

ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

MINUTES OF THE 158<sup>th</sup> MEETING

MIDEWIN NATIONAL TALLGRASS PRAIRIE, WILMINGTON, IL

17 MAY, 2013

(Approved at the 159<sup>th</sup> meeting, August 16, 2013)

BOARD MEMBERS PRESENT: Chair Dan Gooch, Vice-chair Glen Kruse, Secretary John Clemetsen, Dr. Jim Herkert, Dr. Joyce Hofmann, Ms. Susanne Masi, Ms. Laurel Ross, Dr. John Taft, Dr. Jeff Walk.

BOARD MEMBERS ABSENT: None

BOARD MEMBER VACANCIES: One

OTHERS PRESENT: Mr. Chris Benda, Ms. Jeannie Barnes, and Mr. Randy Nyboer (Illinois Natural History Survey), Mr. Philip Willink (Shedd Aquarium), Mr. Randy Heidorn and Ms. Kelly Neal (Illinois Nature Preserves Commission), Ms. Maggie Cole, Ms. Kathi Davis, Dr. Jim Herkert, Mr. Don McFall, and Ms. Stefanie Fitzsimmons (Illinois Department of Natural Resources), Mr. Louis Luksander and Mr. Rob Sulski (Great Lakes Falconers Association), and Ms. Anne Mankowski (Endangered Species Protection Board).

158-1 Call to Order Welcome and Introduction of Guests

Chair Gooch called the meeting to order at 9:33 A.M., asked Board members to introduce themselves and noted that there was a quorum. He then asked audience members to introduce themselves.

158-2 Adoption of Agenda

Chair Gooch recommended changes to the order of agenda items. He suggested that to better accommodate the ESPB technical expert consultants that had travelled to participate in discussion during the List review agenda items by moving the agenda items for “Board Member Appointments” and “Board Budget – FY2014 Revision” to after the agenda item for “2014 Illinois List Review: Recommendation for Changes to Part 1 of the List of Illinois Endangered and Threatened Plants”. He also noted that the “Closed Session (personnel matters)” item actually represents a recess from the meeting, so the Board needs to return to the regular meeting to adjourn and suggest it should be moved to prior to the “Adjournment” item. Ms. Ross so **moved**, Secretary Clemetsen seconded the motion and it was **approved** unanimously.

158-3 Approval of Minutes of the 157<sup>th</sup> (02/08/13) Meeting

Chair Gooch asked for a motion to approve the 157<sup>th</sup> meeting minutes. Dr. Hofmann so **moved** and Vice-chair Kruse seconded the motion. Chair Gooch asked if there were any corrections to the minutes and Mr. Kruse noted the omission of the word “minutes” from the first sentence under item 157-3. Dr. Hofmann and Mr. Kruse agreed to the amendment and the minutes, as amended, were **approved** unanimously.

158-4 ESPB Staff Report

Ms. Mankowski, Director of the Illinois Endangered Species Protection Board, gave her report (Attachment A). She noted the item in her report about after-the-fact approval of translocations of Northern Riffleshell and Clubshell mussels to several locations including into an Illinois Land and Water Reserve and explained that the IDNR had elected to not seek input from the Board about the activities, but the INPC had sought input from the Board. The INPC had reviewed the item at its meeting the week prior and among determinations there, the INPC directed its staff to work with the Board and IDNR in developing a joint animal translocation policy. Ms.

Mankowski reminded the Board that it was her understanding that the Board and IDNR were already supposed to be working toward a joint policy and she would, of course work, with both agencies to develop a policy.

158-5 IDNR Staff Report

Dr. Herkert, Director of IDNR Office of Resource Conservation, and Mr. McFall, Chief of IDNR Division of Natural Heritage, gave their report (Attachment B).

Chair Gooch asked Mr. McFall if he could explain how many IDNR Endangered and Threatened Species Possession Permits are issued for live animals and for the different allowable reasons. Mr. McFall replied that he couldn't speak to that at the current meeting, but could provide more detailed information in future reports to the Board. Chair Gooch indicated that it would be helpful to the Board and requested that the IDNR provide the Board a report with detailed information about the number of E&T Possession Permits issued for live animals, by species and by reason. Mr. McFall responded that he would do so.

Vice Chair Kruse asked about the IDNR Osprey release project highlighted in recent media reports. Mr. McFall stated that the activities are following the approved recovery outline for the species. Secretary Clemetsen asked where the birds were coming from and Mr. McFall replied that some at least are from the Washington D.C. area. Dr. Walk questioned the activities noting that the recovery outline actually reviewed that translocations were likely unnecessary and did not recommend them as a priority recovery strategy. Ms. Mankowski advised the Board that there are two recovery outlines for the species – one that has been approved by the Board and one that has not. Ms. Ross asked for an explanation of why there are two documents. Ms. Mankowski explained that the IDNR contracted Dr. Walk to write an outline that was accepted by the IDNR in January 2008 and reviewed by the Board in February 2008, but the Board took no action to formally approve it at that time. The Board later formally approved the outline in February 2010, with some wording modifications to the status review triggers to clarify that the Board alone has the authority to make listing decisions and that review of listing status should be referred to the Board and not the ESTACs, which no longer exist or any other entity or group. The IDNR circulated for review in January 2011 a new draft recovery outline for the osprey that among other changes, promoted translocations as the priority strategy and also stated the Board had previously approved the status review triggers, but the triggers included were not those previously approved by the Board. Ms. Mankowski sent comments about these inconsistencies but they had not been addressed in the “final” version of the document she received from the IDNR.

158-6 INPC Staff Report

Mr. Heidorn, Director of the Illinois Nature Preserves Commission, gave his report (Attachment C).

158-7 2014 Illinois List Review: A Review of the Process, Board Preliminary Approvals to Date, and Outstanding Species Issues

Ms. Mankowski reviewed the Illinois List 5-year review process and schedule including information about legal requirements, individual species' status and distribution data and information that is being considered, and the process by which she and the Board are engaging advice of the ESPB technical expert consultants (ESPB TECs) (see Attachment D).

158-8 2014 Illinois List Review: Recommendation for Changes to the Lists of Illinois Endangered and Threatened Invertebrates Other Than Mussels

Ms. Mankowski presented her recommendations for listing status changes for invertebrates other than mussels (see Attachment E) and engaged Board members in reviewing the species data and information compiled and answered Board member questions.

Ms. Mankowski reviewed her recommended changes to the status of currently listed species and for adding species to the list of invertebrates other than mussels: she recommended a change from endangered to threatened for Eryngium Stem Borer (*Papaipema eryngii*); a change from threatened to endangered for Cobweb

Skipper (*Hesperia metea*); to delist from endangered the Arogos Skipper (*Atrytone arogos*), Isopod (*Caecidotea spatulata*), and Leafhopper (*Paraphlepsius lupalus*); no change in status for all other currently listed species; and, the addition as endangered of Onyx Rocksnail (*Leptoxis praerosa*). Vice-chair Kruse **moved** to approve Ms. Mankowski's recommendations and Dr. Walk seconded the motion. There was brief discussion about the occurrence data for the Isopod (*Caecidotea spatulata*). Chair Gooch asked if the Board was ready to vote and the recommended changes were **approved** unanimously.

All Board preliminarily approved revisions to the Illinois list of endangered and threatened invertebrates other than mussels during the meeting, included:

**Board preliminarily approved revisions to the Illinois List – invertebrates other than mussels**

Endangered to threatened:      Papaipema eryngii      Eryngium Stem Borer

Threatened to endangered:      Hesperia metea      Cobweb Skipper

Remove from endangered:      Atrytone arogos      Arogos Skipper  
    Caecidotea spatulata      Isopod  
    Paraphlepsius lupalus      Leafhopper

Remove from threatened:      None

Add as endangered:      Leptoxis praerosa      Onyx Rocksnail

Add as threatened:      None

No listing status change recommended: (data do not warrant change)

SNAILS	Discus macclintocki	Iowa Pleistocene Snail
	Fontigens antroecetes	Hydrobiid Cave Snail
	Lithasia obovata	Shawnee Rocksnail
CRUSTACEANS	Caecidotea lesliei	Isopod
	Crangonyx anomalus	Anomalous Spring Amphipod
	Crangonyx packardi	Packard's Cave Amphipod
	Gammarus acherondytes	Illinois Cave Amphipod
	Orconectes indianensis	Indiana Crayfish
	Orconectes kentuckiensis	Kentucky Crayfish
	Orconectes lancifer	Shrimp Crayfish
	Orconectes placidus	Bigclaw Crayfish
	Stygobromus iowae	Iowa Amphipod
SCORPIONS	Centruroides vittatus	Common Striped Scorpion
DRAGONFLIES	Nannothemis bella	Elfin Skimmer
	Somatochlora hineana	Hine's Emerald Dragonfly
SPRINGTAILS	Pygmarrhopalites madonnensis	Madonna Cave Springtail
STONEFLIES	Diploperla robusta	Robust Springfly
	Prostoia completa	Central Forestfly
LEAFHOPPERS	Aflexia rubranura	Redveined Prairie Leafhopper
	Athysanella incongrua	Leafhopper
BUTTERFLIES & MOTHS	Calephelis mutica	Swamp Metalmark
	Hesperia ottoe	Ottoe Skipper
	Incisalia polios	Hoary Eflin
	Lycaeides melissa samuelis	Karner Blue Butterfly
	Speyeria idalia	Regal Fritillary

Chair Gooch suggested that since there were so many species to consider, the Board should review them in the order they are presented in Ms. Mankowski's recommendation (see Attachment F), and instead of starting with a motion regarding Ms. Mankowski's entire recommendation, the Board initiate motions for individual species or groups as appropriate.

The Board began with discussion about *Ammophila breviligulata* (Marram Grass). Ms. Masi questioned staff recommendation to change from endangered to threatened. Ms. Mankowski reminded the Board that her recommendations consider the status and distribution of a species when it originally listed versus its status and distribution now and the number of EOs for the species has increased. She referred the Board to the individual species review for the subject species. There was discussion about similar population and threat characteristics of two other beach species, *Chamaesyce polygonifolia* (Seaside Spurge) and *Cakile edentula* (Sea Rocket) and Ms. Masi noted that those two species are annuals and subject to a great deal of population fluctuation. Ms. Masi stated that they all occupy the same very specific habitat that is subject to ongoing threats of beach grooming and other beach activities. Mr. Benda stated that in surveys he has conducted of these communities, the *Ammophila* is the dominant and very abundant. He also asked for clarification about how much area or how many plants might be captured in an individual mapped EO, noting that sometimes they are small polygons and other times quite large. There was discussion that it varies by EO and they are determined by separation distances between EOs that are set by NatureServe, in this case it would be a separation distance of about 10 kilometers, so that the distribution of this species may occur over as many as 90 kilometers of lakefront. There was discussion that the three species occur all along the lakefront at several sites in Cook and Lake Counties and that the currently lower lake levels are exposing a greater amount of suitable habitat, but it may be a temporary condition. Ms. Mankowski asked if since there are eight new EOs for the species since the time it was originally listed, does the Board think that all EOs are still subject to the same degree of threat so that its status should not be considered improved from endangered. Vice-chair Kruse acknowledged that listing decisions should be based on what we know at the time and based on the data on hand, it appears the species' status and distribution has improved. Ms. Mankowski reviewed the population numbers reported in her species review. Ms. Masi **moved** that *Ammophila breviligulata* (Marram Grass) be changed from endangered to threatened. Dr. Taft seconded the motion and it was **approved** unanimously.

Dr. Taft initiated discussion for *Asclepias stenophylla* (Narrow-leaved Green Milkweed). He stated that although the number of EOs has increased the number of individuals at any location is small and the habitat, hill prairies, are under constant threat of woody encroachment. Chair Gooch reviewed that only one EO is protected. Dr. Taft made a **motion** to maintain *Asclepias stenophylla* (Narrow-leaved Green Milkweed) as endangered and Ms. Ross seconded the motion. Chair Gooch asked about reproduction at sites and Mr. Nyboer responded that during the INAI update, his staff added three new sites for the species and they noted that there was good reproduction at those sites. Ms. Mankowski noted that the new occurrences had not yet been added to the Database and she reviewed the number of sites where occurrence has persisted for many years. Mr. Kruse asked if the listing decision for the species should be deferred until the data for the three new occurrences was entered into the Database and considered in an updated review for the species. There was discussion that those three sites may make a difference if they were substantial populations, but the Board agreed to move forward with a listing decision at this time based on the information on hand. The Board voted on the original motion to maintain the species as endangered and it was **approved** unanimously.

Ms. Mankowski reviewed the species review for *Carex cryptolepis* (Yellow Sedge). Vice-chair Kruse **moved** to change the status of *Carex cryptolepis* (Yellow Sedge) from endangered to threatened and Dr. Walk seconded the motion. There was discussion that the EOs occur across a fairly big geographic area, but no sites are protected. The Board voted and **approved** unanimously the motion to change the status of *Carex cryptolepis* (Yellow Sedge) from endangered to threatened.



Ms. Masi **moved** to maintain *Chamaesyce polygonifolia* (Seaside Spurge) as endangered and Dr. Taft seconded the motion. There was some discussion about population numbers and seed dispersal characteristics. Chair Gooch asked for a vote and the Board **approved** unanimously the motion to maintain *Chamaesyce polygonifolia* (Seaside Spurge) as endangered.

Chair Gooch asked for a motion regarding *Dennstaedtia punctilobula* (Hay-scented Fern), Dr. Walk **moved** to change the status from endangered to threatened, and Ms. Ross seconded the motion. Mr. Benda reviewed his observations for several locations noting that it was observed at all six sites he visited, but all populations were fairly small with maybe 12-20 fronds, and possibly constituting only one or two plants, at each location. Dr. Taft **moved** to amend the original motion by maintaining the species as endangered and Dr. Hofmann seconded the amendment. Chair Gooch asked about stability of the locations and Mr. Benda replied that he thought they were generally stable, noting that several locations had not been observed for 30 years when he visited them and they were still persisting. The Board voted on the amended motion to maintain *Dennstaedtia punctilobula* (Hay-scented Fern) as endangered and it was **approved** unanimously.

Secretary Clemetsen **moved** to change from endangered to threatened *Dichantherium yadkinense* (Panic Grass) and Ms. Ross seconded the motion. Chair Gooch asked for discussion. Vice-chair Kruse noted that TEC comments asked for confirmation of voucher specimens and Mr. Benda indicated that he believed he had the specimens and could provide them to appropriate experts to verify. Dr. Taft **moved** to amend the original motion by maintaining the species as endangered until identification is verified and Ms. Ross seconded the amendment. Chair Gooch asked if this should be moved to the grouping of species where the listing decision will be deferred until outstanding information is confirmed, in this case the identification. Ms. Mankowski responded that unless the Board felt confident it would change the status of the species to threatened if voucher specimens were verified as correct, she recommended against dedicating resources to rushing to identify the vouchers, etc. and that the Board simply keep the species as endangered. She added that the TECs could then work with the Database to confirm the voucher specimens and ensure respective EO reports are correct. Dr. Taft **moved** to amend the amended motion by maintaining the species as endangered and Ms. Ross seconded the amendment. The Board voted on the amendment to maintain *Dichantherium yadkinense* (Panic Grass) as endangered and it was **approved** unanimously.

Chair Gooch asked for a motion for *Euonymus americanus* (American Strawberry Bush), Dr. Taft **moved** to change the status from endangered to threatened, and Vice-chair Kruse seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Euonymus americanus* (American Strawberry Bush) from endangered to threatened.

Vice-chair Kruse **moved** to change the status of *Filipendula rubra* (Queen-of-the-Prairie) from endangered to threatened and Dr. Hofmann seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Filipendula rubra* (Queen-of-the-Prairie) from endangered to threatened.

Secretary Clemetsen **moved** to change the status of *Berchemia scandens* (Supple-Jack) from threatened to endangered and Dr. Hofmann seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Berchemia scandens* (Supple-Jack) from threatened to endangered.

Dr. Hofmann **moved** to change the status of *Botrychium biternatum* (Southern Grape Fern) from threatened to endangered and Dr. Taft seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Botrychium biternatum* (Southern Grape Fern) from threatened to endangered.

Dr. Hofmann **moved** to change the status of *Carex intumescens* (Swollen Sedge) from threatened to endangered and Secretary Clemetsen seconded the motion. There was no discussion. The Board voted and **approved**

unanimously to change the status of *Carex intumescens* (Swollen Sedge) from threatened to endangered.

Secretary Clemetsen **moved** to change the status of *Cimicifuga rubifolia* (Black Cohosh) from threatened to endangered and Dr. Taft seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Cimicifuga rubifolia* (Black Cohosh) from threatened to endangered.

Ms. Masi **moved** to change the status of *Corallorhiza maculata* (Spotted Coral-root Orchid) from threatened to endangered and Dr. Taft seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the status of *Corallorhiza maculata* (Spotted Coral-root Orchid) from threatened to endangered.

Secretary Clemetsen **moved** to change the status of *Elymus trachycaulus* (Bearded Wheat Grass) from threatened to endangered and Ms. Ross seconded the motion. There was some discussion about Board members' knowledge of individual sites that may indicate stable population numbers at a couple of locations, but there was agreement when taken in whole the overall status and distribution appears to have declined. The Board voted and **approved** unanimously to change the status of *Elymus trachycaulus* (Bearded Wheat Grass) from threatened to endangered.

Chair Gooch explained that the discussion would now move to taxa recommended for delisting by staff and noted that some of the recommendations were related to the authority of the Board to list sub-specific taxa versus a biological determination regarding status and distribution of any individual taxa (further explanation is provided in Table 5 of Attachment F). He suggested that a discussion of the topic first might expedite the reviews for individual taxa. Dr. Taft led the discussion by reviewing that not all specialists recognize the same designations for varieties and subspecies nor whether a taxon may or may not be considered a part of Illinois' native flora. He added that he had recommendations for allowing exceptions for these reasons and also for when a taxon is endemic, for example. Chair Gooch noted that the Board has traditionally used Mohlenbrock as its reference for Illinois flora and asked if anyone recalled why. Mr. Nyboer replied that it was the first and only Flora of Illinois and was used as such by the Board, the IDNR, and the INPC. Vice-chair Kruse noted that the question seems to be whether the Board has the authority to list sub-specific taxa and reviewed the explanation for past Board actions that Ms. Mankowski had summarized in her staff recommendations document. Chair Gooch noted that the Illinois Endangered Species Protection Act specifically mentions subspecies with regard to Federal listings, but specifically does not mention subspecies with regard to State listings. There was discussion that since JCAR had approved past listings of sub-specific taxa, the Board should consider it acceptable to continuing doing so. Chair Gooch asked that the Board return to discussion and voting for individual species listing status recommendations and review the sub-specific taxa issue as it occurs in each recommendation.

Dr. Taft **moved** that nomenclature for *Alnus incana* subsp. *rugosa* (Speckled Alder) be changed to *Alnus incana* and Ms. Masi seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the nomenclature for *Alnus incana* subsp. *rugosa* to *Alnus incana*.

Ms. Mankowski reviewed her recommendation for delisting *Berberis canadensis* (Allegheny Barberry) due to extirpation. She explained that the species has not been observed at either of the two known locations in decades, the locations had been searched several times over those years, and she had searched the one site in Jackson County again this year and was planning to search the other in Tazewell County site during the week following the Board meeting. She suggested that if the Board was going to be satisfied with the "surveyed with no observation" if she did not find it the next week and would move to delist the species as extirpated, then she would conduct the planned survey. However, if the Board would like additional years of search effort before making a decision to delist, she would not dedicate the time to conduct the planned survey this year. Vice-chair Kruse **moved** to delist the species if the planned survey by staff did not find it at the Tazewell County location and Dr. Taft seconded the motion. The Board voted and **approved** unanimously to delist *Berberis canadensis*

(Allegheny Barberry) if the planned survey by staff did not locate the species at the Tazewell County site. Ms. Mankowski noted that she would include the species in the list of “outstanding issues” that she will revisit with the Board prior to the Board reconfirming all of its preliminary approvals for the current List revision.

Dr. Taft **moved** that nomenclature for *Carex canescens* var. *disjuncta* (Silvery Sedge) be changed to *Carex canescens* and Vice-chair Kruse seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the nomenclature for *Carex canescens* var. *disjuncta* to *Carex canescens*.

Dr. Taft **moved** that nomenclature for *Cypripedium parviflorum* var. *makasin* (Small Yellow Lady’s Slipper) be changed to *Cypripedium parviflorum* and Vice-chair Kruse seconded the motion. There was discussion that depending upon which flora is used there may be three varieties in Illinois or they may be considered individual species. The nomenclature change would be consistent with Mohlenbrock where this “variety” is considered a species (*Cypripedium parviflorum*). The Board voted and **approved** unanimously to change the nomenclature for *Cypripedium parviflorum* var. *makasin* to *Cypripedium parviflorum*.

Ms. Mankowski reviewed that her original recommendations were for delisting *Eupatorium hyssopifolium* (Hyssop-leaved Thoroughwort) and *Euphorbia spathulata* (Spurge), but in response to her recommendations ESPB TECs had sent to the Database recent EO reports of observations for both species. She indicated that based on that new information she recommended no changes to listing status and would move both species to the list of “outstanding issues” and that she will confirm the EO reports were entered into the Database before she revisits all recommendations with the Board prior to the Board reconfirming all of its preliminary approvals for the current List revision. Dr. Taft **moved** to maintain the endangered status for *Eupatorium hyssopifolium* (Hyssop-leaved Thoroughwort) and *Euphorbia spathulata* (Spurge) pending confirmation that the respective EO reports were entered into the Database and Dr. Walk seconded the motion. The Board voted and **approved** unanimously to maintain as endangered *Eupatorium hyssopifolium* (Hyssop-leaved Thoroughwort) and *Euphorbia spathulata* (Spurge) pending confirmation that the respective EO reports were entered into the Database.

Dr. Taft **moved** to delist *Galium lanceolatum* (Wild Licorice) and Ms. Ross seconded the motion. There was no discussion. The Board voted and **approved** unanimously to delist *Galium lanceolatum* (Wild Licorice).

Ms. Mankowski reviewed that the Board listed as endangered *Lonicera dioica* var. *glaucescens* (Red Honeysuckle), but the question now is how to handle that listing in light of the Board’s authority for listing sub-specific taxa and because there is another variety (*L. dioica* var. *dioica*) in Illinois. Her recommendation was to delist the variety because it is not the only representative of the species in Illinois. Dr. Taft reviewed that not much is known about the status of the *L. dioica* var. *dioica*. Dr. Walk suggested that the conservative approach would be to leave *L. dioica* var. *glaucescens* listed as is until the Board learns more about the status of *L. dioica* var. *dioica* in order to make any decisions about lumping the two varieties under the species *L. dioica*. Dr. Taft **moved** to maintain as endangered *Lonicera dioica* var. *glaucescens* and Ms. Masi seconded the motion. The Board voted and **approved** unanimously to maintain as endangered *Lonicera dioica* var. *glaucescens* (Red Honeysuckle).

Dr. Hofmann **moved** to take a recess and it was seconded by Ms. Ross. Chair Gooch suggested the Board recess from 12:45 P.M. until 1:00 P.M.. The Board voted and **approved** unanimously to take a recess.

Chair Gooch called the meeting back to order at 1:00 P.M.

Dr. Taft **moved** that *Phlox pilosa* subsp. *sangamonensis* (Sangamon Phlox) be maintained on the list because it is endemic to Illinois even though it is not the only representative of the species in Illinois. Dr. Hofmann seconded the motion. The Board voted and **approved** unanimously to maintain as endangered *Phlox pilosa* subsp. *sangamonensis* (Sangamon Phlox).

Dr. Taft reviewed that both *Platanthera flava* var. *flava* (Tuberclad Orchid) and *Platanthera flava* var. *herbiola* (Tuberclad Orchid) are listed (*P. flava* var. *flava* is endangered and *P. flava* var. *herbiola* is threatened) and suggested that the Board could either maintain varieties as varieties and under respective current listing statuses or could lump them together under the species *P. flava*. Ms. Mankowski noted that the varieties occur in different habitats and largely in different parts of the state. Dr. Walk **moved** to delist *P. flava* var. *flava* and change the nomenclature of *P. flava* var. *herbiola* to *P. flava* and Secretary Clemetsen seconded the motion. The Board voted and **approved** unanimously to delist *P. flava* var. *flava* and change the nomenclature of *P. flava* var. *herbiola* to *Platanthera flava*.

Ms. Masi **moved** to change from threatened to endangered *Cakile edentula* (Sea Rocket) and Dr. Taft seconded the motion. Ms. Masi reviewed some population survey numbers from the Plants of Concern Program and reiterated that this is a beach species that is subject to ongoing threats from beach activities. Ms. Mankowski indicated that she is having trouble reconciling that the stated threats represent actual impacts to the species because the data do not support that – with 13 new EOs added for the species since its original listing and continued persistence at most EOs. Vice-chair Kruse agreed that the threats are not so severe that they seem to outweigh the apparent improvements in status and distribution. Chair Gooch reviewed that Ms. Mankowski’s recommendation was for delisting from threatened. There was additional discussion about the apparent improvements to status and distribution, the unknowns about some EOs and threats, and the uncertainty about whether what is known is enough to consider the species secure and no longer meeting the definition of threatened. Dr. Taft **moved** to amend the original motion by maintaining as threatened *Cakile edentula* (Sea Rocket) and Dr. Hofmann seconded the amendment. The Board voted on the amendment to maintain *Cakile edentula* (Sea Rocket) as endangered and it was **approved** unanimously.

Dr. Herkert stated his concern about the last discussion surrounding Mr. Kruse’s reference to an “apparent” improvement in status and distribution because of the uncertainty of the EO data and other possible occurrence information that may not be reflected in the EO data. He said that he has never heard the Board question so vigorously the unknowns when acting to add a species to the list, but when it comes to delisting or improving the listing status, the Board seems to be applying a different standard. Ms. Mankowski offered some agreement and reviewed again that in this instance the Board is presented with data evident improvements, but chooses to place greater weight on the suggestion of threats even when those threats are not demonstrated by the data – she believes that there has been such an increase in the number of EOs and persistence across EOs should be considered evidence that the threat is not as threatening as perceived. Mr. Nyboer added that some of the stated threats involve intermittent disturbances and several of the sand species actually require some of this type of disturbance to maintain populations. Dr. Herkert added that the Board should be giving greater consideration to identifying what the “end points” are for each species so that it is known up front what it will take to actually be comfortable with changing a listing status instead of essentially starting a new evaluation with every 5-year review. Ms. Mankowski agreed and noted that the need for the Board to develop recovery planning documents and status review triggers at the time of listing or shortly thereafter, was identified in the Board’s 40-year review of the ESPA. Dr. Herkert reiterated that it seems the Board has excessive reluctance to delist or improve status and over time just keeps “ratcheting up” what it takes for those changes to take place and saying it wants to see five more years of data. He reviewed that during the time he worked for the Board, it had at times come up with informal guidelines for the number of EOs, etc., to trigger a serious discussion about a status change. Dr. Walk asked if Dr. Herkert could provide the Board copies of those and Dr. Herkert said he would try to find copies of them. Dr. Taft replied that the Board has talked about that in preparation for this current List review and agreed that the threats are often too individualistic to adopt guidelines for status changes. Dr. Herkert, Ms. Mankowski, and Dr. Walk replied that it should seem reasonable to develop guidelines that at least trigger a serious discussion. There was additional discussion about the need for recovery plans with stated goals for each species. Dr. Herkert said that in the absence of recovery plans it seems that when the Board is presented with data demonstrating such improvements and the Board says it wants to see five more years of data, the Board should be able to say specifically what the data will have to demonstrate in five more years for the Board to

actually change the listing status – waiting five years is not a goal. Ms. Mankowski agreed. Dr. Hofmann noted that the Board made the decision to wait for five more years with a number of the animal reviews and Ms. Mankowski added that for her recommendations, if a good improvement was only a single year or single five-year interval event she typically recommended that she would like to see the improvement sustained into at least another interval before making a recommendation for status change. Chair Gooch noted that the Board could, of course, change decisions when it reconfirms all preliminary listing decisions for this five-year review, but asked if any Board member wanted to change any actions already taken during the current meeting. No Board members indicated a desire to change any decisions from the current meeting.

Vice-chair Kruse **moved** to delist *Carex woodii* (Pretty Sedge) and Dr. Taft seconded the motion. There was no discussion. The Board voted and **approved** unanimously to delist *Carex woodii* (Pretty Sedge).

Chair Gooch asked Ms. Mankowski to review her recommendation to delist *Cypripedium candidum* (White Lady's Slipper). Ms. Masi **moved** to delist *Cypripedium candidum* and Vice-chair Kruse seconded the motion. There was no further discussion. The Board voted and **approved** unanimously to delist *Cypripedium candidum* (White Lady's Slipper).

Ms. Mankowski reviewed three species for which no Board action was required at this time. She explained that *Isoetia medeoloides* (Small Whorled Pogonia) was delisted by the Board in 2009, but under the ESA the Board does not have the authority to delist Federally listed species in this manner, so the species should be placed back on the published List as endangered. She also explained that *Mentzelia oligosperma* (Stickleaf) and *Utricularia subulata* (Hair Bladderwort) were species for which the Board had already made preliminary approvals to add as endangered. She indicated that she would confirm that occurrence data for the Stickleaf and Hair Bladderwort have made it to the Database before the Board reconfirms its preliminary approvals.

Chair Gooch then identified the list of plant species in Item 2 of Attachment F. for which Ms. Mankowski did not recommend listing status changes and asked if Board members had any recommendations alternate to Ms. Mankowski's. There were no alternate recommendations and no discussion. Secretary Clemetsen **moved** to maintain the current listing status for all the species in the respective list in Table 2 and Dr. Walk seconded the motion. The Board voted and **approved** unanimously to maintain the current listing status for all the species in the respective list.

Ms. Mankowski reviewed her recommended name changes for *Carex inops* subsp. *heliophila* to *Carex heliophila* and for *Salvia azurea* subsp. *pitcheri* to *Salvia azurea*. Dr. Walk **moved** to approve the name changes and Dr. Taft seconded the motion. There was no discussion. The Board voted and **approved** unanimously to change the nomenclature for *Carex inops* subsp. *heliophila* to *Carex heliophila* and for *Salvia azurea* subsp. *pitcheri* to *Salvia azurea*.

All Board preliminarily approved revisions to Part 1 of the Illinois lists of endangered and threatened plants during the meeting, included:

#### **Board preliminarily approved revisions to the Illinois List – Part 1 of plants**

<u>Endangered to threatened:</u>	Ammophila breviligulata	Marram Grass
	Carex cryptolepis	Yellow Sedge
	Euonymus americanus	American Strawberry Bush
	Filipendula rubra	Queen-of-the-Prairie
<u>Threatened to endangered:</u>	Berchemia scandens	Supple-Jack
	Botrychium biternatum	Southern Grape Fern
	Carex intumescens	Swollen Sedge
	Cimicifuga rubifolia	Black Cohosh

	Corallorhiza maculata	Spotted Coral-root Orchid
	Elymus trachycaulus	Bearded Wheat Grass
<u>Remove from endangered:</u>	Berberis canadensis	Allegheny Barberry
	Galium lanceolatum	Wild Licorice
	Penstemon brevisepalus	Short-sepaed Beard Tongue
	Platanthera flava var. flava	Tuberclcd Orchid
<u>Remove from threatened:</u>	Carex woodii	Pretty Sedge
	Cypripedium candidum	White Lady's Slipper
<u>Add as endangered:</u>	Isotria medeoloides	Small Whorled Pogonia
	Mentzelia oligosperma	Stickleaf
	Utricularia subulata	Hair Bladderwort
<u>Add as threatened:</u>	None	

No listing status change: (data do not warrant change)

Adoxa moschatellina	Moschatel
Agalinus skinneriana	Pale False Foxglove
Alnus incana subsp. rugosa	Speckled Alder
Amelanchier interior	Shadbush
Amelanchier sanguinea	Shadbush
Amorpha nitens	Smooth False Indigo
Arctostaphylos uva-ursi	Bearberry
Artemisia dracunculus	Dragon Wormwood
Asclepias lanuginosa	Wooly Milkweed
Asclepias meadii	Mead's Milkweed
Asclepias ovalifolia	Oval Milkweed
Asclepias stenophylla	Narrow-leaved Green Milkweed
Asplenium bradleyi	Bradley's Spleenwort
Asplenium resiliens	Black Spleenwort
Aster furcatus	Forked Aster
Astragalus distortus	Bent Milk Vetch
Astragalus tennesseensis	Tennessee Milk Vetch
Baptisia tinctoria	Yellow Wild Indigo
Bartonia paniculata	Screwstem
Beckmannia syzigachne	American Slough Grass
Bessya bullii	Kitten Tails
Betula alleghaniensis	Yellow Birch
Boltonia decurrens	Decurrent False Aster
Botrychium campestre	Prairie Moonwort
Botrychium matricariifolium	Daisyleaf Grape Fern
Botrychium multifidum	Northern Grape Fern
Botrychium simplex	Dwarf Grape Fern
Bouteloua gracilis	Blue Grama
Buchnera americana	Bluehearts
Bumelia lanuginosa	Wooly Buckthorn
Cakile edentula	Sea Rocket
Calamagrostis insperata	Bluejoint Grass
Calla palustris	Water Arum
Calopogon oklahomensis	Oklahoma Grass Pink Orchid
Calopogon tuberosus	Grass Pink Orchid
Camassia angusta	Wild Hyacinth

<i>Carex alata</i>	Winged Sedge
<i>Carex arkansana</i>	Arkansas Sedge
<i>Carex atlantica</i>	Sedge
<i>Carex aurea</i>	Golden Sedge
<i>Carex bromoides</i>	Sedge
<i>Carex brunnescens</i>	Brownish Sedge
<i>Carex canescens</i> var. <i>disjuncta</i>	Silvery Sedge
<i>Carex chordorrhiza</i>	Cordroot Sedge
<i>Carex communis</i>	Fibrous-rooted Sedge
<i>Carex crawfordii</i>	Crawford's Sedge
<i>Carex cumulata</i>	Sedge
<i>Carex decomposita</i>	Cypress-knee Sedge
<i>Carex diandra</i>	Sedge
<i>Carex disperma</i>	Shortleaf Sedge
<i>Carex echinata</i>	Sedge
<i>Carex formosa</i>	Sedge
<i>Carex garberi</i>	Elk Sedge
<i>Carex gigantea</i>	Large Sedge
<i>Carex inops</i> subsp. <i>heliophila</i>	Plains Sedge
<i>Carex nigromarginata</i>	Black-edged Sedge
<i>Carex oligosperma</i>	Few-seeded Sedge
<i>Carex oxylepis</i>	Sharp-scaled Sedge
<i>Carex physorhyncha</i>	Bellow's Beak Sedge
<i>Carex plantaginea</i>	Plaintain-leaved Sedge
<i>Carex prasina</i>	Drooping Sedge
<i>Carex reniformis</i>	Reniform Sedge
<i>Carex trisperma</i>	Three-seeded Sedge
<i>Carex tuckermanii</i>	Tuckerman's Sedge
<i>Carex viridula</i>	Little Green Sedge
<i>Carex willdenowii</i>	Willdenow's Sedge
<i>Carya aquatica</i>	Water Hickory
<i>Carya pallida</i>	Pale Hickory
<i>Castilleja sessiliflora</i>	Downy Yellow Painted Cup
<i>Ceanothus herbaceus</i>	Redroot
<i>Chamaedaphne calyculata</i>	Leatherleaf
<i>Chamaelirium luteum</i>	Fairy Wand
<i>Chamaesyce polygonifolia</i>	Seaside Spurge
<i>Chimaphila maculata</i>	Spotted Wintergreen
<i>Chimaphila umbellata</i>	Pipsissewa
<i>Cimicifuga americana</i>	American Bugbane
<i>Cimicifuga racemosa</i>	False Bugbane
<i>Circaea alpina</i>	Small Enchanter's Nightshade
<i>Cirsium pitcheri</i>	Pitcher's (Dune) Thistle
<i>Cladrastis lutea</i>	Yellowwood
<i>Clematis crispa</i>	Blue Jasmine
<i>Clematis occidentalis</i>	Mountain Clematis
<i>Clematis viorna</i>	Leatherflower
<i>Collinsia violacea</i>	Violet Collinsia
<i>Comptonia peregrina</i>	Sweetfern
<i>Conioselinum chinense</i>	Hemlock Parsley
<i>Cornus canadensis</i>	Bunchberry
<i>Corydalis aurea</i>	Golden Corydalis
<i>Corydalis halei</i>	Hale's Corydalis

<i>Corydalis sempervirens</i>	Pink Corydalis
<i>Corylus cornuta</i>	Beaked Hazelnut
<i>Cynoscium digitatum</i>	Cynoscium
<i>Cyperus grayioides</i>	Umbrella Sedge
<i>Cyperus lancastris</i>	Galingale
<i>Cypripedium acaule</i>	Moccasin Flower
<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's Slipper
<i>Cypripedium reginae</i>	Showy Lady's Slipper
<i>Cystopteris laurentiana</i>	Laurentian Fragile Fern
<i>Dalea foliosa</i>	Leafy Prairie Clover
<i>Delphinium carolinianum</i>	Wild Blue Larkspur
<i>Dennstaedtia punctilobula</i>	Hay-scented Fern
<i>Deschampsia flexuosa</i>	Hairgrass
<i>Dichanthelium boreale</i>	Northern Panic Grass
<i>Dichanthelium jorii</i>	Panic Grass
<i>Dichanthelium portoricense</i>	Hemlock Panic Grass
<i>Dichanthelium ravenelii</i>	Ravenel's Panic Grass
<i>Dichanthelium yadkinense</i>	Panic Grass
<i>Dodecatheon frenchii</i>	French's Shootingstar
<i>Draba cuneifolia</i>	Whitlow Grass
<i>Drosera intermedia</i>	Narrow-leaved Sundew
<i>Drosera rotundifolia</i>	Round-leaved Sundew
<i>Dryopteris celsa</i>	Log Fern
<i>Echinodorus tenellus</i>	Small Burhead
<i>Eleocharis olivacea</i>	Capitate Spikerush
<i>Eleocharis pauciflora</i>	Few-flowered Spikerush
<i>Eleocharis rostellata</i>	Beaked Spike Rush
<i>Epilobium strictum</i>	Downy Willow Herb
<i>Equisetum pratense</i>	Meadow Horsetail
<i>Equisetum scirpoides</i>	Dwarf Scouring Rush
<i>Equisetum sylvaticum</i>	Woodland Horsetail
<i>Eriophorum virginicum</i>	Rusty Cotton Grass
<i>Eryngium prostratum</i>	Eryngo
<i>Eupatorium hyssopifolium</i>	Hyssop-leaved Thoroughwort
<i>Euphorbia spathulata</i>	Spurge
<i>Fimbristylis vahlii</i>	Vahl's Fimbristylis
<i>Galactia mohlenbrockii</i>	Boykin's Dioclea
<i>Galium virgatum</i>	Dwarf Bedstraw
<i>Geranium bicknellii</i>	Northern Cranesbill
<i>Glyceria arkansana</i>	Arkansas Mannagrass
<i>Gratiola quartermaniae</i>	Hedge Hyssop
<i>Gymnocarpium dryopteris</i>	Oak Fern
<i>Gymnocarpium robertianum</i>	Scented Oak Fern
<i>Halesia carolina</i>	Silverbell Tree
<i>Helianthus angustifolius</i>	Narrow-leaved Sunflower
<i>Helianthus giganteus</i>	Tall Sunflower
<i>Heliotropium tenellum</i>	Slender Heliotrope
<i>Heteranthera reniformis</i>	Mud Plantian
<i>Hexalectris spicata</i>	Crested Coralroot Orchid
<i>Hudsonia tomentosa</i>	False Heather
<i>Huperzia porophila</i>	Cliff Clubmoss
<i>Hydrolea uniflora</i>	One-flowered Hydrolea
<i>Hypericum kalmianum</i>	Kalm's St. John's Wort



<i>Iliamna remota</i>	Kankakee Mallow
<i>Isotria verticillata</i>	Whorled Pogonia
<i>Juncus vaseyi</i>	Vasey's Rush
<i>Juniperus horizontalis</i>	Trailing Juniper
<i>Justicia ovata</i>	Water Willow
<i>Lesquerella ludoviciana</i>	Silvery Bladderpod
<i>Lonicera dioica</i> var. <i>glaucescens</i>	Red Honeysuckle
<i>Lycopodiella inundata</i>	Bog Clubmoss
<i>Lysimachia radicans</i>	Creeping Loosestrife
<i>Malus angustifolia</i>	Narrow-leaved Crabapple
<i>Malvastrum hispidum</i>	False Mallow
<i>Medeola virginiana</i>	Indian Cucumber Root
<i>Megalodonta beckii</i>	Water Marigold
<i>Melanthera nivea</i>	White Melanthera
<i>Melica mutica</i>	Two-Flowered Melic Grass
<i>Mirabilis hirsuta</i>	Hairy Umbrella-wort
<i>Nemophila triloba</i>	Baby Blue-eyes
<i>Opuntia fragilis</i>	Fragile Prickly Pear
<i>Orobanche fasciculata</i>	Clustered Broomrape
<i>Phacelia gilioides</i>	Ozark Phacelia
<i>Phegopteris connectilis</i>	Long Beech Fern
<i>Phlox pilosa</i> subsp. <i>sangamonensis</i>	Sangamon Phlox
<i>Pinus banksiana</i>	Jack Pine
<i>Pinus echinata</i>	Shortleaf Pine
<i>Pinus resinosa</i>	Red Pine
<i>Platanthera ciliaris</i>	Orange Fringed Orchid
<i>Platanthera flava</i> var. <i>herbiola</i>	Tuberclad Orchid
<i>Poa languida</i>	Weak Bluegrass
<i>Polanisia jamesii</i>	James' Clammyweed
<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb
<i>Potamogeton pulcher</i>	Spotted Pondweed
<i>Potamogeton strictifolius</i>	Stiff Pondweed
<i>Primula mistassinica</i>	Bird's-eye Primrose
<i>Ptilimnium nuttallii</i>	Mock's Bishop Weed
<i>Quercus texana</i>	Nuttall's Oak
<i>Rhamnus alnifolia</i>	Alder Buckthorn
<i>Rhynchospora glomerata</i>	Clustered Beak Rush
<i>Rosa acicularis</i>	Bristly Rose
<i>Sagittaria australis</i>	Arrowhead
<i>Salix serissima</i>	Autumn Willow
<i>Salix syrticola</i>	Dune Willow
<i>Salvia azurea</i> subsp. <i>pitcher</i>	Blue Sage
<i>Sanguisorba canadensis</i>	American Burnet
<i>Sanicula smallii</i>	Southern Sanicula
<i>Saxifraga virginiana</i>	Early Saxifrage
<i>Schizachne purpurascens</i>	False Melic Grass
<i>Schoenoplectus purshianus</i>	Weak Bulrush
<i>Schoenoplectus smithii</i>	Smith's Bulrush
<i>Scirpus microcarpus</i>	Bulrush
<i>Scleria muhlenbergii</i>	Muhlenberg's Nut Rush
<i>Shepherdia canadensis</i>	Buffaloberry
<i>Silene ovata</i>	Ovate Catchfly
<i>Sorbus americana</i>	American Mountain Ash

<i>Sparganium americanum</i>	American Burreed
<i>Spiranthes lucida</i>	Yellow-lipped Ladies' Tresses
<i>Stellaria pubera</i>	Great Chickweed
<i>Stylisma pickeringii</i>	Patterson's Bindweed
<i>Styrax grandifolius</i>	Bigleaf Snowbell Bush
<i>Symphoricarpos albus</i> var. <i>albus</i>	Snowberry
<i>Talinum calycinum</i>	Fameflower
<i>Thelypteris noveboracensis</i>	New York Fern
<i>Tilia heterophylla</i>	White Basswood
<i>Torreyochloa pallida</i>	Pole Manna-Grass
<i>Trichophorum cespitosum</i>	Tufted Bulrush
<i>Trillium cernuum</i>	Nodding Trillium
<i>Trillium erectum</i>	Ill-scented Trillium
<i>Ulmus thomasii</i>	Rock Elm
<i>Utricularia cornuta</i>	Horned Bladderwort
<i>Vaccinium corymbosum</i>	Highbush Blueberry
<i>Vaccinium oxycoccos</i>	Small Cranberry
<i>Vaccinium stamineum</i>	Deerberry
<i>Valeriana uliginosa</i>	Marsh Valerian
<i>Valerianella chenopodifolia</i>	Corn Salad
<i>Valerianella umbilicata</i>	Corn Salad
<i>Woodsia ilvensis</i>	Rusty Woodsia
<i>Zigadenus elegans</i>	White Camass

Spelling Corrections:

*Agalinus skinneriana* to *Agalinis skinneriana*

*Cyperus grayioides* to *Cyperus grayoides*

Name Changes:

*Alnus incana* subsp. *rugosa* to *Alnus incana*

*Carex canescens* var. *disjuncta* to *Carex canescens*

*Carex inops* subsp. *heliophila* to *Carex heliophila*

*Cypripedium parviflorum* var. *makasin* to *Cypripedium parviflorum*

*Platanthera flava* var. *herbiola* to *Platanthera flava*

*Salvia azurea* subsp. *pitcher* to *Salvia azurea*

Chair Gooch indicated that the discussion was now concluded for Part 1 of the review of the list of endangered and threatened plants and noted that Ms. Mankowski had requested discussion about the timing and schedule for completing the remainder of the plant list review. Ms. Ross asked for Ms. Mankowski's recommendation of what she thinks is a reasonable schedule based on her understanding of the workload. Ms. Mankowski reviewed her workload to date and recommended breaking the remainder of the plants into two groups, but to keep the existing TEC deadlines for nominations, etc., so that that workload would not be extended for staff. Ms. Ross said she supported staff recommendation. Chair Gooch reviewed that he and Ms. Mankowski had been discussing changing the schedule into out-years by staggering the reviews of the animal and plant lists which would more evenly spread the workload for staff and Board members. Ms. Mankowski reminded the Board that following the conclusion of the current List review, the Board planned to review and revise as necessary the List review process before heading into the next List review. She advised that she would have a number of recommendations about revising the process for the Board to consider and suggested that the Board consider the proposal to split the List review into two staggered groups at the time when the Board reviews the whole process. Chair Gooch returned to discussion about the current List review and asked if Ms. Mankowski was proposing to add a special meeting during the currently proposed schedule or to bump the schedule out by another quarterly meeting altogether. Ms. Mankowski replied that her preference was to bump the schedule out by another quarterly meeting to allow her additional time to manage the workload. She then directed the

Board's attention to questions she had presented in their Board member packets for the meeting - about how much detail she should provide in the plant species reviews, whether the Board was going to support TEC requests for additional surveys for several species, and how much populations versus EO data does she need to dig for – noting that with the Plant list review she is being asked to do a great deal more work and provide much greater detail than the Board agreed to for the overall List review and it also exceeds the level done for other species groups. There was some general discussion about the consistency of reporting to the Database and the robustness and use of Database data for EOs and individual population numbers and trends. Chair Gooch asked the Board if they will be satisfied with the same or lesser level of review and detail that Ms. Mankowski provided in the Part 1 plant list review for the rest of the plants. There was some discussion about the question and agreement that Ms. Mankowski would proceed with the same or lesser level of review and detail and plan to address the remainder of the plants in two more groups.

#### 158-10 ESPB Budget – FY2014 Revisions

Ms. Mankowski reviewed that after having no funding or staff for multiple years and then being funded and staffed at only up to 25% for the last 4.5 years, the Board was pleased to see the IDNR's forwarded and Governor's recommended ESPB appropriation for FY2014 of \$386,000, which brings the Board back to just above 50% of historic funding. She noted that it was also good to see those IDNR programs that have never dipped below 50% funding or staffing have increases in IDNR's forwarded and Governor recommended appropriations for FY2014, as well – IDNR Natural Areas Stewardship from \$10,147,000 to \$11,873,000, IDNR Natural Areas Design and Construction from \$2,001,000 to \$2,855,000 and IDNR Endangered Species Protection from \$1,193,000 to \$1,652,000.

She presented to the Board a revised spending plan for the FY2014 budget that would dedicate a greater proportion of funding toward personnel expenses by compensating Ms. Mankowski with cash pay for a greater proportion of her overtime as compared to previous years and for now hiring staff contractually instead of as direct hires. Ms. Ross **moved** to approve the revised spending plan, Dr. Walk seconded the motion, and it was **approved** unanimously.

#### 158-11 Board Appointments

Ms. Mankowski reviewed that the Board's member recommendation process is advisory to the Governor's Office and supplemental to the on-line self nomination process at [Illinois.Appointments.Gov](http://Illinois.Appointments.Gov) . She reported that since the 157<sup>th</sup> meeting she had drafted and sent letters of recommendation to the Governor's Office for reappointments of Ms. Ross and Dr. Walk and the Governor's Office had confirmed their reappointments. She noted that Secretary Clemetsen's term expired May 15, 2013 and Chair Gooch asked Mr. Clemetsen if he wished to continue service as a Board member. Mr. Clemetsen stated that after 18 years of service, he did not believe he would be able to commit to another term, but that he would be willing to continue serving until replaced. Chair Gooch thanked Secretary Clemetsen for his service to date and willingness to continue serving until replaced.

Chair Gooch reviewed that the Board has one standing vacancy and would now have one member serving on an expired term without interest in reappointment. He noted that Ms. Mankowski had performed vetting and interviews of two individuals that she was prepared to nominate for Board recommendation to the Governor's Office for member appointments and asked her to present the nominations to the Board. Ms. Mankowski reviewed information for Ms. Jill Riddell and Mr. James Robinett. She noted that both candidates were well qualified to help the Board maintain its statutory composition requirements and she thought they would also bring additional skill sets and talents that complement the current composition of the Board and would be beneficial, overall. Dr. Walk **made a motion** for the Board to recommend to the Governor's Office that Ms. Riddell and Mr. Robinett be appointed as members of the Board. Ms. Ross seconded the motion and it was **approved** unanimously. Chair Gooch instructed Ms. Mankowski to write and send to the Governor's Office respective letters of recommendation.

158-12 Next Meeting Information

The Board's next regularly scheduled meeting will be August 16, 2013 at 9:30 A.M. at Midewin National Tallgrass Prairie.

158-13 Public Comment Period (3 minutes per person)

There were no public comments.

158-14 Other Business (Board members complete travel forms and time reporting sheets)

Board members completed travel forms and time reporting sheets.

158-15 Recess to Closed Session to Discuss Personnel Matters

Chairman Gooch asked for a motion to move to closed session to discuss personnel matters. Ms. Ross so **moved**, Vice-chair Kruse seconded the motion, and it was **approved** unanimously. The Board recessed to closed session from 3:53 P.M. until 4:30 P.M.

158-16 Adjournment

Chair Gooch called the meeting back to order at 4:30 P.M. Dr. Walk **moved** to adjourn, Vice-chair Kruse seconded the motion, and it was **approved** unanimously. The meeting was adjourned at 4:30 P.M.

**Illinois Endangered Species Protection Board staff report  
for the 158<sup>th</sup> Meeting, May 17, 2013**  
Submitted by Anne Mankowski, Director

The Board currently only has one staff, its Director; all activities were conducted by the ESPB Director unless otherwise noted. Ms. Mankowski has not been able to complete all required work in the course of a 37.5-hour work week. Since the last staff report, Ms Mankowski has worked the following overtime hours toward ESPB and IDNR duties: February: claimed = 35.0, donated = 7.0; March: claimed = 50.0, donated = 15.5; April: claimed = 67.5, donated = 4.5.

**1. Illinois List of Endangered and Threatened Species Review and Revision ending in 2014**

The Board continues work on the next five-review of the List; the process usually takes about two years. The Board is required by law to base its listing decisions on scientific evidence. Ms. Mankowski spent a great deal of time compiling species information, with some assistance from the IDNR Natural Heritage Database staff. She also spent a great deal of time communicating with the EPSB technical expert consultants for species status and distribution information/evidence and review of ESPB staff listing status recommendations in preparation for the Board's consideration.

**2. ESPB-led project to contract surveys to update endangered and threatened animal occurrence records that are greater than 10 years old – and to engage programmatic and systematic EO survey updates**

Ms. Mankowski continues working on the subject project and is attempting to gain IDNR ORC and OREP partnership commitment for a programmatic rather than a stand-alone project approach. This work is needed to support and improve all regulatory and protection applications by both the ESPB and IDNR and will provide a more up to date and higher quality product for fee-based program services associated with IDNR consultation and the Natural Heritage Database.

As discussed previously, historic record plant element occurrence (EO) updates had been addressed a few years ago in a separate effort and the Board initially was focusing on addressing animal EOR updates. The proposed new approach will first address the historic animal EOs and then include both animals and plants.

**3. ESPB Member appointments**

Ms. Mankowski drafted and sent letters of recommendation to the Governor's Office for reappointments of Ms. Ross and Dr. Walk. She also requested letters of support for the recommendations from IDNR Director Marc Miller and included those in the package that went to the Governor's Office.

Ms. Mankowski performed vetting and interviews of two candidates for possible nomination for Board recommendation to the Governor's Office for appointment as Board members. Those nominations will be presented to the Board under agenda item 7.

**5. ESPB Website**

Ms. Mankowski spent time working with IDNR web support staff on updates to the ESPB website. The ESPB website serves as the web portal for ESPB and IDNR administered endangered and threatened species program information.

**6. ESPB Budget**

Ms. Mankowski continues working with IDNR on multiple budget assignments related to the FY2013 and FY2014 budgets. Ms. Mankowski will provide Board members with additional update information at the meeting.

Ms. Mankowski provided comments to IDNR Fiscal and ORC regarding Governor's Office of Budget and Management budgeting for results performance measure assigned to the Board by IDNR. In responding to a short turn-around assignment, IDNR assigned one performance measure to both IDNR ORC and the Board of "number of incidental take authorizations (ITA) issued" stating that the effectiveness measure is "success is reaching agreement on approaches that allow commerce and industry to expand in Illinois while also providing protection to Illinois' rarest species." Ms. Mankowski advised the IDNR that the metric is an IDNR function and is not an appropriate measure for Board performance of duties; that under current IDNR ITA process administration, the Board does not necessarily agree that every ITA is providing protection to Illinois' rarest species; and, that the Board has an expectation that it should be allowed to speak for itself with regard to mission, priorities, needs, and performance. She suggested the Board's performance measure should be "number of endangered and threatened species surveys, research efforts, conservation

recommendations, and status reviews conducted” with an effectiveness measure of “success is development of information to improve effectiveness and efficiency of species listing decisions by the Board and species and habitat regulatory applications, management, and protection decisions by the IDNR.” She further advised that relative to requirements of the Endangered Species Protection Act, not every application for ITA should be awarded authorization, so a more appropriate IDNR metric would be “number of IT applications reviewed” instead of the “number of IT authorizations issued”.

## **7. ESPB Research/Strategic Projects Program**

Ms. Mankowski continues administration of IDNR research projects.

## **8. Meetings, Presentations, and Publications**

- Ms. Mankowski participates in IDNR ORC twice-monthly administrative meetings, when possible.
- Ms. Mankowski participated in an April 17, 2013 Chicago Wilderness Executive Council Meeting held at Midewin National Tallgrass Prairie. The Board is a member of the executive council.
- As the guest of an event sponsor, Ms. Mankowski attended the Environmental Law and Policy Center’s 20<sup>th</sup> Anniversary celebration held at Navy Pier in Chicago on April 17, 2013.
- Ms. Mankowski attended the 214<sup>th</sup> meeting of the Illinois Nature Preserves Commission held on May 7, 2013 in North Chicago, Illinois. She presented a report of ESPB activities.

## **9. Coordination with IDNR and INPC:**

Ms. Mankowski coordinated with the Endangered Species Program ORC, Division of Wildlife ORC, Impact Assessment Section OREP, Office of Land Management, Office of Law Enforcement, Office of Legal Counsel, Office of Strategic Services, Media Relations, and Illinois Nature Preserves Commission, on multiple matters listed below, by topic:

### E&T vouchering and translocation

- In response to request from IDNR Assistant Director, John Rogner, Ms. Mankowski provided him copies of the summary tables used for discussion during the ESPB staff report at the ESPB 157<sup>th</sup> meeting, held February 8, 2013 about potential negative impacts to endangered and threatened fish and mussel species from vouchering and relocation/translocation activities. Mr. Rogner indicated that he wanted IDNR ORC to use the tables as it investigated the issues and developed strategies to eliminate or minimize the apparent negative impacts, as appropriate.

### E&T incidental take authorization

- At the request of IDNR Legal Counsel, met with Legal Counsel, IDNR OREP E&T consultation program staff and IDNR ORC E&T incidental take authorization (ITA) program staff to discuss feedback received by Legal Counsel in response to recent presentations about IDNR ITA made to the Illinois State Bar Association and Association of Fish and Wildlife Agencies Legal Committee Working Group and various aspects of IDNR ITA process administration.  
Provided follow-up recommendations to IDNR Legal Council, OREP, and ORC regarding issues related to IDNR ITA process administration.
- Provided review, comments, and questions to IDNR on draft ITAs for: City of Rock Island, Schwiebert Park Boat Dock, involving Black Sandshell (*Ligumia recta*); and Illinois Tollway Authority, I90 bridge over Kishwaukee River, involving Black Sandshell (*Ligumia recta*); and, Green River Wind Farm Phase 1, LLC in Bureau, Lee, and Whiteside Counties, involving the Ornate Box Turtle (*Terrepenne ornata*), Plains Hognose Snake (*Heterodon nasicus*), Blanding’s Turtle (*Emydoidea blandingii*), Yellow Mud Turtle (*Kinosternon flavescens*), and Regal Fritillary (*Speyeria idalia*).

In order to facilitate future discussions by the Board about the ITA process and the ESPB’s role, Ms. Mankowski will provide Board members copies of documents from a recent ITA (applicant conservation plan accepted as complete by IDNR, IDNR draft ITA, ESPB comments on the IDNR draft ITA, IDNR response to ESPB comments, and related follow-up interagency communication). She will at future meetings when the Board will discuss the topic, provide Board members additional examples.

### E&T translocation

- With respect to E&T animal translocations, the agreement between ESPB and IDNR ORC is that until a time when a joint IDNR/ESPB policy is developed, a proposal developed pursuant to the *ESPB E&T Animal Translocation Policy* should be reviewed and approved by both ESPB staff and IDNR ORC prior to issuance of an IDNR E&T possession permit for the activity. The current agreement between ESPB and INPC is that INPC gains input and

recommendation from ESPB for proposed E&T animal translocation activities involving INPC properties prior to issuing an INPC permit.

In mid January 2013, Ms. Mankowski was informed by INPC staff that they had recently become aware of translocations of Northern Riffleshell (*Epioblasma rangiana*) and Clubshell (*Pleurobema clava*), both Illinois and Federally endangered, into Illinois, including into a registered Land and Water Reserve in 2012 that appeared to have been done without knowledge of INPC or respective INPC or IDNR authorizations. Consistent with INPC procedure, she was asked for ESPB advice to INPC on the matter. The INPC did not have and Ms. Mankowski was not provided any additional documentation or proposal for the activities.

At that time she provided statement to INPC and IDNR that in the absence of project-specific documentation or proposal for review, the Board did not approve of the activities and questioned whether violations of the ESA may have taken place. She also provided general reminder to INPC and IDNR that, while the Board is open to further evaluating the topic of endangered and threatened species translocations, in general, the Board does not 1) support/endorse/approve translocations of E&T that are not specifically described and prescribe for within a Board-approved, species-specific, state-level recovery plan or outline, or project-level translocation proposal (and as per agreed upon ESPB/ORC coordination process), or 2) recognize as part of “recovery”, “conservation”, or “research/scientific purpose” translocations that take place absent of respective planning documents.

Ms. Mankowski was informed 04/26/2013 by IDNR ORC of after-the-fact approval by IDNR and request from IDNR for INPC after-the-fact approval of the proposal for the 2012 translocations of Northern Riffleshell (*Epioblasma rangiana*) and Clubshell (*Pleurobema clava*) into an INPC property and for future translocations into the same property. The Board has not received copy of the proposal for the already executed activities nor for proposed future activities under this project and has not been asked again for review, advice, or approval.

#### E&T recovery planning and implementation

- Provided advice to IDNR ORC regarding the ORC recovery planning process for developing, reviewing, and approving endangered and threatened species recovery plans relative to ORC’s development of a draft Illinois Alligator Snapping Turtle (*Macrochelys temminckii*) recovery plan.
- Completed project management for the development of a Blanding’s Turtle (*Emydoidea blandingii*) conservation assessment. After the ESPB and IDNR reconcile some procedural and regulatory elements, work on a recovery plan may be reinitiated and the conservation assessment may be used in developing the recovery plan.

#### ESPB/IDNR review and approval coordination

- Ms. Mankowski continues reminding IDNR ORC of several standing agreements for coordination of reviews and approvals of E&T recovery planning, E&T animal translocation proposals, E&T possession permits, and E&T ITA between the two agencies. Ms. Mankowski has advised IDNR ORC of multiple occasions when the agreements for coordination of reviews and approvals have not been exercised and recommended that IDNR ORC address with the Board directly if it would prefer to vacate the standing agreements.

#### E&T monitoring/surveillance and reporting

- Continued working on developing a programmatic approach to updating E&T element occurrence surveys and IDNR Natural Heritage (Biotics 4) Database records. Ms. Mankowski is attempting to gain partnership commitment from IDNR ORC and OREP.
- Continued working on draft revised endangered and threatened species element occurrence reporting forms for use by the IDNR Natural Heritage (Biotics 4) Database. The revisions address some information gaps and terminology discrepancies and are intended to improve the robustness of data reported to the Database. Ms. Mankowski will work with Database staff to finalize the forms, which will replace those currently available via the Board’s website.

#### Other

- Met with staff of the INPC to discuss the ESPB’s Illinois E&T List review process and schedule.
- Handled over 100 phone and email requests for ESPB and E&T information from the public and other state and federal agencies including referring those related to IDNR E&T consultation, incidental take, data, and permit programs, etc.

### **10. Coordination with other Agencies**

- Ms. Mankowski met with staff of the USFWS to discuss the ESPB’s Illinois E&T List review process and schedule and data maintained by the IDNR Illinois Natural Heritage Database.
- Ms. Mankowski responded to a request from Kane County Forest Preserve District for arcview elements of the recently completed ESPB contracted Illinois Blanding’s Turtle Conservation Assessment. Kane CFPD wanted to use the

work products for planning purposes. Ms. Mankowski explained that, as stated in the conservation assessment, the document and interpretations and recommendations therein, are not currently approved or endorsed by the ESPB or IDNR and release of them by ESPB or use by other entities at this time may be premature. She further explained that the ESPB and IDNR intend to develop an Illinois recovery plan for the species and may use elements from the conservation plan in that effort. She advised that she would keep in mind Kane CFPD's request after a final recovery plan has been approved by both agencies.

#### **11. Field Work**

- Conducted surveys for *Berberis canadensis* (Allegheny Barberry) in Jackson and Tazewell Counties.

#### **12. Other General Administration and Clerical Work**

- Completed the online 2013 Ethics Training Program; the annual training is required for all state agency employees and is separate from the annual training required for all staff and members of state boards and commissions.
- Prepared and routed Board member and staff travel vouchers and timesheets.
- Conducted administration related to Board research projects.
- Conducted updates to ESPB budget tracking on ORC sharepoint.
- Regularly distributed information to Board members via email and hardcopy mailings.
- Following response to a vendor's inquiry about ESPB research or other project funding opportunities, Ms. Mankowski conducted required procurement communication reporting to the State of Illinois Procurement Communication Reporting website.
- All aspects of preparation for the May 17, 2013, 158<sup>th</sup> ESPB meeting.



**Illinois Department of Natural Resources  
report to the Illinois Endangered Species Protection Board  
at the 158<sup>th</sup> meeting, May 17, 2013**

**Illinois Invasive Species Awareness Month**

May is Invasive Species Awareness Month (ISAM) in Illinois and groups across the state are holding invasive species events. So far 82 events are listed on the ISAM Calendar, which can be viewed online on the Awareness Month website at: <http://www.invasive.org/illinois/Calendar.html>. There's still time to submit events. Chris Evans, Invasive Species Campaign Coordinator with the Illinois Wildlife Action Plan, coordinates ISAM and maintains the calendar of events.

The second annual Illinois Invasive Species Awareness Month Awards will be presented May 29 at DNR headquarters in Springfield. Organizations, individuals, businesses and volunteers who made significant contributions to the prevention, control and management of invasive species in Illinois will be recognized.

**Natural Heritage Resident Interns**

IDNR posted openings for 8 Natural Heritage Resident positions May 7 with completed application packets from all interested students due to DNR by May 24. We are hoping to select the interns in June with a start date sometime after July 1, 2013.

The Residency program provides 12-month, full-time employment with benefits under the mentoring of Natural Heritage or Nature Preserves Commission staff in field or central office locations. Candidates must be graduate students currently enrolled in a full-time graduate program in plant biology, forestry, zoology or related biological science field and have the approval of their academic advisor.

The locations for these positions are Cook County, McDonough County and Jasper County to work with Nature Preserves Commission field staff; McHenry County, Peoria County, Ford County and Madison County to work with Natural Heritage biologists, and Sangamon County to work with DNR's Endangered Species program and Database program. Bob Szafoni is DNR's Natural Heritage Resident coordinator. He can provide interested students details on the program.

**Herpetology Code**

Senate Bill 2362 creates the Herptiles Act of 2013, increasing protection for reptiles and amphibians in Illinois and bringing herptile regulations together into one statute for the first time. Scott Ballard with the Division of Natural Heritage was instrumental in drafting the legislation.

**Incidental Take Authorization**

There are currently six active Incidental Take Authorizations (ITAs) in various phases of completion.

- Kane County DOT/LaFox Road over Mill Creek: Blanding's turtle
- Green River Wind Farm/Lee County: multiple species
- Enbridge Pipeline-Flanagan South Alignment/Multiple Counties: Yellow headed blackbird, King rail, Illinois chorus frog
- Orth Road over Beaver Creek/Boone County: Spike mussel
- Sherrill Road bridge/Grundy County: Slippershell mussel
- Mason County Wind Farm: Illinois chorus frog

A final ITA was signed and submitted to applicant for official implementation on 13 March. This was for a new water main for the City of Edwardsville – Illinois chorus frog. We asked that approximately \$27k be deposited into the Wildlife Preservation Fund (WPF) as part of the overall mitigation package.

A final ITA was signed and submitted to applicant for official implementation on 21 March. This was for the I-90 bridge over the Kishwaukee River – Black sandshell. We asked that mussel relocation occur and that IDOT work with the Genoa Fish Hatchery to propagate mussels at a cost of approximately \$30k.

A final ITA was signed and submitted to the applicant on 6 May. This was for the City of Rock Island Marina/Landing at Schwiebert Park – Black sandshell. We asked that mussel relocation occur and that \$730.00 be deposited into the WPF as part of the overall mitigation package.

**Endangered Species Possession Permits**

For the first quarter of 2013, (January through March), DNR issued 25 E and T Possession Permits. An additional 14 applications are currently being processed.

### **Illinois Natural Areas Inventory (INAI)**

The 65<sup>th</sup> Natural Areas Evaluation Committee (NAEC) meeting was held March 19<sup>th</sup>. Anne Mankowski represents ESPB on the committee. The meeting included a discussion of INAI Category II (specific suitable habitat designation for endangered species). A draft Cat II feature deletion form was circulated. Based upon comments on the form and other comments, the Natural Areas Program has undertaken a significant re-evaluation of the Cat II criteria within the INAI Standards and Guidelines. These revisions will be distributed for comment at the next NAEC meeting.

### **Natural Heritage Database**

In April, Natural Heritage database staff mapped and/or did data entry of 64 E&T occurrences, both new and updates and received 60 records of E&T species. They did quality control of 111 E and T records.

### **Land Acquisition**

DNR acquired a 263 acre addition to Cretaceous Hills State Natural Area in Pope County in April. Cretaceous Hills is an important endangered species site with 12 endangered or threatened plant species occurring here and 1 threatened animal species, and is a good example of the original barrens natural community of southern Illinois. The addition expands Cretaceous Hills to 500 acres, including a 236 acre nature preserve. Open Land Trust funds were used to acquire the tract.

### **Species Report**

On February 28, IDNR confirmed the presence of White-Nose Syndrome (WNS), a disease fatal to several bat species, in four Illinois counties. Illinois becomes the 20<sup>th</sup> state in the U.S. to confirm this deadly disease in bats. The University of Illinois - Illinois Natural History Survey (INHS), the U.S. Forest Service (USFS)-Shawnee National Forest, the University of Illinois' Veterinary Diagnostic Laboratory (UIVDL), and the USGS National Wildlife Health Center-Madison, WI (NWHC) assisted in the discovery of WNS which was detected in LaSalle County in north-central Illinois, Monroe County in southwestern Illinois, and Hardin and Pope Counties in extreme southern Illinois.

Little brown bats and northern long-eared bats from these counties were submitted to the UIVDL and NWHC in early-to-mid February 2013. Both laboratories confirmed the disease, while the fungal pathogen was isolated directly from a LaSalle County bat and a Monroe County bat at the INHS. With confirmation of WNS in Illinois, a total of 20 states, mostly in the eastern U.S., and five Canadian Provinces have now been confirmed infected. Currently seven hibernating bat species are affected by WNS: little brown bat, big brown bat, northern long-eared bat, tri-colored bat, eastern small-footed bat, the endangered Indiana bat, and the endangered gray bat. The disease continues to spread rapidly and has the potential to infect at least half of the bat species found in North America.

White-nose syndrome is not known to affect people, pets, or livestock but is harmful or lethal to hibernating bats, killing 90 percent or more of some species of bats in caves where the fungus has lasted for a year or longer, according to the U.S. Fish and Wildlife Service. WNS is known to be transmitted primarily from bat to bat, but spores of *Geomyces destructans*, the non-native, cold-loving fungus that causes white-nose syndrome, may be inadvertently carried between caves and abandoned mines by humans on clothing, footwear, and caving gear. The name of the disease refers to the white fungal growth often found on the noses of infected bats. White-nose syndrome was first detected in New York State in 2006 and has killed more than 5.7 million cave-dwelling bats in the eastern third of North America as it has spread south and west across the landscape. A map of the current spread of white-nose syndrome can be found at <http://whitenosesyndrome.org/resources/map>.

During December 2012 the IDNR along with the State of New York and the University of California - Santa Cruz conducted an effort to recover bats that had been banded in April of 2012 at the Blackball and Zimmerman mines in LaSalle County, Illinois. We were able to recover and identify 97 and 164 bats respectively from the 350 that had been banded at each site. The first survey image at Blackball (December 3) was taken at 11:35 AM, the last at 4:11 pm. The first at Zimmerman (December 4) was taken at 10:02, the last at 4:45 pm. The differences in capture rates between the two sites during the December visit has more to do with using a more consistent and refined search effort on the second survey day (Zimmerman) rather than a real difference in the number of banded bats present. The Blackball Complex was confirmed as being infected with WNS during a visit by Joe Kath in the end of January 2013; numbers of bats will surely plummet soon if they have not already. Data from the band retention study conducted February 25 & 26, 2013 is currently being analyzed.

The U.S. Fish and Wildlife Service (USFWS) announces WHITE-NOSE SYNDROME GRANTS TO STATES: The goal of the White-nose Syndrome Grants to States is to provide needed assistance to state agencies in addressing the spread of WNS, the resultant loss of cave bat populations, and the threat to federally listed bat species. The USFWS acknowledges the key role of state agencies in addressing WNS, including responding to the public; collecting data to monitor bat populations and disease progression; engaging in research activities; and implementing actions to curtail the spread of WNS. The Endangered Species Program in Region 5 is responsible for leading the USFWS response and the allocation of funds and has determined that funding is needed for state agencies to help build their capacity to address this crisis. Priority may be given to states most directly affected or most susceptible to WNS, as determined by proximity to known affected sites. As of April 15, 2013, states confirmed with WNS are: Alabama, Connecticut,

Delaware, Georgia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia. Oklahoma and Iowa have announced the detection of DNA suggestive of the causative fungus, *Geomyces destructans*, on bats within their borders. Therefore, states considered susceptible to the disease due to proximity include: Arkansas, Iowa, Kansas, Michigan, Minnesota, Mississippi, Oklahoma, Rhode Island, and Wisconsin. Given that the rate and mode of spread of this disease is not fully understood, grants will also be available for states beyond these areas that have significant cave bat resources or a demonstrated need, should funding be available. The USFWS expects up to \$950,000 in funds for this program. Grant requests between \$5,000 and \$50,000 will be accepted.

For Interested Parties - Official notification for USFWS Traditional Section 6 funds for FY13 grants was released on May 6, 2013. Illinois has been allocated: **\$70,434.00**

PLEASE NOTE WHAT IS NEEDED ASAP FROM INTERESTED PARTIES – **NO LATER THAN 5PM CST, Monday, May 27, 2013**

What we need as soon as possible for FFY 2013 Section 6, for each project – “Pre-Proposal”:

- Project title
- A brief project description (1-4 sentences maximum!)
- Project budget (State-Partner share, Federal share, and Total \$ Request )
- Note: Single State Section 6 projects have a 75% Federal/25% State-Partner match (multi-state projects have a 90% Federal/10% State-Partner match). State-Partner match may come from a direct financial contribution (i.e. donation of \$/salary/hours from Principal Investigator), portion of University overhead, man-hour contribution, equipment use contribution. **The IDNR has no money to offer for the State-Partner match portion!**

We need this information to do the *Request for Approval of Federal Assistance package* for IDNR administration’s sign-off along with submitting the proposed projects to the *State Clearinghouse* for their legally mandated 30 day approval window.

\*The Department will review all “pre-proposals” and then work with its partners to decide what projects best meet our conservation needs for FFY13. Applicants whose “pre-proposals” are selected will then be asked to write a (Final) complete proposal using the official Federal Guidelines.

\*NOTE: Complete Proposal Packages must be into the USFWS Region 3 Office no later than **August 1, 2013**. Therefore, DNR will need Final Proposals to follow the specific formats described in the above attachments. These must be ready to go and turned into the DNR Federal Aid Division no later than **July 1, 2013**. If you do not follow the attached formats, your proposal will be denied.

IDNR recently announced that the 2014 MWBWG (Midwest Bat Working Group) will be held at the University of Illinois at Springfield (UIS) on April 3 and 4, 2014. Please mark your calendars accordingly. This meeting will be co-hosted by IDNR and UIS. In the coming months, Joe Kath will be working with other MWBWG members on meeting details and logistics. UIS is conveniently located minutes from Interstate 55 and many reasonable lodging and dining options are available. As you know, Springfield is a very historic town and UIS is located approximately 10 minutes from the downtown area which features most of the Abraham Lincoln sites, including the new Abraham Lincoln Presidential Library – you may wish to bring your family/friends and make a weekend event out of your trip. The Department looks forward to seeing everyone next April!



# Illinois Nature Preserves Commission

# memorandum

**To:** Endangered Species Protection Board  
**From:** Kelly Neal, Jenny Skufca, and Randy Heidorn  
**Date:** May 16, 2013  
**Subject:** Illinois Nature Preserves Commission report for the ESPB Meeting May 17, 2013

## KEY

NP = Nature Preserve  
 SP = State Park  
 LWR = Land and Water Reserve  
 COA = Conservation Opportunity Area  
 NHL = Natural Heritage Landmark  
 FPD = Forest Preserve District  
 INAI = Illinois Natural Areas Inventory  
 IDOT = Illinois Department of Transportation  
 INPC = Illinois Nature Preserves Commission  
 IDNR = Illinois Department of Natural Resources  
 ESPB = Endangered Species Protection Board

## AREAS

Area 1 - John Nelson  
 Area 2 - Steven Byers  
 Area 3 - Kim Roman  
 Area 4 - Angella Moorehouse  
 Area 5 - Thomas Lerczak  
 Area 6 - Mary Kay Solecki  
 Area 7 - Debbie Newman  
 Area 8 - Bob Edgin

### Significant Actions by the INPC at its 214<sup>th</sup> May 7, 2014, North Chicago, IL

- The following sites were given preliminary approval for dedication as an Illinois Nature Preserves:
  - Hopkins Park Savanna, Kankakee Co., 77 acres, owned by The Nature Conservancy, protecting high quality dry and dry-mesic savanna providing habitat for 3 state-endangered plants and a state-threatened insect and plant.
  - Fon du Lac Seep, Tazewell Co., 10.616 acres owned by the Fon du Lac Park District protecting high quality seep community.
- The following sites were given final approval for dedication as Illinois Nature Preserves:
  - Callie Mae Spraggins Savanna NP, Kankakee Co., 5 acres privately-owned, protecting high quality dry and dry-mesic sand savanna and sand flatwoods and providing habitat for two state-endangered plants.
  - Openlands Lakeshore, Bluff and Ravine NP, Lake Co., 74.795 acres owned by Openlands protecting beach, eroding bluff and ravine communities providing habitat for six state-endangered and four state-threatened plants.
  - Rollins Savanna NP, Lake Co., 1092 acres owned by the Lake County FPD providing habitat for seven state-endangered wetland birds, two state threatened birds, one state-threatened fish and one state-endangered plant in a matrix of degraded wetland, prairie woodland and savanna.
  - Sun Lake NP, Lake Co.; 514 acres owned by the Lake County FPD protecting habitat for fifteen state-endangered or state-threatened species.
- The Commission gave after-the-fact approval of a translocation of the federally and state endangered clubshell and northern riffleshell mussels (*Pleurobema clava* and *Epioblasma rangiana*) to Edgewood Farm LWR, Champaign and Vermilion Co.
- Concerned that the above problem was, in part, caused by a failure of the review process to allow flexibility for landowners, managers, researchers and staff, Commissioners directed staff to coordinate the development of a joint animal translocation policy to address the translocation of state or federal endangered or threatened species amongst the IDNR, ESPB and INPC. The desire is to allow staff level approval for a majority of decisions, and ensure adequate review. This would help prevent a repeat of the mussel situation and would also reduce the desire to avoid protected areas, since their inclusion slows the permit process. Kelly Neal will coordinate this for the INPC.
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**Selected portions of the Threats to Sites Report  
prepared for the 214<sup>th</sup> Meeting of the INPC**

**Bluff Spring Fen NP, Cook County – Steven Byers, John Nelson, Jenny Skufca**

**Issue:** The Bluff Spring Fen Protection Plan (approved June 30, 2003) between the INPC and Bluff City Materials, Inc. calls for conveyance of surface water from Gifford Lake to Poplar Creek through proposed stormwater piping.

**Threat:** Surface water represents a threat to this groundwater-dependent wetland.

**Status:** Ongoing. The stormwater piping project began in March 2013, and is expected to take six months to complete. The landowner of the NP, FPD of Cook County, and INPC staff are in close contact with the contractor and Bluff City Materials. Daily activity reports with photo-documentation are provided to all parties.

**Middlefork Savanna NP, Lake County – Steven Byers, Jenny Skufca**

**Issue #1:** An adjacent landowner, Knollwood Golf Club, dredged a golf course pond and piped sediment into the NP owned by the Lake County Forest Preserve District (LCFPD).

**Threat #1:** Direct and indirect impact to aquatic resources/ephemeral ponds in the NP and at the Knollwood Golf Club.

**Status #1:** Ongoing. The Office of the Attorney General is engaged in settlement negotiation with the alleged responsible party based on the Complaint for Injunction and Civil Penalties filed on October 31, 2012, and citing six counts based on violations to the Illinois Natural Areas Preservation Act (INAPA) and one count based on a violation of the Illinois Environmental Protection Act. The INPC continues to coordinate with the Lake County FPD.

**Issue #2:** Private landowner located adjacent to NP has requested a conditional use permit and zoning change in order to construct and maintain a private helicopter landing facility approximately 150 feet from the NP boundary.

**Threat #2:** Potential impacts (noise, lighting, loose debris) to public and wildlife associated with the landings and takeoffs in close proximity to and over the NP. Concern related to nesting and migration of avian species, as well as pollutants entering sensitive aquatic systems.

**Status #2:** New. The NP landowner, Lake County FPD, provided an opposition letter to the Lake County Planning, Building, and Development Department on March 26, 2013, on this proposed use and has notified the petitioner of the impact this project would have on a dedicated NP.

**Trout Park Nature Preserve, Kane County – Steven Byers, Jenny Skufca**

**Issue #1:** The Tollway Authority will be widening I-90 (one additional lane each direction) and will be constructing a new bridge over the Fox River.

**Threat #1:** Direct impacts to woody cover adjacent to the NP. The right-of-way will be much wider than suggested by current boundary fences and will be impacted during bridge construction. Indirect impacts from additional salt and contaminants from widened road.

**Status #1:** Ongoing. The INPC staff has met with the Tollway Authority regarding the bridge design features and the need to monitor groundwater. Groundwater monitoring wells have been installed by the Illinois State Geological Survey. At the INPC staff's recommendation and as mitigation for wetland impacts outside of the NP, the Tollway Authority has accepted the protection of the Fox River Country Day School site (INAI #0968, Chicago Junior School Area) that includes the balance of the unprotected high-quality forested fen wetlands in Illinois.

**Issue #2:** Proposed construction of an auto auction facility within the Class III groundwater area for Trout Park NP.

**Threat #2:** Potential for pollutants from facility to adversely impact groundwater quality.

**Status #2:** Ongoing. The Illinois Environmental Protection Agency (IEPA) provided recommendations to the consultant by email on December 7, 2012, and a follow-up letter to the attorney on January 8, 2013, regarding design features (fill, secondary drainage, liners, quality control, etc.) and a groundwater monitoring program to eliminate or reduce the threat to groundwater.

**Bliss Woods NP, Kane County – Steven Byers, Jenny Skufca**

**Issue:** An unknown amount of lead shot has been deposited in the NP by years of trap/skeet shooting at adjacent former Aurora Sportsman's Club.

**Threat:** Lead shot poses a threat to humans and the environment.

**Status:** Ongoing. The IEPA submitted Violation Notices to the alleged responsible parties on January 10, 2013, citing a threat to groundwater and open dumping. One of the alleged responsible parties is working with IEPA to propose remediation opportunities to the NP landowner, FPD of Kane County. The INPC and FPD of Kane County staff intend to map management areas in the NP to identify highest sensitivity and match potential lead remediation options with conditions on the ground.

**Red Wing Slough/Deer Lake LWR, Lake County – Steven Byers**

**Issue:** The Illinois Department of Transportation (IDOT) plans to widen Illinois Route 173 adjacent to the southern boundary of the LWR.

**Threat:** Potential direct impact to wetland resources in existing right-of-way and indirect impacts to the LWR that include alterations to surface hydrology, increased pollutants, and salt spray.

**Status:** New. The INPC staff has met with representatives of IDOT and is currently involved in the evaluation of alignment alternatives.

**Oakwood Hills NP, Bates Fen NP, and multiple INAI sites, McHenry County – Steven Byers**

**Issue:** Maintenance of an existing pipeline.

**Threat:** Potential direct and indirect impact to multiple sites of statewide ecological significance. The maintenance project calls for construction of pits to install equipment and excavation, as necessary, to repair pipelines.

**Status:** New. The INPC staff is coordinating with pipeline officials, McHenry County Conservation District, U.S. Fish and Wildlife Service, and IDNR Consultation to ensure project will not impact high-quality natural areas.

**MacArthur Woods NP, Lloyd's Woods NP, Grainger Woods NP, and Elm Road Woods NP, Lake County – Steven Byers**

**Issue:** Nicor proposes to install pipelines within the St. Mary's Road right-of-way located adjacent to the aforementioned NPs.

**Threat:** Potential direct and indirect impacts to the NPs. Maintenance project calls for construction of pits to install equipment and excavation.

**Status:** New. The INPC staff is coordinating with the landowner of the NPs (Lake County FPD) and participating in field surveys with the adjacent landowner and consultants to eliminate or minimize impact to NPs.

**Illinois Beach NP, Lake County – Steven Byers, Jenny Skufca**

**Issue:** The landowner, IDNR, is storing and applying road salt in close proximity and potentially within the NP.

**Threat:** Salt used for deicing roads is a primary source of chlorides, which have been documented to be a major cause of groundwater and surface water degradation resulting in direct impact to freshwater aquatic plants and animals. Studies show that non-native, invasive plant species favor higher chloride levels and will out-compete the native plants found in our relict high-quality wetlands. As a result of excessive chloride loadings, wetlands change from their natural high diversity condition to that of a monoculture that offers little habitat opportunity for native flora and fauna.

**Status:** New. The INPC submitted a memo to the IDNR on April 24, 2013, requesting removal of the road salt pile and no further use of salt within Illinois Beach State Park. The INPC received a response that the salt was being removed. The INPC staff will confirm its removal. Long term, IDNR staff is working on a salt guidance document for Illinois state parks.

**Tallmadge Sand Forest LWR, Kankakee County – Kim Roman, Jenny Skufca**

**Issue:** Eighty-eight white oak trees were removed from within the LWR.

**Threat:** Direct impact to the LWR. Unauthorized removal of trees, over 4,000 feet of up to 18-inch ruts were created throughout the interior of the LWR; unauthorized removal of signs.

**Status:** Ongoing. The Office of the Attorney General is representing the INPC as a plaintiff and intervener (with the LWR landowner, The Nature Conservancy) in a Complaint for Injunction and Civil Penalties filed October 29, 2012, citing four counts based on violations to the INAPA. The case is scheduled for trial in October 2013.

**Des Plaines Dolomite Prairies LWR, Will County – Kim Roman**

**Issue:** A private contractor hired by a power company to maintain lines running through the LWR was responsible for creating ruts on the site.

**Threat:** Direct impact to the LWR.

**Status:** New. The INPC staff facilitated discussion with the power company, private contractor, and IDNR site staff to repair ruts and perform weed control this growing season.

**Short Fork Seep NP, McDonough County – Angella Moorehouse, Jenny Skufca**

**Issue:** The private landowner discovered that herbicide associated with power line vegetative maintenance had been used within the NP.

**Threat:** Direct impact to flora in the NP causing damage to the vegetation and soils within the high quality portion of seep/sedge meadow of the NP.

**Status:** Ongoing. The Office of the Attorney General continues to conduct settlement negotiations with the alleged responsible party based on a Complaint for Injunctive and Other Relief filed December 7, 2011.

**Black Hawk Forest NP, Rock Island County – Angella Moorehouse**

**Issue:** A large gully has formed just west of the southwest corner of the NP.

**Threat:** Potential indirect sedimentation impact to the NP.

**Status:** New. The IDOT will install a new pipe. All work will occur outside of the NP boundary.

**Crevecoeur NP, Tazewell County – Thomas Lerczak**

**Issue:** At least three adjacent landowners are potentially encroaching on the NP boundary.

**Threat:** Unauthorized use of the NP.

**Status:** Ongoing. A formal boundary survey has revealed multiple encroachments along the NP's southern boundary. Survey flags have been placed. Encroaching landowners will be contacted. The INPC staff is working with the landowner (Village of Creve Coeur) to establish protocol.

**Gillespie Prairie LWR, Macoupin and Montgomery counties – Thomas Lerczak, Jenny Skufca**

**Issue:** Ditch clearing has occurred on 0.9 acres of the IDNR-owned LWR, a portion of which lies on property leased to Aladdin Steel.

**Threat:** Unauthorized vegetation removal within the LWR.

**Status:** Ongoing. The INPC submitted correspondence to Aladdin Steel on March 4, 2013, requesting mitigation for damages. The INPC staff will continue to work with the IDNR District Heritage Biologist, Site Superintendent, and Leases and Concessions staff until a resolution is reached. On April 29, 2013, Aladdin Steel verbally agreed to conduct all mitigation requested.

**Edgewood Farm LWR and Larimore's Salt Fork of the Vermilion River LWR, Vermilion County – Mary Kay Solecki**

**Issue:** Sunrise Coal is planning a new coal mine upstream of the LWRs.

**Threat:** Potential water withdrawal from Salt Fork of the Vermilion River for coal washing and processing estimated at ~325,000 gallons/day initially then increasing to 540,000 gallons/day; discharge of wastewater into Salt Fork. The Salt Fork of the Vermilion River is recognized as a high-quality stream in Vermilion County and the eastern part of Champaign County by the Illinois Natural Areas Inventory. The Salt Fork in Vermilion County is also home to several state-threatened or endangered mussels and fish.

Potential water withdrawal and wastewater discharge may impact state-listed species and the two LWRs on the Salt Fork.

**Status:** New. The INPC staff researched mine plans, identified progress of the permit and approval process, and coordinated with the LWR and INAI site landowners. The INPC staff presented concerns to Homer Village Board at their meeting. The Village Board was considering selling non-potable water to Sunrise Coal Company. The Village Board voted unanimously to deny request for up to 540,000 gallons/day of non-potable water. Sunrise Coal will likely seek alternate means of obtaining non-potable water for the mine.

**Middle Fork Woods NP, Vermilion County – Mary Kay Solecki**

**Issue:** Serious issues with ash ponds located in the floodplain of the Middle Fork of the Vermilion River and the potential need for long-term riverbank stabilization in the vicinity of the ash ponds. Samples from monitoring wells show two unlined, impounded ash ponds are leaking contaminants into the groundwater. A sheen was observed in two erosion channels on the River bank located near failed gabions at one ash pond. Red staining of the bank also existed in this same area. In the fall of 2012, a Violation Notice was issued by IEPA to Dynegy for exceedances of groundwater standards for boron, manganese, sulfate, total dissolved solids, and pH. Notice of Intent to Pursue Legal Action was sent by the IEPA to Dynegy on December 13, 2012.

**Threat:** Potential for significant adverse effects to the Middle Fork of the Vermilion River, surrounding floodplain and other natural resources in the area if concerns are not addressed. The NP is located on the River, downstream of the ash ponds.

**Status:** New. The INPC staff reviewed potential impacts and the site visit report provided by the IDNR staff. Ongoing coordination with the IDNR will occur regarding solutions.

**John M. Olin NP, Madison County – Debbie Newman, Jenny Skufca**

**Issue:** Neighboring landowner has cleared approximately three acres of timber along Hop Hollow Creek, which forms a portion of the NP boundary.

**Threat:** Changes to the surface hydrology of the NP may occur when precipitation returns due to large piles of timber placed along the Creek and across the Creek. Within a short distance of the clearing, the Creek outfalls to the Mississippi River.

**Status:** Ongoing. The NP neighbor's attorney has provided their property survey, which they claim contradicts the formal survey completed for the NP. An IDNR surveyor will assist the INPC in confirmation of surveys. Boundaries will be marked accordingly and the encroachment reassessed based on boundary findings. The IDNR's Office of Legal Council is remaining abreast of the issue.

**Marjorie J. Brines White Oak Woods LWR, Wabash County – Bob Edgin**

**Issue:** Illegal dumping of tires, metal, and small appliances.

**Threat:** Unauthorized use of the LWR; direct and indirect impacts to natural community.

**Status:** New. Trash was removed by the private landowner and the INPC staff.

**Culley Barrens LWR, Pope County – Bob Edgin**

**Issue:** Unauthorized camping, trash and tent left by campers; removal of boundary signs.

**Threat:** Unauthorized use of the LWR.

**Status:** New. The private landowner was notified and had no knowledge of the camping activities. The landowner requested the tent and trash be removed and have the boundary signs replaced. The tent and trash were removed by the INPC staff. Boundary signs will be replaced as time allows.

**Flag Pond LWR, Clay County – Bob Edgin**

**Issue:** Discovery of four deer stands within the LWR boundary.

**Threat:** Unauthorized use of the IDNR-owned LWR.

**Status:** New. The site manager was notified. Investigation is ongoing.

**Excerpted listing of INPC staff action for the Reporting Period: December 22, 2012 – April 9, 2013**

**INPC OPERATIONS**

- After some minor revisions, a request was sent to the IDNR Office of Legal Council to seek IDNR written approval of the proposed administrative rule: 17 IL Admin Code 4020: Inventories, Registers and Records. The proposed rule sets out procedures and rates of fees for use of the Natural Heritage database and was approved by the INPC at the 213<sup>th</sup> meeting (Resolution 2233). The IDNR internal review of the proposed fees ended with no comments. The rule will be sent to the Joint Committee on Administrative Rules and Secretary of State for First Notice on May 2, 2013.
- Randy Heidorn, Jenny Skufca and Kelly Neal continued to coordinate with the Office of Realty and Environmental Planning on review of changes to the Illinois Natural Areas Preservation Act (as it relates to consultation) and the Administrative Rule for Consultation.
- Mary Kay Solecki has been coordinating with Hal Hassen, IDNR archeologist, and INPC staff on preparation of procedures for the inclusion of historic properties in the INPC system which will be presented to the Commission for approval at a later date.
- Randy Heidorn, Debbie Newman, Kim Roman and Kelly Neal worked on planning and promoting the INPC’s 50<sup>th</sup> Anniversary in coordination with current and former INPC Commissioners. Logos for the INPC’s 50<sup>th</sup> Anniversary have been designed.
- Randy Heidorn continues to represent the INPC on the planning committee of the 40<sup>th</sup> Natural Areas Conference scheduled for October 1-4, 2012. Mr. Heidorn will be helping convene this conference with former INPC Commissioner, John Schwegman, who was also the first president of Natural Areas Association (NAA). The conference theme lends itself to the celebration of the INPC’s 50<sup>th</sup> Anniversary.

**OUTREACH/PARTNERSHIP/TRAINING/VOLUNTEER COORDINATION/MEETINGS ATTENDED**

**INPC staff prepared for and participated in:**

- Randy Heidorn attended the Board of Director’s Meeting of the NAA in Washington, D.C. He is currently President of the NAA. While there, he participated in the Association of Fish and Wildlife Agencies’ Teaming with Wildlife Coalition fly-in. He participated in meetings with staff members of the Illinois Congressional delegation advocating for continued funding of the State and Tribal Wildlife Grants. Illinois has received over \$12 million over the last decade to fund primarily restoration work on state-owned natural areas and hill prairies. As a part of the event, Mr. Heidorn assisted IDNR Director Miller in giving Senator Dick Durbin an award recognizing his ongoing support for this grant program.
- Jenny Skufca and Kelly Neal continue to coordinate with the U.S. Fish and Wildlife Service on Habitat Conservation Plans for the Hine’s Emerald Dragonfly and Wind Energy.

**BIOLOGICAL INVENTORIES**

**Area 3**

Pecumsaugen Creek/Blackball Mines NP

**Area 4**

Cedar Glen NP

Cedar Glen LWR

Mississippi River –Nauvoo INAI site

**Area 5**

Walden West LWR

Sand Prairie-Scrub Oak NP

**STEWARDSHIP – Planning**

Kelly Neal attended the Eastern Prairie Fringed Orchid Researcher’s meeting to coordinate permitting and activities at other INPC sites.

**Area 1**

Boone Creek Fen NP

Boloria Fen and Sedge Meadow NP

Freeport Prairie NP

George B. Fell NP

**Area 2**

Met with Conserve Lake County staff regarding an update of the protection and management plans for Liberty Prairie NP.



**Area 3**

Discussed updating management plans with the FPD of Kendall County and FPD of Cook County, The Nature Conservancy, and Chicago Council Girl Scouts.

**Area 4**

Black Hawk Forest NP	Kedzior Woodlands LWR
Josua Lindahl Hill Prairies NP	Harry N. Patterson Savanna LWR
Stony Hills NP	Cecil White Prairie LWR
Jamar Haven LWR	Cedar Glen NP
Thistle Hills LWR	Cedar Glen LWR
Short Fork Seep NP	Mississippi River Sand Hills NP
Nenawakwa LWR	Robert A. Evers LWR
Haw Creek Sedge Meadow LWR	Grubb Hollow Prairie NP

**Area 5**

Tomlin Timber NP	Carpenter Park NP
Anderson Prairie LWR	Funks Grove LWR
North Elkhart Hill Grove LWR	Fon du Lac Seep LWR
Black Partidge Park Woods LWR	Bennett's Terraqueous Gardens NP
Dirksen-McNaughton Woods LWR	Illinois River Sand Areas LWR
Crevecoeur NP	McCune Sand Prairie LWR
Mettler Woods NP	Sandy Creek Bluffs LWR
Baugher Hill Prairie NHL	Walden West LWR
Mt. Palatine Cemetery Prairie NP	Stubblefield Woodlots NP
North Elkhart Hill Grove LWR	Independence Park Woods LWR
Hopewell Hill Prairies NP	Anderson Prairie LWR

**Area 6**

Horseshoe Bottom NP	Kinney's Ford Seep LWR
Upper Sangamon River LWR	Doris Westfall Prairie Restoration NP

**Area 7**

Salt Lick Point LWR	Stemler Cave Woods NP
DesPain Wetlands LWR	Blufftop Acres LWR

**STEWARDSHIP - Consulting, contract work conducted, administered or completed**

**Area 1**

Harlem Hills NP	George B. Fell NP
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**Area 3**

Hildy Prairie NP	Long Run Seep
Old Plank Road Prairie NP	Proposed Callie Mae Spraggins Savanna NP

**Area 5**

Crevecoeur NP

**Area 6**

Riverbend LWR  
Sibley Grove NP  
Submitted NAAF proposal to conduct prescribed burns at 1 NP, 2 LWRs, and an INAI site.

**Area 7**

Salt Lick Point LWR	Horse Creek Glade NHL
DesPain Wetlands LWR	Armin Krueger Speleological NP
Blufftop Acres LWR	Various sites in Monroe and Randolph counties.

**STEWARDSHIP – Land management conducted by staff**

**Area 1**

Piscasaw Creek INAI site	Proposed Johns Mound LWR
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Boone Creek Fen NP	Sleepy Hollow Ravine NP
Harlem Hills NP	Yonder Prairie NP
Boloria Fen and Sedge Meadow NP	Bluff Spring Fen NP

**Area 2**

Trout Park NP  
Hybernia NP  
Bluff Spring Fen NP

Sleepy Hollow Ravine NP  
Wingate Prairie NP  
Boone Creek Fen

**Area 3**

Sweet Fern Savanna LWR  
Goose Lake Prairie NP  
Hitts Siding Prairie NP

Sleepy Hollow Ravine NP  
Boone Creek Fen NP

**Area 4**

Black Hawk Forest NP  
Josua Lindahl Hill Prairies NP  
Stony Hills NP  
Jamar Haven LWR  
Nenawakwa LWR

Robert A. Evers LWR  
Harry N. Patterson Savanna LWR  
Root Cemetery Savanna NP

**Area 5**

Dirksen-McNaughton Woods LWR  
Black Partridge Park Woods LWR

Sparks Pond LWR  
Walden West LWR

**Area 6**

Little Vermilion River LWR  
Tomlinson Pioneer Cemetery Prairie NP

Upper Sangamon River LWR

**Area 7**

DesPain Wetlands LWR  
Salt Lick Point LWR

Angela's Prairie LWR

**STEWARDSHIP - Prescribed Burning**

**Area 1**

Freeport Prairie NP  
Boloria Fen and Sedge Meadow NP

Hanover Bluff NP  
Chain of Lakes SP

**Area 3**

Des Plaines Dolomite Prairies LWR  
Grant Creek Prairie NP  
Hanover Bluff NP

Wilmington Shrub Prairie NP  
Old Plank Road Prairie NP

**Area 4**

Robert A. Evers LWR

**Area 5**

Revis Spring Hill Prairie NP  
Sand Prairie-Scrub Oak NP

Witter's Bobtown Hill Prairie NP

**Area 6**

Prospect Cemetery Prairie NP  
Barnhart Prairie Restoration NP

Sibley Grove NP

**Area 7**

DesPain Wetlands LWR  
Stemler Cave Woods NP  
Angela's Prairie LWR  
Angela's Prairie NHL  
Martha and Michelle Prairie LWR  
Blufftop Acres LWR

Brickey-Gonterman Memorial Hill Prairie NP  
Brickey-Gonterman at Renault Bluffs LWR

2014 Illinois List Review: A Review of the Process, Outstanding Species Issues,  
and Board Preliminary Approvals to Date

## Illinois Endangered Species Protection Board

Required 5-year review and revision of the  
Illinois List of Endangered and Threatened Species,  
ending in 2014



## ESPB 2014 Illinois List review and revision

**E&T invertebrate (other than mussels) and  
Part 1 of plant lists review**

ESPB 158th meeting 05/17/13  
Midewin National Tallgrass Prairie  
Wilmington, IL



## ESPB 2014 Illinois List review and revision

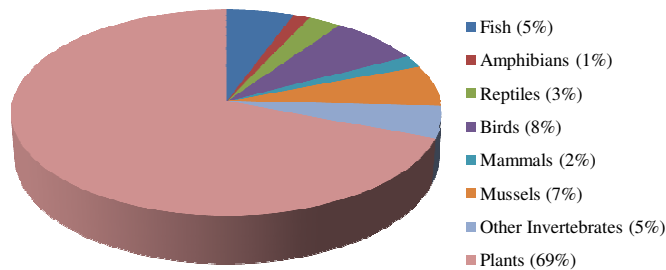
- Illinois Endangered Species Protection Act – 1972
- First Illinois List of Endangered and Threatened Species – 1981
- There have 6 revisions of the Illinois List (1984, 1989, 1994, 1999, 2004, 2009), the 2014 revision is the 7<sup>th</sup>
- 132 technical experts have assisted the ESPB with revisions to date – 2014 revision will bring that total to 146



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## ESPB 2014 Illinois List review and revision

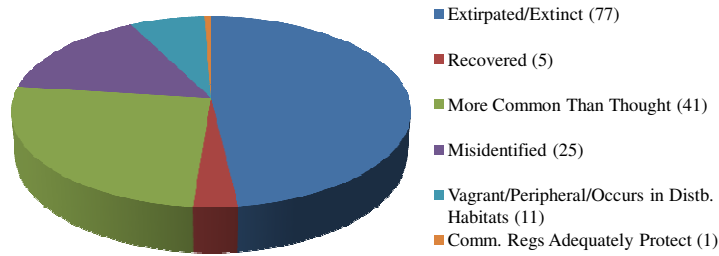
The ESPB has listed a total 644 species since the first Illinois List.



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## ESPB 2014 Illinois List review and revision

The ESPB has delisted a total of 160 species since the first revision of the Illinois List.



  
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## ESPB 2014 Illinois List review and revision

The current (2011) Illinois List includes 484 species.

	Endangered	Threatened	Totals
Fish	19	12	31
Amphibians	3	6	9
Reptiles	10	8	18
Birds	25	5	30
Mammals	5	4	9
Invertebrates	43	12	55
<b>Total Animals</b>	<b>105</b>	<b>47</b>	<b>152</b>
Plants	251	81	332
<b>TOTALS</b>	<b>356</b>	<b>128</b>	<b>484</b>

  
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## ESPB 2014 Illinois List review and revision

The ESPA (520 ILCS 10/2) definitions "endangered" and "threatened" species:

"Endangered Species" means any species of plant or animal classified as endangered under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as in danger of extinction in the wild in Illinois due to one or more causes including but not limited to, the destruction, diminution or disturbance of habitat, overexploitation, predation, pollution, disease, or other natural or manmade factors affecting its prospects of survival.

"Threatened Species" means any species of plant or animal classified as threatened under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as likely to become endangered in the wild in Illinois within the foreseeable future.



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## ESPB 2014 Illinois List review and revision

The ESPA (520 ILCS 10/7) also stipulates :

The Board may list, as endangered or threatened, species of animals or plants which have reproduced in or otherwise significantly used, as in migration or overwintering, the area which is now the State of Illinois, if there is scientific evidence that the species qualify as endangered or threatened as these terms are defined in this Act.



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## ESPB 2014 Illinois List review and revision

### ESPB criteria for listing species as endangered or threatened on the Illinois List

- Species included in the Federal list of Endangered or Threatened species.
- Species proposed for Federal Endangered or Threatened status, which occur in Illinois.
- Species which formerly were widespread in Illinois, but have been nearly extirpated from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois.
- Species which exhibit very restricted geographic ranges of which Illinois is a part.
- Species which exhibit restricted habitats or low populations in Illinois.
- Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.



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## ESPB 2014 Illinois List review and revision

### ESPB criteria for delisting species from the Illinois List

- A peripheral species that presently occurs only in disturbed/non-native habitats in Illinois.
- A species now considered to be only a vagrant breeding species in Illinois.
- All native populations are now considered to be extirpated in Illinois.
- Illinois records for this species are now believed to be based on mis-identified specimens.
- Now known to be more common in Illinois than previously thought.
- Commercial fishing regulations determined by the Illinois Department of Natural Resources provide adequate protection for this species in Illinois.
- The species is now considered extinct.
- A species now considered to be recovered from endangerment or the threat of endangerment in Illinois.



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## ESPB 2014 Illinois List review and revision

The Illinois List review and revision process:  
(in compliance with the ESPA (520 ILCS 10/1) and the Illinois Administrative Procedures Act (5 ILCS 100/1))

1. The Board and its staff review and evaluate available data collected since the original and current List were generated. The Board is required to base listing decision on scientific evidence. When conducting the 5-year review and revision, the Board consults with its technical expert consultants (ESPB TECs).
2. Board staff compile and present recommendations for changes to the List (additions, deletions, or change in status from one category to another) at one or more Board meetings and the Board preliminarily approves a list of proposed changes.
3. The Board holds a public hearing for comments on the proposed changes to the List. The hearing record remains open for two weeks.
4. After considering public comments received, the Board makes final approval of changes at a subsequent meeting and submits the List to the IDNR.



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## ESPB 2014 Illinois List review and revision

The Illinois List review and revision process (continued):  
(in compliance with the ESPA (520 ILCS 10/1) and the Illinois Administrative Procedures Act (5 ILCS 100/1))

5. IDNR conducts an internal review of the List and submits Administrative Rule changes to the Secretary of State for publication in the Illinois Register and review by the Joint Committee on Administrative Rules (JCAR). This first notice for Administrative Rule changes to the List published in the Illinois Register includes a 45-day comment period.
6. If substantive comments are received during the 45-day comment period, the IDNR, with assistance from the Board, provides a response to comments to the JCAR.
7. JCAR approves the List at a regularly scheduled meeting of its committee.
8. Upon approval by JCAR, the IDNR submits the final Administrative Rule changes to the List to the Secretary of State for publication in the Illinois Register and the List becomes official.



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## ESPB 2014 Illinois List review and revision

### What are we considering in our review:

- The IDNR Natural Heritage (Biotics 4) Database is used as a primary source of information. In this review, we are using mostly “last observed” data that only illustrates the most recent observation of each element occurrence for a species.
- Information reviewed for each species includes range in Illinois (present and historic), abundance in Illinois (total numbers, if known), number of known populations or locations where it occurs, number of these locations which are known to be protected from disturbance, the types of threats the species faces, and how fragile or sensitive the species is (species biology/ecology).
- For currently listed species, we aren’t starting from scratch, but are reviewing whether there has been a change in status and distribution that warrants a change in listing status.



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## ESPB 2014 Illinois List review and revision

### Our process to date and planned:

#### January 2012

ESPB staff made request to IDNR ORC to submit to the Database any outstanding Element Occurrence (EO) status and distribution information and to submit to ESPB staff recommendations supported by evidence for status changes for currently listed species and for addition of new species.

ESPB staff made request to over 50 research and resource management institutions to submit to the Database any EO status and distribution information.

#### February/March 2012

The Board and staff vetted 42 ESPB TECs to advise the Board in the List review and ESPB staff made request to the ESPB TECs to submit to the Database any EO status and distribution information and to submit to ESPB staff recommendations supported by evidence for status changes for currently listed species and addition of new species.



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## ESPB 2014 Illinois List review and revision

### Our process to date and planned, continued:

#### April 2012

ESPB staff began reviewing by taxonomic group, currently listed species against Database information, ESPB TEC and IDNR recommendations and evidence, and preparing 1<sup>st</sup> cut lists of recommended changes to the list of endangered and threatened species.

#### May 16, 2012 Board meeting

The Board reviewed the bird list and made preliminary approval of proposed changes.

#### August 10, 2012 Board meeting

The Board reviewed the mammal list and made preliminary approval of proposed changes.

#### November 9, 2012 Board meeting

The Board reviewed the amphibian and reptile lists.



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## ESPB 2014 Illinois List review and revision

### Our process to date and planned, continued:

#### February 8, 2013 Board meeting

The Board reviewed the fish and mussel lists.

#### May 17, 2013 Board meeting

Planned - Other invertebrates and part of the plant lists review.

#### August 16, 2013 Board meeting

Planned – Remainder of plant list review.

#### November 15, 2013 Board meeting

Planned - The Board will review outstanding taxonomic group list issues and confirm preliminary approval of proposed changes to the IL List of Endangered and Threatened Species (List).



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## ESPB 2014 Illinois List review and revision

### Our process to date and planned, continued:

#### December 2013/January 2014

Planned - the Board holds a public hearing for proposed changes to the List.

#### January/February 2014

Planned – the Board and staff review and consider comments and evidence received during the two-week public hearing record period.

#### Beginning February 2014

Planned – at a Board meeting open to the public, the Board reviews its determinations regarding public hearing evidence and either makes final approval to proposed List changes or revises proposed changes and schedules another public hearing for the new changes.

- if another public hearing is held, the Board repeats the cycle for considering evidence and reviewing determinations until it approves as final its proposed changes to the List.
- once proposed changes to the List have been approved as final by the Board, staff will work with IDNR to propose amendments to respective Administrative Rules. The Administrative Rule amendment process may take 6-9 months.



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## ESPB 2014 Illinois List review and revision

### Outstanding List review items that will be revisited before the Board confirms preliminary approval of respective proposed changes, to date:

#### Birds:

Peregrine falcon – proposed for delisting - review 2011, 2012, and (if available) 2013 data.

Chuck-will's-widow – proposed for addition as T- confirm EOs are in the Database.

#### Mammals:

Woodrat – no Board action, IDNR recommends E to T – data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Golden Mouse – no Board action, IDNR recommends delisting - data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Rice Rat – no Board action, IDNR recommends delisting with data available by 2014 - data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Eastern Small-footed Bat – proposed for addition as T – contract another year of surveys; confirm EOs are in the Database.



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## ESPB 2014 Illinois List review and revision

- Now we'll look at one currently listed species account as review of the information that has been considered.
- Then review currently listed species proposed for status change and any questions about those not proposed for status change.
- Then review species proposed for addition.



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## ESPB 2014 Illinois List review and revision

### Reminders:

- Because of the Board's designated process for selecting and utilizing expert consultants and requirements of the Open Meetings Act, any "meeting" of such experts needs to be conducted in a meeting open to the public.
- The current meeting satisfies that requirement, but please note that this is a business meeting of the Board that is open to the public and not a "public hearing".
- Only those individuals identified as presenters on the agenda will be recognized to participate in discussion. In the interest of time and to facilitate development of meeting minutes and the administrative record for the List review process, please keep discussion brief and focused.
- If members of the audience wish to address the Board on this agenda item, they may do so during the public comment period at the end of the meeting, by requesting to present their own agenda item at a subsequent Board meeting, or during the required public hearing that is part of the List review process and will be held at a time after the Board has confirmed preliminary approval for any changes to the List (currently anticipated for early 2014).



**ILLINOIS ENDANGERED SPECIES PROTECTION BOARD**  
*One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438*

**ESPB 2014 Illinois List review and revision**

So, before we move along.....

Any questions?



Attachment E

Re: Agenda Items 158-8: Copy of the 2014 Illinois List Review: Staff recommendation for changes to the list of Illinois endangered and threatened invertebrates other than mussels



# ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

*One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438*

## **Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:**

### **ESPB staff 1<sup>st</sup> cut FINAL recommendations for Invertebrates (except mussels)**

Prepared by Anne Mankowski

04/19/2013

1<sup>st</sup> cut draft dated 03/15/2013, updated as 1<sup>st</sup> cut final 04/19/2013

This is the 1<sup>st</sup> cut final recommendations that will be presented to the Board at the 05/17/2013 meeting.

#### **Contents:**

(This is a compilation of otherwise stand-alone documents; I didn't spend a lot of time crafting, so it isn't pretty)

1. List of any pre-1<sup>st</sup> cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (page 2).  
  
List of post-1<sup>st</sup> cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (page 2).
2. ESPB staff list of recommended changes from endangered to threatened, threatened to endangered, remove from endangered, remove from threatened, add as endangered, add as threatened, and species for which no change is recommended (page 6).
3. List of species under Federal review – implications to the Illinois List (page 6).
4. Table 1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of counties w/ occurrences, # of topographic quads w/ occurrences (page 7).
5. Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (page 8).
6. Currently listed species individual reviews (begins page 9) – each review includes:
  - a. Date of listing, reason for listing;
  - b. ESPB status and distribution publication species acct;
  - c. species data from Tables 1 and 2;
  - d. 1982-2011 5-year element occurrence trend graph;
  - e. ESPB status review triggers (if any) and listing status change recommendation (if any); and
  - f. NatureServe conservation status, lower 48 (for some spp).
7. Recommendations for species to be added as endangered or threatened (if any) (begins page 77).



**1A. List of any recommendations and evidence received from ESPB TECs and IDNR by 11/30/12 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes.**

ESPB TECs Jeremy Tiemann and Kevin Cummings submitted listing recommendation forms and supporting evidence/documentation for the species identified below. Copies of the recommendation forms are included in the individual species reviews (see listing on page 6; nomination form begins page 71).

ESPB TECs Tiemann and Cummings recommendation for listing as Illinois endangered, *Leptoxis praerosa*, Onyx Rocksnail.

**Mankowski note on recommendation** – agree with recommendation.

**1B. List of any recommendations and evidence received from ESPB TECs by 03/29/2013 deadline for species listing status change or additions to the Illinois List (presented as received) and Mankowski response/notes.**

**ESPB TEC Tim Cashatt 03/21/13 comments:** I was surprised that you are recommending changing the status of Hine's emerald dragonfly from State Endangered to State Threatened. I have been under the impression that once a species is listed Federally Endangered a state cannot down list a species below its Federal status. I have 24 years of experience in working with this species and am on the recovery team. We have more life history, biological, distributional and genetics information now than when it was listed, and I believe others conducting research on this species would agree that it should retain its present Endangered status in Illinois.

The narrative for Hine's emerald (p. 38), describing the habitat, has changed very little since 1991. Surveys up through 2012 still describe the habitat as seepage sedge meadow and cattail marsh, predominately fed by ground water, and shallowly overlaying limestone bedrock. The substrate that the larvae inhabit is organic muck. Crayfish burrows are utilized to survive periods of drought in late summer and to overwinter. Much more information can be found in the recovery plan and the more recent papers by Soluk and Mierzwa, I believe, will show a general decline in numbers.

All known Illinois breeding sites are still within the Des Plaines River floodplain, a heavily industrialized region threatened with urban, industrial, and recreational contamination. Lockport Prairie and parts of Hanson Material Service Corporation are thought to contain the two largest breeding populations of Hine's emerald in Illinois. The breeding populations on Hanson's property **are not** protected! With the heavy industry (including mining) surrounding these two sites alone, our largest known breeding populations would be at risk if there were an industrial accident. There has already been an oil spill near one of the smaller breeding populations near another site. A railroad passes through or near most sites carrying materials that could contaminate breeding habitat nearby. Some sites have already been impacted by the railroads. Lockport Prairie is additionally at risk from roadway and golf course chemical contamination. Also, recent observations by Dr. Dan Soluk suggest there has been further fragmentation by the construction of the I-355 bridge which passes over Hine's habitat.

In the late 80's to mid 90's 46 sites were surveyed by Illinois State Museum for potential habitat, resulting in 5-6 sites that we recognize today as breeding sites. During the late 90's and early 2000's field studies were more focused on larval and habitat studies than surveys for additional sites. In an effort to find additional breeding habitat, the 2007 report of Vogt and Cashatt (Site Survey Identification for Hine's emerald Dragonfly in Illinois) identified a total of 40 sites in 15 counties, mostly away from the Des Plaines River floodplain. In 2010 to 2011 an additional 17 sites were surveyed mostly in northwestern and north central Illinois, with no new breeding sites discovered. Some should be revisited because of extreme drought or flood conditions at the time they were surveyed. In 2011-2012 one new site was discovered at Cherry Hill Woods in Cook County and another possible site at Palos Fen.

Population levels at known sites have fluctuated over the years (see the reports of Soluk and Mierzwa), but few

larvae were located during the 2012 season due to the severe drought conditions. As a result, I would anticipate that the number of adults would be lower in the next few years.

Hine's emerald is endangered from a number of factors:

1. Drought related to climatic change. Drought conditions could seriously impact the population for several years.
2. Impact of mining at Hanson Material Service Corporation (and lack of Hine's breeding habitat management on their property). There would be high water demands from numerous sources and mining operations that would significantly lower aquifers that provide important source water for critical breeding (females need water to oviposit in) and larval habitat
3. Further habitat fragmentation due to urbanization and industrialization.
4. Habitat changes due to invasive plants.
5. Lack of good population demographic information.
6. High risk of a catastrophic industrial accident in or near breeding habitat. Larvae are dependent on a clean source of water during their larval stages which could last up to 4 years in Illinois.

For the past few years, Dr. Meredith Mahoney has been conducting genetics studies on Hine's emerald range wide (IL, WI, MI, MO, WI, CA (Ontario)) including samples from historic sites in AL and OH. Despite the fact that Illinois and Missouri have very small populations, analysis of DNA samples from Illinois and Missouri show more genetic diversity than those from the larger sites in WI and MI. A loss of any of the Illinois (or Missouri) populations could potentially impact the population as a whole because some are unique haplotypes.

Those of us who are conducting research on Hine's emerald consider the Illinois population to be the most imperiled of all of the populations. It is my opinion that the Illinois Hine's emerald population deserves the highest level of protection that we can give it.

**Mankowski 04/19/13 response:** Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. Comments are noted and will be included in Section 1 and the respective species review of the final draft of the invertebrate list 1<sup>st</sup> cut document.

Under the Illinois Endangered Species Protection Act, any federally-listed species is automatically added to the Illinois List and its federal listing status is noted, but the Board determines its Illinois listing status. Also under the IESPA, the protections afforded endangered and threatened species are the same, so a species does not gain increased protection by being listed as endangered versus threatened.

Board staff informed the Illinois Natural Heritage Database of commenter advice that one of the six EOs is not protected (the 1<sup>st</sup> cut draft document indicated all six are protected). Database staff indicated that they will correct the error within the Database. Board staff have corrected the information in the species review for the final draft of the 1<sup>st</sup> cut document.

The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence.

The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations greatly reflects search effort. The Board agrees that using the number of observed EOs is not a good indication of many aspects of status and distribution. Certainly, the Board's preference would be to conduct a comprehensive review for all 484 species currently on the Illinois List, but the Board does not have capacity for such a review. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other

species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available.

For this List review process, Board staff began by compiling the course-level review in the 1<sup>st</sup> cut draft document, which relies heavily on EO data and staff included other information, data, and documentation made available to them by ESPB TECs or in response to other requests for information that Board sent out in early 2012 when it began the review process. The information and reference to data and documents that the commenter provided were helpful and informative to enhance the species review, but did not provide the actual data and documentation necessary.

Under separate cover, Board staff received from Mr. Kris Lah of the US Fish and Wildlife Service, copies of the two documents listed below that did provide data and documentation supporting Dr. Cashatt's comments. The documents sent by Mr. Lah include an assessment of population size for Illinois and the partial draft (less the decision section) of the USFWS 5-year review for the species that together, provide considerable data and documentation for Illinois population size and trends, genetics, and threats.

Documents provided to Board staff on 03/18/13 by Mr. Kris Lah, US Fish and Wildlife Service, Barrington, Illinois:

- 1) US Fish and Wildlife Service. No Date. Partial Draft Hine's Emerald Dragonfly, *Somatochlora hineana* (Odonata: Corduliidae) Five-Year Review: Summary and Evaluation. US Fish and Wildlife Service, Midwest Region, Chicago Ecological Services Field Office, Barrington, Illinois. 50 pp.
- 2) Soluk, D.A., and K.S. Mierzwa. 2012. An Assessment of the Hine's Emerald Dragonfly (*Somatochlora hineana*) Population Size in the Lower Des Plaines River Valley, Illinois. Submitted to The Habitat Conservation Planning Partners as part of a Habitat Conservation Plan being prepared under section 10(a) of the US Endangered Species Protection Act.

Some relevant information from the Partial Draft USFWS 5-year Review is excerpted below (in italics). (Note - there is a difference in distinction of Illinois "occurrences" per the Illinois Natural Heritage Database and "sites" by the USFWS. The Natural Heritage Database recognizes six occurrences in Illinois. Within the USFWS partial draft 5-year review, the Illinois population theoretically consists of 3 subpopulations and there are 10 sites across those 3 subpopulations.)

*Illinois population size excerpts from Partial Draft USFWS 5-year Review:*

*...the Illinois population, is estimated to be within the range of 86-313 adults (estimate includes standard error - Soluk and Mierzwa 2012, pp. 22-25). Illinois Subpopulation 1 is estimated to consist of 154 (s.e. 74) to 212 (s.e. 87) adult Hine's emerald dragonflies. Illinois Subpopulation 2 is estimated to consist of 10 (s.e. 4) adult Hine's emerald dragonflies. An estimate of the third subpopulation has not been developed because there is not enough quantitative information currently available to allow a meaningful analysis; however, it is believed to provide a minimal contribution to the Illinois population (Soluk and Mierzwa 2012, p. 2).*

*While the estimate does not include some of the known breeding habitats in Illinois, the estimate for the Illinois population would most likely not change significantly by adding the smaller sites since the core of the Illinois population is included.*

*Illinois population trend excerpt from Partial Draft USFWS 5-year Review:*

*In this same report, the authors utilized 17 years of population data to develop an index that provides insight on the population trend in Illinois. The index values show a mean 17-year density, represented as an index value of 1.0. Index values greater than 1.0 (i.e., greater than the long-term mean) occurred in or prior to 2002, with most of the lower values occurring after 2002. The lowest value (0.07) coincided with a drought that Illinois experienced in 2005. The 2011 adult density (index of 0.60) is below the long-term mean, but slightly above the adult density documented in 2003 (index value of 0.51), a year with a relatively thorough larval dataset (Soluk and Mierzwa 2012, pp. 15 and 26). Whether assessing the size of the Illinois population based on the long-term mean or the 2003 data set, the size of the population is very low for any insect and appears to be on a downward trend.*

Illinois genetics excerpts from Partial Draft USFWS 5-year Review:

Based on tenets of genetics, the long term viability of any species is based on a combination of population size and genetic diversity that are essential to counteract catastrophic events (Dudash and Fenster 2000). In order for a species to persist, its genetic diversity must be maintained range-wide and distinct haplotypes must be preserved. For some species, even a small loss of genetic diversity will preclude a species' ability to withstand significant changes to the environment.

Based on recent genetic analyses by Dr. Meredith Mahoney (pers. comm. 2012), of 141 samples of Hine's emerald dragonfly tissue analyzed for mitochondrial DNA (mtDNA) variation, there are 21 haplotypes rangewide, with up to six differences (1.1%) among them. Missouri exhibits the greatest genetic diversity across the range of the species with 13 of the 21 haplotypes found in Missouri including 10 that are unique to the state; whereas, Michigan has been found to only contain one haplotype and Wisconsin has four haplotypes.

Hine's emerald dragonfly sites in Illinois had previously been thought of as being the most genetically diverse (Purdue et al. 1996) prior to the discovery of sites in Missouri (M. Mahoney, pers. comm. 2012). There are six different haplotypes (genetic variants) that have been found in Illinois, four of which are unique to Illinois, with up to five differences (0.92% divergence) among them. The differences (number or %) are the maximum observed base pair substitutions between haplotype pairs looking either range wide or just within Illinois or other regions. Some haplotype pairs have only one or two differences between them. The four unique haplotypes were all found in sites (Lockport Prairie Nature Preserve, River South and Middle parcels, and Romeoville Prairie) within a close proximity (approx. 4.25 miles (6.84 km)) of each other. The haplotypes unique to Illinois are B, C, E, and F. Alternatively, haplotype D, which is found across the species range, has not yet been found in Illinois, though two other widespread haplotypes (A and G) do occur. Analyses of museum samples from extirpated Ohio populations found genetic variants that are not seen in other, extant, populations (Purdue et al., 1996, and Mahoney pers. comm. 2012). Range wide analysis showed little geographic structuring of genetic variation and most variation (77-86%) is within states (Mahoney pers. comm. 2012). Due to the high genetic diversity and unique haplotypes in Hine's emerald dragonfly populations in Illinois and Missouri, the long term viability of the species range-wide would be compromised if the genetic diversity of these populations is threatened.

Illinois threats excerpt from Partial Draft USFWS 5-year Review:

Site	Direct loss of habitat	Fragmentation	Hydrological	Contaminants	Vehicle mortality	Invasive animals	Invasive plants	Livestock	ATV's
Lockport Prairie		X	X	X	X		X		X
River South and Middle Parcel	X	X	X	X	X		X		X
Romeoville Prairie		x	X	X	X		X		X
Long Run Seep and Long Run/ComEd		X	X	X	X		X		
Keepataw			X	X	X		X		X
Black Partridge		X	X	X	X		X		X
Waterfall Glen		X	X	X	X		X		
Cherry Hill Woods		X			X		X		
McMahon Fen		X	X	X	X		X		X
Palos Fen		X		X	X		X		

**Mankowski 04/19/13 final recommendation:** Based on the information and evidence provided by the commenter (Dr. Cashatt) and by Mr. Kris Lah (USFWS), staff recommendation is for no change in status.

## ESPB staff listing status recommendations

Endangered to threatened: Papaipema eryngii Eryngium Stem Borer

Threatened to endangered: Hesperia metea Cobweb Skipper

Remove from endangered: Atrytone arogos Arogos Skipper  
 Caecidotea spatulata Isopod  
 ? Paraphlepsius lupalus ? Leafhopper

Remove from threatened: None

Add as endangered: Leptoxis praerosa Onyx Rocksnail

Add as threatened: None

No listing status change recommended: (data do not warrant change)

SNAILS	Discus macclintocki	Iowa Pleistocene Snail
	Fontigens antroecetes	Hydrobiid Cave Snail
	Lithasia obovata	Shawnee Rocksnail
CRUSTACEANS	Caecidotea lesliei	Isopod
	Crangonyx anomalus	Anomalous Spring Amphipod
	Crangonyx packardi	Packard's Cave Amphipod
	Gammarus acherondytes	Illinois Cave Amphipod
	Orconectes indianensis	Indiana Crayfish
	Orconectes kentuckiensis	Kentucky Crayfish
	Orconectes lancifer	Shrimp Crayfish
	Orconectes placidus	Bigclaw Crayfish
	Stygobromus iowae	Iowa Amphipod
SCORPIONS	Centruroides vittatus	Common Striped Scorpion
DRAGONFLIES	Nannothemis bella	Elfin Skimmer
	Somatochlora hineana	Hine's Emerald Dragonfly
SPRINGTAILS	Pygmarrhopalites madonnensis	Madonna Cave Springtail
STONEFLIES	Diploperla robusta	Robust Springfly
	Prostoia completa	Central Forestfly
LEAFHOPPERS	Aflexia rubranura	Redveined Prairie Leafhopper
	Athysanella incongrua	Leafhopper
BUTTERFLIES AND MOTHS	Calephelis mutica	Swamp Metalmark
	Hesperia ottoe	Ottoe Skipper
	Incisalia polios	Hoary Eflin
	Lycaeides melissa samuelis	Karner Blue Butterfly
	Speyeria idalia	Regal Fritillary

### Species under Federal review – implications to the Illinois List:

Papaipema eryngii. Rattlesnake-master borer moth. USFWS action - 12-month finding (warranted or not warranted for listing) expected by end of FFY2013 (Sep 2013). Illinois endangered.

Amblyscirtes linda. Linda's Roadside-skipper. USFWS action - 12-month finding (warranted or not warranted for listing); part of 404 SE aquatic species - 12-month finding work after MDL work plan (probably after FFY2016). If USFWS lists the species and includes Illinois in its range, it will automatically be added to the IL List. Never listed in IL (would have been considered extirpated); Bouseman et al, 2006, cite a published 1896 occurrence from Jackson Co (now in Field Museum collection). No records in INHS collection.

Table1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of topographic quads with occurrences (Illinois Natural Heritage Biotics 4 Database, February 2013 [except snails, Nov 2012]).

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	Current Status	Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
SNAILS									
<i>Discus macclintocki</i>	Iowa Pleistocene Snail	IL E, Fed E	1994-08-31	1	0	0	1	1	0
<i>Fontigens antroecetes</i>	Hydrobiid Cave Snail	E	2011-08-26	1	1	4	1	2	2
<i>Lithasia obovata</i>	Shawnee Rocksnail	E	2012-07-11	12	4	0	12	5	3
CRUSTACEANS									
<i>Caecidotea lesliei</i>	Isopod	E	2000-05-01	1	0	0	1	1	0
<i>Caecidotea spatulata</i>	Isopod	E	1937-04-18	1	0	0	1	1	0
<i>Crangonyx anomalus</i>	Anomalous Spring Amphipod	E	1992-04-15	2	0	0	2	1	0
<i>Crangonyx packardi</i>	Packard's Cave Amphipod	E	2012-08-07	8	1	0	8	5	2
<i>Gammarus acherondytes</i>	Illinois Cave Amphipod	IL E, Fed E	2011-03-26	8	7	8	5	1	1
<i>Orconectes indianensis</i>	Indiana Crayfish	E	2011-08-18	24	12	0	13	7	6
<i>Orconectes kentuckiensis</i>	Kentucky Crayfish	E	2011-06-01	6	4	0	2	1	1
<i>Orconectes lancifer</i>	Shrimp Crayfish	E	1999-10-01	2	0	0	2	1	0
<i>Orconectes placidus</i>	Bigclaw Crayfish	E	2006-09-08	6	3	0	7	4	4
<i>Stygobromus iowae</i>	Iowa Amphipod	E	1997-04-05	3	0	1	2	2	0
SCORPIONS									
<i>Centruroides vittatus</i>	Common Striped Scorpion	E	2012-05-12	2	1	2	3	2	1
DRAGONFLIES									
<i>Nannothemis bella</i>	Elfin Skimmer	T	2004	2	1	2	2	3	3
<i>Somatochlora hineana</i>	Hine's Emerald Dragonfly	IL E, Fed E	2011-10-18	6	5	6	4	3	3
SPRINGTAILS									
<i>Pygmarrhopalites madonnensis</i>	Madonna Cave Springtail	E	1998-11-12	1	0	0	1	1	0
STONEFLIES									
<i>Diploperla robusta</i>	Robust Springfly	E	2009-04	1	1	1	1	1	1
<i>Prostoia completa</i>	Central Forestfly	E	2002-03-23	2	2	0	1	1	1
LEAFHOPPERS									
<i>Aflexia rubranura</i>	Redveined Prairie Leafhopper	T	2004-08-31	6	4	4	5	4	4
<i>Athysanella incongrua</i>	Leafhopper	E	2005-06-22	1	1	1	1	1	1
<i>Paraphlepsius lupalus</i>	Leafhopper	E	1991-08-21	1	0	1	1	1	0
BUTTERFLIES AND MOTHS									
<i>Atrytone arogos</i>	Arogos Skipper	E	1989-07-16	1	0	1	1	1	0
<i>Calephelis mutica</i>	Swamp Metalmark	E	2003-08-09	2	1	1	2	3	1
<i>Hesperia metea</i>	Cobweb Skipper	T	2000-04-13	5	0	0	5	4	0
<i>Hesperia ottoe</i>	Ottoe Skipper	E	2004-06-19	10	2	5	10	6	3
<i>Incisalia polios</i>	Hoary Eflin	E	2004	1	1	1	1	1	1
<i>Lycæides melissa samuelis</i>	Karner Blue Butterfly	IL E, Fed E	2001-08-12	1	0	0	1	1	0
<i>Papaipema eryngii</i>	Eryngium Stem Borer	E	2012-06-11	10	8	5	14	7	7

Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (some 2012 also) (Illinois Natural Heritage Biotics 4 Database, February 2013 [except snails, Nov 2012]).

SCIENTIFIC_NAME	COMMON_NAME	obs 1982- 1986	obs 1987- 1991	obs 1992- 1996	obs 1997- 2001	obs 2002- 2006	obs 2007- 2011	obs 2012	# Cos 1982- 1986	# Cos 1987- 1991	# Cos 1992- 1996	# Cos 1997- 2001	# Cos 2002- 2006	# Cos 2007- 2011	# Cos 2012
SNAILS															
<i>Discus macclintocki</i>	Iowa Pleistocene Snail	1	0	1	0	0	0	0	1	0	1	0	0	0	0
<i>Fontigens antroecetes</i>	Hydrobiid Cave Snail	0	0	0	1	0	1	0	0	0	0	1	0	1	0
<i>Lithasia obovata</i>	Shawnee Rocksnail	0	3	0	2	0	4	1	0	3	0	2	0	3	1
CRUSTACEANS															
<i>Caecidotea lesliei</i>	Isopod	0	0	0	1	0	0	0	0	0	0	1	0	0	0
<i>Caecidotea spatulata</i>	Isopod	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Crangonyx anomalus</i>	Anomalous Spring Amphipod	0	0	1	0	0	0	0	0	0	1	0	0	0	0
<i>Crangonyx packardii</i>	Packard's Cave Amphipod	0	0	0	1	0	0	1	0	0	0	1	0	0	1
<i>Gammarus acherondytes</i>	Illinois Cave Amphipod	1	0	1	1	1	1	0	1	0	1	1	1	1	0
<i>Orconectes indianensis</i>	Indiana Crayfish	0	5	5	12	8	5	0	0	3	3	5	4	4	0
<i>Orconectes kentuckiensis</i>	Kentucky Crayfish	0	1	0	1	4	1	0	0	1	0	1	1	1	0
<i>Orconectes lancifer</i>	Shrimp Crayfish	1	1	2	1	0	0	0	1	1	1	1	0	0	0
<i>Orconectes placidus</i>	Bigclaw Crayfish	0	0	1	4	3	0	0	0	0	1	3	2	0	0
<i>Stygobromus iowae</i>	Iowa Amphipod	0	0	0	1	0	0	0	0	0	0	1	0	0	0
SCORPIONS															
<i>Centruroides vittatus</i>	Common Striped Scorpion	1	0	1	0	0	0	1	1	0	1	0	0	0	1
DRAGONFLIES															
<i>Nannothemis bella</i>	Elfin Skimmer	1	1	0	1	1	0	0	1	2	0	1	2	0	0
<i>Somatochlora hineana</i>	Hine's Emerald Dragonfly	0	4	6	4	4	6	0	0	3	3	3	3	3	0
SPRINGTAILS															
<i>Pygmarrhopalites madonnensis</i>	Madonna Cave Springtail	0	0	0	1	0	0	0	0	0	0	1	0	0	0
STONEFLIES															
<i>Diploperla robusta</i>	Robust Springfly	0	0	0	0	0	1	0	0	0	0	0	0	1	0
<i>Prostoia completa</i>	Central Forestfly	1	0	1	0	2	0	0	1	0	1	0	1	0	0
LEAFHOPPERS															
<i>Aflexia rubranura</i>	Redveined Prairie Leafhopper	0	3	6	1	4	0	0	0	3	5	1	3	0	0
<i>Athysanella incongrua</i>	Leafhopper	0	0	0	1	1	0	0	0	0	0	1	1	0	0
<i>Paraphlepsius lupalus</i>	Leafhopper	0	1	0	0	0	0	0	0	1	0	0	0	0	0
BUTTERFLIES AND MOTHS															
<i>Atrytone arogos</i>	Arogos Skipper	1	1	0	0	0	0	0	1	1	0	0	0	0	0
<i>Calephelis mutica</i>	Swamp Metalmark	0	1	0	0	1	0	0	0	1	0	0	1	0	0
<i>Hesperia metea</i>	Cobweb Skipper	3	1	0	1	0	0	0	3	1	0	1	0	0	0
<i>Hesperia ottoe</i>	Ottoe Skipper	3	6	3	3	2	0	0	3	4	2	3	1	0	0
<i>Incisalia polios</i>	Hoary Eflin	0	1	1	0	1	0	0	0	1	1	0	1	0	0
<i>Lycæides melissa samuelis</i>	Karner Blue Butterfly	0	0	1	1	0	0	0	0	0	1	1	0	0	0
<i>Papaipema eryngii</i>	Eryngium Stem Borer	0	2	3	2	3	5	1	0	2	3	3	3	4	1
<i>Speyeria idalia</i>	Regal Fritillary	2	5	3	11	13	8	1	3	6	4	10	12	9	1

**Currently listed species individual reviews – each review includes:**

(Note – In the reviews, I provide “notes and recommendations” for those species for which I am recommending listing status change and for those where I felt it necessary to explain my lack of recommendation for a change in listing status. If a species review does not include “notes and recommendations”, it means that I am not recommending any change in listing status.)

- a. Date of listing, reason for listing;
- b. ESPB status and distribution publication species acct;
- c. species data from Tables 1 and 2;
- d. 1982-2011 5-year element occurrence trend graph;
- e. status review triggers (if any) and listing status change recommendation (if any); and
- f. NatureServe conservation status, lower 48.

SNAILS	<i>Discus macclintocki</i>	Iowa Pleistocene Snail	pg. 10
	<i>Fontigens antroecetes</i>	Hydrobiid Cave Snail	12
	<i>Lithasia obovata</i>	Shawnee Rocksnail	14
CRUSTACEANS	<i>Caecidotea lesliei</i>	Isopod	16
	<i>Caecidotea spatulata</i>	Isopod	18
	<i>Crangonyx anomalus</i>	Anomalous Spring Amphipod	20
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	<i>Gammarus acherondytes</i>	Illinois Cave Amphipod	24
	<i>Orconectes indianensis</i>	Indiana Crayfish	26
	<i>Orconectes kentuckiensis</i>	Kentucky Crayfish	28
	<i>Orconectes lancifer</i>	Shrimp Crayfish	30
	<i>Orconectes placidus</i>	Bigclaw Crayfish	33
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SPRINGTAILS	<i>Pygmarrhopalites madonnensis</i>	Madonna Cave Springtail	47
STONEFLIES	<i>Diploperla robusta</i>	Robust Springfly	49
	<i>Prostoia completa</i>	Central Forestfly	51
LEAFHOPPERS	<i>Aflexia rubranura</i>	Redveined Prairie Leafhopper	53
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BUTTERFLIES AND MOTHS	<i>Atrytone arogos</i>	Arogos Skipper	59
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	<i>Hesperia metea</i>	Cobweb Skipper	63
	<i>Hesperia ottoe</i>	Ottoe Skipper	66
	<i>Incisalia polios</i>	Hoary Eflin	68
	<i>Lycaeides melissa samuelis</i>	Karner Blue Butterfly	70
	<i>Papaipema eryngii</i>	Eryngium Stem Borer	72
	<i>Speyeria idalia</i>	Regal Fritillary	75

**Recommendations for species to be added as endangered or threatened:**

*Leptoxis praerosa*

Onyx Rocksnail

pg. 77



Iowa Pleistocene Snail, *Discus macclintocki* (Illinois endangered, Federally endangered)

Listed as IL E, 7/25/1984; Listed as Fed E, 8/2/1978

Reason for listing: designated Fed E or T; very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

### ***Discus macclintocki* (Baker)**

**IOWA PLEISTOCENE SNAIL**

**DISCIDAE**

**Status:** Endangered in Illinois  
Federally Endangered



**Present Distribution:** The Iowa Pleistocene snail is known from only 18 locations, all in Iowa and Illinois (Frest 1984).

**Former Illinois Distribution:** The Iowa Pleistocene snail was first described from a fossil in 1928, and living specimens were not found until 1955 (Frest 1984). The distribution of this glacial relict has probably always been similar to the current distribution, although there are Pleistocene Era records from much of central Illinois.

**Habitat:** In Illinois, this snail is restricted to algific slope habitats in the Driftless area of the northwestern part of the state.

**Reason for Status:** Human disturbances such as habitat clearing, pasturing, trampling, and road building are all threats to populations of this species (Frest 1984).

**Management Recommendations:** The primary management needs for this species are habitat protection, population monitoring, life history research, and research investigating the feasibility of reestablishing snail colonies in other suitable areas.

#### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

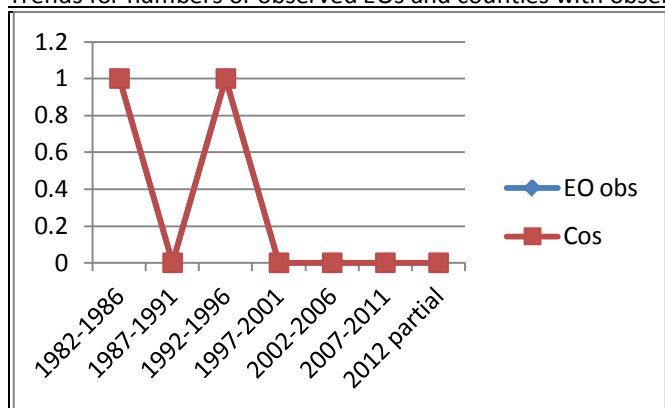
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1994-08-31	1	0	0	1	1	0

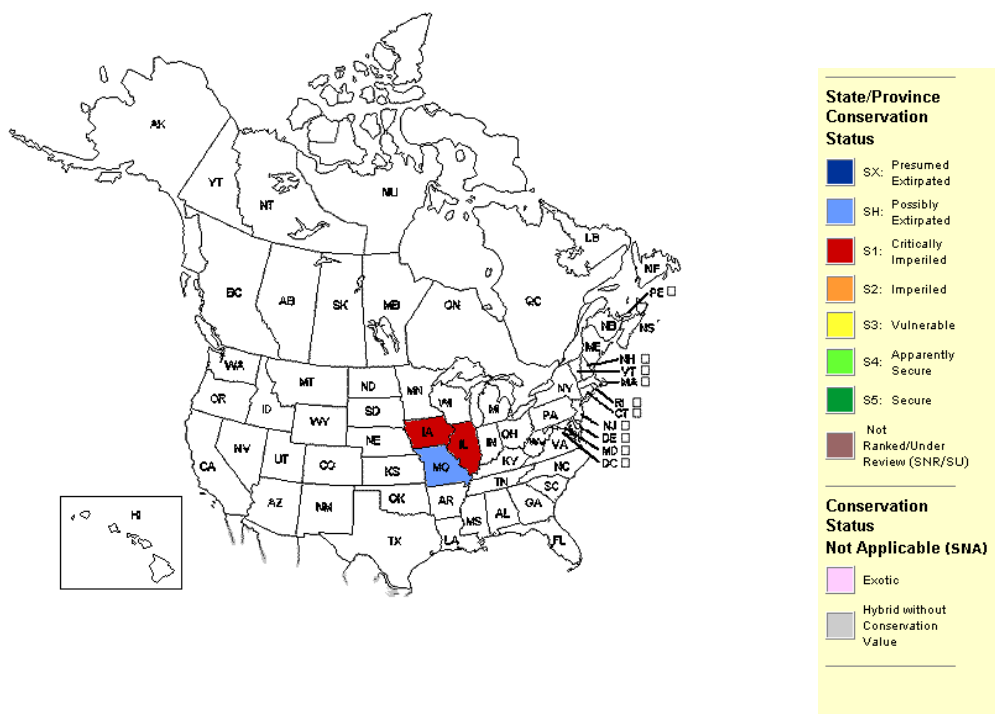
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	1	0	0	0	0
Cos	1	0	1	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Discus macclintocki*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Hydrobiid Cave Snail, *Fontigens antroecetes* (Illinois endangered)

Listed as IL E, 9/1/2004

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

## ***Fontigens antroecetes* (Hubricht)**

**HYDROBIID CAVE SNAIL**

**HYDROBIIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The hydrobiid cave snail occurs only in a narrow range comprising a few caves in eastern Missouri and one groundwater basin in St. Clair County, Illinois.

**Former Illinois Distribution:** *Fontigens antroecetes* probably has never been widespread, being restricted to caves in eastern Missouri and adjacent Illinois (Lewis *et al.* 2003).

**Habitat:** The hydrobiid cave snail is an obligate cave species.

**Reason For Status:** The groundwater habitat in all or most of the caves in which this species occurs has been degraded by a variety of factors, notably nutrient enrichment from septic effluent. During recent surveys of caves and springs in Monroe and St. Clair counties in the southern Illinois karst region no additional localities for the hydrobiid cave snail were discovered. Its presence has been confirmed for one cave system in a state nature preserve (Lewis *et al.* 2003).

**Management Recommendations:** The primary management need for this species is habitat protection. The controlling of nutrient enrichment from septic systems, as well as siltation, nutrients and chemicals from farming operations are imperative for the survival of this species.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

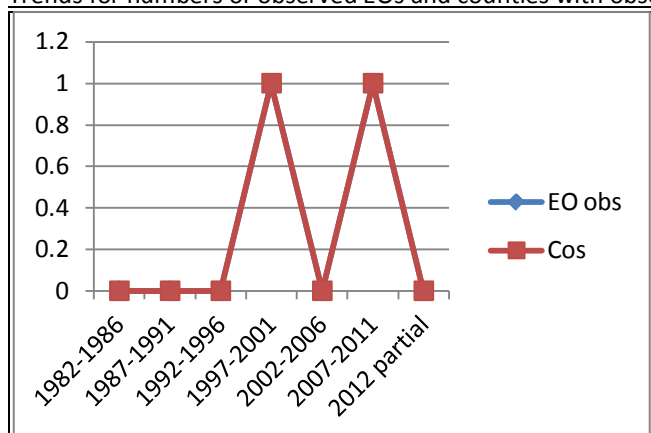
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-08-26	1	1	4	1	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	1	0
Cos	0	0	0	1	0	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Fontigenes antroecetes*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Shawnee Rocksnail, *Lithasia obovata* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

*Lithasia obovata* (Sav. 1829)  
Shawnee Rocksnail

**PLEUROCERIDAE**

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** Ohio River and tributaries in Pennsylvania, Ohio, Indiana, Illinois, Kentucky, and Tennessee (Burch 1989 in NatureServe 2009). In Illinois, recent (post-2000) occurrences of this species are known from a small portion of the Little Wabash River in Gallatin and White counties (IDNR 2010).

**Former Illinois Distribution:** Data suggests that this species once historically found in five basins in the Wabash River drainage in Clay, Gallatin, Lawrence, Wabash, and White counties (IDNR 2010).

**Habitat:** Large rivers and tributaries.

**Reason for Status:** Habitat degradation including siltation, chemical pollution, impoundments, in-stream disturbances (e.g., gravel mining, dredging, and channelization), and competition from exotic species threaten this species whose range has been reduced to one sub-watershed in Illinois.

**Management Recommendations:** Improvements to water quality, protection of habitat from degradation, and additional surveys will help conserve this species in Illinois.



**Key**

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

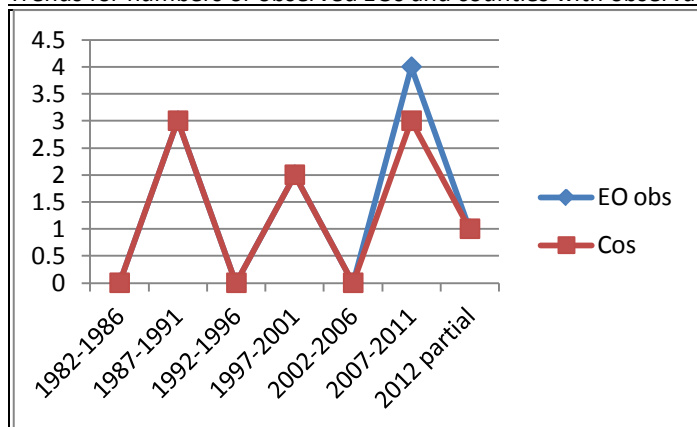
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-07-11	12	4	0	12	5	3

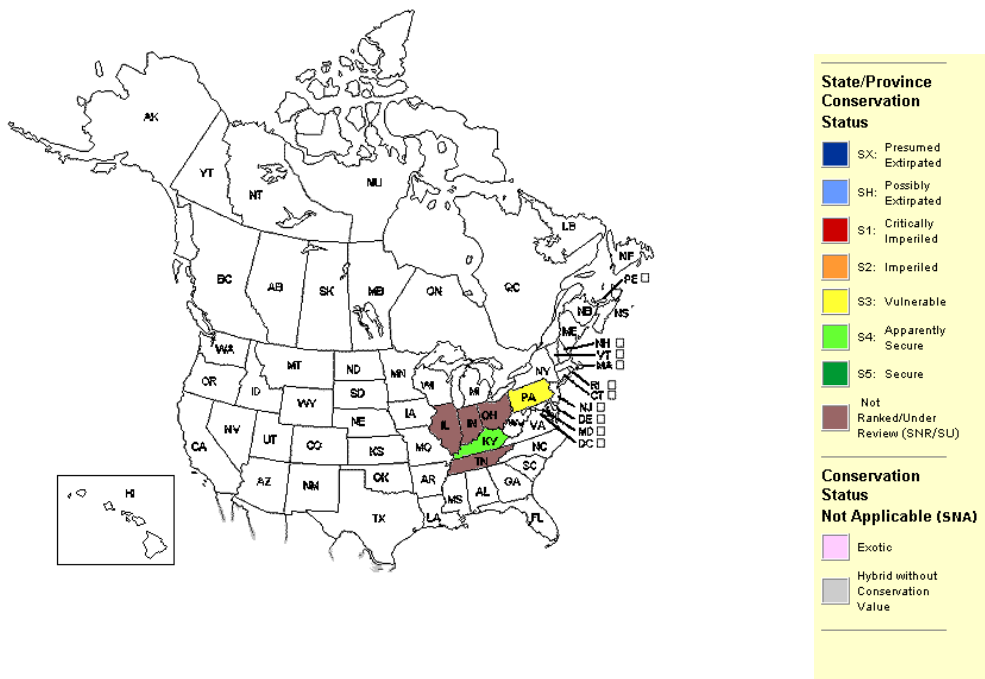
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	3	0	2	0	4	1
Cos	0	3	0	2	0	3	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Lithasia obovata*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Isopod, *Caecidotea lesliei* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Caecidotea lesliei* Lewis & Bowman**

**ISOPOD**

**ASELLIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This rare isopod is known only from one location, a drainage tile in McDonough County, Illinois (Page and Retzer 2002).

**Former Illinois Distribution:** This species was only recently described by Lewis and Bowman (1981), after first being collected in 1941 from McDonough County.

**Habitat:** The habitat of this isopod is apparently groundwater among interstices in unconsolidated glacial drift or alluvium (White 1991). The only known occurrence of this species is from a drain tile (Lewis and Bowman 1981, White 1991). In May of 2000, four specimens of this species were collected from the type locality (Page and Retzer 2002).

**Reason for Status:** There is only one known location for this species, and its present status there is uncertain. It is probably limited to a small portion of the western part of the Western Illinois Till Plain where it occupies groundwater habitat. (White 1991).

**Management Recommendations:** The only known occurrence of this species should be protected from disturbance, drainage, and agricultural chemicals which could only threaten its continued existence.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

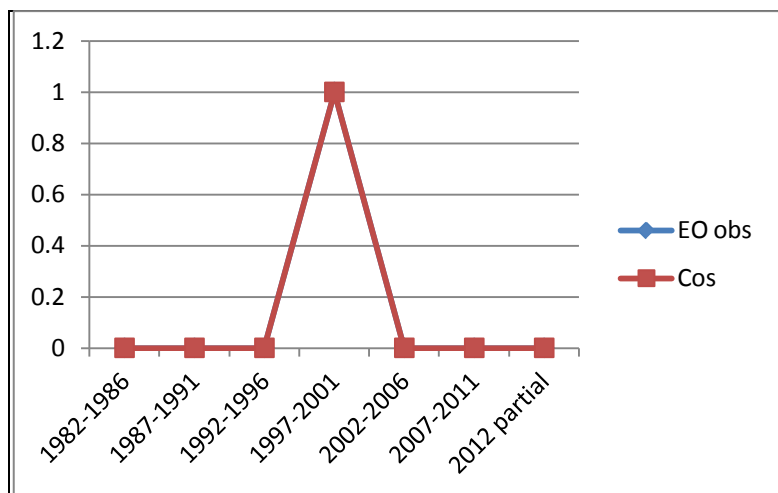
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2000-05-01	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	0	0
Cos	0	0	0	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (S1)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).



Isopod, *Caecidotea spatulata* (Illinois endangered)

Listed as IL E, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Caecidotea spatulata* Mackin and Hubricht**

**ISOPOD**

**ASELLIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This species is known only from Illinois and Missouri (Peck and Lewis 1977).

**Former Illinois Distribution:** In Illinois this isopod is known only from St. Clair County. Recent attempts to find this species near the type locality in St. Clair County have been unsuccessful. (Page and Retzer 2002).

**Habitat:** In Illinois, this species is known to inhabit swales and springs (Peck and Lewis 1977).

**Reason For Status:** The areas in St. Clair County where this species is known to occur are highly industrial and threatened by industrial encroachment. Lewis (2000) visited 33 sites in St. Clair and Monroe counties, Illinois, and one site in St. Louis County, Missouri, but was not able to find this species.

**Management Recommendations:** Areas where this isopod is known or likely to occur should be protected from drainage, agricultural runoff and other actions that could potentially threaten the aquatic habitats this species depends on.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

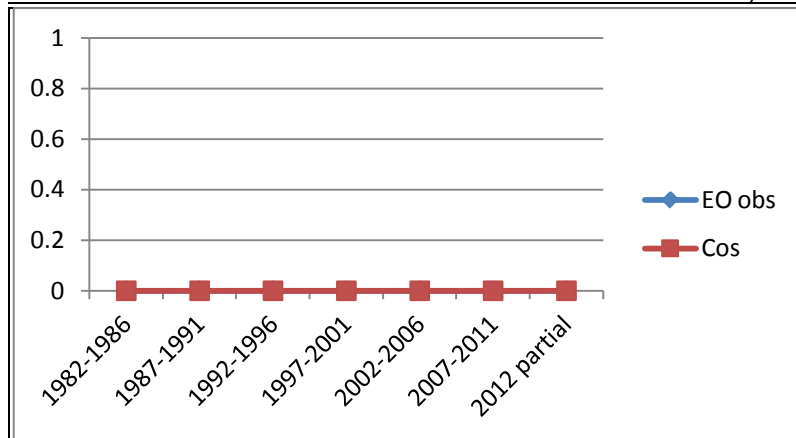
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1937-04-18	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	0	0	0	0
Cos	0	0	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

This species has not been observed since 1937. There is only one EO for the species and there has been only one “surveyed with no observation” report for that EO (during 1997-2001 window). ESPB staff noted in the 03/15/13 draft 1<sup>st</sup> cut review that it would be good to have additional years of “surveyed with no observation” reports before making a recommendation for delisting as extirpated. Upon reconsideration of the EO data and species’ review, staff notes that when the Board listed the species in 1994 there was insufficient evidence to confirm any more recent observation of the 1937 occurrence information that was used to establish the singular EO for the species. Staff recommendation is that the species should be delisted because data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

**Mankowski recommendation** — remove from endangered. Data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

NatureServe Conservation Status in United States

Illinois (SU), Missouri (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Anomalous Spring Amphipod, *Crangonyx anomalus* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Crangonyx anomalus* Hubricht**

**ANOMALOUS SPRING  
AMPHIPOD**

**CRANGONYCTIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** Presently known only from Pope County, Illinois.

**Former Illinois Distribution:** There are only two Illinois records for this species, a 1974 record from Pope County, and a 1992 record from a spring on private land in Pope County.

**Habitat:** Like other members of the family Crangonyctidae in Illinois, this species is an inhabitant of shallow groundwater habitats such as seeps, springs, caves, and subsurface cavities in limestone (White 1991).

**Reason for Status:** Although this species is presently known from only one locality in Illinois, it may occur elsewhere in the Shawnee Hills region (White 1991). This species is threatened by groundwater degradation and contamination. Page and Retzer (2002) revisited the 1974 site but were unable to find this species. They noted that the difficult terrain and limited samples do not rule out the species existence in the area.

**Management Recommendations:** Areas where this species is known or likely to occur should be protected from drainage, agricultural chemicals, and other actions that could potentially threaten groundwater habitats.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

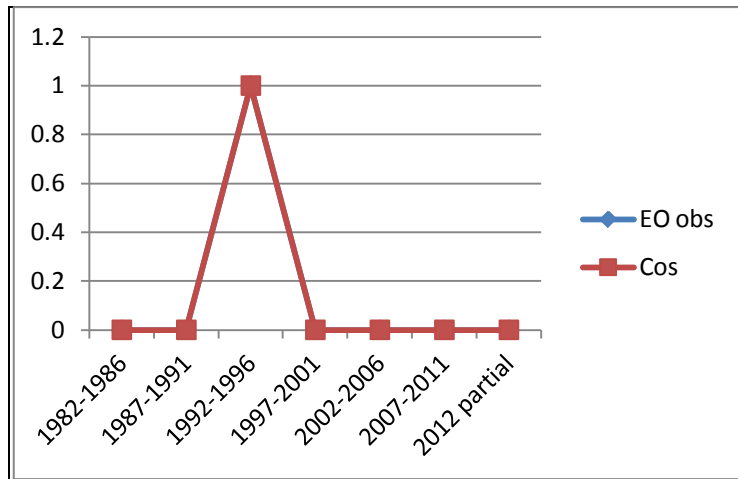
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1992-04-15	2	0	0	2	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	0	0	0	0
Cos	0	0	1	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (SU), Indiana (S2), Kentucky (S3S5), Ohio (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Packard's Cave Amphipod, *Crangonyx packardi* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Crangonyx packardi*** Packard

**PACKARD'S CAVE AMPHIPOD**

**CRANGONYCTIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This amphipod occurs in the low interior plateaus of southern Indiana, central Kentucky, and southern Illinois (Peck and Lewis 1977, Holsinger 1986).

**Former Illinois Distribution:** The only Illinois records for this amphipod are from caves in Hardin, Johnson, Saline, Pike, and Union Counties (Peck and Lewis 1977).

**Habitat:** This species is apparently primarily restricted to caves in the Shawnee Hills Natural Division of Illinois. Page and Retzer (2002) reported a new record of this species from Bell Smith Springs in Johnson County in 1997.

**Reason for Status:** This species is known from only a few localities in Illinois and is threatened by groundwater degradation and contamination.

**Management Recommendations:** Caves where this species occurs should be protected from undue disturbance, and efforts should be made to protect the groundwater resources of these areas.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

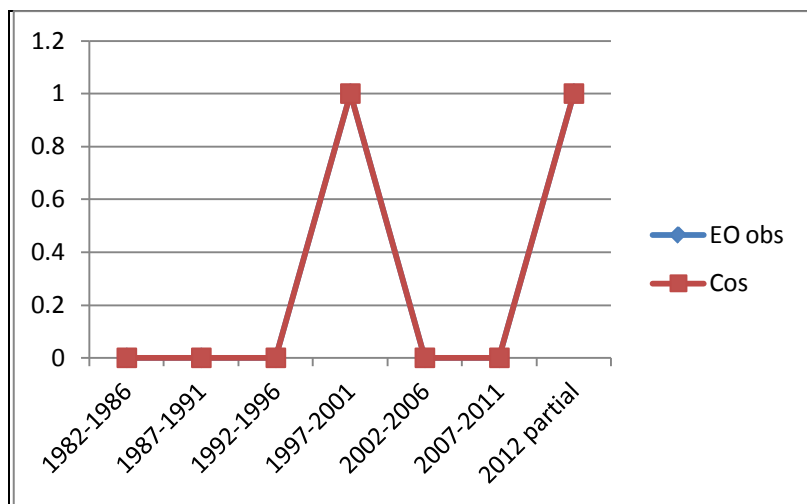
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-08-07	8	1	0	8	5	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	0	1
Cos	0	0	0	1	0	0	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (S1), Indiana (S4), Kansas (SNR), Kentucky (S4S5), Missouri (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Illinois Cave Amphipod, *Gammarus acherondytes* (Illinois endangered, Federally endangered)

Listed as IL E, 3/17/1989; Listed as Fed E, 9/3/1998

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

## ***Gammarus acherondytes*** Hubricht & Mackin

**ILLINOIS CAVE AMPHIPOD**

**GAMMARIDAE**

**Status:** Endangered in Illinois  
Federally Endangered



**Present Distribution:** This amphipod was originally known from four caves in Monroe and one cave in St. Clair counties, Illinois (Holsinger 1972, Peck and Lewis 1977). Recent studies indicate that this species is known from 12 caves in six drainages, all in Madison and St. Clair counties, Illinois (Lewis *et al.* 2003).

**Former Illinois Distribution:** The Illinois cave amphipod was first discovered in Monroe County in 1938, and found soon after in St. Clair County (Hubricht and Mackin 1940). It has apparently always been restricted to these two counties.

**Habitat:** This amphipod is an inhabitant of small cave streams in southwestern Illinois (Holsinger 1972).

**Reason for Status:** The Illinois cave amphipod is restricted to only a few cave systems in Illinois and is threatened by groundwater degradation and contamination. In recent studies by Taylor and Webb (2000), they were unable to find this species in the only St. Clair County cave from which it had been reported in spite of repeated sampling throughout the year. Also numerous attempts have been made to find this species from throughout the karst regions of Illinois, and none of the studies have found the Illinois cave amphipod outside of its present range in Monroe and St. Clair counties (Webb *et al.* 1993, Webb *et al.* 1998, Lewis *et al.* 2003).

**Management Recommendations:** Caves where this species occurs should be protected from undue human disturbance, and efforts should be made to protect the groundwater resources of these cave systems.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

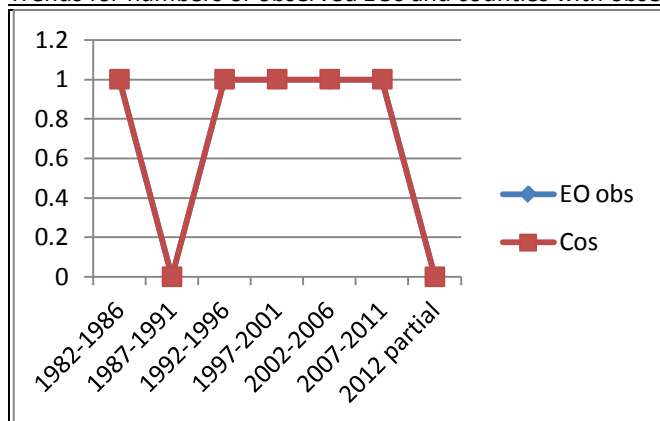
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-03-26	8	7	8	5	1	1

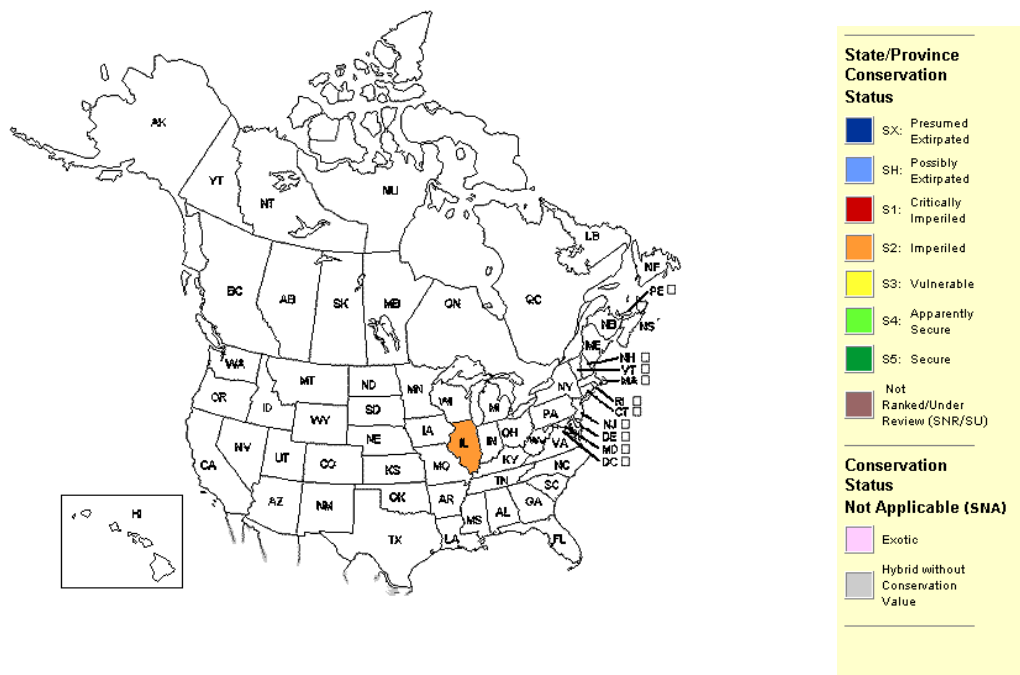
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	1	1	1	1	0
Cos	1	0	1	1	1	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Gammarus acherondytes*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).



Indiana Crayfish, *Orconectes indianensis* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

## ***Orconectes indianensis* (Hay)**

**INDIANA CRAYFISH**

**CAMBARIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The Indiana crayfish is restricted to the Wabash river drainage in southwestern Indiana and the Saline River and Honey Creek systems in Illinois (Page 1985a).

**Former Illinois Distribution:** This species formerly occurred in the North Fork of the Saline river, but otherwise its historic distribution within Illinois is similar to its present distribution (Page 1985a).

**Habitat:** In Illinois, the Indiana crayfish inhabits rocky riffles and pools of small to medium-sized streams in the southern part of the state (Page 1985a).

**Reason for Status:** This species has a very limited range with only a few documented occurrences in Illinois and the rest of the United States. The streams this crayfish inhabits are threatened by pollution (due to strip mining and oil production), siltation, desiccation, and impoundment.

**Management Recommendations:** There is a need for additional surveys of streams in and around the presently known sites where this species occurs. Preservation and protection of areas of the Saline River and Honey Creek should be considered. Efforts should also be made to protect and possibly improve the water quality in these streams.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

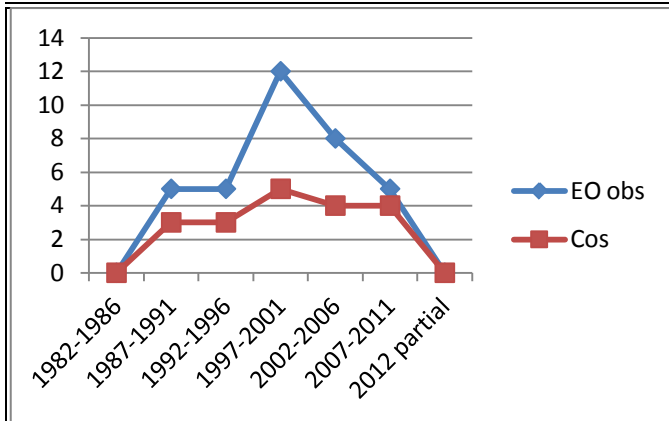
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-08-18	24	12	0	13	7	6

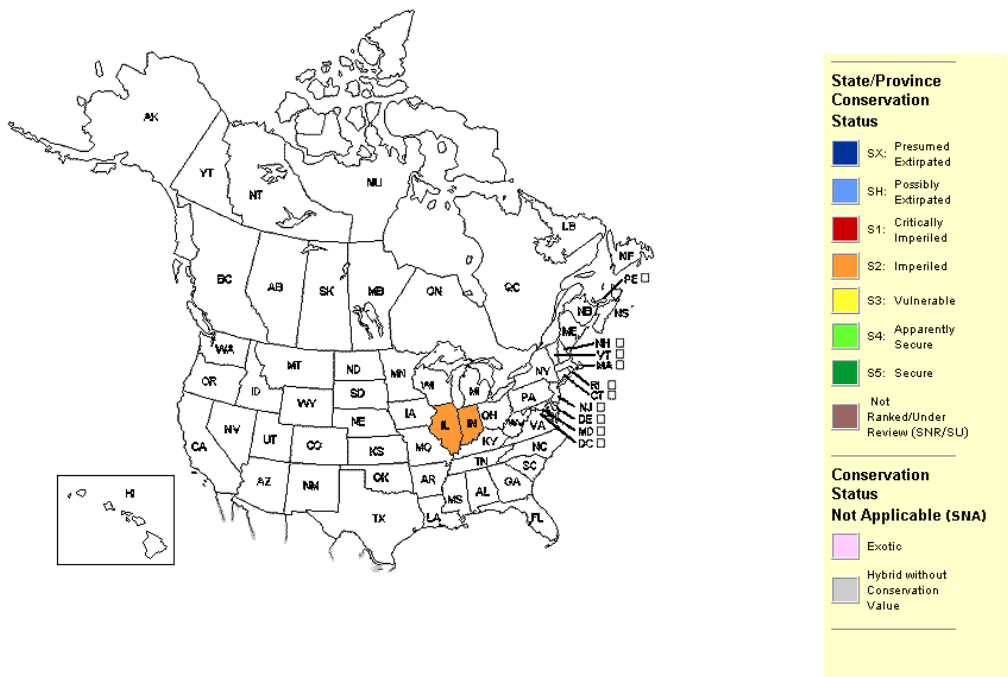
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	5	5	12	8	5	0
Cos	0	3	3	5	4	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Orconectes indianensis*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Kentucky Crayfish, *Orconectes kentuckiensis* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Orconectes kentuckiensis* Rhoades**

**KENTUCKY CRAYFISH**

**CAMBARIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The Kentucky crayfish is known only from a few small streams in southeastern Illinois and northwestern Kentucky. In Illinois, it is restricted to Big, Hosick, and Peters Creeks in Hardin County (Page 1985a).

**Former Illinois Distribution:** This crayfish was first reported in Illinois by Brown (1955), and was probably never more widespread in Illinois than it is today (Page 1985a).

**Habitat:** In Illinois, the Kentucky crayfish usually occurs in shallow, rocky pools of small streams (Boyd and Page 1978); however, Rhoades (1944) reported finding it in accumulations of brush over a mud substrate in Kentucky.

**Reason for Status:** This species is restricted to three small stream systems in Illinois and is threatened by disturbances such as siltation, desiccation, strip mining, and oil production.

**Management Recommendations:** The protection of Big Creek would conserve the largest population of this species and the largest population of another endangered crayfish, *Orconectes placidus*.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

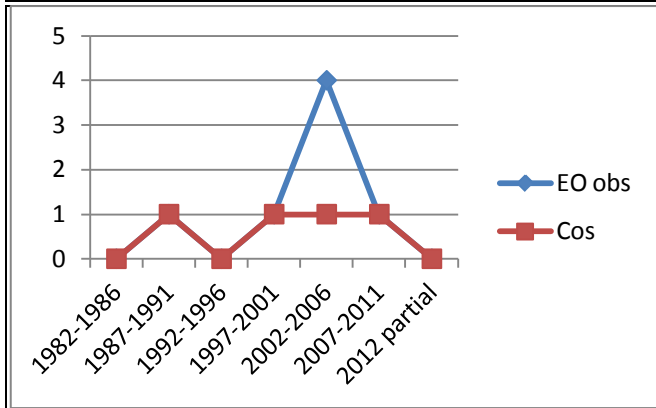
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-06-01	6	4	0	2	1	1

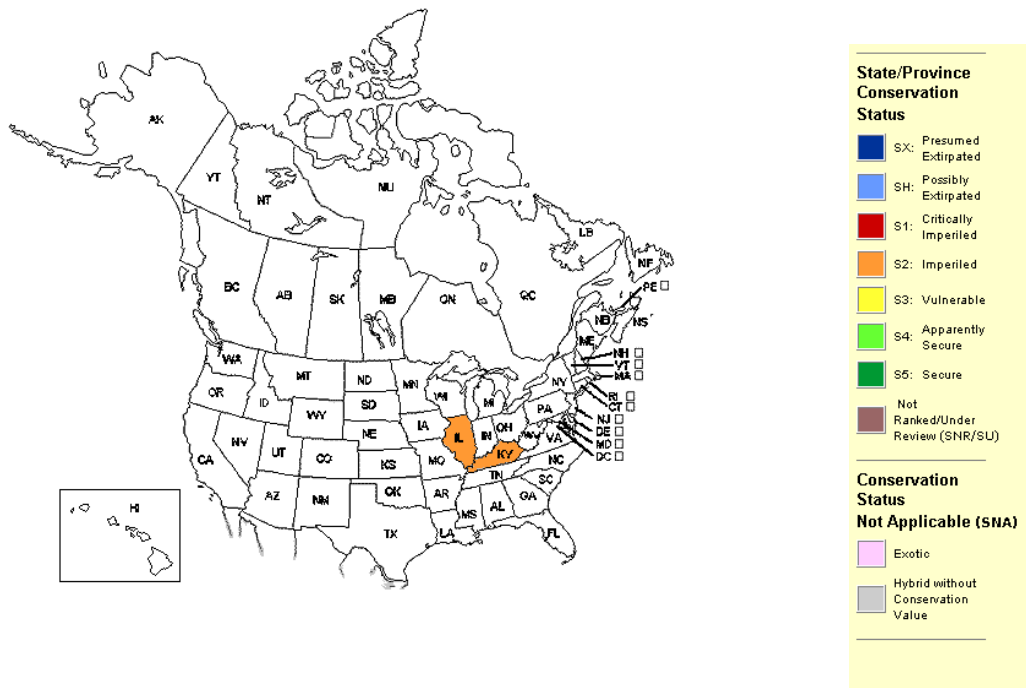
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	1	4	1	0
Cos	0	1	0	1	1	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Orconectes kentuckiensis*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Shrimp Crayfish, *Orconectes lancifer* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

### ***Orconectes lancifer* (Hagen)**

**SHRIMP CRAYFISH**

**CAMBARIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The oxbow crayfish occurs in the Gulf Coastal Plain with populations known from Louisiana, Mississippi, Tennessee, Texas, Arkansas, and Illinois. In Illinois, it is restricted to Horseshoe Lake in Alexander County (Page and Retzer 2002).

**Former Illinois Distribution:** In Illinois, the oxbow crayfish has been found in only one county. It was first discovered in Illinois in the mid 1800s (Faxon 1914) and has recently been collected (1992) from the same general area (Page and Burr 1973, Burr 1996, Page and Retzer 2002).

**Habitat:** In Illinois, this crayfish occupies deep waters of Horseshoe Lake (Page 1985a).

**Reason for Status:** In Illinois, this species is found only in one Alexander County lake. A single catastrophic event has the possibility of wiping out the entire state population of this crayfish.

**Management Recommendations:** The primary management need for this species in Illinois is enhanced protection of Horseshoe Lake. Periodic monitoring of the Horseshoe Lake population and surveys in other Illinois oxbow lakes in the southern part of the state might reveal additional populations.

#### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

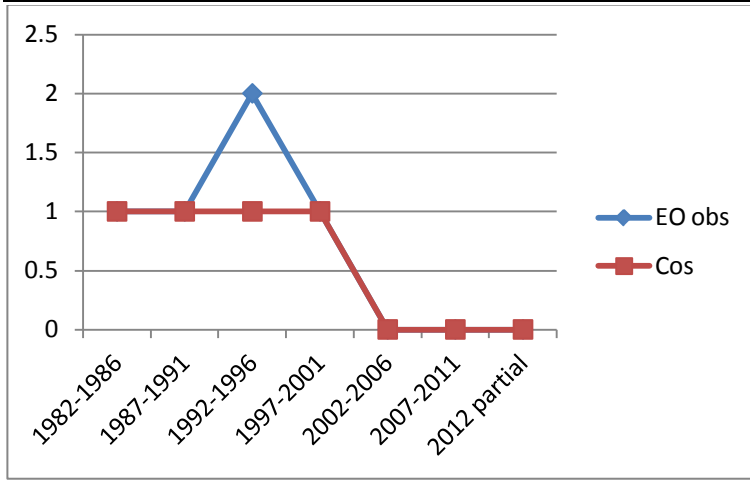
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1999-10-01	2	0	0	2	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	2	1	0	0	0
Cos	1	1	1	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

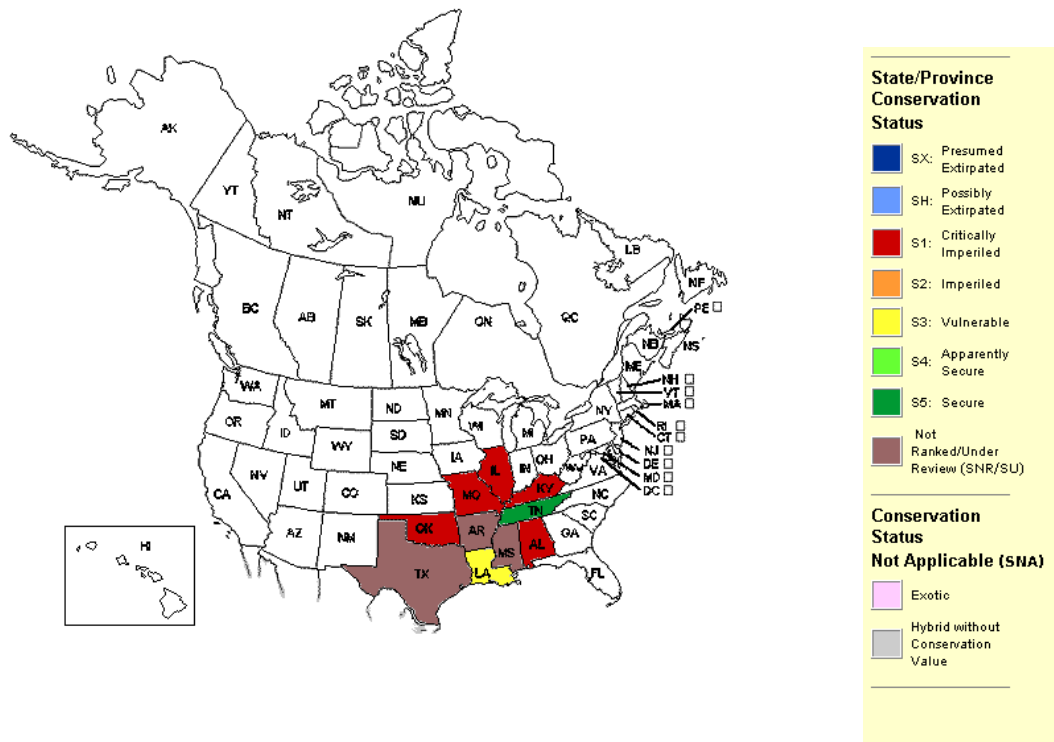


**Mankowski notes and recommendation:**

This species is only known from two EOs and has not been observed since 1999. Both EOs were surveyed with no observation during 2012. The species may be extirpated, but it would be good to see additional years of survey data before considering a recommendation for delisting as extirpated.

**Mankowski recommendation** – no change in status.

*Orconectes lancifer*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Bigclaw Crayfish, *Orconectes placidus* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Orconectes placidus* (Hagen)**

**BIGCLAW CRAYFISH**

**CAMBARIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This species occurs in streams of the Cumberland, Tennessee, and lower Ohio River systems in Kentucky, Tennessee, and Illinois (Page 1985a). In Illinois, it is known from Big Creek in Hardin County and the lower Ohio River. Though previously thought to occur in the lower Mississippi River in southern Illinois, these records were based on misidentified specimens (Wetzel and Poly 2000).

**Former Illinois Distribution:** This species' former distribution within Illinois was probably similar to what it is today.

**Habitat:** In Big Creek, *Orconectes placidus* inhabits downstream gravel and rubble riffles, whereas in the Ohio River, it is usually encountered along rocky banks and in rocky backwater areas (Page 1985a).

**Reason for Status:** Most of the populations of this crayfish in Illinois are small, and could easily be eliminated. Declining water quality and other disturbances along the Ohio River could exterminate this species.

**Management Recommendations:** The protection of Big Creek as a natural area would protect both this species and the Kentucky crayfish. Stream modifications such as dredging and impoundments should be minimized in areas of the Ohio River where this species occurs.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



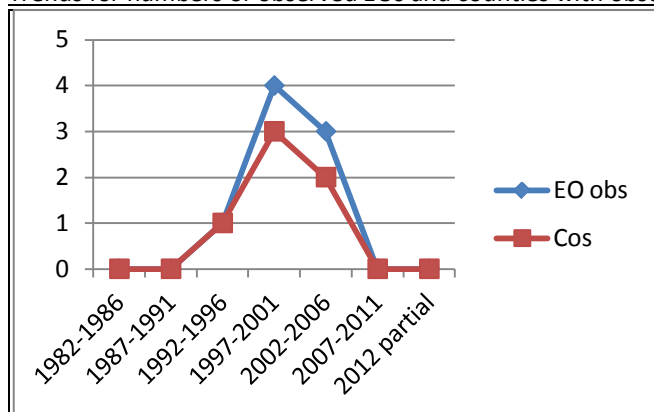
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2006-09-08	6	3	0	7	4	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	4	3	0	0
Cos	0	0	1	3	2	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Orconectes placidus*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Iowa Amphipod, *Stygobromus iowae* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

## ***Stygobromus iowae* Hubricht**

**IOWA AMPHIPOD**

**GAMMARIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This amphipod is known only from two caves and one spring in Iowa, and a flooded mine in Illinois (Holsinger 1978, 1986, Peck and Christiansen 1990).

**Former Illinois Distribution:** There are only three records for this species in Illinois, a 1965 record from Jo Daviess County, and a 1995 and a 1997 record from Carroll County.

**Habitat:** Peck and Christiansen (1990) report that this species is known in Illinois from a flooded mine, while in Iowa, it is known from a cave and a spring.

**Reason for Status:** This species is threatened by groundwater degradation.

**Management Recommendations:** Research is needed to determine the current status of this species in Illinois.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

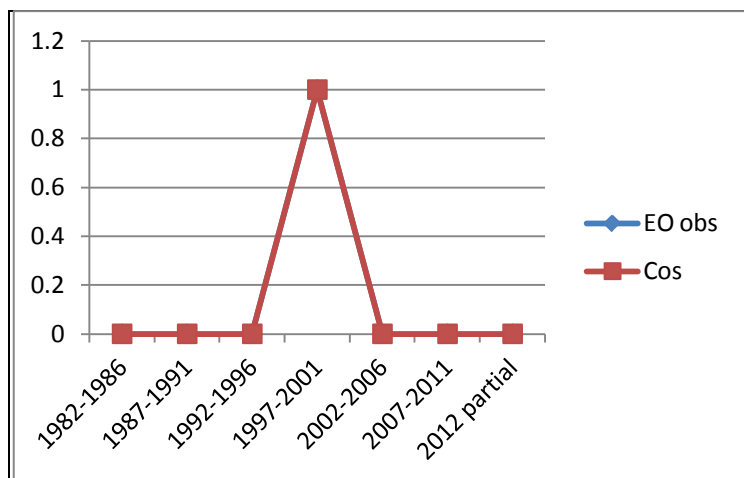
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1997-04-05	3	0	1	2	2	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	0	0
Cos	0	0	0	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (S1), Iowa (SU)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Common Striped Scorpion, *Centruroides vittatus* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

*Centruroides vittatus* (Say)

Common Striped Scorpion

BUTHIDAE

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** Texas, where it is most heavily concentrated, into Arkansas, Colorado, Illinois, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, and Tennessee. It is also found in the Mexican states of Tamaulipas, Coahuila, Nuevo Leon, Chihuahua, and Durango (Schaefer 2001). In Illinois, the

common striped scorpion is most recently (1996) known from several locations in only one of two historic counties (Monroe) in southwestern Illinois (IDNR 2010).

**Former Illinois Distribution:** This otherwise generally widespread scorpion is historically known from only Monroe and Randolph counties in southwestern Illinois (Anton 1996).

**Habitat:** Restricted to open talus slide microhabitat and forest openings and glades.

**Reason for Status:** The species has highly restrictive and specialized habitat requirements, a very limited distribution in the State, and its habitat is threatened by shading from invasive plant growth that alters microhabitat conditions.

**Management Recommendations:** Management activities to control and reduce woody succession and encroachment by invasive species that shade-out the open talus slide microhabitats where the species occurs, permanent protection of these areas, and additional surveys will help conserve this species in Illinois.



#### Key

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

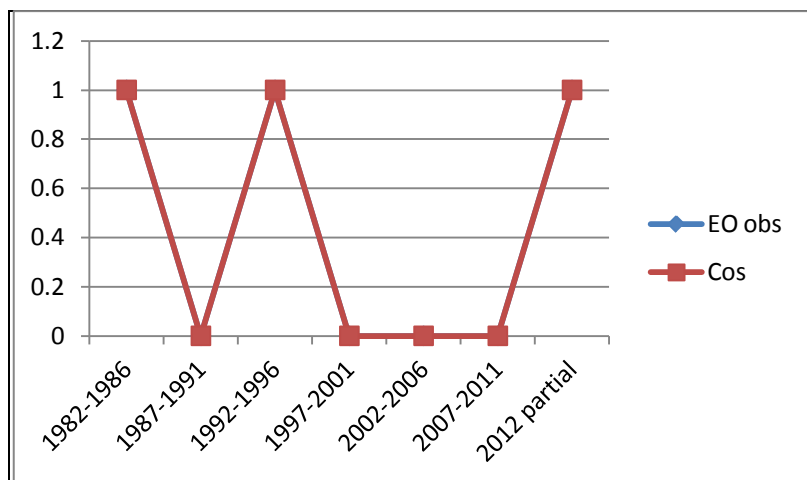
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-05-12	2	1	2	3	2	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	1	0	0	0	1
Cos	1	0	1	0	0	0	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

IL = S1. No other state rankings.

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Elfin Skimmer Dragonfly, *Nannothemis bella* (Illinois threatened)

Listed as IL T, 01/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Nannothemis bella* Uhler**

**ELFIN SKIMMER DRAGONFLY**

**LIBELLULIDAE**

**Status:** Threatened in Illinois



**Present Distribution:** This dragonfly is known from the eastern U.S. and Canada but is very local in occurrence (Needham *et al.* 2000).

**Former Illinois Distribution:** In Illinois, this species is known only from Cook and McHenry counties (T. Cashatt, personal communication).

**Habitat:** This dragonfly is restricted to fens, seeps and springs.

**Reason For Status:** There are only two known localities for this species in Illinois despite extensive searches in suitable localities throughout the state.

**Management Recommendations:** Wetlands where this species occurs should receive complete protection from disturbances and development that may threaten the water level and water quality in these sensitive locations.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

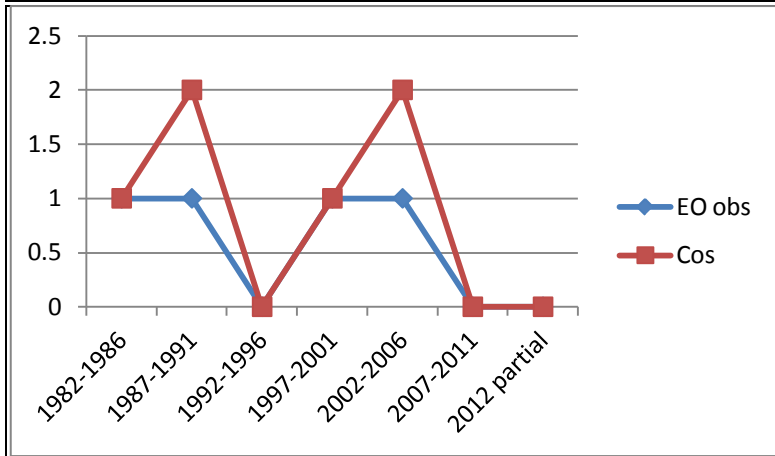
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2004	2	1	2	2	3	3

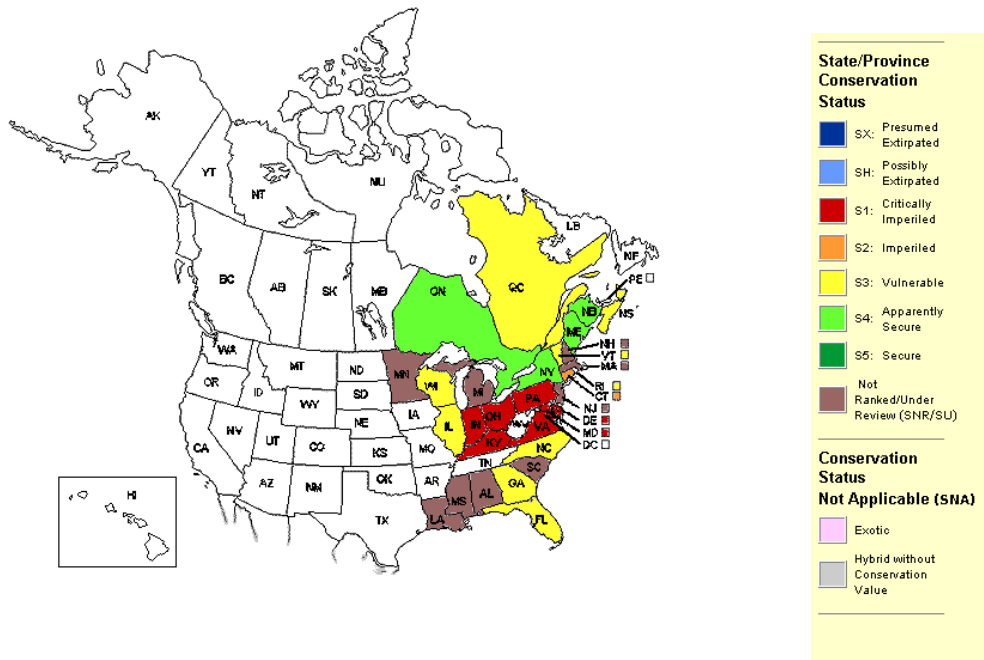
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	0	1	1	0	0
Cos	1	2	0	1	2	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Nannothemis bella*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Hine's Emerald Dragonfly, *Somatochlora hineana* (Illinois endangered, Federally endangered)

Listed as IL E, 12/20/1991; Listed as Fed E, 01/26/1995

Reason for listing: proposed Fed E or T; very restricted geographic range of which IL is a part; restricted habitats or low pops in IL

## ***Somatochlora hineana* Williamson**

**HINE'S EMERALD DRAGONFLY**

**CORDULIIDAE**

**Status:** Endangered in Illinois  
Federally Endangered



**Present Distribution:** This dragonfly was formerly known from only four localities in Ohio and Indiana. It was believed to be extinct until small isolated populations were recently discovered in Illinois and Wisconsin. It has recently been reported from isolated sites in Alabama, Illinois, Michigan, Missouri, and Wisconsin (Curry 2001).

**Former Illinois Distribution:** This species was not known to occur in Illinois until 1983 when it was collected in a Will County state nature preserve. It was not identified until 1987.

**Habitat:** The Hine's emerald dragonfly inhabits calcareous, spring-fed marshes overlaying dolomite limestone bedrock. All known occurrences in Illinois are within two km of the Des Plaines River (Cashatt 1991). The eggs of this species are probably deposited in wet sand, mud, or moss at water's edge. It probably has a three year aquatic larval stage and is known to inhabit crayfish burrows during cooler times of the year. Adults emerge beginning in May and continue emergence into August, living up to 4-5 weeks (Cashatt 1991).

**Reason for Status:** This species occupies a very limited range in Illinois, the Midwest, and South. Its habitat in Illinois is severely threatened by heavy industrial, human encroachment, and a proposed expressway.

**Management Recommendations:** Complete protection of areas harboring this species is necessary. It is believed to be very sensitive to habitat disturbance (Cashatt 1991), so strong protective measures are necessary to adequately protect it.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



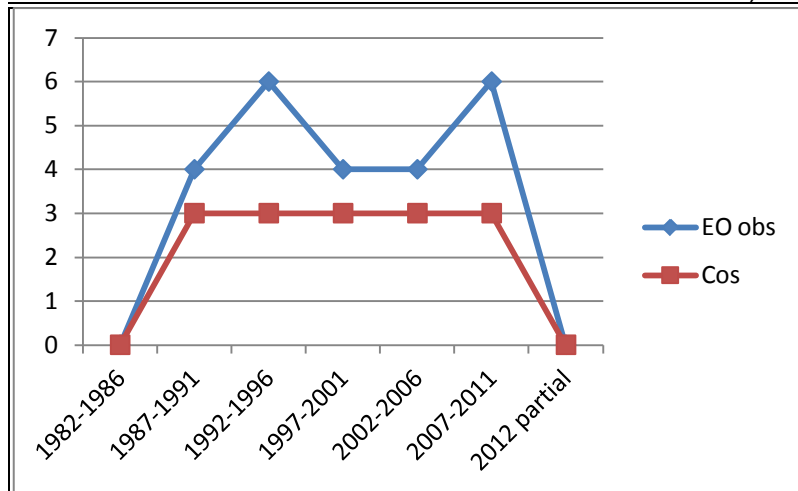
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-10-18	6	5	5	4	3	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	4	6	4	4	6	0
Cos	0	3	3	3	3	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

This species receives a great deal of management and monitoring under a federal recovery plan. It is known from six EOs, five of which are protected and representing all three counties known from historic distribution. Five EOs (83% of total), across the three counties, have had observations in the last 10 years. There appears to be persistence/sustainability at majority of EOs - four EOs (66% of total) have had observations in each 5-year interval since at least the 1992-1996 interval (3 EOs, across the three counties, since the 1987-1991 interval and one additional EO since the 1992-1996 interval). During the 1992-1996 window, three EOs had “surveyed w/ no observation” reports, although two of those had observations in subsequent years. The other EO with a “surveyed s/ no observation” report during 1992-1996 (report from 1995) also had a “surveyed w/ no observation” in 2011, but this EO has the least reported survey effort of all; there were no reported survey results from 1996-2010. While there is ongoing management at most of the EOs, there are no population augmentations or other manipulations reported at any location. It appears the species may be secure in Illinois beyond the definition of state endangered.

**Mankowski 03/15/13 recommendation** – change from endangered to threatened.

**ESPB TEC Tim Cashatt 03/21/13 comments:** I was surprised that you are recommending changing the status of Hine's emerald dragonfly from State Endangered to State Threatened. I have been under the impression that once a species is listed Federally Endangered a state cannot down list a species below its Federal status. I have 24 years of experience in working with this species and am on the recovery team. We have more life history, biological, distributional and genetics information now than when it was listed, and I believe others conducting research on this species would agree that it should retain its present Endangered status in Illinois.

The narrative for Hine's emerald (p. 38), describing the habitat, has changed very little since 1991. Surveys up through 2012 still describe the habitat as seepage sedge meadow and cattail marsh, predominately fed by ground water, and shallowly overlaying limestone bedrock. The substrate that the larvae inhabit is organic muck. Crayfish burrows are utilized to survive periods of drought in late summer and to overwinter. Much more information can be found in the recovery plan and the more recent papers by Soluk and Mierzwa, I believe, will show a general decline in numbers.

All known Illinois breeding sites are still within the Des Plaines River floodplain, a heavily industrialized region threatened with urban, industrial, and recreational contamination. Lockport Prairie and parts of Hanson Material Service Corporation are thought to contain the two largest breeding populations of Hine's emerald in Illinois. The breeding populations on Hanson's property **are not** protected! With the heavy industry (including mining) surrounding these two sites alone, our largest known breeding populations would be at risk if there were an industrial accident. There has already been an oil spill near one of the smaller breeding populations near another site. A railroad passes through or near most sites carrying materials that could contaminate breeding habitat nearby. Some sites have already been impacted by the railroads. Lockport Prairie is additionally at risk from roadway and golf course chemical contamination. Also, recent observations by Dr. Dan Soluk suggest there has been further fragmentation by the construction of the I-355 bridge which passes over Hine's habitat.

In the late 80's to mid 90's 46 sites were surveyed by Illinois State Museum for potential habitat, resulting in 5-6 sites that we recognize today as breeding sites. During the late 90's and early 2000's field studies were more focused on larval and habitat studies than surveys for additional sites. In an effort to find additional breeding habitat, the 2007 report of Vogt and Cashatt (Site Survey Identification for Hine's emerald Dragonfly in Illinois) identified a total of 40 sites in 15 counties, mostly away from the Des Plaines River floodplain. In 2010 to 2011 an additional 17 sites were surveyed mostly in northwestern and north central Illinois, with no new breeding sites discovered. Some should be revisited because of extreme drought or flood conditions at the time they were surveyed. In 2011-2012 one new site was discovered at Cherry Hill Woods in Cook County and another possible site at Palos Fen.

Population levels at known sites have fluctuated over the years (see the reports of Soluk and Mierzwa), but few larvae were located during the 2012 season due to the severe drought conditions. As a result, I would anticipate that the number of adults would be lower in the next few years.

Hine's emerald is endangered from a number of factors:

1. Drought related to climatic change. Drought conditions could seriously impact the population for several years.
2. Impact of mining at Hanson Material Service Corporation (and lack of Hine's breeding habitat management on their property). There would be high water demands from numerous sources and mining operations that would significantly lower aquifers that provide important source water for critical breeding (females need water to oviposit in) and larval habitat
3. Further habitat fragmentation due to urbanization and industrialization.
4. Habitat changes due to invasive plants.
5. Lack of good population demographic information.
6. High risk of a catastrophic industrial accident in or near breeding habitat. Larvae are dependent on a clean source of water during their larval stages which could last up to 4 years in Illinois.

For the past few years, Dr. Meredith Mahoney has been conducting genetics studies on Hine's emerald range wide (IL, WI, MI, MO, WI, CA (Ontario)) including samples from historic sites in AL and OH. Despite the fact that Illinois and Missouri have very small populations, analysis of DNA samples from Illinois and Missouri show more genetic diversity than those from the larger sites in WI and MI. A loss of any of the Illinois (or Missouri) populations could potentially impact the population as a whole because some are unique haplotypes.

Those of us who are conducting research on Hine's emerald consider the Illinois population to be the most imperiled of all of the populations. It is my opinion that the Illinois Hine's emerald population deserves the highest level of protection that we can give it.

**Mankowski 04/19/13 response:** Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. Comments are noted and will be included in Section 1 and the respective species review of the final draft of the invertebrate list 1<sup>st</sup> cut document.

Under the Illinois Endangered Species Protection Act, any federally-listed species is automatically added to the Illinois List and its federal listing status is noted, but the Board determines its Illinois listing status. Also under the IESPA, the protections afforded endangered and threatened species are the same, so a species does not gain increased protection by being listed as endangered versus threatened.

Board staff informed the Illinois Natural Heritage Database of commenter advice that one of the six EOs is not protected (the 1<sup>st</sup> cut draft document indicated all six are protected). Database staff indicated that they will correct the error within the Database. Board staff have corrected the information in the species review for the final draft of the 1<sup>st</sup> cut document.

The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence.

The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations greatly reflects search effort. The Board agrees that using the number of observed EOs is not a good indication of many aspects of status and distribution. Certainly, the Board's preference would be to conduct a comprehensive review for all 484 species currently on the Illinois List, but the Board does not have capacity for such a review. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available.

For this List review process, Board staff began by compiling the course-level review in the 1<sup>st</sup> cut draft document, which relies heavily on EO data and staff included other information, data, and documentation made available to them by ESPB TECs or in response to other requests for information that Board sent out in early 2012 when it began the review process. The information and reference to data and documents that the commenter provided were helpful and informative to enhance the species review, but did not provide the actual data and documentation necessary.

Under separate cover, Board staff received from Mr. Kris Lah of the US Fish and Wildlife Service, copies of the two documents listed below that did provide data and documentation supporting Dr. Cashatt's comments. The documents sent by Mr. Lah include an assessment of population size for Illinois and the partial draft (less the decision section) of the USFWS 5-year review for the species that together, provide considerable data and documentation for Illinois population size and trends, genetics, and threats.

Documents provided to Board staff on 03/18/13 by Mr. Kris Lah, US Fish and Wildlife Service, Barrington, Illinois:

- 3) US Fish and Wildlife Service. No Date. Partial Draft Hine's Emerald Dragonfly, *Somatochlora hineana* (Odonata: Corduliidae) Five-Year Review: Summary and Evaluation. US Fish and Wildlife Service, Midwest Region, Chicago Ecological Services Field Office, Barrington, Illinois. 50 pp.

- 4) Soluk, D.A., and K.S. Mierzwa. 2012. An Assessment of the Hine's Emerald Dragonfly (*Somatochlora hineana*) Population Size in the Lower Des Plaines River Valley, Illinois. Submitted to The Habitat Conservation Planning Partners as part of a Habitat Conservation Plan being prepared under section 10(a) of the US Endangered Species Protection Act.

Some relevant information from the Partial Draft USFWS 5-year Review is excerpted below (in italics). (Note - there is a difference in distinction of Illinois "occurrences" per the Illinois Natural Heritage Database and "sites" by the USFWS. The Natural Heritage Database recognizes six occurrences in Illinois. Within the USFWS partial draft 5-year review, the Illinois population theoretically consists of 3 subpopulations and there are 10 sites across those 3 subpopulations.)

*Illinois population size excerpts from Partial Draft USFWS 5-year Review:*

*...the Illinois population, is estimated to be within the range of 86-313 adults (estimate includes standard error - Soluk and Mierzwa 2012, pp. 22-25). Illinois Subpopulation 1 is estimated to consist of 154 (s.e. 74) to 212 (s.e. 87) adult Hine's emerald dragonflies. Illinois Subpopulation 2 is estimated to consist of 10 (s.e. 4) adult Hine's emerald dragonflies. An estimate of the third subpopulation has not been developed because there is not enough quantitative information currently available to allow a meaningful analysis; however, it is believed to provide a minimal contribution to the Illinois population (Soluk and Mierzwa 2012, p. 2).*

*While the estimate does not include some of the known breeding habitats in Illinois, the estimate for the Illinois population would most likely not change significantly by adding the smaller sites since the core of the Illinois population is included.*

*Illinois population trend excerpt from Partial Draft USFWS 5-year Review:*

*In this same report, the authors utilized 17 years of population data to develop an index that provides insight on the population trend in Illinois. The index values show a mean 17-year density, represented as an index value of 1.0. Index values greater than 1.0 (i.e., greater than the long-term mean) occurred in or prior to 2002, with most of the lower values occurring after 2002. The lowest value (0.07) coincided with a drought that Illinois experienced in 2005. The 2011 adult density (index of 0.60) is below the long-term mean, but slightly above the adult density documented in 2003 (index value of 0.51), a year with a relatively thorough larval dataset (Soluk and Mierzwa 2012, pp. 15 and 26). Whether assessing the size of the Illinois population based on the long-term mean or the 2003 data set, the size of the population is very low for any insect and appears to be on a downward trend.*

*Illinois genetics excerpts from Partial Draft USFWS 5-year Review:*

*Based on tenets of genetics, the long term viability of any species is based on a combination of population size and genetic diversity that are essential to counteract catastrophic events (Dudash and Fenster 2000). In order for a species to persist, its genetic diversity must be maintained range-wide and distinct haplotypes must be preserved. For some species, even a small loss of genetic diversity will preclude a species' ability to withstand significant changes to the environment.*

*Based on recent genetic analyses by Dr. Meredith Mahoney (pers. comm. 2012), of 141 samples of Hine's emerald dragonfly tissue analyzed for mitochondrial DNA (mtDNA) variation, there are 21 haplotypes rangewide, with up to six differences (1.1%) among them. Missouri exhibits the greatest genetic diversity across the range of the species with 13 of the 21 haplotypes found in Missouri including 10 that are unique to the state; whereas, Michigan has been found to only contain one haplotype and Wisconsin has four haplotypes.*

*Hine's emerald dragonfly sites in Illinois had previously been thought of as being the most genetically diverse (Purdue et al. 1996) prior to the discovery of sites in Missouri (M. Mahoney, pers. comm. 2012). There are six different haplotypes (genetic variants) that have been found in Illinois, four of which are unique to Illinois, with up to five differences (0.92% divergence) among them. The differences (number or %) are the maximum observed base pair substitutions between haplotype pairs looking either range wide or just within Illinois or other regions. Some haplotype pairs have only one or two differences between them. The four unique haplotypes were all found in sites (Lockport Prairie Nature Preserve, River South and Middle parcels, and Romeoville Prairie) within a close proximity (approx. 4.25 miles (6.84 km)) of each other. The haplotypes unique to Illinois are B, C, E, and F. Alternatively, haplotype D, which is found across the species range, has not yet been found in Illinois, though two other widespread*

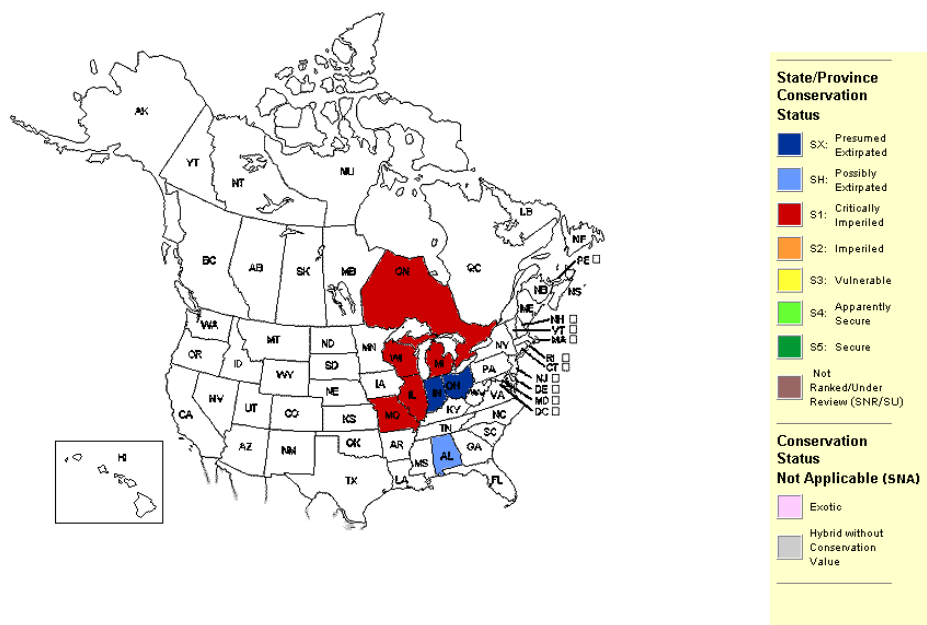
haplotypes (A and G) do occur. Analyses of museum samples from extirpated Ohio populations found genetic variants that are not seen in other, extant, populations (Purdue et al., 1996, and Mahoney pers. comm. 2012). Range wide analysis showed little geographic structuring of genetic variation and most variation (77-86%) is within states (Mahoney pers. comm. 2012). Due to the high genetic diversity and unique haplotypes in Hine's emerald dragonfly populations in Illinois and Missouri, the long term viability of the species range-wide would be compromised if the genetic diversity of these populations is threatened.

Illinois threats excerpt from Partial Draft USFWS 5-year Review:

Site	Direct loss of habitat	Fragmentation	Hydrological	Contaminants	Vehicle mortality	Invasive animals	Invasive plants	Livestock	ATV's
Lockport Prairie		X	X	X	X		X		X
River South and Middle Parcel	X	X	X	X	X		X		X
Romeoville Prairie		x	X	X	X		X		X
Long Run Seep and Long Run/ComEd		X	X	X	X		X		
Keepataw			X	X	X		X		X
Black Partridge		X	X	X	X		X		X
Waterfall Glen		X	X	X	X		X		
Cherry Hill Woods		X			X		X		
McMahon Fen		X	X	X	X		X		X
Palos Fen		X		X	X		X		

**Mankowski 04/19/13 final recommendation:** Based on the information and evidence provided by the commenter (Dr. Cashatt) and by Mr. Kris Lah (USFWS), staff recommendation is for no change in status.

*Somatochlora hineana*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Madonna Cave Springtail, *Pygmarrhopalites madonnensis* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

***Pygmarrhopalites madonnensis* (Zeppelini and Christiansen, 2003)**

**Name change in late 2009, from *Arrhopalites madonnensis***

**Madonna Cave Springtail**

**ARRHOPALITIDAE**

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** Only known from Illinois (Lewis et al 2003; Zeppelini et al 2009) and currently from only one Illinois location in Monroe County (IDNR 2010).

**Former Illinois Distribution:** This species has only been recorded from a singular location in Monroe County (Lewis et al 2003; Zeppelini et al 2009).

**Habitat:** This species is an obligatory cavernicole, i.e., troglobite (cave-dwelling animals that have adapted to their dark surroundings) (Zeppelini and Christiansen 2003).

**Reason for Status:** The species has highly restrictive and specialized habitat requirements, it has a very limited distribution, only being known from one location, and is threatened by development activities that impact water quality in that location (Lewis et al 2003; Zeppelini and Christiansen 2003).

**Management Recommendations:** Management activities to control and reduce impacts from local development activities (such as land clearing, sedimentation, nutrient enrichment, agrichemicals, and agricultural activities) that may negatively affect the quality of water entering the cave system, as well as permanent protection of the cave system, will help conserve this species in Illinois.



**Key**

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

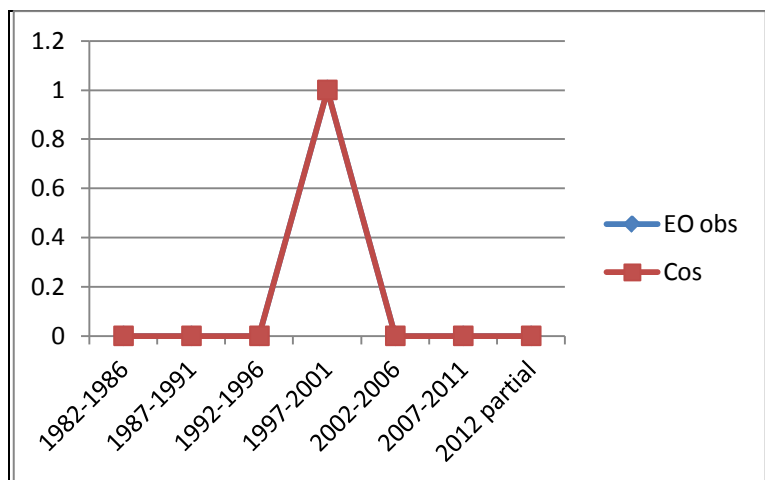
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1998-11-12	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	0	0
Cos	0	0	0	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

IL = SNR. No other state rankings.

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).



Robust Springfly, *Diploperla robusta* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

***Diploperla robusta* (Stark and Gaufin, 1974)**  
**Robust Springfly** **PERLODIDAE**

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** Connecticut, Kentucky, Illinois, Indiana, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia (Kondratieff 2004 *in* NatureServe 2009). In Illinois, this species is only known from a single ravine in an Illinois Nature Preserve in Vermilion County (IDNR).

**Former Illinois Distribution:** This species has only been collected from one location in Vermilion County (Stark and Armitage 2004; INHS 2010b).

**Habitat:** Ravines of large river bluffs and uplifted areas (Stark and Armitage 2004).

**Reason for Status:** The species is currently known from only one stream segment in the State and localized threats include increases in water temperature and nutrient enrichment of the stream system.

**Management Recommendations:** Improvements to water quality, including thermal conditions, and additional surveys are necessary to conserve this species in Illinois.



**Key**

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.



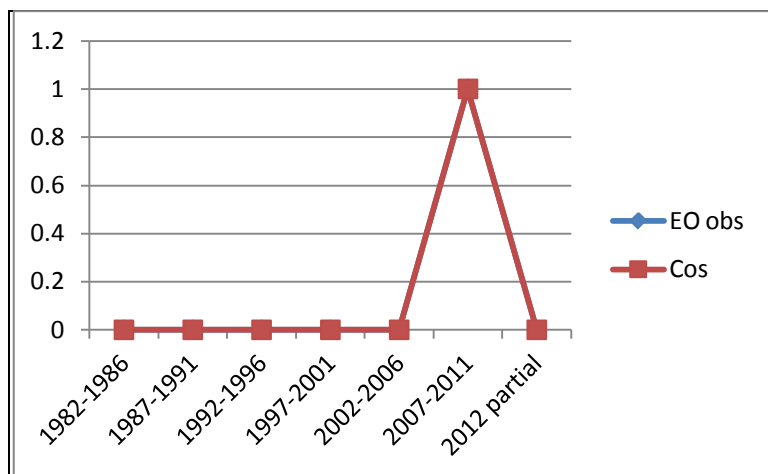
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2009-04	1	1	1	1	1	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	0	0	1	0
Cos	0	0	0	0	0	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Connecticut (SNR), Illinois (SNR), Indiana (SNR), Kentucky (SNR), Maryland (SNR), Ohio (SNR), Pennsylvania (SNR), Tennessee (SNR), Virginia (SNR), West Virginia (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Central Forestfly, *Prostoia completa* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

*Prostoia completa* (Walker, 1852)  
Central Forestfly

NEMOURIDAE

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** Alabama to Quebec and west to Minnesota and Oklahoma (Stark et al 1986 in NatureServe 2009). Although widespread in medium sized creeks across much of the Midwest and into the Ozarks, this species is currently known from only one Illinois location in Union County (IDNR 2010).

**Former Illinois Distribution:** This species has only been recorded from the one location in a single drainage in Union County (INHS 2010b).

**Habitat:** Gravel bottomed rivers and streams.

**Reason for Status:** Degradation and destruction of this species' very specific in-stream habitat from activities that directly impact (substrate removal) or indirectly impact (result in increases sedimentation) threaten this singular population.

**Management Recommendations:** Management needs for the conservation and protection of the species include reduction of habitat degradation resulting from streambed substrate removal and other activities that compromise habitat structure and additional surveys.



#### Key

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

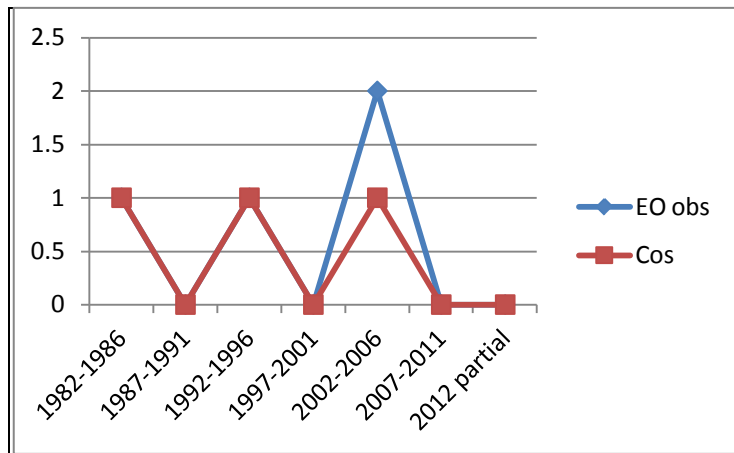
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2002-03-23	2	2	0	1	1	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	1	0	2	0	0
Cos	1	0	1	0	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Alabama (SNR), Arkansas (SNR), Illinois (SNR), Indiana (SNR), Iowa (SNR), Kentucky (SNR), Massachusetts (SNR), Minnesota (SNR), Mississippi (SNR), Missouri (SNR), Oklahoma (SNR), Pennsylvania (SNR), Wisconsin (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Redveined Prairie Leafhopper, *Aflexia rubranura* (Illinois threatened)

Listed as IL T, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Aflexia rubranura* (DeLong)**

**REDVEINED PRAIRIE  
LEAFHOPPER**

**CICADELLIDAE**

**Status:** Threatened in Illinois



**Present Distribution:** The redveined prairie leafhopper is found in scattered localities in the Great Lakes region. Specimens have been collected from extreme eastern South Dakota, Wisconsin, northeastern Illinois, northern Michigan, and Manitoulin Island, Ontario, Canada.

**Former Illinois Distribution:** This species is known in Illinois only from Cook, Grundy, Lake, McHenry, and Will counties, but was probably very common when prairies were more prevalent in the state.

**Habitat:** The redveined prairie leafhopper occurs in tall grass prairie sites, and one time was probably a major faunal component where prairie dropseed (*Sporobolus heterolepis*) was a common prairie species (Hamilton 1999). It has recently been found at four sites in Illinois, all on state-owned property.

**Reason For Status:** This leafhopper has apparently become less common in recent years, and is now known from only 28 tall grass prairie sites from throughout its range (Hamilton 1994, 1999). This wingless leafhopper is adversely affected by fire management regimens, as well as the loss of habitat. Many of the sites thought to have the greatest potential for this species have been searched, but only a few redveined prairie leafhopper populations have been found.

**Management Recommendations:** Prairies where this species is known to occur should be protected from unnecessary disturbance, and a fire management regimen implemented that will have minimal impact on this species.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

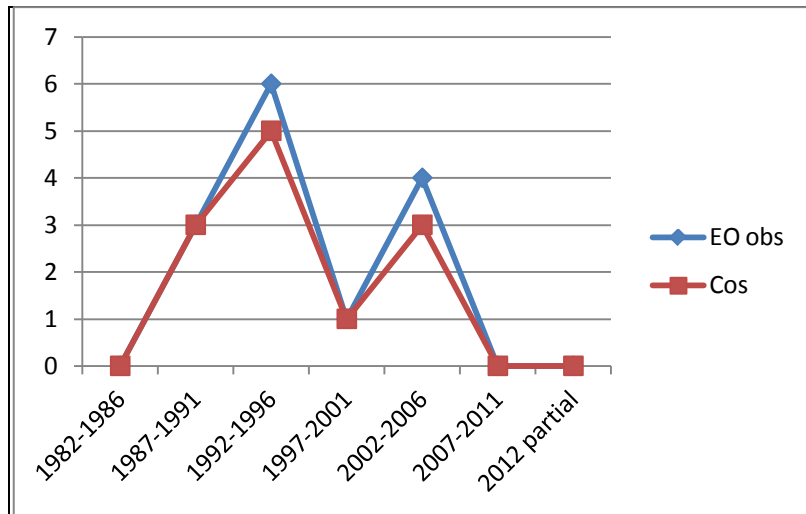
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2004-08-31	6	4	4	5	4	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	3	6	1	4	0	0
Cos	0	3	5	1	3	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

There are four EOs (66% of total) with observations in the last 10 years and although there are no observations during the most recent 5-year interval, there are no “surveyed w/ no observation” reports during that or any other time period. Of the six EOs for the species, four (67%) are protected.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

Illinois (S2), Minnesota (S3), Wisconsin (S2?)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Leafhopper, *Athysanella incongrua* (Illinois endangered)

Listed as IL E, 10/30/2009

Reason for listing: restricted habitats or low pops in IL

*Athysanella incongrua* (Baker, 1898)  
a leafhopper

CICADELLIDAE

**Illinois Status:** Endangered

**Federal Status:** None

**Present Distribution:** The range of this species is centered in the Great Plains and Illinois is the easternmost point with the exception of a dubious record from New Hampshire. The species is recorded from Iowa, Nebraska, Kansas, and Oklahoma, but not from Missouri. In Illinois, it appears to have been extirpated from one location and is currently known from only a single population in an Illinois Nature Preserve in Mason County (IDNR 2010).

**Former Illinois Distribution:** This species is historically known from only two locations, one each in Morgan and Mason Counties, within Illinois.

**Habitat:** A flightless species that is restricted to dry prairie.

**Reason for Status:** In addition to a statewide population reduction to only one known location, this leafhopper is associated with rare and restrictive habitat (dry prairie) that is threatened by destruction and degradation, due to invasive and exotic species encroachment.

**Management Recommendations:** This flightless insect may be sensitive to fire and therefore may require careful application of prescribed burn management in addition to other management activities to control and reduce woody succession and encroachment by invasive species.



#### Key

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.



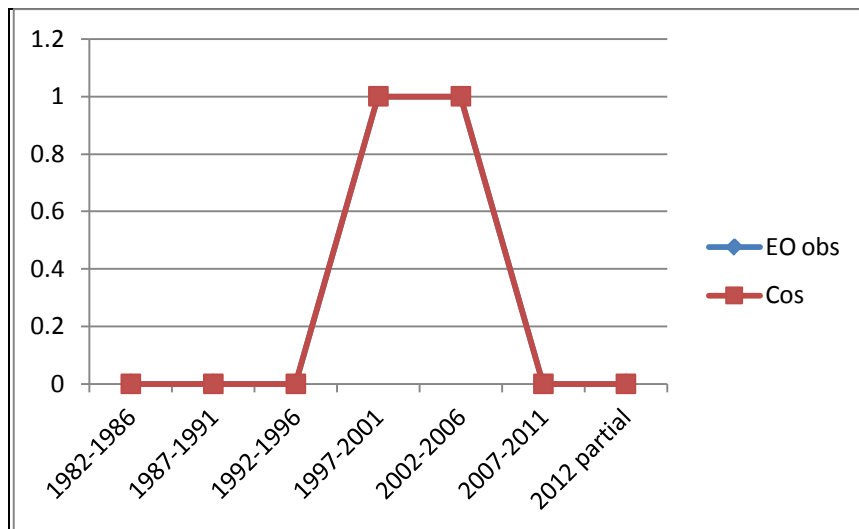
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2005-06-22	1	1	1	1	1	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	1	0	0
Cos	0	0	0	1	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

IL = S1. No other state rankings.

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Leafhopper, *Paraphlepsius lupalus* (Illinois endangered)

Listed as IL E, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Paraphlepsius lupalus*** Hamilton

**LEAFHOPPER**

**CICADELLIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This leafhopper is known only from a Lake County state park.

**Former Illinois Distribution:** This species is known only from northeastern Illinois.

**Habitat:** This species is apparently restricted to sand dunes near the shore of Lake Michigan.

**Reason For Status:** This leafhopper has a very restricted range. Extensive searches in other locations with suitable habitat have been unsuccessful in finding this species (R. Panzer personal communication).

**Management Recommendations:** Areas of the state park where this species occurs should be protected from unnecessary human disturbances. Populations of this species at this site should be monitored on a regular basis.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



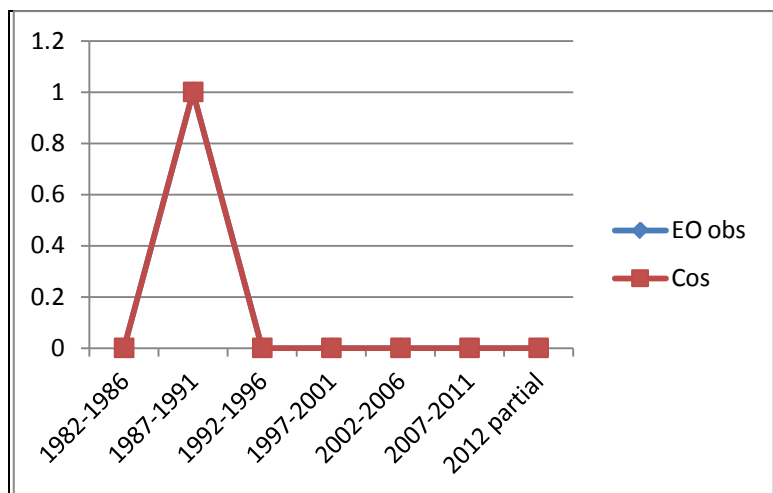
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1991-08-21	1	0	1	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	0	0	0	0
Cos	0	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

This species is known from a singular location and has not been observed since 1991 by Dr. Ron Panzer. Dr. Chris Dietrich reported “surveyed with no observation” in 2004 and indicated he had learned via personal communication that Dr. Panzer had surveyed for the species many times since 1991, to no avail. Ms. Mankowski made request 03/12/13 to Dr. Panzer for survey dates that could be entered into the Database for those absence of presence reports. As of 04/19/2013, she had not heard back from Dr. Panzer.

**Mankowski recommendation** – if Dr. Panzer replies with absence of presence survey dates during adequate timeframe for Ms. Mankowski to have the information entered into the Database and re-do the species review, she will make recommendation for delisting as extirpated. If the data does not arrive, then the recommendation is for no change in status.

NatureServe Conservation Status in United States

Illinois (S1)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Arogos Skipper, *Atrytone arogos* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Atrytone arogos* (Boisduval & Le Conte)**

**AROGOS SKIPPER**

**HESPERIIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The arogos skipper occurs from Minnesota and New York south to Florida and Texas (Pyle 1981). In Illinois, the only known colony occurred in a Mason County state nature preserve.

**Former Illinois Distribution:** This butterfly was first located in Illinois in the 1970s after long being suspected of occurring in the state. Searches for it in other parts of the state have been unsuccessful.

**Habitat:** The arogos skipper occurs in prairie areas that are dominated by little bluestem (*Schizachyrium scoparium*) and big bluestem (*Andropogon gerardii*.) The larval food plants are big bluestem and little bluestem (Pyle 1981, Sedman and Hess 1985); adults are commonly encountered on pale coneflower (*Echinacea pallida*) (Heitzman and Heitzman 1987).

**Reason for Status:** This species is one of the rarest butterflies in Illinois, and is known from only one location in the state. It is possible that this skipper could be found in a few other locations in Illinois, but its population in the state is very low.

**Management Recommendations:** The one known Illinois population should be closely monitored and afforded complete protection. Research is needed to determine the influence of prairie fire on populations of this species.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1989-07-16	1	0	1	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	0	0	0	0	0
Cos	1	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

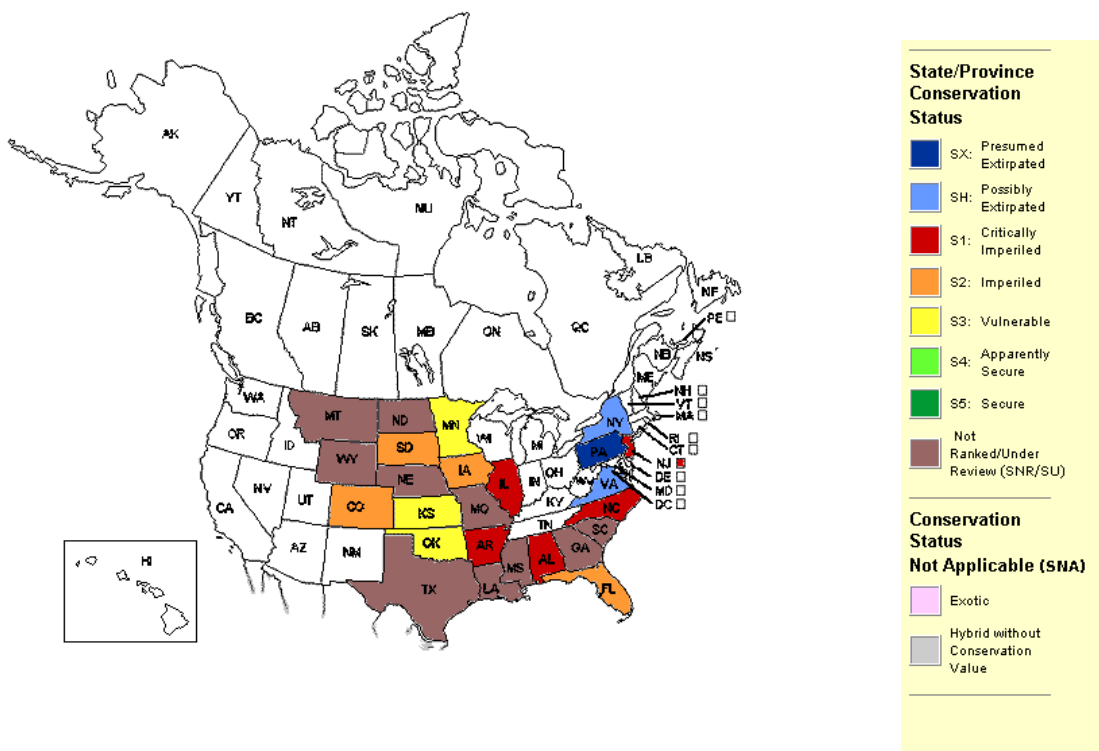
No graph produced.

**Mankowski notes and recommendation:**

Between 1980-1989, the species was observed in nine years; eight of those survey efforts collected all animals reported. It has not been observed at this singular location since 1989. During the time period from 1990-2005, the EO for this species was surveyed in seven years with “no observation” reported (in two of those years, the EO was visited twice).

**Mankowski recommendation** – delist as extirpated.

*Atrytone arogos*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Swamp Metalmark, *Calephelis muticum* (Illinois endangered)

Listed as IL E, 1/18/1994

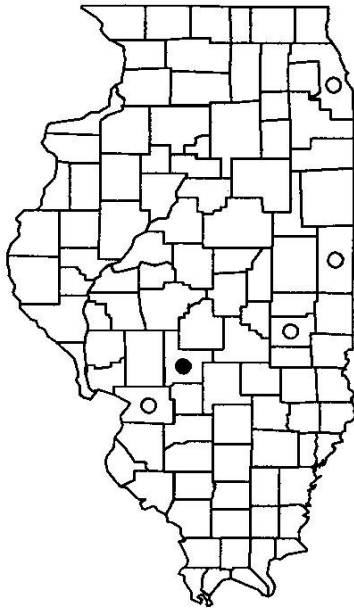
Reason for listing: restricted habitats or low pops in IL;

## ***Calephelis muticum* McAlpine**

**SWAMP METALMARK**

**RIODINIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** This butterfly is known to occur in Ohio, Michigan, Illinois, Indiana, Missouri, and Arkansas (Shull 1987, Opler 1992).

**Former Illinois Distribution:** Irwin and Downey (1973) list five collections in Illinois from Kane County between 1930-1939, and a questionable record from Bureau County. However, the historic Kane County records are now believed to be from Cook County (T. Cashatt, personal communication). This species was probably never common in the state but is now extremely rare. Its host plant *Cirsium muticum* (swamp thistle) is limited primarily to the northeastern quarter of the state (Mohlenbrock and Ladd 1978).

**Habitat:** The swamp metalmark is found in wet meadows, marshes, and bogs (Opler 1992, Bouseman and Sternburg 2001).

**Reason For Status:** This butterfly is known from very few locations in Illinois, and populations appear to be small.

**Management Recommendations:** Areas where this species is known to occur should be protected and populations monitored on a regular basis. Additional areas of suitable habitat need to be surveyed for this rare butterfly.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

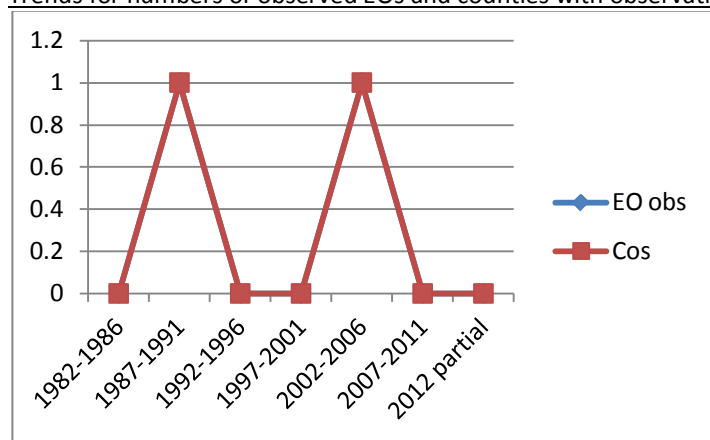
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2003-08-09	2	1	1	2	3	1

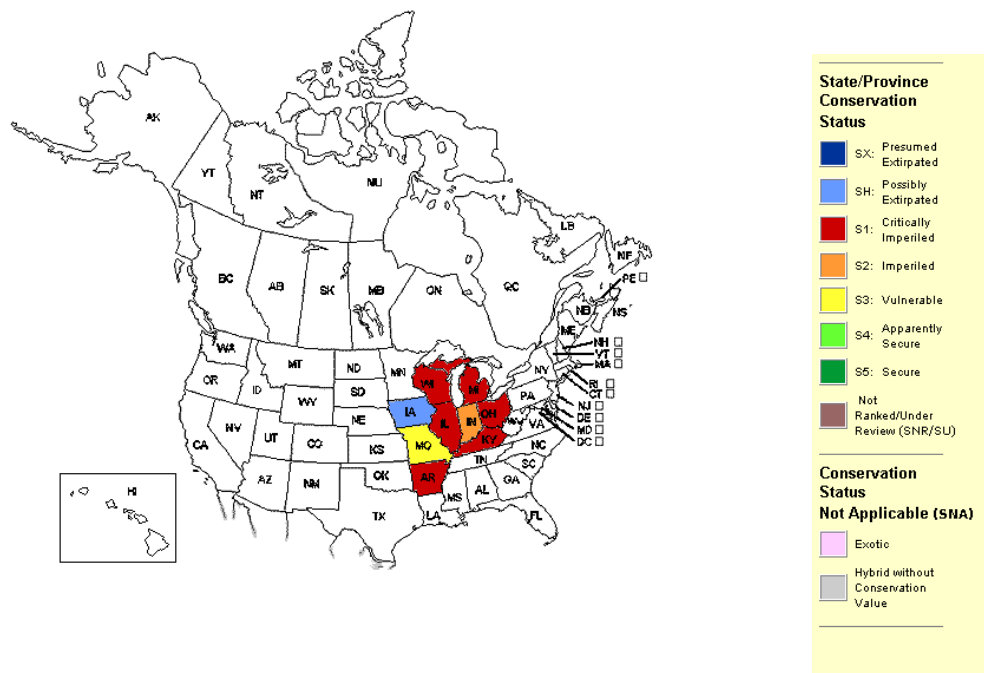
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	0	1	0	0
Cos	0	1	0	0	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Calephelis muticum*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Cobweb Skipper, *Hesperia metea* (Illinois threatened)

Listed as IL T, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

## ***Hesperia metea* Scudder**

**COBWEB SKIPPER**

**HESPERIIDAE**

**Status:** Threatened in Illinois



**Present Distribution:** The cobweb skipper is found from Minnesota and Maine south to Texas and Florida (Pyle 1981). It is presently known to occur in one southern and three west-central Illinois counties.

**Former Illinois Distribution:** In Illinois, this butterfly was first collected in 1978 and has since been found in three other counties.

**Habitat:** The cobweb skipper inhabits sand dunes, loess-sand prairies, loess hill prairies, and barrens (Sedman and Hess 1985). The larval food plants appear to be little bluestem and big bluestem (Sedman and Hess 1985, Heitzman and Heitzman 1987). Adults are frequently found on wild hyacinth (*Camassia scilloides*), wild strawberry (*Fragaria virginiana*), rose verbena (*Glandularia canadensis*), and dwarf larkspur (*Delphinium tricorne*) (Heitzman and Heitzman 1987). This species may be dependent on fire, populations appear to be highest immediately following fire, and decline in subsequent years.

**Reason for Status:** This butterfly is found in very few locations in Illinois and appears to be dependent on a specific type of habitat that is rare in Illinois.

**Management Recommendations:** The cobweb skipper may be dependent on fire and is intolerant of vegetational change due to succession. Therefore management for early successional stages using fire appear to be important for this species' survival in Illinois. This species has a habit of relocating colonies.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

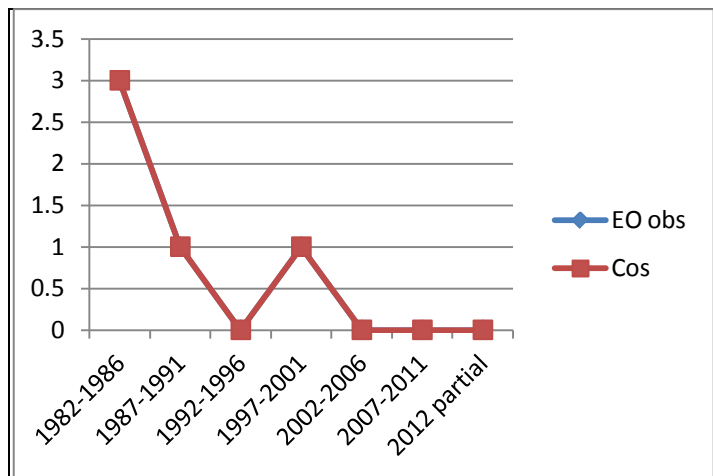
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2000-04-13	5	0	0	5	4	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	1	0	1	0	0	0
Cos	3	1	0	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

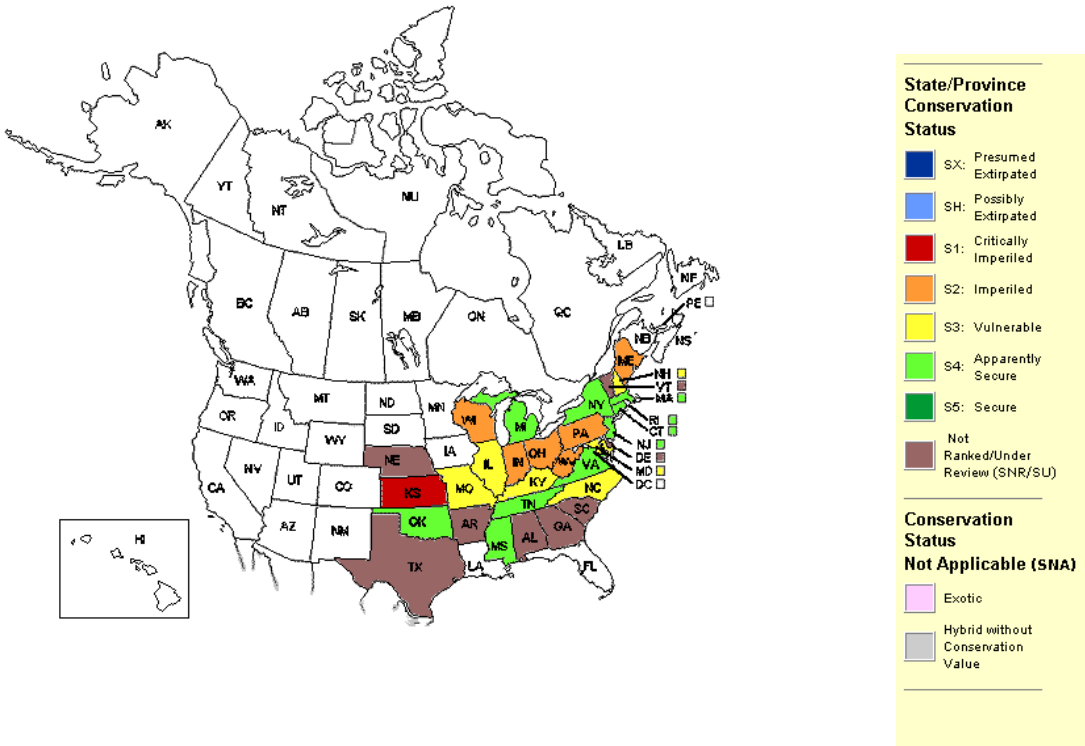


**Mankowski notes and recommendation:**

There are five EOs for the species. It was most recently observed in 2000 at one EO, with the next most recent observation from 1989 at one of the other four EOs. There were “surveyed w/ no observation” reports at four EOs (80% of total) during the 2002-2006 window (three from single-year reports in 2005 and one reported in two subsequent years, 2004 and 2005). All four of the 2005 “surveyed w/ no observation” reports noted that the habitat at each location had become overgrown with forest and was probably no longer suitable for the species. It would be good to have additional confirming survey data and habitat evaluation information. However, the species is noted as intolerant to succession of vegetation, and while a 2000 report from the remaining EO observed individuals in a wooded ravine adjacent to a hill prairie, the lack of observation of the species and the associated habitat degradation described at 80% of EOs seems sufficient evidence that the species may be no longer be secure in Illinois consistent with the definition of state threatened.

**Mankowski recommendation** – change from threatened to endangered.

*Hesperia metea*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).



Ottoe Skipper, *Hesperia ottoe* (Illinois endangered)

Listed as IL T, 3/17/1989; Listed as IL E 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

## ***Hesperia ottoe* Edwards**

**OTTOE SKIPPER**

**HESPERIIDAE**

**Status:** Threatened in Illinois



**Present Distribution:** The ottoe skipper occurs from Montana and Michigan south to Colorado and Texas (Pyle 1981). In Illinois, it is primarily restricted to sandy hill prairies along the Illinois River in west-central Illinois.

**Former Illinois Distribution:** This species was first recorded in Illinois in 1946 from Lake County, and was subsequently found in Mason County in the early 1960s.

**Habitat:** In Illinois, this species occurs in sandy areas including sand prairies, dunes, and loess-sand hill prairies (Sedman and Hess 1985). It is apparently dependent upon relatively undisturbed sand-prairie habitat. The larval food plant in Illinois is not known, but is suspected to be little bluestem (Sedman and Hess 1985). In Michigan, its larval host plant is fall witch grass (*Leptoloma cognatum*) (Shull 1987). In Illinois, adults feed on blazing star (*Liatris* spp.) and purple coneflower (*Echinacea purpurea*) (Sedman and Hess 1985).

**Reason for Status:** This species is apparently intolerant of habitat change and is dependent upon high quality natural habitats. Nearly any change to its habitat has the possibility of wiping out a colony. Additionally, the ottoe skipper very rarely strays from its natural habitat, so preservation of sand-prairie areas are essential for this species in Illinois.

**Management Recommendations:** Protection of sand-prairie habitat is the greatest management need for this species in Illinois.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

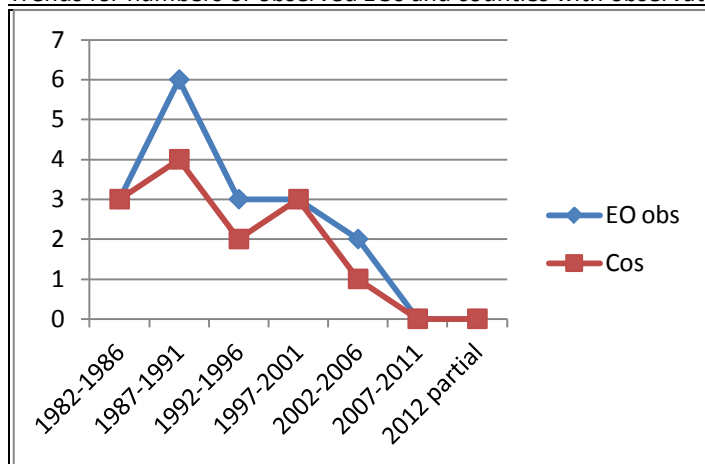
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2004-06-19	10	2	5	10	6	3

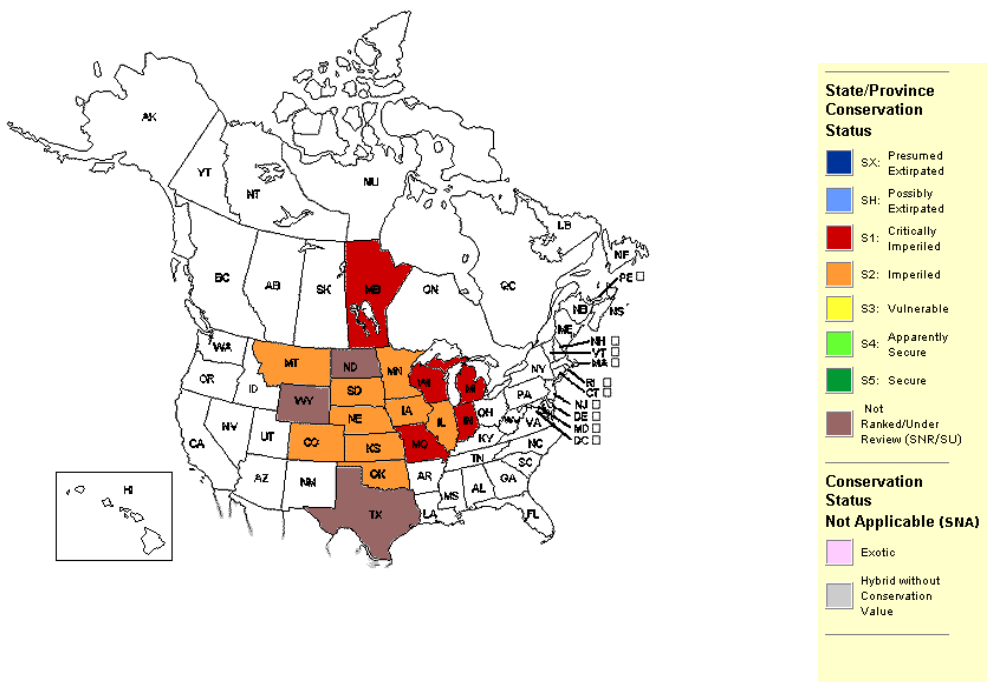
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	6	3	3	2	0	0
Cos	3	4	2	3	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Hesperia ottoe*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Hoary Elfin, *Incisalia polios* (Illinois endangered)

Listed as IL E, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Incisalia polios* Cook & Watson**

**HOARY ELFIN**

**LYCAENIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The hoary elfin occurs from Nova Scotia and Maine south to New Jersey, south in the Appalachians to Virginia, west across Great Lakes region and southern prairie provinces of Canada north to Alaska (Opler 1992).

**Former Illinois Distribution:** The hoary elfin is known from only one population in Illinois.

**Habitat:** Sunny glades in barrens, dunes, forest edges, and rocky ridges (Opler 1992).

**Reason For Status:** This species is known from only one population in the state. Its host plant, bearberry (*Arctostaphylos uva-ursi*), is Endangered in Illinois. Colonies of this species are very local (Opler 1992).

**Management Recommendations:** The area where this species occurs should be protected from unnecessary disturbances. Populations of this species' host plant, bearberry, should also be monitored in locations where this butterfly occurs.

**Note:** Bouseman and Sternburg (2001) use the name *Callophrys polios* for this species.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

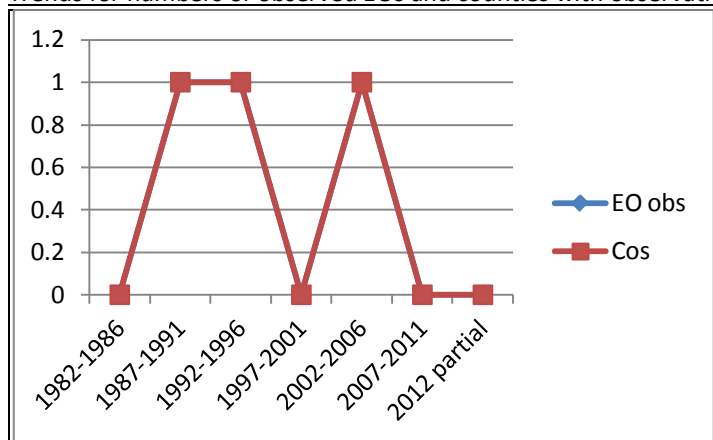
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2004	1	1	1	1	1	1

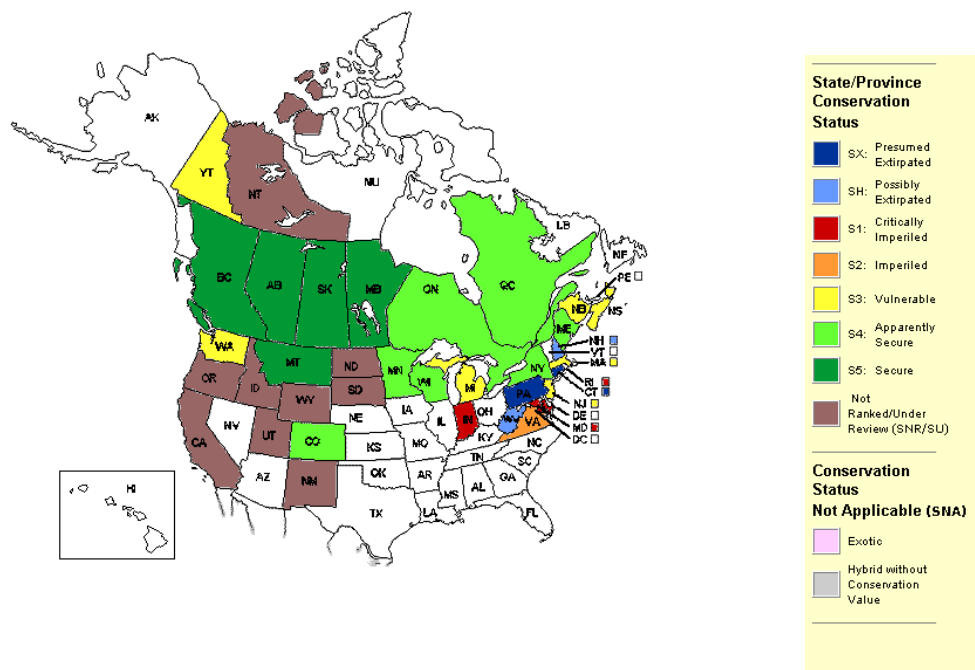
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	1	0	1	0	0
Cos	0	1	1	0	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Callophrys polios*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Karner Blue, *Lycaeides Melissa samuelis* (Illinois endangered, Federally endangered)

Listed as IL E, 1/18/1994; Listed as Fed E, 12/14/1992

Reason for listing: designated Fed E or T;

## ***Lycaeides melissa samuelis* Nabokov**

**KARNER BLUE**

**LYCAENIDAE**

**Status:** Endangered in Illinois  
Federally Threatened



**Present Distribution:** This rare butterfly is known from northern Indiana, adjacent Illinois, and central Wisconsin. It is rare and local in Illinois, historically only being known from Lake County.

**Former Illinois Distribution:** In Illinois, this species has always been restricted to the northeastern corner of the state. Permanent populations are probably absent, the few records appear to be due to vagrants, and perhaps, temporary populations (Bouseman and Sternburg 2001).

**Habitat:** In Illinois, this species is apparently restricted to sandy areas near Lake Michigan.

**Reason for status:** The Karner blue is always local, found in restricted populations, and is probably not a permanent resident of Illinois. Collecting by butterfly enthusiasts is also a potential threat to this species.

**Management Recommendations:** Protection of the areas where this species occurs, at the Illinois Beach State Park and surrounding areas, is the greatest management need for this species.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

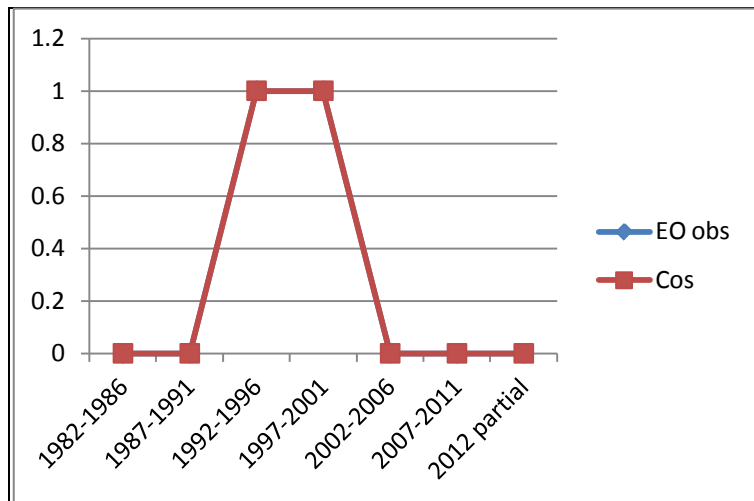
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2001-08-12	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	1	0	0	0
Cos	0	0	1	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

No state rankings.

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Eryngium Stem Borer, *Papaipema eryngii* (Illinois endangered)

Listed as IL E, 12/20/1991

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

## ***Papaipema eryngii* Bird**

**ERYNGIUM STEM BORER**

**NOCTUIDAE**

**Status:** Endangered in Illinois



**Present Distribution:** The eryngium stem borer is found in northern Illinois and Indiana, Missouri, Oklahoma, Arkansas, Kentucky, and Virginia.

**Former Illinois Distribution:** This species was thought to be extinct in Illinois until its rediscovery in 1989 by Ron Panzer. It is now known to occur in a few state nature preserves in northeastern Illinois.

**Habitat:** A nocturnal, colonial species, the eryngium stem borer occurs only on large prairie areas that have abundant populations of rattlesnake master (*Eryngium yuccifolium*), its larval host plant.

**Reason for Status:** This species is dependent on large prairie areas with an abundance of rattlesnake master, presently an extremely rare habitat in Illinois.

**Management Recommendations:** Complete protection of this species is necessary. Management that benefits populations of its larval host plant (rattlesnake master) would also probably benefit this moth. Since *Papaipema* eggs are present in prairie litter during the spring and fall, fire could represent a potential threat to this species (Panzer 1988). However, mounting anecdotal evidence suggests that *Papaipema* moths can regularly survive partial burns provided that relatively large portions of their habitat remain unburned (Panzer 1988).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

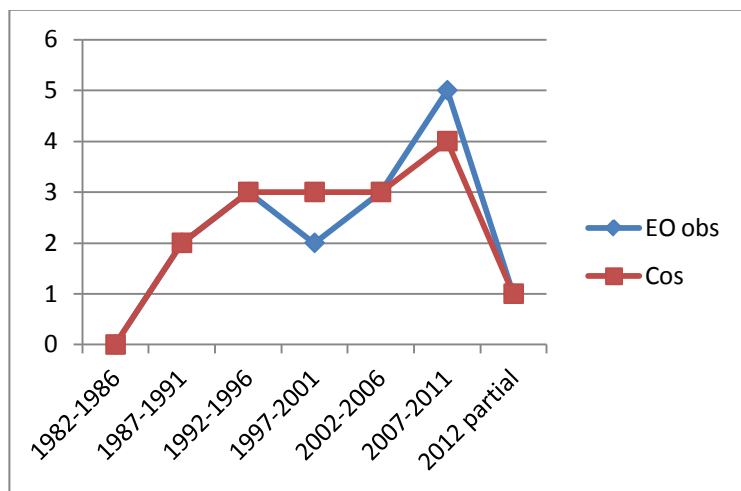
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-06-11	10	8	5	14	7	7

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	3	2	3	5	1
Cos	0	2	3	3	3	4	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



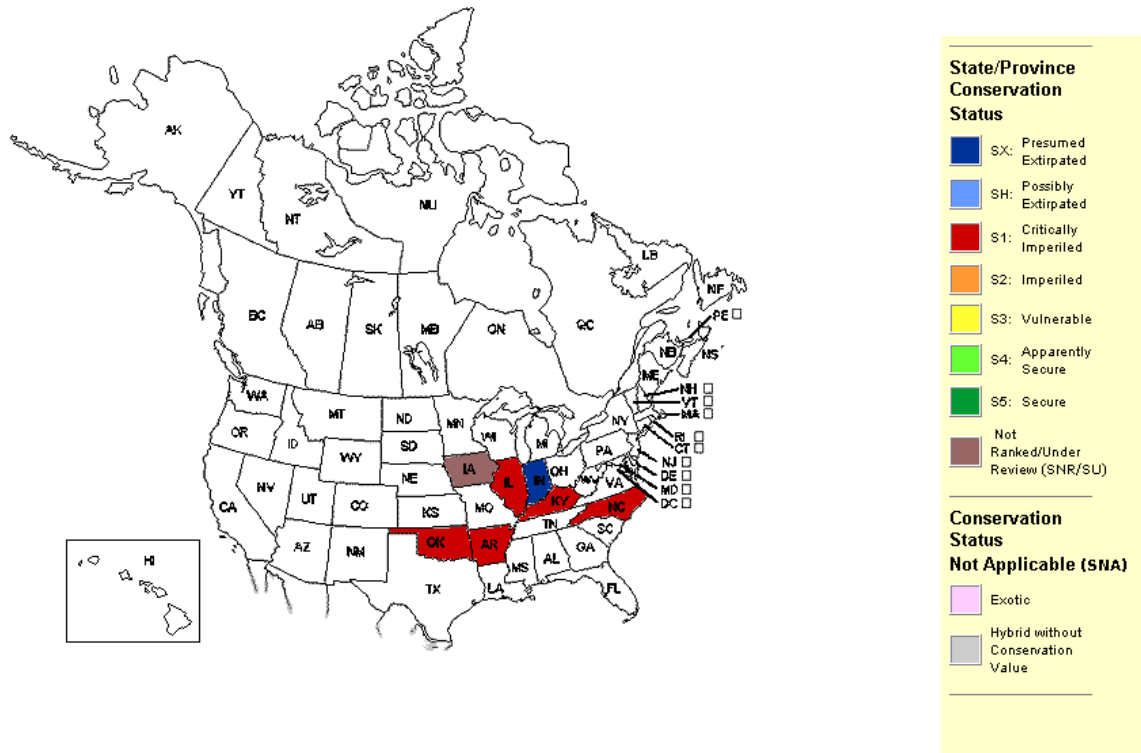
**Mankowski notes and recommendation:**

Eight EOs (80% of total) have had observations since 2002 and five EOs (50% of total) are protected. Data from the 2007-2011 interval added five new EOs and three new counties for the species, doubling the numbers of total EOs and counties, and greatly enhancing the status and expanding the known distribution, statewide. While this increase in observations is only reflected in one, and the most recent, 5-year interval, four of the five new EOs had observations in more than one year during the time period. Only two EOs overall are based on single observations and no EOs have had “surveyed w/ no observation” reports without observation in subsequent years. Two EOs were established by stocking, one each in 1991 and 1993, but both have had subsequent observations and are not noted as receiving additional population augmentation or manipulation. It appears the species may be secure in Illinois beyond the definition of endangered.

**Mankowski recommendation** – change from endangered to threatened.



*Papaipema eryngii*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

Regal Fritillary, *Speyeria idalia* (Illinois threatened)

Listed as IL T, 4/26/1999

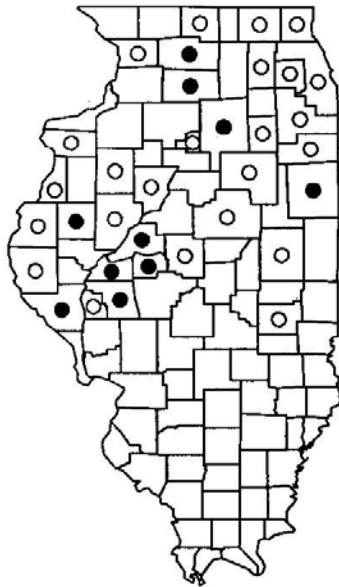
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

## ***Speyeria idalia* (Drury)**

**REGAL FRITILLARY**

**NYMPHALIDAE**

**Status:** Threatened in Illinois.



**Present Distribution:** The regal fritillary occurs from western Indiana, southwestern Wisconsin, southeastern North Dakota and south and west to Oklahoma and Colorado. It was formerly found in the east to New Brunswick, Canada, and North Carolina in the Appalachians (Schweitzer 1993). It presently occurs sporadically in the northern half of Illinois.

**Former Illinois Distribution:** In the past the regal fritillary probably occurred throughout Illinois wherever prairie habitat existed. It is presently known from ten Illinois counties, though there are historical records from 24 additional counties. It usually occurs in scattered populations that are sometimes common for several years, then scarce for a time, followed by resurgence (Bouseman and Sternburg 2001).

**Habitat:** The regal fritillary has been found in tallgrass prairies, wet meadows, and other open habitats, and frequently in sandy areas (Bouseman and Sternburg 2001).

**Reason for status:** Regal fritillary populations in Illinois have declined considerably, the few remaining are small and isolated, making them vulnerable to potential population collapse. A recent global status survey suggested that from a biological perspective, the regal fritillary could be considered endangered east of the Mississippi River.

**Management Recommendations:** Protection of areas harboring this species is necessary as well as protecting good quality tallgrass prairie and sand prairie.

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.

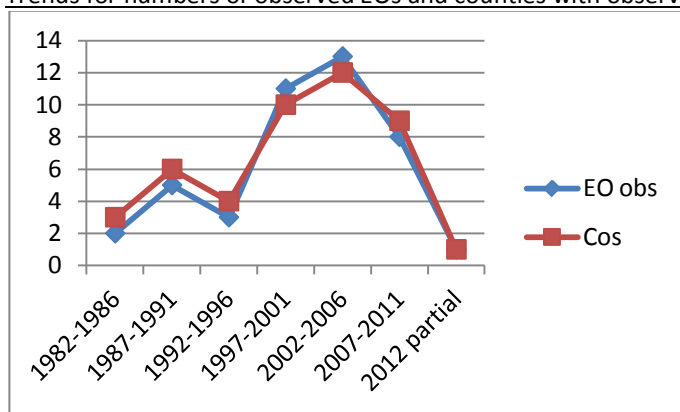
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-07-12	26	18	12	33	18	17

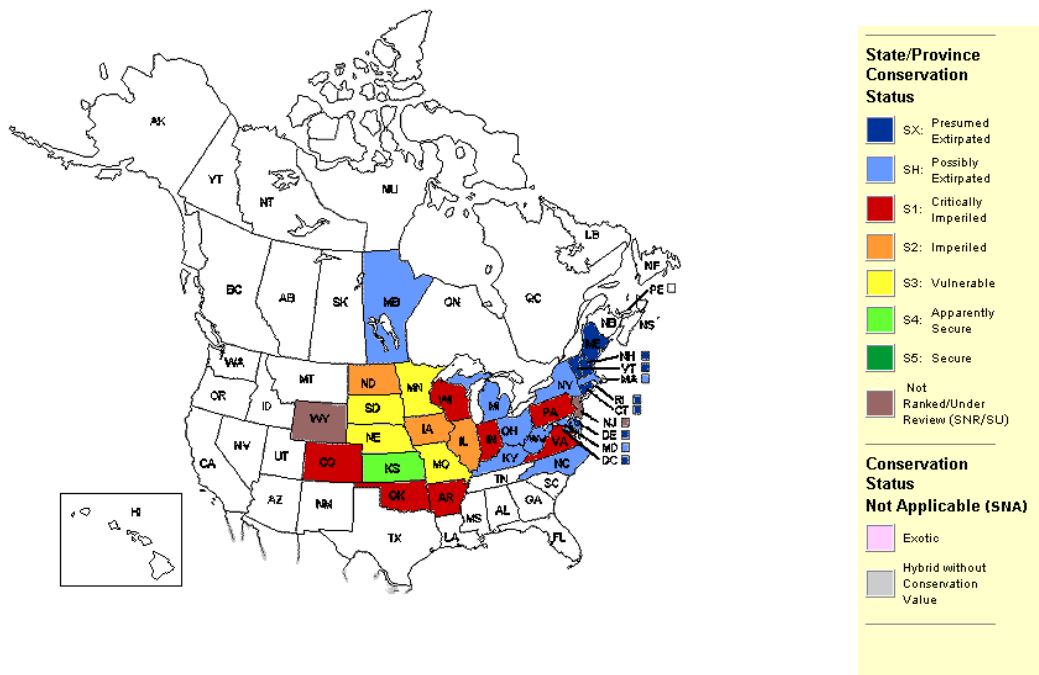
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	5	3	11	13	8	1
Cos	3	6	4	10	12	9	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Speyeria idalia*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).

**Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:**

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:  
Anne Mankowski, Director  
Illinois Endangered Species Protection Board  
One Natural Resources Way  
Springfield, IL 62702-1271  
Office phone: 271-785-8687  
Email: [anne.mankowski@illinois.gov](mailto:anne.mankowski@illinois.gov)  
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A. **Date:** 13 February 2013

B. **Proposer Information**

**Name:** Jeremy S. Tiemann and Kevin S. Cummings  
**Address:** 1816 South Oak Street  
**Phone number:** JST = 217-244-4594; KSC = 217-333-1623  
**Email address:** JST = [jtiemann@illinois.edu](mailto:jtiemann@illinois.edu); KSC = [ksc@illinois.edu](mailto:ksc@illinois.edu)  
**Title:** Field Biologist  
**Organization affiliation:** Illinois Natural History Survey

C. **The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).**

**Scientific Name:** *Leptoxis praerosa* (Say, 1821) --- (Gastropoda: Pleuroceridae)  
**Common Name:** Onyx Rocksnail  
**Nomenclature Citation:** Say, T. 1821. *Journal of the Academy of Natural Sciences of Philadelphia* 2(1):177.

D. **Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (*endangered = at risk of extinction in the wild in Illinois*; *threatened = likely to become endangered in the wild in Illinois within the foreseeable future*).**

Recommend listing as endangered	<u>  X  </u>
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**Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:**

- Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:

have experienced a range reduction

- Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:

species which exhibit restricted habitats or low populations in Illinois

**E. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.**

Aquatic gastropods are an understudied group and most species lack basic life-history information (Johnson et al. *in press*). Currently, little is known about *Leptoxis praerosa*. The snail is known from throughout the Ohio River basin (Burch 1989) in portions of Tennessee, Kentucky, Ohio, Indiana, and Illinois (Figure 1), and it inhabits algae-cover rocks in swift current (Goodrich and van der Schalie 1944).

Pleurocerids respire with a gill, mature slowly, are long-lived, dioecious with internal fertilization, and females generally attach eggs to firm substrates in late spring and early summer. They have narrow ecological tolerances, limited dispersal ability, and predominately occur found in riverine habitats (Johnson et al. *in press*).

**F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.**

Johnson et al. (*in press*) lists *L. praerosa* as common and NatureServe (2013) assigns a rank of G5 to the snail. However, we believe the species is rare in Illinois. Since 2007, we have been compiling a list of Illinois snail records from the literature (e.g., Baker 1906; Goodrich 1940; Goodrich and van der Schalie 1944; Branson and Batch 1987; Burch 1989; Pyron et al. 2008) and major natural history collections (e.g., the Academy of Natural Sciences of Drexel University, Philadelphia; the Chicago Academy of Science, Chicago; the Field Museum of Natural History, Chicago; the Florida Museum of Natural History, Gainesville; the Illinois Natural History Survey, Champaign; the Museum of Comparative Zoology, Harvard; the Ohio State University Museum of Zoology, Columbus; the University of Illinois Museum of Natural History, Champaign; the University of Michigan Museum of Zoology, Ann Arbor). We have visited these historical areas to document what species are present today. Through our work, we have determined that *L. praerosa* was extant in the lower Wabash River mainstem (downstream of Mt. Carmel) and the Ohio River mainstem (Tiemann et al. 2011). However despite sampling >80 sites (~1,500 person hours) in two rivers\*, we found *L. praerosa* live at only 1 site (1 individual found at Little Chain Rapids in the Wabash during the Summer of 2011 in 7 hours of sampling – INHS 41722). INHS ichthyologists found 1 live individual (INHS 31551) in the Wabash River at Rochester in 1997, but we failed to find it alive in 3 visits since (1 relict found during the Summer of 2011 – INHS 41635), nor did IDNR biologist find it during 3 visits since. We did find 2 relict specimens at Grand Chains Rapids in the Wabash during 7 hours of

sampling during the Summer of 2011 (INHS 41701). Despite the numerous collections made in the Ohio River, we failed to find any evidence of the snail. Please see Table 1 and Figure 2 for a list of locations of where and when *L. praerosa* has been collected within Illinois waters.

The primary factors responsible for the decline for most aquatic gastropods are anthropogenic disturbances to stream habitats (e.g., habitat destruction and environmental contamination) and invasions of exotic species (Johnson et al. *in press*). Within the Wabash River, physical and biological changes as a result of anthropogenic activities are the suspected cause for declines in aquatic species richness (Simon 2006). We can only speculate these are the reasons for the decline in *L. praerosa*.

\*Sites were visited between 1-5 times by INHS malacologists, and averaged ~4 person hours/visit.

"INHS XXXXX" indicates Illinois Natural History Survey Mollusk Collections' catalogue number.

**G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.**

Specifically none. However, within Illinois, its range overlaps with the federally endangered freshwater mussel, fat pocketbook (*Potamilus capax*).

**H. Information regarding the status of the species over all or a significant portion of its range.**

Johnson et al. (*in press*) lists *L. praerosa* as common and NatureServe (2013) assigns a rank of G5 to the snail. However, neither source specifically addresses the snail's status in Illinois. In Indiana, *L. praerosa* is known from the Wabash and Blue rivers and Ohio River mainstem (Goodrich and van der Schalie 1944; Pyron et al. 2008; Tiemann and Cummings unpublished data). Pyron et al. (2008) failed to find the snail in the Wabash and Ohio rivers during their surveys of Indiana, and recommended its state-status as "critically imperiled." Similarly, it has been reported as rare in Kentucky. Branson and Batch (1987) did not report the snail from the Ohio River.

**I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.**

Please see Tiemann et al. (2011), which has been provided to Ann Mankowski. This report was submitted in early 2011, before our field season began (thus before our 2011 discovery of the snail in the Wabash River at Little Chain Rapids).

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

**Provide specific citations here:**

Baker, F.C. 1906. A catalogue of the Mollusca of Illinois. Bulletin of the Illinois State Laboratory of Natural History 7(6):53-136.

Burch, J.B. 1989. North American freshwater snails. Malacological Publications, Hamburg, Michigan. viii + 365 p.

Branson, B.A. and D.L. Batch. 1987. Distribution of aquatic snails (Mollusca: Gastropoda) in Kentucky with notes on fingernail clams (Mollusca: Sphaeriidae: Corbiculidae). Transactions of the Kentucky Academy of Science 48:62-70.

Goodrich, C. 1940. The Pleuroceridae of the Ohio River drainage system. Occasional Papers of the Museum of Zoology, University of Michigan 417:1-21.

Goodrich, C. and H. van der Schalie. 1944. A revision of the Mollusca of Indiana. American Midland Naturalist 32:257-326.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.R. Mackie, E. Pip, T.A. Tarpley, J.S. Tiemann, N.V. Whelan, and E.E. Strong. *In press*. Conservation Status of Freshwater Snails of Canada and the United States. Fisheries. Expected May 2013.

Pyron, M., J. Beugly, E. Martin, and M. Spielman. 2008. Conservation of the freshwater gastropods of Indiana. historic and current distributions. American Malacological Bulletin 26:137-151.

NatureServe. <http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Leptoxis+praerosa> Accessed on 13 February 2013.

Simon, T.P. 2006. Biodiversity of fishes in the Wabash River: status, indicators, and threats. Proceedings of the Indiana Academy of Science 115:136-148.

Tiemann, J.S., K.S. Cummings, and C.A. Mayer. 2011. Distribution of pleurocerids (Gastropoda) of Illinois. INHS Technical Report 2011(9). Final report submitted to the Illinois Department of Natural Resources. 36 pages + appendix.

**Provide a list of attachments here: two figures and one table – please see below**

Table 1. Historical locations of *Leptoxis praerosa* in Illinois. Data are taken from natural history collections (e.g., the Illinois Natural History Survey, Champaign (INHS); the Ohio State University Museum of Zoology, Columbus (OSUM); the University of Illinois Museum of Natural History, Champaign (UIMNH); the University of Michigan Museum of Zoology, Ann Arbor (UMMZ)).

Source (catalogue number)	Stream	Common location	Lat/Long	Year last observed
INHS 31551	Wabash River	Rochester, Wabash County	38.3448, -87.8249	1997 – live
OSUM 1219	Wabash River	4 mi N Grayville, Wabash County	38.2942, -87.9356	1980s – dead
UIMNH 17129	Wabash River	New Harmony dam, White County	38.1059, -87.9558	pre-1920 – live
INHS 41701	Wabash River	Grand Chain Rapids, White County	38.0261, -88.0079	2011 – relict
INHS 41722	Wabash River	Little Chain Rapids, White County	37.9525, -88.0367	2011 – live
UMMZ 44020	Ohio River	Elizabethtown, Hardin County	37.4442, -88.3054	1927 – live
INHS 40560	Ohio River	Golconda, Pope County	37.3666, -88.4819	1894 – live
OSUM 18405	Ohio River	Metropolis, Massac County	37.1424, -88.7106	1988 – dead
OSUM 12303	Ohio River	Little Chain Bar, Massac County	37.1834, -88.7929	1980 – live

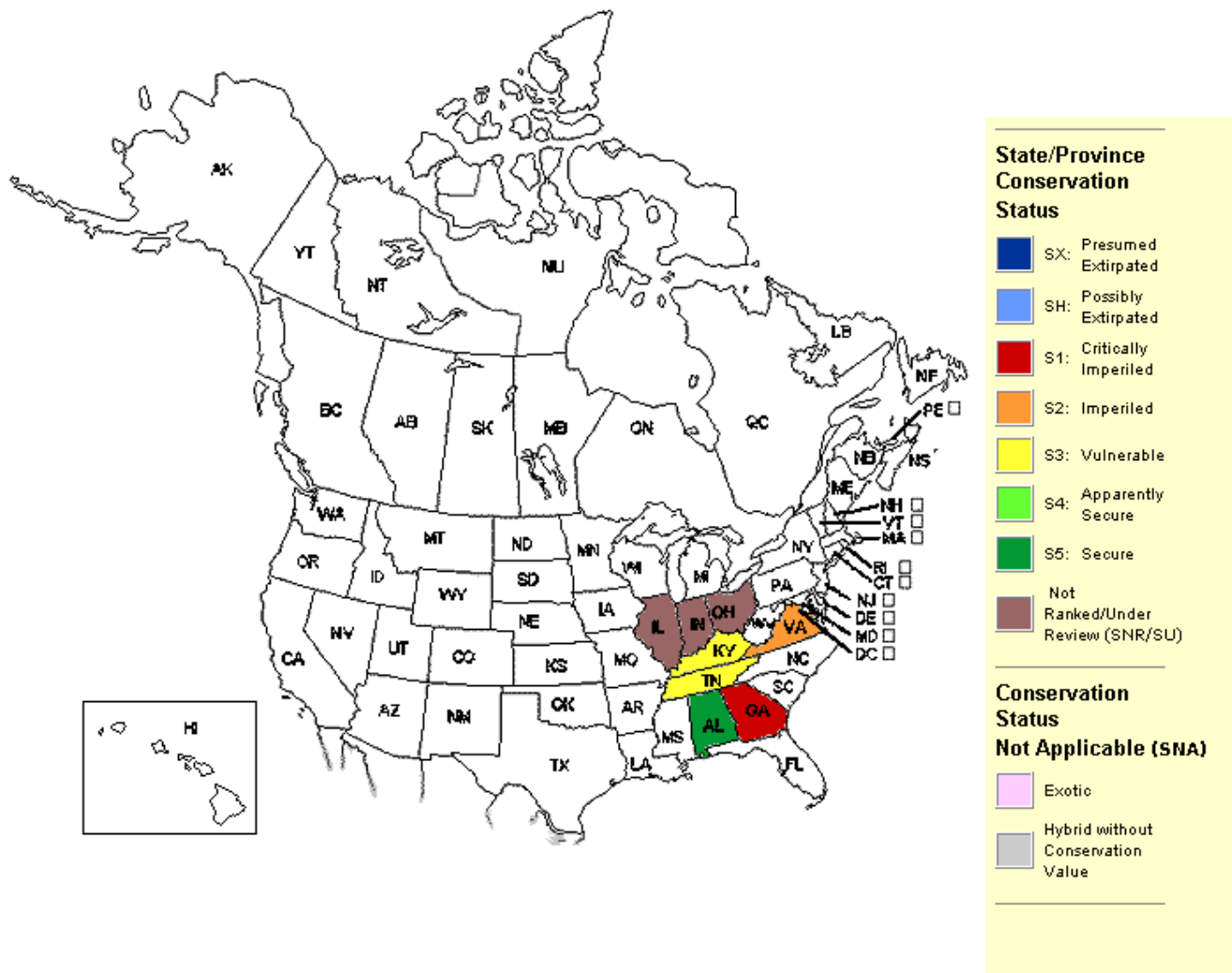


Figure 1. Range of *Leptoxis praerosa*. Map taken from NatureServe (2013).



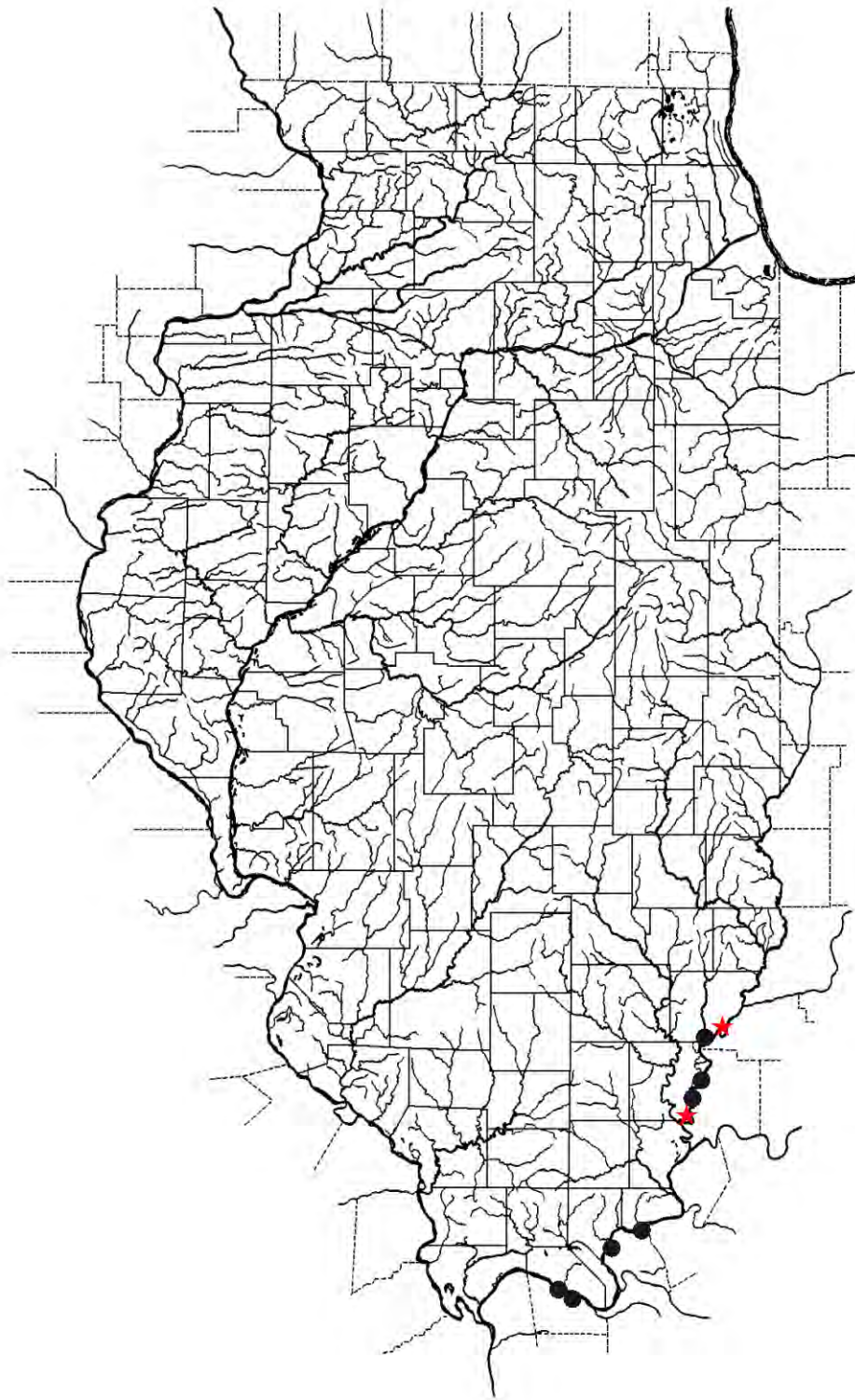


Figure 2. Range of *Leptoxis praerosa* within Illinois. Red stars indicate where live specimens have been collected since 1990, and black circles indicated where relict specimens have been found (data taken from natural history collections (e.g., the Illinois Natural History Survey, Champaign; the Ohio State University Museum of Zoology, Columbus; the University of Illinois Museum of Natural History, Champaign; the University of Michigan Museum of Zoology, Ann Arbor).

Re: Agenda Items 158-9: Copy of the 2014 Illinois List Review: Staff recommendation for changes to the Part 1 of the list of Illinois endangered and threatened plants



# ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

*One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438*

## **Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:**

### **ESPB staff Part 1, 1<sup>st</sup> cut FINAL recommendations for Plants**

Prepared by Anne Mankowski

04/19/2013

1<sup>st</sup> cut draft dated 03/15/2013, updated as 1<sup>st</sup> cut final 04/19/2013

This is the 1<sup>st</sup> cut final recommendations that will be presented to the Board at the 05/17/2013 meeting.

#### **Contents:**

(This is a compilation of otherwise stand-alone documents; I didn't spend a lot of time crafting, so it isn't pretty)

1. List of any pre-1<sup>st</sup> cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (page 2).  
  
List of post-1<sup>st</sup> cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (page 2). Comments and responses for taxa associated with Table 5 are compiled following Table 5.
2. ESPB staff list of recommended changes from endangered to threatened, threatened to endangered, remove from endangered, remove from threatened, add as endangered, add as threatened, and species for which no change is recommended (from partial list review) (page 29).
3. Spelling corrections (page 33); Name changes (page 33); List of species under Federal review – implications to the Illinois List (page 33).
4. Table 1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of counties w/ occurrences, # of topographic quads w/ occurrences (page 34).
5. Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (page 43).
6. Table 3. Plant species issues carried over from 2009 List revision (page 52).
7. Table 4. Federally listed species removed from the IL List that should be added back (page 52).
8. Table 5. Subspecies and varieties – explanation of listing status change recommendations and compilation of ESPB TEC comments and Board staff responses for taxa associated with Table 5 (page 53).
9. Currently listed species individual reviews (begins page 61) – each review includes:
  - a. Date of listing, reason for listing;
  - b. ESPB status and distribution publication species acct;
  - c. species data from Tables 1 and 2;
  - d. 1982-2011 5-year element occurrence trend graph;
  - e. ESPB status review triggers (if any) and listing status change recommendation (if any); and
  - f. NatureServe conservation status, lower 48 (for some spp).
10. Recommendations for species to be added as endangered or threatened (if any) (page 67).

**1A. List of any recommendations and evidence received from ESPB TECs and IDNR by 02/28/2013 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes.**

ESPB TEC Randy Nyboer sent on 03/01/2013 a nomination to add Aster prenanthoides (Crooked Aster). Mr. Nyboer initially emailed the nomination to the wrong email address and it was finally received after the deadline by Ms. Mankowski. Mr. Nyboer did not use the ESPB TEC Species Nomination Form.

Ms. Mankowski advised Mr. Nyboer on 03/04/2013 that she would not include his nomination because it was received late, it was not prepared using the previously distributed ESPB nomination form, and it lacked sufficient information and evidence for her to review and consider making a recommendation for the Board's consideration. She explained that Mr. Nyboer could submit the form by the Part 2 Plant list review deadline or present it as his own agenda item with 30 days notice at a Board meeting, present it during the 3-minute public comment period at any meeting, or present it during the public hearing period that will be held after the Board confirms all preliminary listing decisions and before the Board finalizes it's listing decisions – that public hearing period is expected for sometime at the end of 2013 or beginning of 2014 and notice of it will be posted to the Board's website.

Mr. Nyboer replied on 03/04/2013 that he would complete the ESPB TEC nomination form and submit it in time for the Part 2 Plant list review deadline.

**1B. List of any recommendations and evidence received from ESPB TECs by 03/29/2013 deadline for species listing status change or additions to the Illinois List (presented as received) and Mankowski response/notes.**

**1B (1). Randy Nyboer (03/25/2013) comments to Board staff regarding Part 1, Plant List 1<sup>st</sup> Cut draft proposed listing changes to Threatened and Endangered Plant Species and Mankowski (04/19/2013) responses.**

Mankowski introductory note: Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. In some cases the same response or portions of it have been repeated for more than one comment, as appropriate. The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence. All ESPB TEC comments and staff responses (except those associated with Table 5) will be presented together in the front section of the Part1, Plant List 1<sup>st</sup> Cut final document; ESPB TEC comments and staff responses associated with Table 5 will be presented together following Table 5; and, ESPB TEC comments and staff responses will also be added to respective species reviews when ESPB TEC comments and recommendations were contrary to staff recommendations. For some species, ESPB TEC comments caused staff to be less convinced of staff recommendations, but they were maintained so that staff can gain feedback from the Board for use when reviewing the remaining species. While ESPB TEC comments may not have persuaded staff to change the staff recommendation for a species, Board members will have access to all ESPB TEC comments, staff responses, and species reviews when they review the information and discuss and vote on listing decisions during the May 17, 2013 Board meeting.

Nyboer comments and Mankowski responses associated with Table 5, follow Table 5.

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**1B (2). John Taft (03/28/2013) comments to Board staff regarding Part 1, Plant List 1<sup>st</sup> Cut draft proposed listing changes to Threatened and Endangered Plant Species and Mankowski (04/19/2013) responses.**

Mankowski introductory note: Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. In some cases the same response or portions of it have been repeated for more than one comment, as appropriate. The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence. All ESPB TEC comments and staff responses (except those associated with Table 5) will be presented together in the front section of the Part1, Plant List 1<sup>st</sup> Cut final document; ESPB TEC comments and staff responses associated with Table 5 will be presented together following Table 5; and, ESPB TEC comments and staff responses will also be added to respective species reviews when ESPB TEC comments and recommendations were contrary to staff recommendations. For some species, ESPB TEC comments caused staff to be less convinced of staff recommendations, but they were maintained so that staff can gain feedback from the Board for use when reviewing the remaining species. While ESPB TEC comments may not have persuaded staff to change the staff recommendation for a species, Board members will have access to all ESPB TEC comments, staff responses, and species reviews when they review the information and discuss and vote on listing decisions during the May 17, 2013 Board meeting.

Taft comments and Mankowski responses associated with Table 5, follow Table 5.

Thank you for your helpful and detailed compilation efforts to assist with listing decisions.

### **Comments regarding Other Suggested Changes**

#### Endangered to Threatened:

*Asclepias stenophylla* – 7 EORs in 2 counties may not qualify for this change. Recent surveys of hill prairies likely would have yielded more records of this distinctive and readily recognizable species if it was more common. This may be all there is. Not sure this minor increase in EORS supports this change in status. Is there any information on population sizes that might suggest these occurrences were particularly large? If these are small populations, these numbers fall short of suggesting a secure or increasing trend. Hill prairies in particular are so prone to woody encroachment that the habitat cannot be considered secure. RECOMMENDATION - NO CHANGE.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. With regard to number of occurrences, staff recommendation is based on the number of observations relative to known EOs over time and not on whether the species is absent or present at other or additional locations. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Chamaesyce polygonifolia* – 4 to 6 populations in 2 counties seems to fall short of a species not at risk of extirpation, particularly in its shore habitat that is so often disturbed by urban and visitor activities. My observations suggest it occurs in low density on the beach at Illinois Beach State Park. Any idea about the sizes of the other populations? This recommended change might be justified, but it seems to be an in-between state of security, albeit 2 occur in protected sites. RECOMMENDATION – MAYBE, DEPENDING ON POPULATION SIZES.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 6 EOs there are 18 nested sites; 3 persisting since the 1970s, 1 since the 1980s, 3 since the 1990s, and 11 since the 2000s. Individual reported numbers in the most recent years of observation for each EO were 80 plants; 1,801-2,000+ stems; 1,100 reproductive stems; 10 plants; 213,000+ stems; and, 800+ plants. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Dichantheium yadkinense* – A total of 8 EORs from 7 quad sheets in 2 counties. I understand some of the recent observations from the INAI update from southern Illinois may be based on misidentifications (personal communication with Chris Benda). Voucher specimens should be evaluated by a botanist with experience with *Dichantheium* species before making this adjustment. RECOMMENDATION – SPECIMENS SHOULD BE VALIDATED BEFORE STATUS CHANGE.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Chris Benda is an ESPB TEC and did not provide recommendation regarding misidentified observations. The Database is responsible for conducting quality assurance/quality control of EO reports. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review. If the Board wants voucher specimens verified, Mankowski recommends the species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision – it is then recommended that the commenter provide specific information to the Database about which EO reports may be based on misidentified specimens for their evaluation and investigation and Ms. Mankowski can follow-up with the Database, the individual who reported the observations, and the commenter, accordingly.

*Dennstaedia punctilobula* – 2 to 6 populations in 1 or 2 counties for a cliff dwelling species may be inadequate to assume a species not prone to extinction. This fern primarily is a shaded cliff species; depending on climate trends, these could be some of the most vulnerable taxa with climate change. Since the INAI update included cliff communities and there appears to be limited evidence of an increase from those observations, the known numbers might be fairly comprehensive and this change in status seems not to be warranted. RECOMMENDATION – NO CHANGE UNTIL FURTHER TRENDS COULD ASSESS STABILITY WITH CHANGING CLIMATE.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range

and distribution. As the Board discussed within the last few years with regard to bats and the anticipated potential threat from white nose syndrome, the Board is not supposed to make listing decisions out of anticipation of a potential threat, but rather based on best available information regarding current status and distribution. With regard to number of occurrences, staff recommendation is based on the number of observations relative to known EOs over time and not on whether the species is absent or present at other or additional locations. There are eight EOs for the species and seven have had observation in the last ten years. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review.

*Euonymus americanus* – 3 EORs in 3 counties (1 per county) seems to fall short of suggesting a recovering or secure species. I know of three of these populations and two are very small (<5 plants); it seems to be locally occasional at Little Black Slough. RECOMMENDATION – NO CHANGE (unless it can be determined there are more populations than the three I know from Johnson and Pulaski counties).

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Additionally, specific location information is not being included in these reviews – the commenter can make request to the Database for the specific location information. There are five EOs for this species and four have had observations in the last ten years. Across the five EOs there are seven nested sites; two persisting since the 1970s, two since the 1980s, two since the 1990s, and one since the 2000s. Individual reports for the four EOs with recent observations noted several hundred plants at two EOs, twenty-three plants an one EO, and several plants at one EO. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

Threatened to Endangered:

*Botrychium biternatum* – I recall the push to delist this taxon in the 1980s and early 1990s based on observations by Larry Stritch. I always wondered if Larry’s observations were based on mistaken identity of the similar *Botrychium dissectum* var. *obliquum*. I have only seen *B. biternatum* once, near Carbondale in the early 1990s, and the population was very small. RECOMMENDATION – AGREE WITH CHANGE back to ENDANGERED.

Mankowski response: Comments noted. No data, evidence, or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Corallorhiza maculata* – not sure this change to E is justified based on the numbers.

Mankowski response: Comment noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review.

*Elymus trachycaulus* – this grass is actually fairly common at a long-term research site of mine in Lake County. While the EORs were reported once from this site, I have not been continually reporting the occurrences with each year of observation (from 2006 to 2012). It is unclear how these reports are interpreted when the number of occurrence are tabulated or whether lack of reports is taken to represent absence. This leads to the concern

that the Heritage records can be over interpreted if based on trends of reported populations. It is interesting to consider this circumstance where absence of reports suggests a change from T to E. The best decisions might not always in the numbers. RECOMMENDATION – NO CHANGE (KEEP AS THREATENED); HOWEVER, REVIEW POC DATA.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been explained to TECs and discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. As has also been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers, has only rarely looked at "surveyed with no observation" reports – which is mentioned in this species review – and has been looking at number of reported observations for each species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

Remove from Endangered:

*Euphorbia spathulata* – I last saw this species on 12 May 1987 (photo documented). Previously, it had been collected by Robert Evers from the same site – Fults Hill Prairie, now a state nature preserve. I checked the exact locality of my previous observation of this species in mid June of 2007; however, it was not seen. I have not checked since. Unless there was knowledge of its specific habitat niche and locality, any other searches easily could miss this diminutive species. Rare annuals merit some leniency when considering extirpation, particularly when they occur in seldom searched locations. RECOMMENDATION – KEEP AS ENDANGERED UNTIL 30 YEARS SINCE OBSERVATION.

Mankowski response: Comments noted and will be added to species review for Board information. No data, or documentation supporting contrary recommendation was provided. Database records indicate the date of 2008-06-23 for a report by you – commenter is asked to please contact the Database and provide them information necessary to correct the record. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. The Database is responsible for conducting quality assurance/quality control of EO reports. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. As with many guidelines developed during any of the List review and revision processes, it is very difficult to establish thresholds for many parameters across all species in any taxonomic group that all experts and Board members agree upon. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

*Eupatorium hyssopifolium* – recently verified as extant by Phillippe and Marcum. RECOMMENDATION – KEEP AS ENDANGERED.

Mankowski response: Comment noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been explained to TECs and discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for



reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

Remove from Threatened:

*Cypripedium candidum* – This species will continue to be vulnerable to collection, woody encroachment and other factors. I monitored a population at Black Partridge (Goose Lake fen) for several years and observed it to go from just over 200 plants to 1 in about 25 years. After management of the fen habitat, a few additional plants were observed. While this still counts as an EOR, it is a greatly diminished population, making me wonder about trends elsewhere (I have heard similar trends occurred at Gavin Bog Prairie). Perhaps Susanne Masi can suggest whether trends data from her census work supports this change. RECOMMENDATION – CONSULT WITH PLANTS OF CONCERN PROJECT MANAGER PRIOR TO FINAL DECISION.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about threats and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 30 EOs (61% of total) are protected and specific to collecting, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 27 EOs (55% of total) have had repeated obs in at least 2 of the 3 most recent 5-year intervals and 13 EOs (27% of total) have had repeated obs in all of the 3 of the most recent 5-year intervals. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below. Susanne Masi is an ESPB TEC and did not provide any comments for this species. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

first obs	# nested sites	most recent reported #s 1997-2001	most recent reported #s 2002-2006	most recent reported #s 2007-2012
1988	1		several dozen observed	3,070 clumps across 4 locations
1977	8		26 clumps at one nested site	203+ clumps across 6 nested sites
1993	1	several colonies		
1980	1		22 clumps, 90% flowering	
1977	1	49 clumps, 45% reproductive	63 clumps, 35% flowering	61 clumps, 67% flowering
1990	2	20 plants at one nested site		16 stems across 2 nested sites
1976	1		sno	
1988	1	101-300 clumps, 30% reproduction	130 clumps, 59% flowering	75 clumps, 70% flowering
1992	1		162 stems, 10% flowering	72 clumps, 40% flowering
1977	1	several hundred flowering stems		705 total plants, 325 flowering
1988	1		54 clumps in 4 pops	357 clumps across 4 pops
1991	1	101-300 plants, 14% reproductive	201-400 plants, 53% flowering	401-800 clumps, 83% reproductive
1977	1	>800 plants	>800 plants in 1 pop	295 clumps across 5 pops
1977	2		66 clumps at 1 location, 54% reprod.	152 clumps across 2 nested sites
1977	1	38 plants in 1 pop	100 clumps in 2 pops	757 plants across 4 subpops
1977	1	401-800 clumps, 88% reproductive	802-1,600 clumps in 2 pops	100 stems, 25% reproductive
1989	1			3,910 plants across 2 pops
1970	1	18 clusters, 2 with flowering stems		

1990	1	sno	sno	sno
1983	1		201-400 flowering clumps	707 clumps, 95% flowering
1986	1			
1988	1	observed	observed	3 clumps
1985	1	2 clumps	49 stems in approx 8 clumps	7 genets
1989	1	many plants	6 clumps, 43% flowering	30 plants, 50% flowering
1985	1			sno
1991	1	16 clumps	sno	16 clumps
1991	1		sno	
1992	1	150 clumps, 35% reproductive	165 clumps, 15.2% flowering	117 clumps, 67% flowering
1992	1	6 clumps, 4% reproductive	14 fruiting clumps	19 clumps, 89% flowering
1993	1		23 clumps at 2 locations	19 clumps across 2 locations
1993	1	5 flowering stalks		
1997	7	observed at one nested site	220 clumps across 6 nested sites	222-421 clumps across 5 nest. sites
1993	1			sno
1999	1	1 clump	2 clumps at 2 locations	4 clumps across 2 locations
2001	1	2 plants		
2002	1		27 clumps at 3 locations	66 clumps, 90% flowering
2002	1		5 plants in 2 pops	5 clumps in 2 pops
2005	1		1 clump	sno
2001	1	8 clumps, 100% reproductive	sno	99 stems, 52% flowering
2005	1		24 inflorescences	
1988	1			
2001	1	1 clump with 5 flowering stems		
2007	1			sno
2009	1			1 clump
2009	1			3 clumps with 18 flowering stems
2008	1			2 stems, 50% flowering
2006	1		observed	5 stems, 60% flowering
2008	1			sno
2009	1	18 clumps, 122 blooms	16 stems	66 clumps. 60% flowering

notes: yellow cell = established from plantings; blank cell = no report; sno = surveyed w/ no obs.

**Spelling corrections and nomenclatural considerations (with assistance from Dr. Steven R. Hill).  
“No change” list and elsewhere throughout the document:**

Mankowski comment regarding spelling corrections: Notification of spelling errors is appreciated. However, please consider that errors in the List review documents should be taken with a grain of salt because staff simply does not have time to adequately proofread these during the timeframes set for the review schedule. If you want to check the official spellings used by the Board, please reference the Administrative Rules that constitute the official List (Title 17, CH.1, SEC. 1010 – IL List of E&T Fauna; Title 17, CH.1, SEC. 1050 – IL List of E&T Flora) or the ESPB Checklist of E&T Animals and Plants of IL. When staff prepared materials for the List review public hearing and final approvals by the Board, greater attention will be made to confirming spelling.

Agalinus should be Agalinis

Mankowski response: The Board has spelled this Agalinus since it was first listed in 1994. I need to correct on Checklist and Ad Rule to Agalinis per Mohlenbrock.

Arctostaphylos should be Artostaphylos

Mankowski response: Does commenter really mean Artostaphylos? There is a typo in the 1<sup>st</sup> cut document that included an errant “p”. Arctostaphylos is consistent with all ESPB listings and Mohlenbrock. I need a citation from commenter for a change to Artostaphylos.

Aster furcatus – now Eurybia furcata (with revisions, no Aster species are considered native to N. Am.)

Mankowski response: Need a citation from commenter for the name change.

Betula alleghaniensis = Betula alleghaniensis

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Calamogrostis = Calamagrostis

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Cyperus grayioides = Cyperus grayoides

Mankowski response: The Board has always spelled this grayioides. Mohlenbrock is grayoides; Mankowski needs to correct on Ad Rule and Checklist.

Cypripedium acaula = Cypripedium acaule

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Justica = Justicia

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Malvastrum hispidum = Malvastrum angustum

Mankowski response: Need a citation from commenter for the name change.

Orobanche fasciculata = Orobanche fasciculata

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Sheperdia = Shepherdia

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Vaccinium stemineum = Vaccinium stamineum

Mankowski response: just a typo on 1<sup>st</sup> cut doc

Valerianella chenopodifolia = Valerianella chenophodiifolia

Mankowski response: chenopodifolia is consistent with previous ESPB listings and Mohlenbrock; need a citation from commenter for the spelling change to chenophodiifolia.

**Table 1 list:** see above spelling and nomenclatural notes

Symphoricarpos ablus var. albus = Symphoricarpos albus var. albus

Mankowski response: just a typo on 1<sup>st</sup> cut doc

p. 135: Dichantherium yadkinense = panic grass, not shadbush

Mankowski response: just a typo on the 1<sup>st</sup> cut doc

## **SUGGESTED ADDITIONAL CHANGES**

Berchemia scandens – T to E; only 1 EOR. Listed as E in 2002.

Mankowski response: No data, evidence, or documentation was provided. This species' status was changed from endangered to threatened in 2009 for the following reasons presented by the ESTAC for plants – "This species is becoming more abundant in the area where it was first discovered in Illinois. Also, present information suggests that this taxon may be adventive in Illinois, sometimes being planted in the southeastern United States." Apparently, no data supporting the recommendation was brought forth.

Mankowski recommendation: Staff overlooked this species review. Agree with the recommendation for a change back to endangered because the previous listing decision was made without sufficient evidence.

Carex atlantica – T to E; only 2 EORs

Mankowski response: No data, evidence, or documentation was provided. This species was originally listed as threatened in 2004 and at that time, it was known for only one location in Pope County that was first observed in 1967, but had not been observed since 1968. That location has eight nested sites and has since had observations in 2005 and 2009, noting in the most recent reports from 10-25 to several hundred clumps at seven nested sites and one nested site had no observations. A new EO was located in 2005 – only one site was reported in 2005 and four new nested sites were added to this EO in 2009. Most recent reported numbers for this EO were from 25-50 to several hundred clumps across the nested sites. One EO is protected. The species' known distribution is restricted to the one county in extreme southern Illinois. Relative to status and distribution at the time of original listing, it seems a change from threatened to endangered is not currently warranted.

Mankowski recommendation: no change in status.

Carex oligosperma – T to E. 4 EORS, 1 seen in 10 years. **Listed as E in 2002 and on most recent checklist.**

Mankowski response: Error in entry on Table 1, should be E.

Chamaedaphne calyculata – T to E. 7 EORs total, 3 observed in last 10 years.

Mankowski response: No data, evidence, or documentation was provided. Mankowski maintains recommendation for no change in status for the reasons explained in her species review.

Helianthus angustifolius – T to E: only 4 EORs.

Mankowski response: No data, evidence, or documentation was provided. This species was listed as threatened in 1980 and there were only two locations known at that time. One EO was added in 1986

and another in 2005. There are 12 nested sites across the 4 EOs - one EO has six nested sites, one EO has three nested sites, one EO has two nested site, and one EO is a singular site. All four EOS have had observations in the last 10 years and all four are protected. Most recent reported numbers range from several dozen to several hundred at nested sites. The species has only been known from Massac and Pope Counties in extreme southern Illinois and has recent observations in both. Relative to the status and distribution at the time of listing, it doesn't seem that a change from threatened to endangered is warranted at this time.

Mankowski recommendation: no change in status

Phacelia gilioides – T to E; only 1 EOR. **Listed as E in 2002 and on most recent checklist.**

Mankowski response: Error in entry on Table 1, should be E.

**ADD AS THREATENED OR ENDANGERED – to be submitted with proper documentation ASAP.**

*Coryphantha missouriensis* (Sweet) Britt. & Rose. Cactaceae. Missouri Mammillaria. Near waterfall catchpool in Union County. Reported as “additional taxa” in Mohlenbrock 2002. More information soon to be presented with completed form.

*Euthamia leptcephala* - Mississippi Valley Grass-leaved Goldenrod, Rare in S 1/6 in sandy soil of forest and woodland habitats. Sieren, D. J. 1980. The taxonomy of the genus Euthamia. Rhodora 83: 551-579.

*Lycopodiella appressum* (Chapm.) Cranfill. Appressed bog clubmoss. Wet woods, very rare, Pulaski County (Mohlenbrock 2002). Also Winnebago County (USDA Plants).

*Elymus glaucus* – Dry woods. Union County

*Physalis pumila* – Dry hillside. Peoria County

*Talinum parviflorum* – Sandstone glades. Calhoun, Johnson, Pope, Union counties.

*Trichostema setaceum* – Dry soil. Very rare. Johnson County

Mankowski response: Recommendations for additions to the list were not submitted using the nomination form and do not include evidence and information sufficient for staff to consider a recommendation and will not be included in the final draft of the Part 1, Plant list 1<sup>st</sup> cut document. If completed nomination forms and sufficient evidence is submitted by the respective TEC deadline for Part 2, Plant list 1<sup>st</sup> cut draft document, staff will include and make recommendations as appropriate.

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**1B (3). Chris Benda (03/29/2013) comments to Board staff regarding Part 1, Plant List 1<sup>st</sup> Cut draft proposed listing changes to Threatened and Endangered Plant Species and Mankowski (04/19/2013) responses.**

Mankowski introductory note: Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. In some cases the same response or portions of it have been repeated for more than one comment, as appropriate. The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to

be based on scientific evidence. All ESPB TEC comments and staff responses (except those associated with Table 5) will be presented together in the front section of the Part1, Plant List 1<sup>st</sup> Cut final document; ESPB TEC comments and staff responses associated with Table 5 will be presented together following Table 5; and, ESPB TEC comments and staff responses will also be added to respective species reviews when ESPB TEC comments and recommendations were contrary to staff recommendations. For some species, ESPB TEC comments caused staff to be less convinced of staff recommendations, but they were maintained so that staff can gain feedback from the Board for use when reviewing the remaining species. While ESPB TEC comments may not have persuaded staff to change the staff recommendation for a species, Board members will have access to all ESPB TEC comments, staff responses, and species reviews when they review the information and discuss and vote on listing decisions during the May 17, 2013 Board meeting.

Benda comments and Mankowski responses associated with Table 5, follow Table 5.

Here are my copy-ready comments regarding the ESPB staff listing status recommendations for Part 1, 1<sup>st</sup> cut Plant list review

*Dennstaedtia punctilobula* – This fern species is common in states east of Illinois and I have observed it at several sites in southern Illinois. These sites are protected are stable. I support the status change for this species.

Mankowski response: Comments noted. No data or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Euonymus americanus* – I observed this species in several counties in southern Illinois and have turned in many EO's for this species. This plant is not rare in states east of Illinois. I support the status change for this species.

Mankowski response: Comments noted. No data or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Chamaesyce polygonifolia* and *Cakile edentula* – You recommend delisting/downgrading these dune species, and I support the change. In my visits to these communities, I found that these two species are common in the appropriate habitat. However, the dominant plant in dune communities is *Ammophila breviligulata* and there is no discussion to delist this species, although it is the most common plant in sand dunes. Are more EOs needed to delist/downgrade this species?

Mankowski response: Comment noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff reviewed again the species review for *Ammophila breviligulata* and agreed with Mr. Benda's recommendation that, consistent with staff recommendations for the other two species, the species review should consider an upgrade in status. Staff acknowledge that they simply overlooked the species when developing the draft of Part 1, Plant list 1<sup>st</sup> cut document and has revised the species review to include ESPB TEC comment and staff response, below.

This species' status has improved since it was listed as endangered in 1980. At the time of listing, only one occurrence was known. One EO was added in the 1980s, three EOs were added in the 1990s, and four EOs were added in the 2000s. All 9 current EOs (100% of total ) have had observations in the last 10 years. All counties with known historic occurrences are captured in the current distribution. Two EOs (22% of total) are protected. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed

at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Because of earlier staff oversight of this species, Ms. Mankowski elected to review the most recent reported population numbers for each EO. Across the 9 EOs there are 14 nested sites. Individual reported numbers in the most recent years of observation for each EO were: significant pops at 1 nested site; approx 140,007 clumps in 2 locations; 2 small clumps; 780 clumps; >800 clumps; approx 2,700 clumps across 3 nested sites; >800 plants; approx 2,000 clumps; and, approx 532,049 clumps.

Mankowski recommendation: change from endangered to threatened.

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**1B (4). Rick Phillippe (03/29/2013) comments to Board staff regarding Part 1, Plant List 1<sup>st</sup> Cut draft proposed listing changes to Threatened and Endangered Plant Species and Mankowski (04/19/2013) responses.**

Mankowski introductory note: Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. In some cases the same response or portions of it have been repeated for more than one comment, as appropriate. The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence. All ESPB TEC comments and staff responses (except those associated with Table 5) will be presented together in the front section of the Part1, Plant List 1<sup>st</sup> Cut final document; ESPB TEC comments and staff responses associated with Table 5 will be presented together following Table 5; and, ESPB TEC comments and staff responses will also be added to respective species reviews when ESPB TEC comments and recommendations were contrary to staff recommendations. For some species, ESPB TEC comments caused staff to be less convinced of staff recommendations, but they were maintained so that staff can gain feedback from the Board for use when reviewing the remaining species. While ESPB TEC comments may not have persuaded staff to change the staff recommendation for a species, Board members will have access to all ESPB TEC comments, staff responses, and species reviews when they review the information and discuss and vote on listing decisions during the May 17, 2013 Board meeting.

Phillippe comments and Mankowski responses associated with Table 5, follow Table 5.

Anne,

Below are my thoughts on the species in question. Best of luck. In case you have any problems reading the e-mail I have attached a pdf copy of this file.

Endangered to Threatened:

Asclepias stenophylla: (Maintain as Endangered). This species has only one protected occurrence in Illinois and is presently extant in 2 counties (Calhoun & Pike) while it was historically known from Adams County, Illinois. No new counties of occurrence for at least the last 20 years. The last search, 5 year period of 2007 – 2011 had 2 EO's, down from 4 EO's from the previous 5 year interval that had 7 EO's, the greatest number of EO's ever for this species. In Illinois, this species is on the northeast limit of its range where it is found on loess hill prairie and limestone glades along the Mississippi River Bluff. Species on the edge of their range are especially significant to any species genetic diversity. This is where the species are most pressured for survival, as a result of adapting to a potentially different climate and/or micro community and a reduced gene flow, they may comprise a region of potential speciation. Thus three isolated populations, while rare (threatened of endangered) in Illinois may

comprise a significant value to the overall health (survivability to a potentially rapidly changing environment) of the species.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided.

There are a total of seven EOs for the species – all seven have had observation in the last 10 years and three EOs had observations in the most recent 5-year interval. While that is a relatively large reduction in observations, it needs to be considered in the context that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations largely reflects search effort. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. The number of EOs for the species has more than doubled since it was listed as threatened in 1980 – two EOs were added prior to its status change to endangered in 1998 and two EOs have been added since then. The species’ known historic distribution includes only three counties and there are recent EOs from two (66%) of those counties. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

Carex cryptolepis: (change to Threatened). However I am a little concerned that none of its populations are from protected locations in Illinois.

Mankowski response: Comments noted. No data, evidence, or documentation further informing recommendation was provided. Comment will not be added to species review. Staff appreciates and agrees with the concern regarding no protected EOs, but notes again the significant increase in number of EOs for the species. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. There were two errors in the Part 1, Plant list 1<sup>st</sup> cut draft document where the number of observed EOs in the 2007-2011 window and trend graph only showed 5 EOs, when it should have been 6. The same error was reflected in “Mankowski notes and recommendations”, where the number of EOs added since listing was noted as 5 instead of 6. Respective corrections have been made to the final draft of the Part 1, Plant list 1<sup>st</sup> cut document. Across the 6 EOs with recent observations individual most recent reports were: 101-200 clumps; 20 clumps, 40% reproductive; >800 reproductive clumps; healthy, scattered pop. w/ fruiting/flowering; 340 individuals; and, observed. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.



Dennstaedtia punctilobula: (Maintain as Endangered). This species is much like that for Asclepias stenophylla. Has only one protected Illinois population and is a species on the edge of its range.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates and agrees with the concern regarding only one protected EOs, but notes again the significant increase in number of EOs for the species. There are eight EOs for the species and seven have had observation in the last ten years. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

Dichanthelium yadkinense: (Maintain as Endangered). I would like to see vouchers from this species sent to an expert for varification.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Database is responsible for conducting quality assurance/quality control of EO reports. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review. If the Board wants voucher specimens verified, Mankowski recommends the species be included with other "outstanding species issues" that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision – it is then recommended that the commenter provide specific information to the Database about which EO reports may be based on misidentified specimens for their evaluation and investigation and Ms. Mankowski can follow-up with the Database, the individual who reported the observations, and the commenter, accordingly.

Euonymus americanus: (change to Threatened). Again an edge of range species, so would not remove from the endangered status unless it starts to become much more widespread. However, it is known in Illinois from a number of protected localities (6) and changing this species from Endangered to Threatened does not seem unreasonable.

Mankowski response: Comments noted. No data or documentation further informing staff recommendation was provided. Comments will not be added to species review.

Filipendula rubra: (change to Threatened).

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

Threatened to Endangered:

Botrychium biternatum: (Maintain as Threatened). This proposal of changing from Threatened to Endangered may be more an artifact of the difficulty of recognizing the species than its scarcity. I would feel uncomfortable supporting this change without a pteridologist making an effort at looking for this species in southern Illinois.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations mostly reflects search effort and that is mentioned in this species' review. The Board needs to make listing decisions based on the best information available and does not have resources to fund systematic and programmatic surveys for all species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review. If the Board wants staff to contract surveys for the species at known EOs and/or across

southern Illinois, then staff recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision

*Carex intumescens*: (Maintain as Threatened). Known from 7 counties and has 3 protected occurrences in Illinois. While looking for a rarely seen Illinois taxon, *Tragia cordata*, observed a large healthy protected population of this species in 2010 at Heron Pond, Johnson County, Illinois. Habitat for this species is still common and through search I feel more populations would likely be found in Illinois. However, probably not enough localities to ever have it removed from the Illinois Threatened status.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. The Database shows no records from 2010 for this species. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations mostly reflects search effort and that is mentioned in this species’ review. The Board needs to make listing decisions based on the best information available and does not have resources to fund systematic and programmatic surveys for all species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review. If the Board wants staff to contract surveys for the species at known EOs and/or statewide, then staff recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision

*Cimicifuga rubifolia*: (Change to Endangered). This species is only maintaining its limited range in Illinois and is under pressure from herb collectors. Also, it has only one protected location in Illinois. This species has many of the characteristics as *Carex intumescens* (reduction in number of EOs, 18 to 5, and reduction in known county records, 7 to 3) but *Cimicifuga rubifolia* has only one protected location and is under pressure from herb collectors.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

*Corallorhiza maculata*: (Change to Endangered). This species is difficult to judge, could be an artifact of how difficult it is to find and being a small orchid it may not flower on a regular basis.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

*Elymus trachycaulis*: (Maintain as Threatened). This species has a number of recent collections and 6 EOs are from protected areas.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Database shows only three observations in the last 10 years. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review.

Remove from Endangered:

*Berberis canadensis*: (Remove from Endangered).

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

*Eupatorium hyssopifolium*: (Maintain as Endangered). This taxon was recently vouchered in Pope County, Illinois (17 August 2011) by Rick Phillippe, Paul Marcum, and Jason Zylka. It was collected while working on a project for some species that are Rarely Seen In Illinois. This is a problem with some taxa that are poorly known and may not have been extensively searched for in Illinois. Though it had not been seen in Illinois for about 13 years, not many individuals are looking for the species. I feel some of these species that have not been seen or vouchered in a number of years may just have not had a botanist searching for them. *Eupatorium hyssopifolium* is not a species I was familiar with and we just picked it up to see what it was as we did not recognize it for certain at that time. We were actually looking for *Hypericum denticulatum* which we also found here as well as *Rhexia mariana*.

Mankowski response: The Board's listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species' reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review and recommends this species be included with other "outstanding species issues" that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

*Euphorbia spathulata*: (Maintain as Endangered). This taxon was last seen in 1987. Has a botanist made a concerted effort to relocate?

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. The Database is responsible for conducting quality assurance/quality control of EO reports. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

*Galium lanceolatum*: (Maintain as Endangered). This taxon was last seen in ????. Has a botanist made a concerted effort to relocate?

Mankowski response: The Board's listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species' reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic

groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered for reasons explained in her species review.

Penstemon brevisepalus: (Remove from Endangered). This taxon is questionable as having ever occurred in Illinois. Until proven as part of our flora and verified by an expert would rather have this species removed from our T & E list. The specimens vouchers now known to have been misidentified.

Mankowski response: Comment noted. The Board has already make preliminary approval for this listing decision.

Remove from Threatened:

Cakile edentula: (Remove from Threatened). I think this would be reasonable.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

Carex woodii: (Maintain as Threatened). I think this is a candidate but is on the border and I would rather error on the safe side. This species is under threat from overgrazing by deer, a serious threat in northeastern Illinois. Also, in Illinois this is a species on the southern edge of its range.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and threats and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 10 EOs (45% of total) are protected and specific to deer browse, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 7 EOs (32% of total) have had repeated obs in at least 3 of the 4 most recent 5-year intervals and 11 EOs (50% of total) have had repeated obs in both of the 2 most recent 5-year intervals. Mankowski maintains recommendation for removal from threatened as recovered/more common than thought for reasons explained here and in her species review.

Cypripedium candidum: (Maintain as Threatened). This species has had a great reduction from its original range in Illinois (extant in only 9 of its historical known range of 25 counties) and its threat from being collected in the wild for horticultural purposes.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about threats and comparison to historic range and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 30 EOs (61% of total) are protected and specific to collecting, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 27 EOs (55% of total) have had repeated obs in at least 2 of the 3 most recent 5-year intervals and 13 EOs (27% of total) have had repeated obs in all of the 3 of the most recent 5-year intervals. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board

is not generally looking at individual population numbers. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

first obs	# nested sites	most recent reported #s 1997-2001	most recent reported #s 2002-2006	most recent reported #s 2007-2012
1988	1		several dozen observed	3,070 clumps across 4 locations
1977	8		26 clumps at one nested site	203+ clumps across 6 nested sites
1993	1	several colonies		
1980	1		22 clumps, 90% flowering	
1977	1	49 clumps, 45% reproductive	63 clumps, 35% flowering	61 clumps, 67% flowering
1990	2	20 plants at one nested site		16 stems across 2 nested sites
1976	1		sno	
1988	1	101-300 clumps, 30% reproduction	130 clumps, 59% flowering	75 clumps, 70% flowering
1992	1		162 stems, 10% flowering	72 clumps, 40% flowering
1977	1	several hundred flowering stems		705 total plants, 325 flowering
1988	1		54 clumps in 4 pops	357 clumps across 4 pops
1991	1	101-300 plants, 14% reproductive	201-400 plants, 53% flowering	401-800 clumps, 83% reproductive
1977	1	>800 plants	>800 plants in 1 pop	295 clumps across 5 pops
1977	2		66 clumps at 1 location, 54% reprod.	152 clumps across 2 nested sites
1977	1	38 plants in 1 pop	100 clumps in 2 pops	757 plants across 4 subpops
1977	1	401-800 clumps, 88% reproductive	802-1,600 clumps in 2 pops	100 stems, 25% reproductive
1989	1			3,910 plants across 2 pops
1970	1	18 clusters, 2 with flowering stems		
1990	1	sno	sno	sno
1983	1		201-400 flowering clumps	707 clumps, 95% flowering
1986	1			
1988	1	observed	observed	3 clumps
1985	1	2 clumps	49 stems in approx 8 clumps	7 genets
1989	1	many plants	6 clumps, 43% flowering	30 plants, 50% flowering
1985	1			sno
1991	1	16 clumps	sno	16 clumps
1991	1		sno	
1992	1	150 clumps, 35% reproductive	165 clumps, 15.2% flowering	117 clumps, 67% flowering
1992	1	6 clumps, 4% reproductive	14 fruiting clumps	19 clumps, 89% flowering
1993	1		23 clumps at 2 locations	19 clumps across 2 locations
1993	1	5 flowering stalks		
1997	7	observed at one nested site	220 clumps across 6 nested sites	222-421 clumps across 5 nest. sites
1993	1			sno
1999	1	1 clump	2 clumps at 2 locations	4 clumps across 2 locations
2001	1	2 plants		
2002	1		27 clumps at 3 locations	66 clumps, 90% flowering
2002	1		5 plants in 2 pops	5 clumps in 2 pops
2005	1		1 clump	sno
2001	1	8 clumps, 100% reproductive	sno	99 stems, 52% flowering
2005	1		24 inflorescences	
1988	1			
2001	1	1 clump with 5 flowering stems		
2007	1			sno
2009	1			1 clump
2009	1			3 clumps with 18 flowering stems

2008	1			2 stems, 50% flowering
2006	1		observed	5 stems, 60% flowering
2008	1			sno
2009	1	18 clumps, 122 blooms	16 stems	66 clumps. 60% flowering

notes: yellow cell = established from plantings; blank cell = no report; sno = surveyed w/ no obs.

Add as Endangered:

Isotria medeoloides: (Add as Endangered).

Mankowski response: Comment noted. This is a legal issue and the species is actually added back to the List without Board action.

Mentzelia oligosperma: (Add as Endangered). This species appears to have greatly declined from its original range in Illinois. Species is only known from restricted habitats and populations are low in Illinois.

Mankowski response: Comment noted. The Board has already make preliminary approval for this listing decision.

Utricularia subulata: (Add as Endangered). This species has a restricted habitat and low populations in Illinois.

Mankowski response: Comment noted. The Board has already make preliminary approval for this listing decision.

Sincerely, Rick Phillippe

**1B (5). Paul Marcum (03/29/2013) comments to Board staff regarding Part 1, Plant List 1<sup>st</sup> Cut draft proposed listing changes to Threatened and Endangered Plant Species and Mankowski (04/19/2013) responses.**

Mankowski introductory note: Thank you for the time you put into reviewing the document and preparing comments. Staff responses to comments are prepared and presented in the format of a regulatory comments/response to comments framework. In some cases the same response or portions of it have been repeated for more than one comment, as appropriate. The Board appreciates and considers expert comments and information as a level of evidence, but please note that mention of a document, reference, or species occurrence may not constitute evidence necessary for Board action, since Board listing decisions are required to be based on scientific evidence. All ESPB TEC comments and staff responses (except those associated with Table 5) will be presented together in the front section of the Part1, Plant List 1<sup>st</sup> Cut final document; ESPB TEC comments and staff responses associated with Table 5 will be presented together following Table 5; and, ESPB TEC comments and staff responses will also be added to respective species reviews when ESPB TEC comments and recommendations were contrary to staff recommendations. For some species, ESPB TEC comments caused staff to be less convinced of staff recommendations, but they were maintained so that staff can gain feedback from the Board for use when reviewing the remaining species. While ESPB TEC comments may not have persuaded staff to change the staff recommendation for a species, Board members will have access to all ESPB TEC comments, staff responses, and species reviews when they review the information and discuss and vote on listing decisions during the May 17, 2013 Board meeting.

Marcum comments and Mankowski responses for taxa associated with Table 5, follow Table 5.

I have gone through all the suggested changes to the Illinois Endangered and Threatened Plant Species List and have made comments for each taxon below.

For other taxa, strictly using numbers of EOR over time is a poor indication of the stability or vulnerability of a species. Number of EOR's over a series of time is more an indication of botanical effort rather than species improvement. All known information about the taxa under consideration needs to be considered when making these decisions. In addition to EOR numbers, population size needs to be considered for many of these taxa. Several of these taxa have shown an increase in number of populations because of focused effort, however, population sizes may be declining. Other considerations include protection status of known sites, whether the plants are annuals or perennials, if they are known to be absent from known sites for significant durations.

Mankowski response: Comments noted and will be added to species review for Board information. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations reflects search effort. The Board has discussed the issues you address and agrees that using the number of observed EOs is not a good indication of many aspects of status and distribution. Certainly, the Board's preference would be to conduct a comprehensive review for all 484 species currently on the Illinois List and for those additional proposed additions, but the Board does not have capacity for such a review. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers or "surveyed w/ no observation" numbers, although those factors are reviewed for some species and additional information has been provided to some species reviews via Mankowski responses to TEC comments. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Several of the other factors that you mentioned have been/are being considered in this current review.

I would suggest that the IESPB discuss and establish better standards for length of time to consider a species as extirpated. In some cases, species were recommended as extirpated after only 15 years. In my opinion, this is not a sufficiently long duration to establish a species as extirpated. I don't know what the right length of time would be, however, I think this is a good opportunity to have this discussion.

Mankowski response: No species is recommended for delisting due to extirpation after only 15 years. The Board's listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species' reviews has been modified to better reflect that. As has been explained and also discussed during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. As with many guidelines developed during any of the List review and revision processes, it is very difficult to establish thresholds for many parameters across all species in any taxonomic group that all experts and Board members agree upon. The Board has and will continue to discuss these issues with each List review and revision.

I thank you for allowing comment on this process and hope that my experience and knowledge of these species is helpful in this review.

Taxa Comments:

Endangered to Threatened:

*Asclepias stenophylla* –With greatly increased emphasis on hill prairies and dry upland forests in southwest Illinois this species has been documented several times in recent years. Increased management appears to have helped this species, however, it is still only known from a very limited number of sites in just a few Illinois counties. Information lacking in the review of this species includes number of individuals at known sites. Is the species abundant where it is found or is there just a few individuals? I would recommend keeping this species as Endangered until further data is collected.

Mankowski response: Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Carex cryptolepis* –Recent increase in the number of EO's, however, there are still only 6. Also, the review lacks the same information as above for *A. stenophylla*. How many plants at known sites? I would recommend keeping this species as Endangered.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. There were two errors in the Part 1, Plant list 1<sup>st</sup> cut draft document where the number of observed EOs in the 2007-2011 window and trend graph only showed 5 EOs, when it should have been 6. The same error was reflected in "Mankowski notes and recommendations", where the number of EOs added since listing was noted as 5 instead of 6. Respective corrections have been made to the final draft of the Part 1, Plant list 1<sup>st</sup> cut document. Across the 6 EOs with recent observations individual most recent reports were: 101-200 clumps; 20 clumps, 40% reproductive; >800 reproductive clumps; healthy, scattered pop. w/ fruiting/flowering; 340 individuals; and, observed. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Chamaesyce polygonifolia* – Although the number of EO's have increased since the species was first listed this species is still limited to a unique habitat in Illinois with occurrences in only a few areas. I would recommend keeping this species as Endangered.



Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 6 EOs there are 18 nested sites; 3 persisting since the 1970s, 1 since the 1980s, 3 since the 1990s, and 11 since the 2000s. Individual reported numbers in the most recent years of observation for each EO were 80 plants; 1,801-2,000+ stems; 1,100 reproductive stems; 10 plants; 213,000+ stems; and, 800+ plants. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Dennstaedtia punctilobula* – ok. Appear to be recent observations of several EO's in southern Illinois. This species is also colonial and therefore is probably relatively stable at known sites.

Mankowski response: Comments noted. No data, evidence, or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Dichanthelium yadkinense* –

Mankowski response: No response since commenter did not provide comment.

*Euonymus americanus* – ok.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

*Filipendula rubra* – ok.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. Comment will not be added to species review.

Threatened to Endangered:

*Botrychium biternatum* –ok. I do know of some recent records for a project to be completed in 2013 for IDNR, however, populations are mostly small where found.

Mankowski response: Comment noted. No data, evidence, or documentation further informing staff recommendation was provided. According to the Database, the most recent observation for this species is 1997. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Comment will not be added to species review.

*Carex intumescens* – Probably still occurs at most of the known sites as indicated by the high percentage when resurveying past EO's (Since 1997 – 86% of EO's surveyed; Since 2002 – 100% of EO's surveyed). I would recommend keeping this species as threatened until more and better data is obtained.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs for the species are single sites, except for one EO that has two nested sites. Across the 5 EOs with recent observations individual most recent reports were: observed; observed; 70 clumps, 15% reproductive; 1 fruiting clump; and, several fruiting clumps. The inclusion in the original species review by Mankowski of the % of EOs with observations as compared to the number surveyed needs to be taken in the context that very few "surveyed with no obs" reports are actually made to the Database, so most likely these %s would be similar for any species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

*Cimicifuga rubifolia* – Most old records are from the Shawnee. This species is probably still present at known sites. It's decline in EO's probably just represents a lack of effort rather than reduced numbers. The review for this species mentions that there are no surveyed with no observation reports for any EO for this species. I recommend keeping this species as Threatened.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations reflects search effort. The lack of observations has been sustained over the last two five-year intervals. While the species may be present at sites without reported observations, staff recommendation is based on the best available current information. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs are single sites, except for one EO that has two nested sites. Across the 5 EOs with recent observations individual most recent reports were: 100-150 plants; 29 plants; 20-25 fruiting plants; 9 flowering plants; and, observed. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

*Corallorhiza maculata* – ok.

Mankowski response: Comments noted. No data, evidence, or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Elymus trachycaulus* – Note, the specific epithet is spelled incorrectly in the List Review. Most populations of this species are in protected places (state nature preserves, county forest preserves, state park). I recommend maintaining this species as Threatened.

Mankowski response: Comments noted and will be added to species review for Board information. Spelling error is not noted – commenter is asked to please provide specific direction as to where in the document the spelling error occurs. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs are single sites. Across the 3 EOs with recent observations individual reports were: 2 stems, followed by “surveyed with no obs” in the subsequent year; 20 plants across 8 colonies; and, 2 fruiting stems. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

Remove from Endangered:

*Berberis canadensis* – ok, probably is extirpated. Note, error in List Review. Last seen in Illinois in 1987 (Fountain Bluff). See Conservation Assessment of this species by Steve Hill (Hill, S.R. 2003. Conservation Assessment for American Barberry (*Berberis canadensis* Mill.) Technical report submitted to the USDA Forest Service, Eastern Region. 33 pp).

Mankowski response: Comment noted. No data or documentation further informing staff recommendation was provided. Comment will not be added to species review. Staff reviewed the Part 1, Plant List 1<sup>st</sup> Cut draft document and could not find any error for the date of most recent observed – it is reported as 1987. Commenter is asked to please provide specific information about the location of the error and to provide a copy of the document referenced if the commenter believes it could add necessary data.

*Eupatorium hyssopifolium* – Should not be removed from the List. I know of a recent collection made within the last 5 years. Is there an official number of years without records that needs to be surpassed to recommend as extirpated? If so, it should certainly be longer than 15 years. Otherwise, we will just be taking things off the list to add them the next time around.

No species is recommended for delisting due to extirpation after only 15 years. The Board’s listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species’ reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

*Euphorbia spathulata* – May be extirpated, however, more thorough searches of the known site should be made before delisting. Although with increased effort at other similar sites in this area it is possible this species could be rediscovered elsewhere. Only 25 years since it has been seen. Many plants reoccur at sites after years of observation. I don’t think we should be too quick to delist these taxa.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

*Galium lanceolatum* – It has only been since 1998 since EOR for this species. In my opinion, this is not long enough to remove from the List.

No species is recommended for delisting due to extirpation after only 15 years. The Board's listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species' reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

*Penstemon brevisepalus* – ok.

Mankowski response: Comment noted. The Board has already made preliminary approval for this listing decision.

Remove from Threatened:

*Cakile edentula* – The habitat for this species is extremely limited in Illinois. Despite an increase in EOR's this taxa is only found in a small area of the state. I recommend maintaining this species as Threatened.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained in her species review.

*Carex woodii* – ok.

Mankowski response: Comments noted. No data, evidence, or documentation further informing staff recommendation was provided. Comments will not be added to species review.

*Cypripedium candidum* – This species is known from several populations, however, I would like to see numbers on population size at known EOR's since listing. I recommend keeping this species as Threatened until further information is obtained.

Mankowski response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided.

As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

first obs	# nested sites	most recent reported #s 1997-2001	most recent reported #s 2002-2006	most recent reported #s 2007-2012
1988	1		several dozen observed	3,070 clumps across 4 locations
1977	8		26 clumps at one nested site	203+ clumps across 6 nested sites
1993	1	several colonies		
1980	1		22 clumps, 90% flowering	
1977	1	49 clumps, 45% reproductive	63 clumps, 35% flowering	61 clumps, 67% flowering
1990	2	20 plants at one nested site		16 stems across 2 nested sites
1976	1		sno	
1988	1	101-300 clumps, 30% reproduction	130 clumps, 59% flowering	75 clumps, 70% flowering
1992	1		162 stems, 10% flowering	72 clumps, 40% flowering
1977	1	several hundred flowering stems		705 total plants, 325 flowering
1988	1		54 clumps in 4 pops	357 clumps across 4 pops
1991	1	101-300 plants, 14% reproductive	201-400 plants, 53% flowering	401-800 clumps, 83% reproductive
1977	1	>800 plants	>800 plants in 1 pop	295 clumps across 5 pops
1977	2		66 clumps at 1 location, 54% reprod.	152 clumps across 2 nested sites
1977	1	38 plants in 1 pop	100 clumps in 2 pops	757 plants across 4 subpops
1977	1	401-800 clumps, 88% reproductive	802-1,600 clumps in 2 pops	100 stems, 25% reproductive
1989	1			3,910 plants across 2 pops
1970	1	18 clusters, 2 with flowering stems		
1990	1	sno	sno	sno
1983	1		201-400 flowering clumps	707 clumps, 95% flowering
1986	1			
1988	1	observed	observed	3 clumps
1985	1	2 clumps	49 stems in approx 8 clumps	7 genets
1989	1	many plants	6 clumps, 43% flowering	30 plants, 50% flowering
1985	1			sno
1991	1	16 clumps	sno	16 clumps
1991	1		sno	
1992	1	150 clumps, 35% reproductive	165 clumps, 15.2% flowering	117 clumps, 67% flowering
1992	1	6 clumps, 4% reproductive	14 fruiting clumps	19 clumps, 89% flowering
1993	1		23 clumps at 2 locations	19 clumps across 2 locations
1993	1	5 flowering stalks		
1997	7	observed at one nested site	220 clumps across 6 nested sites	222-421 clumps across 5 nest. sites
1993	1			sno
1999	1	1 clump	2 clumps at 2 locations	4 clumps across 2 locations
2001	1	2 plants		
2002	1		27 clumps at 3 locations	66 clumps, 90% flowering
2002	1		5 plants in 2 pops	5 clumps in 2 pops
2005	1		1 clump	sno
2001	1	8 clumps, 100% reproductive	sno	99 stems, 52% flowering

2005	1		24 inflorescences	
1988	1			
2001	1	1 clump with 5 flowering stems		
2007	1			sno
2009	1			1 clump
2009	1			3 clumps with 18 flowering stems
2008	1			2 stems, 50% flowering
2006	1		observed	5 stems, 60% flowering
2008	1			sno
2009	1	18 clumps, 122 blooms	16 stems	66 clumps. 60% flowering

notes: yellow cell = established from plantings; blank cell = no report; sno = surveyed w/ no obs.

Add as Endangered:

*Isotria medeoloides* – ok.

Mankowski response: Comment noted. This is a legal issue and the species is actually added back to the List without Board action.

*Mentzelia oligosperma* – ok

Mankowski response: Comment noted. The Board has already made preliminary approval for this listing decision.

*Utricularia subulata* – ok. Some people have suggested that this species is not native to Illinois, however, given the locations of the known sites and the associated species I see no reason to consider it a non-native species. This species is listed as Threatened in Indiana.

Mankowski response: Comment noted. The Board has already made preliminary approval for this listing decision.

## 2. ESPB staff listing status recommendations for Part 1, 1<sup>st</sup> cut Plant list Final review

Endangered to threatened:

Ammophila breviligulata	Marram Grass
Asclepias stenophylla	Narrow-leaved Green Milkweed
Carex cryptolepis	Yellow Sedge
Chamaesyce polygonifolia	Seaside Spurge
Dennstaedtia punctilobula	Hay-scented Fern
Dichanthelium yadkinense	Panic Grass
Euonymus americanus	American Strawberry Bush
Filipendula rubra	Queen-of-the-Prairie

Threatened to endangered:

Berchemia scandens	Supple-Jack
Botrychium biternatum	Southern Grape Fern
Carex intumescens	Swollen Sedge
Cimicifuga rubifolia	Black Cohosh
Corallorhiza maculata	Spotted Coral-root Orchid
Elymus trachycaulus	Bearded Wheat Grass

Remove from endangered:

Alnus incana subsp. rugosa	Speckled Alder
X Berberis canadensis	X Allegheny Barberry
Carex canescens var. disjuncta	Silvery Sedge
Cypripedium parviflorum var. makasin	Small Yellow Lady's Slipper
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort
Euphorbia spathulata	Spurge
Galium lanceolatum	Wild Licorice
Lonicera dioica var. glaucescens	Red Honeysuckle
Penstemon brevisepalus	Short-sepaed Beard Tongue
Phlox pilosa subsp. sangamonensis	Sangamon Phlox
Platanthera flava var. flava	Tuberclad Orchid

Remove from threatened:

Cakile edentula	Sea Rocket
Carex woodii	Pretty Sedge
Cypripedium candidum	White Lady's Slipper
Platanthera flava var. herbiola	Tuberclad Orchid

Add as endangered:

Isotria medeoloides	Small Whorled Pogonia
Mentzelia oligosperma	Stickleaf
Utricularia subulata	Hair Bladderwort

Add as threatened: None

No listing status change recommended: (data do not warrant change)

Adoxa moschatellina	Moschatel
Agalinus skinneriana	Pale False Foxglove
Amelanchier interior	Shadbush
Amelanchier sanguinea	Shadbush
Amorpha nitens	Smooth False Indigo
Arctostaphylos uva-ursi	Bearberry
Artemisia dracunculoides	Dragon Wormwood
Asclepias lanuginosa	Woolly Milkweed
Asclepias meadii	Mead's Milkweed
Asclepias ovalifolia	Oval Milkweed
Asplenium bradleyi	Bradley's Spleenwort
Asplenium resiliens	Black Spleenwort
Aster furcatus	Forked Aster

<i>Astragalus distortus</i>	Bent Milk Vetch
<i>Astragalus tennesseensis</i>	Tennessee Milk Vetch
<i>Baptisia tinctoria</i>	Yellow Wild Indigo
<i>Bartonia paniculata</i>	Screwstem
<i>Beckmannia syzigachne</i>	American Slough Grass
<i>Bessya bullii</i>	Kitten Tails
<i>Betula alleghaniensis</i>	Yellow Birch
<i>Boltonia decurrens</i>	Decurrent False Aster
<i>Botrychium campestre</i>	Prairie Moonwort
<i>Botrychium matricariifolium</i>	Daisyleaf Grape Fern
<i>Botrychium multifidum</i>	Northern Grape Fern
<i>Botrychium simplex</i>	Dwarf Grape Fern
<i>Bouteloua gracilis</i>	Blue Grama
<i>Buchnera americana</i>	Bluehearts
<i>Bumelia lanuginosa</i>	Wooly Buckthorn
<i>Calamagrostis inasperata</i>	Bluejoint Grass
<i>Calla palustris</i>	Water Arum
<i>Calopogon oklahomensis</i>	Oklahoma Grass Pink Orchid
<i>Calopogon tuberosus</i>	Grass Pink Orchid
<i>Camassia angusta</i>	Wild Hyacinth
<i>Carex alata</i>	Winged Sedge
<i>Carex arkansana</i>	Arkansas Sedge
<i>Carex atlantica</i>	Sedge
<i>Carex aurea</i>	Golden Sedge
<i>Carex bromoides</i>	Sedge
<i>Carex brunnescens</i>	Brownish Sedge
<i>Carex chordorrhiza</i>	Cordroot Sedge
<i>Carex communis</i>	Fibrous-rooted Sedge
<i>Carex crawfordii</i>	Crawford's Sedge
<i>Carex cumulata</i>	Sedge
<i>Carex decomposita</i>	Cypress-knee Sedge
<i>Carex diandra</i>	Sedge
<i>Carex disperma</i>	Shortleaf Sedge
<i>Carex echinata</i>	Sedge
<i>Carex formosa</i>	Sedge
<i>Carex garberi</i>	Elk Sedge
<i>Carex gigantea</i>	Large Sedge
<i>Carex inops</i> subsp. <i>heliophila</i>	Plains Sedge
<i>Carex nigromarginata</i>	Black-edged Sedge
<i>Carex oligosperma</i>	Few-seeded Sedge
<i>Carex oxylepis</i>	Sharp-scaled Sedge
<i>Carex physorhyncha</i>	Bellow's Beak Sedge
<i>Carex plantaginea</i>	Plaintain-leaved Sedge
<i>Carex prasina</i>	Drooping Sedge
<i>Carex reniformis</i>	Reniform Sedge
<i>Carex trisperma</i>	Three-seeded Sedge
<i>Carex tuckermanii</i>	Tuckerman's Sedge
<i>Carex viridula</i>	Little Green Sedge
<i>Carex willdenowii</i>	Willdenow's Sedge
<i>Carya aquatica</i>	Water Hickory
<i>Carya pallida</i>	Pale Hickory
<i>Castilleja sessiliflora</i>	Downy Yellow Painted Cup
<i>Ceanothus herbaceus</i>	Redroot
<i>Chamaedaphne calyculata</i>	Leatherleaf
<i>Chamaelirium luteum</i>	Fairy Wand
<i>Chimaphila maculata</i>	Spotted Wintergreen
<i>Chimaphila umbellata</i>	Pipsissewa
<i>Cimicifuga americana</i>	American Bugbane



<i>Cimicifuga racemosa</i>	False Bugbane
<i>Circaea alpina</i>	Small Enchanter's Nightshade
<i>Cirsium pitcheri</i>	Pitcher's (Dune) Thistle
<i>Cladrastis lutea</i>	Yellowwood
<i>Clematis crispa</i>	Blue Jasmine
<i>Clematis occidentalis</i>	Mountain Clematis
<i>Clematis viorna</i>	Leatherflower
<i>Collinsia violacea</i>	Violet Collinsia
<i>Comptonia peregrina</i>	Sweetfern
<i>Conioselinum chinense</i>	Hemlock Parsley
<i>Cornus canadensis</i>	Bunchberry
<i>Corydalis aurea</i>	Golden Corydalis
<i>Corydalis halei</i>	Hale's Corydalis
<i>Corydalis sempervirens</i>	Pink Corydalis
<i>Corylus cornuta</i>	Beaked Hazelnut
<i>Cynoscium digitatum</i>	Cynoscium
<i>Cyperus grayioides</i>	Umbrella Sedge
<i>Cyperus lancastricensis</i>	Galingale
<i>Cypripedium acaule</i>	Moccasin Flower
<i>Cypripedium reginae</i>	Showy Lady's Slipper
<i>Cystopteris laurentiana</i>	Laurentian Fragile Fern
<i>Dalea foliosa</i>	Leafy Prairie Clover
<i>Delphinium carolinianum</i>	Wild Blue Larkspur
<i>Deschampsia flexuosa</i>	Hairgrass
<i>Dichanthelium boreale</i>	Northern Panic Grass
<i>Dichanthelium jooi</i>	Panic Grass
<i>Dichanthelium portoricense</i>	Hemlock Panic Grass
<i>Dichanthelium ravenelii</i>	Ravenel's Panic Grass
<i>Dodecatheon frenchii</i>	French's Shootingstar
<i>Draba cuneifolia</i>	Whitlow Grass
<i>Drosera intermedia</i>	Narrow-leaved Sundew
<i>Drosera rotundifolia</i>	Round-leaved Sundew
<i>Dryopteris celsa</i>	Log Fern
<i>Echinodorus tenellus</i>	Small Burhead
<i>Eleocharis olivacea</i>	Capitate Spikerush
<i>Eleocharis pauciflora</i>	Few-flowered Spikerush
<i>Eleocharis rostellata</i>	Beaked Spike Rush
<i>Epilobium strictum</i>	Downy Willow Herb
<i>Equisetum pratense</i>	Meadow Horsetail
<i>Equisetum scirpoides</i>	Dwarf Scouring Rush
<i>Equisetum sylvaticum</i>	Woodland Horsetail
<i>Eriophorum virginicum</i>	Rusty Cotton Grass
<i>Eryngium prostratum</i>	Eryngo
<i>Fimbristylis vahlia</i>	Vahl's Fimbristylis
<i>Galactia mohlenbrockii</i>	Boykin's Dioclea
<i>Galium virgatum</i>	Dwarf Bedstraw
<i>Geranium bicknellii</i>	Northern Cranesbill
<i>Glyceria arkansana</i>	Arkansas Mannagrass
<i>Gratiola quartermaniae</i>	Hedge Hyssop
<i>Gymnocarpium dryopteris</i>	Oak Fern
<i>Gymnocarpium robertianum</i>	Scented Oak Fern
<i>Halesia carolina</i>	Silverbell Tree
<i>Helianthus angustifolius</i>	Narrow-leaved Sunflower
<i>Helianthus giganteus</i>	Tall Sunflower
<i>Heliotropium tenellum</i>	Slender Heliotrope
<i>Heteranthera reniformis</i>	Mud Plantain
<i>Hexalectris spicata</i>	Crested Coralroot Orchid
<i>Hudsonia tomentosa</i>	False Heather

<i>Huperzia porophila</i>	Cliff Clubmoss
<i>Hydrolea uniflora</i>	One-flowered Hydrolea
<i>Hypericum kalmianum</i>	Kalm's St. John's Wort
<i>Iliamna remota</i>	Kankakee Mallow
<i>Isotria verticillata</i>	Whorled Pogonia
<i>Juncus vaseyi</i>	Vasey's Rush
<i>Juniperus horizontalis</i>	Trailing Juniper
<i>Justicia ovata</i>	Water Willow
<i>Lesquerella ludoviciana</i>	Silvery Bladderpod
<i>Lycopodiella inundata</i>	Bog Clubmoss
<i>Lysimachia radicans</i>	Creeping Loosestrife
<i>Malus angustifolia</i>	Narrow-leaved Crabapple
<i>Malvastrum hispidum</i>	False Mallow
<i>Medeola virginiana</i>	Indian Cucumber Root
<i>Megalodonta beckii</i>	Water Marigold
<i>Melanthera nivea</i>	White Melanthera
<i>Melica mutica</i>	Two-Flowered Melic Grass
<i>Mirabilis hirsuta</i>	Hairy Umbrella-wort
<i>Nemophila triloba</i>	Baby Blue-eyes
<i>Opuntia fragilis</i>	Fragile Prickly Pear
<i>Orobanche fasciculata</i>	Clustered Broomrape
<i>Phacelia gilioides</i>	Ozark Phacelia
<i>Phegopteris connectilis</i>	Long Beech Fern
<i>Pinus banksiana</i>	Jack Pine
<i>Pinus echinata</i>	Shortleaf Pine
<i>Pinus resinosa</i>	Red Pine
<i>Platanthera ciliaris</i>	Orange Fringed Orchid
<i>Poa languida</i>	Weak Bluegrass
<i>Polanisia jamesii</i>	James' Clammyweed
<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb
<i>Potamogeton pulcher</i>	Spotted Pondweed
<i>Potamogeton strictifolius</i>	Stiff Pondweed
<i>Primula mistassinica</i>	Bird's-eye Primrose
<i>Ptilimnium nuttallii</i>	Mock's Bishop Weed
<i>Quercus texana</i>	Nuttall's Oak
<i>Rhamnus alnifolia</i>	Alder Buckthorn
<i>Rhynchospora glomerata</i>	Clustered Beak Rush
<i>Rosa acicularis</i>	Bristly Rose
<i>Sagittaria australis</i>	Arrowhead
<i>Salix serissima</i>	Autumn Willow
<i>Salix syrticola</i>	Dune Willow
<i>Sanguisorba canadensis</i>	American Burnet
<i>Sanicula smallii</i>	Southern Sanicula
<i>Saxifraga virginiana</i>	Early Saxifrage
<i>Schizachne purpurascens</i>	False Melic Grass
<i>Schoenoplectus purshianus</i>	Weak Bulrush
<i>Schoenoplectus smithii</i>	Smith's Bulrush
<i>Scirpus microcarpus</i>	Bulrush
<i>Scleria muhlenbergii</i>	Muhlenberg's Nut Rush
<i>Shepherdia canadensis</i>	Buffaloberry
<i>Silene ovata</i>	Ovate Catchfly
<i>Sorbus americana</i>	American Mountain Ash
<i>Sparganium americanum</i>	American Burreed
<i>Spiranthes lucida</i>	Yellow-lipped Ladies' Tresses
<i>Stellaria pubera</i>	Great Chickweed
<i>Stylisma pickeringii</i>	Patterson's Bindweed
<i>Styrax grandifolius</i>	Bigleaf Snowbell Bush
<i>Symphoricarpos albus</i> var. <i>albus</i>	Snowberry

Talinum calycinum	Fameflower
Thelypteris noveboracensis	New York Fern
Tilia heterophylla	White Basswood
Torreyochloa pallida	Pole Manna-Grass
Trichophorum cespitosum	Tufted Bulrush
Trillium cernuum	Nodding Trillium
Trillium erectum	Ill-scented Trillium
Ulmus thomasii	Rock Elm
Utricularia cornuta	Horned Bladderwort
Vaccinium corymbosum	Highbush Blueberry
Vaccinium oxycoccos	Small Cranberry
Vaccinium stemineum	Deerberry
Valeriana uliginosa	Marsh Valerian
Valerianella chenopodifolia	Corn Salad
Valerianella umblicata	Corn Salad
Woodsia ilvensis	Rusty Woodsia
Zigadenus elegans	White Camass

Spelling Corrections:

Agalinus skinneriana to Agalinis skinneriana (after Mohlenbrock 2002)

Cyperus grayioides to Cyperus grayoides (after Mohlenbrock 2002)

Name Changes:

Carex inops subsp heliophila to Carex heliophila (after Mohlenbrock 2002)

Cypripedium parviflorum var makasin to Cypripedium parviflorum (after Mohlenbrock 2002)

Salvia azurea subsp pitcher to Salvia azurea var grandiflora (after Mohlenbrock 1986)

Species under Federal review – implications to the Illinois List:

Phaeophysica leana. Lea's Bog Lichen. USFWS action - 12-month finding (warranted or not warranted for listing); part of 404 SE aquatic species - 12-month finding work after MDL work plan (probably after FFY2016). Illinois threatened.

Schoenoplectus hallii. Hall's Bulrush. USFWS action - 12-month finding (warranted or not warranted for listing); part of 404 SE aquatic species - 12-month finding work after MDL work plan (probably after FFY2016). Illinois threatened.

Table1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of topographic quads with occurrences (Illinois Natural Heritage Biotics 4 Database, February 2013).

**Yellow Cells**

Species with 4 or fewer EOs and with observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. Staff recommendation is for no listing status change based on the low number of EOs, observation within the last 20 years, and habitat for species with no protected EOs has not been destroyed. No individual review produced.

**Red Cells**

Species with 4 or fewer EOs and with no observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. For species listed as threatened, species were reviewed for possible T to E recommendation. Also, surv w/ no obs reports were reviewed to confirm they were insufficient to recommend delisting as extirpated. Staff recommendation is for no listing status change based on the low number of EOs, habitat for species with no protected EOs has not been reported as destroyed, combined ecology/distribution/EO data information was not supportive of T to E recommendation, and surv w/ no obs reports are insufficient to recommend delisting as extirpated. No individual review produced.

**Blue Cells**

Per the Illinois Endangered Species Protection Act (520 ILCS 10/7), the Illinois List automatically adopts species and subspecies designated as endangered or threatened by the USFWS and the Board has the authority to list species that qualify as endangered or threatened as those terms are defined in the ESPA. The Board has in some cases listed subspecies or varieties of a species if those subspecies or varieties are the only representative of the species in Illinois. These subspecies and varieties have been listed as Illinois endangered or threatened, but are not the only representative of the species in Illinois. Staff recommendation is to remove these subspecies and varieties from the IL List. No individual review produced (see Table 5 for more information).

**Gray Cells**

Species not considered in this Part 1, 1<sup>st</sup> cut Plant list review (for May, 2013), but will be considered in the Part 2, 1<sup>st</sup> cut Plant list review (for August, 2013) or a subsequent iteration, if staff is not able to complete all plant reviews in two volumes.

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	Current Status	Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
<i>Adoxa moschatellina</i>	Moschatel	E	5/23/1986	1	0	0	1	1	0
<i>Agalinus skinneriana</i>	Pale False Foxglove	T	08/14/2010	21	16	12	21	14	12
<i>Alnus incana</i> subsp. <i>rugosa</i>	Speckled Alder	E	10/01/2011	5	4	2	5	4	3
<i>Amelanchier interior</i>	Shadbush	T	2010	14	10	5	13	6	4
<i>Amelanchier sanguinea</i>	Shadbush	E	06/26/2009	8	3	2	7	5	2
<i>Ammophila breviligulata</i>	Marram Grass	E	11/23/2009	9	9	2	6	2	2
<i>Amorpha nitens</i>	Smooth False Indigo	E	8/1/2007	2	1	0	2	1	1
<i>Arctostaphylos uva-ursi</i>	Bearberry	E	11/28/2011	3	1	4	2	3	1
<i>Artemisia dracunculoides</i>	Dragon Wormwood	E	8/19/2004	2	1	0	2	1	1
<i>Asclepias lanuginosa</i>	Woolly Milkweed	E	2009	15	5	7	15	8	4
<i>Asclepias meadii</i>	Mead's Milkweed	IL E; Fed E	06/21/2012	9	8	5	8	7	5
<i>Asclepias ovalifolia</i>	Oval Milkweed	E	6/7/2011	1	1	1	1	1	1
<i>Asclepias stenophylla</i>	Narrow-leaved Green Milkweed	E	7/27/2011	7	7	1	7	2	2
<i>Asplenium bradleyi</i>	Bradley's Spleenwort	E	10/17/2011	6	3	1	5	6	4
<i>Asplenium resiliens</i>	Black Spleenwort	E	6/18/2005	2	2	0	1	1	1
<i>Aster furcatus</i>	Forked Aster	T	08/30/2012	30	12	12	26	15	7
<i>Astragalus crassicaulis</i> var. <i>trichocalyx</i>	Large Ground Plum	E	8/14/2008	4	3	1	4	2	1
<i>Astragalus distortus</i>	Bent Milk Vetch	E	04/10/2012	7	6	2	7	5	4
<i>Astragalus tennesseensis</i>	Tennessee Milk Vetch	E	5/10/2002	2	1	1	2	2	1

Baptisia tinctoria	Yellow Wild Indigo	E	8/27/2012	1	1	1	1	2	2
Bartonia paniculata	Screwstem	E	10/4/2006	2	2	1	2	1	1
Beckmannia syzigachne	American Slough Grass	E	07/31/2009	6	4	0	5	3	2
Berberis canadensis	Allegheny Barberry	E	1987	2	0	0	3	2	0
Berchemia scandens	Supple-Jack	T	11/13/1992	1	0	0	1	1	0
Bessya bullii	Kitten Tails	T	09/23/2011	29	19	9	22	11	11
Betula alleghaniensis	Yellow Birch	E	5/15/2009	4	3	3	2	3	2
Boltonia decurrens	Decurrent False Aster	IL T; Fed T	10/10/2012	31	22	2	30	20	17
Botrychium biternatum	Southern Grape Fern	T	6/26/1997	7	0	0	7	3	0
Botrychium campestre	Prairie Moonwort	E	6/1/2009	2	2	0	1	1	1
Botrychium matricariifolium	Daisyleaf Grape Fern	E	5/31/2000	3	0	1	3	2	0
Botrychium multifidum	Northern Grape Fern	E	4/29/1998	4	0	2	5	3	0
Botrychium simplex	Dwarf Grape Fern	E	6/12/1993	4	0	2	4	3	0
Bouteloua gracilis	Blue Grama	E	9/30/2011	1	1	0	1	1	1
Buchnera americana	Bluehearts	T	7/26/2011	7	4	2	7	7	4
Bumelia lanuginosa	Woolly Buckthorn	E	6/6/2012	3	3	2	2	1	1
Cakile edentula	Sea Rocket	T	08/18/2009	14	13	2	6	2	2
Calamagrostis insperata	Bluejoint Grass	E	6/30/2008	3	2	0	3	1	1
Calla palustris	Water Arum	E	6/23/2009	1	1	1	1	1	1
Calopogon oklahomensis	Oklahoma Grass Pink Orchid	E	2010	2	2	2	2	1	1
Calopogon tuberosus	Grass Pink Orchid	E	07/03/2011	19	9	17	17	9	5
Camassia angusta	Wild Hyacinth	E	6/8/2011	1	1	0	1	1	1
Cardamine pratensis var. palustris	Cuckoo Flower	E	8/30/2002	3	1	2	3	2	2
Carex alata	Winged Sedge	E	6/13/2001	1	0	0	2	1	0
Carex arkansana	Arkansas Sedge	E	9/25/2012	5	4	0	7	3	3
Carex atlantica	Sedge	T	8/3/2009	2	2	1	2	1	1
Carex aurea	Golden Sedge	T	07/01/2011	16	13	4	12	4	3
Carex bromoides	Sedge	T	05/21/2012	16	12	7	16	9	6
Carex brunnescens	Brownish Sedge	E	6/6/2009	2	2	2	2	1	1
Carex canescens var. disjuncta	Silvery Sedge	E	7/16/2007	1	1	2	1	2	2
Carex chordorrhiza	Cordroot Sedge	E	5/24/2004	2	1	1	2	1	1
Carex communis	Fibrous-rooted Sedge	T	05/31/2012	18	8	6	15	11	5
Carex crawfordii	Crawford's Sedge	E	7/17/1994	2	0	1	2	1	0
Carex crytolepis	Yellow Sedge	E	07/01/2011	7	5	0	9	5	4
Carex cumulata	Sedge	E	2012	3	3	2	2	2	2
Carex decomposita	Cypress-knee Sedge	E	10/15/2008	5	3	1	5	4	3
Carex diandra	Sedge	E	6/13/1978	2	0	1	2	1	0
Carex disperma	Shortleaf Sedge	E	6/17/2008	4	3	4	4	2	2
Carex echinata	Sedge	E	06/17/2002	5	1	1	5	4	3
Carex formosa	Sedge	E	07/03/2009	5	3	0	4	2	1
Carex garberi	Elk Sedge	E	7/20/2011	3	2	1	3	2	1
Carex gigantea	Large Sedge	E	9/28/2010	4	3	0	4	4	3
Carex inops subsp. heliophila	Plains Sedge	E	5/26/1985	4	0	1	5	2	0

Carex intumescens	Swollen Sedge	T	09/26/2011	13	5	3	12	7	3
Carex nigromarginata	Black-edged Sedge	E	6/28/2011	3	3	0	3	3	3
Carex oligosperma	Few-seeded Sedge	E	6/23/2009	4	1	2	3	3	1
Carex oxylepis	Sharp-scaled Sedge	T	6/24/2010	16	5	1	13	7	4
Carex physorhyncha	Bellow's Beak Sedge	E	6/17/1998	3	0	1	3	3	0
Carex plantaginea	Plaintain-leaved Sedge	E	5/25/2006	2	1	1	2	2	1
Carex prasina	Drooping Sedge	T	05/22/2012	9	4	2	9	9	4
Carex reniformis	Reniform Sedge	E	6/4/2004	2	1	0	2	1	1
Carex trisperma	Three-seeded Sedge	E	6/7/2009	2	2	3	2	2	2
Carex tuckermanii	Tuckerman's Sedge	E	2010	6	2	3	6	3	1
Carex viridula	Little Green Sedge	T	07/07/2011	21	11	5	17	6	4
Carex willdenowii	Willdenow's Sedge	T	5/20/2011	14	6	0	10	7	4
Carex woodii	Pretty Sedge	T	2010	22	17	10	15	8	7
Carya aquatica	Water Hickory	T	6/2/2009	5	3	1	6	5	3
Carya pallida	Pale Hickory	E	1987-02	2	0	1	3	2	0
Castilleja sessiliflora	Downy Yellow Painted Cup	E	2009	7	6	7	8	7	6
Ceanothus herbaceus	Redroot	E	09/28/2009	6	4	2	6	5	3
Chamaedaphne calyculata	Leatherleaf	T	06/23/2009	7	3	5	7	4	2
Chamaelirium luteum	Fairy Wand	E	8/3/2009	7	3	1	8	3	3
Chamaesyce polygonifolia	Seaside Spurge	E	07/20/2010	6	6	2	6	2	2
Chimaphila maculata	Spotted Wintergreen	E	7/28/1997	4	0	1	3	3	0
Chimaphila umbellata	Pipsissewa	E	6/12/1993	3	0	1	2	1	0
Cimicifuga americana	American Bugbane	E	10/9/2008	1	1	1	1	1	1
Cimicifuga racemosa	False Bugbane	E	06/20/2007	4	1	1	4	4	1
Cimicifuga rubifolia	Black Cohosh	T	9/17/2010	18	5	1	14	7	3
Circaea alpina	Small Enchanter's Nightshade	E	1987	2	0	0	2	1	0
Cirsium pitcheri	Pitcher's (Dune) Thistle	IL T; Fed T	2011	2	2	1	2	2	2
Cladrastis lutea	Yellowwood	E	11/10/2007	1	1	0	1	1	1
Clematis crispa	Blue Jasmine	E	5/21/2009	5	2	0	5	4	2
Clematis occidentalis	Mountain Clematis	E	8/20/2003	1	1	0	1	1	1
Clematis viorna	Leatherflower	E	5/25/2011	2	1	1	2	3	1
Collinsia violacea	Violet Collinsia	E	5/21/2012	1	1	0	1	1	1
Comptonia peregrina	Sweetfern	E	2012	2	2	2	2	3	2
Conioselinum chinense	Hemlock Parsley	E	9/19/1996	1	0	1	1	1	0
Corallorhiza maculata	Spotted Coral-root Orchid	T	05/15/2009	13	2	5	12	9	2
Cornus canadensis	Bunchberry	E	6/14/2001	5	0	3	5	3	0
Corydalis aurea	Golden Corydalis	E	5/3/1998	1	0	0	1	1	0
Corydalis halei	Hale's Corydalis	E	4/26/2003	1	1	0	1	1	1
Corydalis sempervirens	Pink Corydalis	E	5/3/1998	2	0	0	2	2	0
Corylus cornuta	Beaked Hazelnut	E	7/16/1992	1	0	0	1	1	0
Cynoscadium digitatum	Cynoscadium	E	8/18/1993	3	0	0	1	1	0
Cyperus grayioides	Umbrella Sedge	T	08/2007	12	7	5	13	6	4
Cyperus lancastriensis	Galingale	T	10/4/2005	3	2	1	3	3	2

Cypripedium acaule	Moccasin Flower	E	5/19/1999	2	0	1	2	2	0
Cypripedium candidum	White Lady's Slipper	T	04/19/2012	49	37	30	36	9	8
Cypripedium parviflorum var. makasin	Small Yellow Lady's Slipper	E	05/13/2009	10	7	7	7	3	3
Cypripedium reginae	Showy Lady's Slipper	E	9/15/2009	5	2	5	4	4	2
Cystopteris laurentiana	Laurentian Fragile Fern	E	1989-PRE	1	0	1	1	1	0
Dalea foliosa	Leafy Prairie Clover	IL E; Fed E	10/07/2010	9	8	3	6	3	3
Delphinium carolinianum	Wild Blue Larkspur	T	2010	10	8	1	11	4	3
Dennstaedtia punctilobula	Hay-scented Fern	E	6/22/2011	8	7	1	5	2	2
Deschampsia flexuosa	Hairgrass	E	2003	1	1	0	1	1	1
Dichanthelium boreale	Northern Panic Grass	E	6/14/2008	3	1	2	2	2	1
Dichanthelium jooi	Panic Grass	E	2008	3	1	1	3	2	1
Dichanthelium portoricense	Hemlock Panic Grass	E	8/20/1998	1	0	0	1	1	0
Dichanthelium ravenelii	Ravenel's Panic Grass	E	6/24/2008	3	2	0	3	1	1
Dichanthelium yadkinense	Panic Grass	E	8/3/2009	8	7	0	7	2	2
Dodecatheon frenchii	French's Shootingstar	T	06/22/2011	20	12	0	14	6	5
Draba cuneifolia	Whitlow Grass	E	7/23/2008	5	5	4	5	3	3
Drosera intermedia	Narrow-leaved Sundew	T	07/13/2012	13	5	7	8	7	3
Drosera rotundifolia	Round-leaved Sundew	E	08/11/2009	7	3	6	6	3	2
Dryopteris celsa	Log Fern	E	5/8/2005	1	1	1	1	1	1
Echinodorus tenellus	Small Burhead	E	8/25/2010	3	1	1	3	2	1
Eleocharis olivacea	Capitate Spikerush	E	9/9/2002	3	1	1	3	2	1
Eleocharis pauciflora	Few-flowered Spikerush	E	10/26/2004	4	2	2	3	3	2
Eleocharis rostellata	Beaked Spike Rush	T	10/7/2009	13	5	12	8	5	3
Elymus trachycaulus	Bearded Wheat Grass	T	08/12/2009	11	3	6	9	6	2
Epilobium strictum	Downy Willow Herb	T	09/15/2009	10	4	9	5	2	2
Equisetum pratense	Meadow Horsetail	T	6/28/2011	10	6	2	8	3	3
Equisetum scirpoides	Dwarf Scouring Rush	E	1978	1	0	0	1	1	0
Equisetum sylvaticum	Woodland Horsetail	E	6/29/2010	3	2	1	3	2	1
Eriophorum virginicum	Rusty Cotton Grass	E	10/20/2009	4	2	4	3	2	1
Eryngium prostratum	Eryngo	E	8/8/2002	6	1	0	7	5	1
Euonymus americanus	American Strawberry Bush	E	6/16/2011	5	4	2	7	4	3
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	E	none	0	0	0	0	0	0
Euphorbia spathulata	Spurge	E	5/12/1987	1	0	1	1	1	0
Filipendula rubra	Queen-of-the-Prairie	E	07/20/2012	23	15	11	22	13	13
Fimbristylis vahlilii	Vahl's Fimbristylis	E	8/23/2006	3	1	0	3	1	1
Galactia mohlenbrockii	Boykin's Dioclea	E	8/7/1996	2	0	2	2	1	0
Galium lanceolatum	Wild Licorice	E	none	0	0	0	0	0	0
Galium virgatum	Dwarf Bedstraw	E	5/12/2012	3	2	1	2	1	1
Geranium bicknellii	Northern Cranesbill	E	07/31/2011	8	6	3	5	3	3
Glyceria arkansana	Arkansas Mannagrass	E	5/24/2007	5	2	0	5	3	2
Gratiola quartermaniae	Hedge Hyssop	E	6/9/2009	1	1	0	1	1	1
Gymnocarpium dryopteris	Oak Fern	E	6/29/2010	2	1	1	2	2	1
Gymnocarpium robertianum	Scented Oak Fern	E	1986	1	0	0	1	1	0

Hackelia deflexa var. americana	Stickseed	E	6/27/1995	4	0	2	5	2	0
Halesia carolina	Silverbell Tree	E	6/28/2010	3	2	2	3	2	2
Helianthus angustifolius	Narrow-leaved Sunflower	T	2011	4	4	2	4	2	2
Helianthus giganteus	Tall Sunflower	E	10/5/2010	10	4	4	9	6	4
Heliotropium tenellum	Slender Heliotrope	E	5/13/2011	3	2	2	4	1	1
Heteranthera reniformis	Mud Plantian	E	10/29/2004	4	1	0	4	3	1
Hexalectris spicata	Crested Coralroot Orchid	E	07/10/2012	7	5	2	7	4	3
Hudsonia tomentosa	False Heather	E	9/30/2011	4	3	1	6	4	3
Huperzia porophila	Cliff Clubmoss	T	6/22/2011	5	1	1	3	2	1
Hydrolea uniflora	One-flowered Hydrolea	E	8/19/2010	4	1	0	4	3	1
Hymenopappus scabiosaeus	Old Plainsman								
Hypericum adpressum	Shore St. John's Wort								
Hypericum kalmianum	Kalm's St. John's Wort	E	07/20/2012	4	4	6	4	2	2
Iliamna remota	Kankakee Mallow	E	7/16/2009	2	1	2	2	2	1
Iresine rhizomatosa	Bloodleaf								
Isoetes butleri	Butler's Quillwort								
Isotria verticillata	Whorled Pogonia	E	8/3/2009	1	1	0	1	1	1
Juncus alpinus	Richardson's Rush								
Juncus vaseyi	Vasey's Rush	E	1994	1	0	1	1	1	0
Juniperus communis	Ground Juniper								
Juniperus horizontalis	Trailing Juniper	E	10/11/2011	2	2	1	2	2	2
Justicia ovata	Water Willow	E	8/20/1991	1	0	0	1	2	1
Larix laricina	Tamarack								
Lathyrus ochroleucus	Pale Vetchling								
Lechea intermedia	Pinweed								
Lespedeza leptochachya	Prairie Bush Clover								
Lesquerella ludoviciana	Silvery Bladderpod	E	3/29/2012	1	1	1	1	1	1
Liatris scariosa var. nieuwlandii	Blazing Star								
Lonicera dioica var. glaucescens	Red Honeysuckle	E	6/16/2011	3	2	0	3	2	1
Lonicera flava	Yellow Honeysuckle								
Luzula acuminata	Hairy Woodrush								
Lycopodiella inundata	Bog Clubmoss	E	7/6/2001	2	0	0	1	1	0
Lycopodium clavatum	Running Pine								
Lycopodium dendroideum	Ground Pine								
Lysimachia radicans	Creeping Loosestrife	E	9/26/2011	4	4	1	2	2	2
Malus angustifolia	Narrow-leaved Crabapple	E	7/2/2008	2	1	1	2	1	1
Malvastrum hispidum	False Mallow	E	08/26/2009	4	2	1	3	2	1
Matelea decipiens	Climbing Milkweed								
Matelea obliqua	Climbing Milkweed								
Medeola virginiana	Indian Cucumber Root	E	5/31/2009	1	1	1	1	1	1
Megalodonta beckii	Water Marigold	E	10/15/2003	2	2	1	1	1	1
Melanthera nivea	White Melanthera	E	10/3/2005	2	2	1	2	2	2



Melanthium virginicum	Bunchflower								
Melica mutica	Two-Flowered Melic Grass	E	5/10/2010	3	2	1	2	1	1
Melothria pendula	Squirting Cucumber								
Menyanthes trifoliata	Buckbean								
Mimulus glabratus	Yellow Monkey Flower								
Minuartia patula	Slender Sandwort								
Mirabilis hirsuta	Hairy Umbrella-wort	E	2003-08	2	1	1	3	1	1
Nemophila triloba	Baby Blue-eyes	E	1998-04	1	0	0	1	1	0
Nothocalais cuspidata	Prairie Dandelion								
Oenothera perennis	Small Sundrops								
Opuntia fragilis	Fragile Prickly Pear	E	9/23/2011	1	1	0	1	1	1
Orobanche fasciculata	Clustered Broomrape	E	6/20/2003	4	1	2	2	2	1
Orobanche ludoviciana	Broomrape								
Oxalis illinoensis	Illinois Wood Sorrel								
Paspalum dissectum	Bead Grass								
Penstemon brevisepalus	Short-sepaed Beard Tongue								
Penstemon grandiflorus	Large-flowered Beard Tongue								
Penstemon tubaeiflorus	Tube Beard Tongue								
Phacelia gilioides	Ozark Phacelia	E	1997	1	0	0	1	1	0
Phaeophyscia leana	Lea's Bog Lichen								
Phegopteris connectilis	Long Beech Fern	E	12/11/1998	2	0	1	3	2	0
Phlox pilosa subsp. sangamonensis	Sangamon Phlox	E	07/05/2012	7	5	0	4	2	2
Pinus banksiana	Jack Pine	E	2008	4	4	3	5	5	5
Pinus echinata	Shortleaf Pine	E	2012	4	4	1	4	4	4
Pinus resinosa	Red Pine	E	2001-10	1	0	0	1	1	0
Planera aquatica	Water Elm								
Plantago cordata	Heart-leaved Plantain								
Platanthera ciliaris	Orange Fringed Orchid	E	7/6/2012	2	2	3	2	2	2
Platanthera clavellata	Wood Orchid								
Platanthera flava var. flava	Tuberclad Orchid	E	7/27/1997	3	0	1	3	2	0
Platanthera flava var. herbiola	Tuberclad Orchid	T	07/01/2011	20	11	12	12	8	5
Platanthera leucophaea	Eastern Prairie Fringed Orchid								
Platanthera psycodes	Purple Fringed Orchid								
Poa alsodes	Grove Bluegrass								
Poa languida	Weak Bluegrass	E	5/14/2012	4	2	1	4	4	2
Poa wolfii	Wolf's Bluegrass								
Pogonia ophioglossoides	Snake-mouth								
Polanisia jamesii	James' Clammyweed	E	8/31/2012	2	2	0	5	3	3
Polygala incarnata	Pink Milkwort								
Polygonatum pubescens	Downy Solomon's Seal								
Polygonum arifolium	Halberd-leaved Tearthumb	E	6/26/2007	3	2	0	3	2	1
Polygonum careyi	Carey's Heartsease								
Populus balsamifera	Balsam Poplar								

Potamogeton gramineus	Grass-leaved Pondweed								
Potamogeton praelongus	White-stemmed Pondweed								
Potamogeton pulcher	Spotted Pondweed	E	1992	1	0	0	2	1	0
Potamogeton robbinsii	Fern Pondweed								
Potamogeton strictifolius	Stiff Pondweed	E	7/31/1991	1	0	1	1	1	0
Primula mistassinica	Bird's-eye Primrose	E	10/21/2004	1	1	0	1	1	1
Ptilimnium nuttallii	Mock's Bishop Weed	E	8/25/2000	2	0	0	3	2	0
Quercus montana	Rock Chestnut Oak								
Quercus phellos	Willow Oak								
Quercus texana	Nuttall's Oak	E	7/1/2006	4	3	3	3	2	2
Ranunculus rhomboideus	Prairie Buttercup								
Rhamnus alnifolia	Alder Buckthorn	E	7/20/1999	2	0	2	2	2	0
Rhexia mariana	Dull Meadow Beauty								
Rhynchospora alba	Beaked Rush								
Rhynchospora glomerata	Clustered Beak Rush	E	6/30/2008	3	1	0	2	2	1
Ribes hirtellum	Northern Gooseberry								
Rosa acicularis	Bristly Rose	E	8/20/2003	2	1	0	2	1	1
Rubus odoratus	Purple-flowering Raspberry								
Rubus pubescens	Dwarf Raspberry								
Rubus schneideri	Bristly Blackberry								
Rudbeckia missouriensis	Missouri Orange Coneflower								
Sabatia campestris	Prairie Rose Gentian								
Sagittaria australis	Arrowhead	E	8/3/2009	1	1	1	1	1	1
Salix serissima	Autumn Willow	E	9/3/2009	4	1	4	3	2	1
Salix syrticola	Dune Willow	E	9/17/2001	1	0	2	1	1	0
Salvia azurea subsp. pitcheri	Blue Sage	T	6/10/2011	8	3	1	7	6	3
Sambucus racemosa subsp. pubens	Red-berried Elder								
Sanguisorba canadensis	American Burnet	E	9/1/2011	3	1	0	2	2	1
Sanicula smallii	Southern Sanicula	E	7/13/2002	1	1	0	1	1	1
Sarracenia purpurea	Pitcher Plant								
Saxifraga virginiana	Early Saxifrage	E	10/17/2008	4	2	0	2	1	1
Schizachne purpurascens	False Melic Grass	E	5/6/2009	1	1	0	1	1	1
Schoenoplectus hallii	Hall's Bulrush								
Schoenoplectus purshianus	Weak Bulrush	E	2002	3	0	0	3	3	0
Schoenoplectus smithii	Smith's Bulrush	E	8/28/2003	1	1	1	1	1	1
Scirpus hattorianus	Bulrush								
Scirpus microcarpus	Bulrush	E	7/6/2009	2	2	1	1	1	1
Scirpus polyphyllus	Bulrush								
Scleria muhlenbergii	Muhlenberg's Nut Rush	E	8/9/2002	2	1	0	2	2	1
Scleria pauciflora	Carolina Whipgrass								
Sedum telephioides	American Orpine								
Shepherdia canadensis	Buffaloberry	E	6/14/2011	3	1	0	2	1	1
Silene ovata	Ovate Catchfly	E	10/17/2008	4	4	0	4	1	1

<i>Silene regia</i>	Royal Catchfly								
<i>Sisyrinchium atlanticum</i>	Eastern Blue-eyed Grass								
<i>Sisyrinchium montanum</i>	Mountain Blue-eyed Grass								
<i>Solidago sciaphila</i>	Cliff Goldenrod								
<i>Sorbus americana</i>	American Mountain Ash	E	6/14/2001	1	0	0	1	1	0
<i>Sparganium americanum</i>	American Burreed	E	10/5/2004	3	1	1	4	4	1
<i>Sparganium emersum</i>	Green-fruited Burreed								
<i>Spiranthes lucida</i>	Yellow-lipped Ladies' Tresses	E	9/10/2011	5	5	2	12	9	8
<i>Spiranthes vernalis</i>	Spring Ladies' Tresses								
<i>Stellaria pubera</i>	Great Chickweed	E	05/29/2009	4	1	1	4	3	1
<i>Stenanthium gramineum</i>	Grass-leaved Lily								
<i>Stylisma pickeringii</i>	Patterson's Bindweed	E	6/4/2009	4	2	0	3	3	2
<i>Styrax americana</i>	Storax								
<i>Styrax grandifolius</i>	Bigleaf Snowbell Bush	E	11/10/2007	1	1	0	1	1	1
<i>Sullivantia sullivantia</i>	Sullivantia								
<i>Symphoricarpos ablus var. albus</i>	Snowberry	E	5/1/2007	3	1	2	3	3	1
<i>Synandra hispidula</i>	Hairy Synandra								
<i>Talinum calycinum</i>	Fameflower	E	7/24/2009	2	2	0	2	2	2
<i>Talinum parviflorum</i>	Small Flower-of-an-hour								
<i>Tetranneuris herbacea</i>	Lakeside Daisy								
<i>Thelypteris noveboracensis</i>	New York Fern	E	5/31/2007	1	1	0	1	1	1
<i>Tilia heterophylla</i>	White Basswood	E	10/2/2005	3	1	2	4	3	1
<i>Tofieldia glutinosa</i>	False Asphodel								
<i>Tomanthera auriculata</i>	Ear-leafed Foxglove								
<i>Torreyochloa pallida</i>	Pole Manna-Grass	E	6/18/2005	2	1	1	2	2	1
<i>Tradescantia bracteata</i>	Prairie Spiderwort								
<i>Trichomanes boschianum</i>	Filmy fern								
<i>Trichophorum cespitosum</i>	Tufted Bulrush	E	1991	3	0	3	3	2	0
<i>Trientalis borealis</i>	Star-flower								
<i>Trifolium reflexum</i>	Buffalo Clover								
<i>Triglochin maritima</i>	Common Bog Arrowgrass								
<i>Triglochin palustris</i>	Slender Bog Arrowgrass								
<i>Trillium cernuum</i>	Nodding Trillium	E	06/12/2009	4	4	2	4	2	2
<i>Trillium erectum</i>	Ill-scented Trillium	E	6/15/2011	4	3	3	4	3	3
<i>Trillium viride</i>	Green Trillium								
<i>Ulmus thomasii</i>	Rock Elm	E	5/3/2011	3	1	0	3	3	1
<i>Urtica chamaedryoides</i>	Nettle								
<i>Utricularia cornuta</i>	Horned Bladderwort	E	9/18/2009	2	1	2	2	2	1
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort								
<i>Utricularia minor</i>	Small Bladderwort								
<i>Vaccinium corymbosum</i>	Highbush Blueberry	E	2012	4	3	3	4	4	3
<i>Vaccinium macrocarpon</i>	Large Cranberry								
<i>Vaccinium oxycoccos</i>	Small Cranberry	E	6/23/2011	4	3	3	5	2	1

Vaccinium stamineum	Deerberry	E	7/10/2002	1	1	0	1	1	0
Valeriana uliginosa	Marsh Valerian	E	6/6/2007	2	2	2	3	1	1
Valerianella chenopodifolia	Corn Salad	E	5/2/1987	1	0	0	1	1	0
Valerianella umbilicata	Corn Salad	E	5/31/2011	3	2	1	3	3	2
Veronica americana	American Brooklime								
Veronica scutellata	Marsh Speedwell								
Viburnum molle	Arrowwood								
Viola blanda	White Hairy Violet								
Viola canadensis	Canada Violet								
Viola conspersa	Dog Violet								
Viola primulifolia	Primrose Violet								
Woodsia ilvensis	Rusty Woodsia	E	6/24/2010	3	1	2	3	2	1
Zigadenus elegans	White Camass	E	6/14/2011	3	1	2	3	2	1

Table 2. Currently listed species, observed element occurrences and counties with observed occurrences for respective 5-year intervals ending in 2011 (some species include 2012 data also) (Illinois Natural Heritage Biotics 4 Database).

**Yellow Cells**

Species with 4 or fewer EOs and with observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. Staff recommendation is for no listing status change based on the low number of EOs, observation within the last 20 years, and habitat for species with no protected EOs has not been destroyed. No individual review produced.

**Red Cells**

Species with 4 or fewer EOs and with no observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. For species listed as threatened, species were reviewed for possible T to E recommendation. Also, surv w/ no obs reports were reviewed to confirm they were insufficient to recommend delisting as extirpated. Staff recommendation is for no listing status change based on the low number of EOs, habitat for species with no protected EOs has not been reported as destroyed, combined ecology/distribution/EO data information was not supportive of T to E recommendation, and surv w/ no obs reports are insufficient to recommend delisting as extirpated. No individual review produced.

**Blue Cells**

Per the Illinois Endangered Species Protection Act (520 ILCS 10/7), the Illinois List automatically adopts species and subspecies designated as endangered or threatened by the USFWS and the Board has the authority to list species that qualify as endangered or threatened as those terms are defined in the ESPA. The Board has in some cases listed subspecies or varieties of a species if those subspecies or varieties are the only representative of the species in Illinois. These subspecies and varieties have been listed as Illinois endangered or threatened, but are not the only representative of the species in Illinois. Staff recommendation is to remove these subspecies and varieties from the IL List. No individual review produced (see Table 5 for more information).

**Gray Cells**

Species not considered in this Part 1, 1<sup>st</sup> cut Plant list review (for May, 2013), but will be considered in the Part 2, 1<sup>st</sup> cut Plant list review (for August, 2013) or a subsequent iteration, if staff is not able to complete all plant reviews in two volumes.

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	EO 1982-1986	EO 1987-1991	EO 1992-1996	EO 1997-2001	EO 2002-2006	EO 2007-2011	EO 2012	# Cos 1982-1986	# Cos 1987-1991	# Cos 1992-1996	# Cos 1997-2001	# Cos 2002-2006	# Cos 2007-2011	# Cos 2012
<i>Adoxa moschatellina</i>	Moschatel														
<i>Agalinus skinneriana</i>	Pale False Foxglove	1	0	11	13	14	5	0	1	0	8	10	10	5	0
<i>Alnus incana</i> subsp. <i>rugosa</i>	Speckled Alder														
<i>Amelanchier interior</i>	Shadbush	2	2	6	4	5	8	0	1	2	4	2	3	3	0
<i>Amelanchier sanguinea</i>	Shadbush	0	1	2	3	2	3	0	0	1	2	3	1	2	0
<i>Ammophila breviligulata</i>	Marram Grass	1	3	3	4	6	6	0	1	3	3	4	6	6	0
<i>Amorpha nitens</i>	Smooth False Indigo														
<i>Arctostaphylos uva-ursi</i>	Bearberry														
<i>Artemisia dracunculoides</i>	Dragon Wormwood														
<i>Asclepias lanuginosa</i>	Woolly Milkweed	5	6	4	1	3	4	0	4	4	4	1	3	4	0
<i>Asclepias meadii</i>	Mead's Milkweed	3	3	9	10	3	5	2	2	2	6	7	2	4	2
<i>Asclepias ovalifolia</i>	Oval Milkweed														
<i>Asclepias stenophylla</i>	Narrow-leaved Green Milkweed	1	4	3	4	7	3	0	1	2	2	2	2	2	0
<i>Asplenium bradleyi</i>	Bradley's Spleenwort	1	1	3	3	1	2	0	1	1	5	3	1	3	0
<i>Asplenium resiliens</i>	Black Spleenwort														
<i>Aster furcatus</i>	Forked Aster	2	6	8	13	10	7	1	2	5	5	7	5	5	1
<i>Astragalus crassicaulus</i> var. <i>trichocalyx</i>	Large Ground Plum														
<i>Astragalus distortus</i>	Bent Milk Vetch	2	1	1	4	4	0	1	2	1	1	2	3	0	1
<i>Astragalus tennesseensis</i>	Tennessee Milk Vetch														

Baptisia tinctoria	Yellow Wild Indigo														
Bartonia paniculata	Screwstem														
Beckmannia syzigachne	American Slough Grass	1	3	2	2	2	3	0	1	1	1	1	2	1	0
Berberis canadensis	Allegheny Barberry	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Berchemia scandens	Supple-Jack	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Bessya bullii	Kitten Tails	13	11	13	7	6	18	0	4	7	6	7	7	10	0
Betula alleghaniensis	Yellow Birch														
Boltonia decurrens	Decurrent False Aster	2	17	23	23	16	7	0	3	14	15	18	15	7	0
Botrychium biternatum	Southern Grape Fern	2	1	2	1	0	0	0	2	1	1	1	0	0	0
Botrychium campestre	Prairie Moonwort														
Botrychium matricariifolium	Daisyleaf Grape Fern														
Botrychium multifidum	Northern Grape Fern														
Botrychium simplex	Dwarf Grape Fern														
Bouteloua gracilis	Blue Grama														
Buchnera americana	Bluehearts	0	0	1	0	1	3	0	0	0	1	0	1	2	0
Bumelia lanuginosa	Wooly Buckthorn														
Cakile edentula	Sea Rocket	0	2	6	8	9	10	0	0	2	2	2	2	2	0
Calamagrostis insperata	Bluejoint Grass														
Calla palustris	Water Arum														
Calopogon oklahomensis	Oklahoma Grass Pink Orchid														
Calopogon tuberosus	Grass Pink Orchid	3	7	4	7	7	6	0	3	5	4	6	5	5	0
Camassia angusta	Wild Hyacinth														
Cardamine pratensis var. palustris	Cuckoo Flower														
Carex alata	Winged Sedge														
Carex arkansana	Arkansas Sedge	0	0	1	0	1	1	1	0	0	1	0	1	1	1
Carex atlantica	Sedge														
Carex aurea	Golden Sedge	0	4	3	9	10	11	0	0	4	2	3	4	3	0
Carex bromoides	Sedge	2	4	2	3	7	8	1	2	3	2	3	4	4	1
Carex brunnescens	Brownish Sedge														
Carex canescens var. disjuncta	Silvery Sedge														
Carex chordorrhiza	Cordroot Sedge														
Carex communis	Fibrous-rooted Sedge	1	5	3	9	4	2	3	1	5	2	4	3	2	2
Carex crawfordii	Crawford's Sedge														
Carex crytolepis	Yellow Sedge	0	1	2	2	3	5	0	0	1	2	2	2	4	0
Carex cumulata	Sedge														
Carex decomposita	Cypress-knee Sedge	0	1	2	2	1	2	0	0	1	2	2	1	2	0
Carex diandra	Sedge														
Carex disperma	Shortleaf Sedge														
Carex echinata	Sedge	0	1	2	0	1	0	0	0	1	2	0	1	0	0
Carex formosa	Sedge	0	0	3	1	3	1	0	0	0	2	1	1	1	0
Carex garberi	Elk Sedge														
Carex gigantea	Large Sedge														
Carex inops subsp. heliophila	Plains Sedge														

Carex intumescens	Swollen Sedge	1	2	7	2	2	3	0	1	2	5	2	2	2	0
Carex nigromarginata	Black-edged Sedge														
Carex oligosperma	Few-seeded Sedge														
Carex oxylepis	Sharp-scaled Sedge	0	2	8	4	1	4	0	0	3	4	3	1	4	0
Carex physorhyncha	Bellow's Beak Sedge														
Carex plantaginea	Plaintain-leaved Sedge														
Carex prasina	Drooping Sedge	2	2	4	6	3	0	2	2	2	4	6	3	0	2
Carex reniformis	Reniform Sedge														
Carex trisperma	Three-seeded Sedge														
Carex tuckermanii	Tuckerman's Sedge	3	4	5	4	2	2	0	2	2	3	3	1	1	0
Carex viridula	Little Green Sedge	3	3	11	11	11	6	0	2	1	3	6	4	4	0
Carex willdenowii	Willdenow's Sedge	0	3	6	2	1	6	0	0	3	4	1	1	4	0
Carex woodii	Pretty Sedge	2	3	7	9	12	16	0	1	3	3	4	5	6	0
Carya aquatica	Water Hickory	0	1	2	0	0	3	0	0	2	3	0	0	3	0
Carya pallida	Pale Hickory														
Castilleja sessiliflora	Downy Yellow Painted Cup	1	3	1	3	5	3	0	1	4	1	4	6	3	0
Ceanothus herbaceus	Redroot	1	5	5	2	4	1	0	1	5	4	2	3	1	0
Chamaedaphne calyculata	Leatherleaf	1	6	1	1	3	3	0	1	4	1	1	2	2	0
Chamaelirium luteum	Fairy Wand	1	0	0	0	5	3	0	1	0	0	0	3	3	0
Chamaesyce polygonifolia	Seaside Spurge	0	1	2	3	6	4	0	0	1	1	2	2	2	0
Chimaphila maculata	Spotted Wintergreen														
Chimaphila umbellata	Pipsissewa														
Cimicifuga americana	American Bugbane														
Cimicifuga racemosa	False Bugbane														
Cimicifuga rubifolia	Black Cohosh	1	0	11	17	3	3	0	1	0	4	5	2	2	0
Circaea alpina	Small Enchanter's Nightshade														
Cirsium pitcheri	Pitcher's (Dune) Thistle														
Cladrastis lutea	Yellowwood														
Clematis crispa	Blue Jasmine	0	1	1	2	1	2	1	0	1	1	2	1	2	1
Clematis occidentalis	Mountain Clematis														
Clematis viorna	Leatherflower														
Collinsia violacea	Violet Collinsia														
Comptonia peregrina	Sweetfern														
Conioselinum chinense	Hemlock Parsley														
Corallorhiza maculata	Spotted Coral-root Orchid	3	5	2	4	1	1	0	3	4	2	4	1	1	0
Cornus canadensis	Bunchberry	1	1	1	1	0	0	0	1	1	1	1	0	0	0
Corydalis aurea	Golden Corydalis														
Corydalis halei	Hale's Corydalis														
Corydalis sempervirens	Pink Corydalis														
Corylus cornuta	Beaked Hazelnut														
Cynosciadium digitatum	Cynosciadium														
Cyperus grayioides	Umbrella Sedge	11	3	9	9	6	1	0	5	2	5	5	5	1	0
Cyperus lancastriensis	Galingale														

Cypripedium acaule	Moccasin Flower														
Cypripedium candidum	White Lady's Slipper	6	20	18	20	29	34	1	4	5	8	8	7	8	1
Cypripedium parviflorum var. makasin	Small Yellow Lady's Slipper														
Cypripedium reginae	Showy Lady's Slipper	1	2	4	3	2	1	0	1	2	4	3	2	1	0
Cystopteris laurentiana	Laurentian Fragile Fern														
Dalea foliosa	Leafy Prairie Clover	1	4	5	5	7	7	0	1	2	2	2	3	3	0
Delphinium carolinianum	Wild Blue Larkspur	0	0	0	0	6	7	0	0	0	0	0	2	3	0
Dennstaedtia punctilobula	Hay-scented Fern	0	2	1	0	6	2	0	0	1	1	0	2	1	0
Deschampsia flexuosa	Hairgrass														
Dichanthelium boreale	Northern Panic Grass														
Dichanthelium jooi	Panic Grass														
Dichanthelium portoricense	Hemlock Panic Grass														
Dichanthelium ravenelii	Ravenel's Panic Grass														
Dichanthelium yadkinense	Panic Grass	1	1	0	2	2	7	0	1	1	0	1	1	2	0
Dodecatheon frenchii	French's Shootingstar	1	1	1	1	5	9	0	2	1	1	1	5	4	0
Draba cuneifolia	Whitlow Grass	0	0	0	1	0	5	0	0	0	0	1	0	3	0
Drosera intermedia	Narrow-leaved Sundew	1	2	3	4	3	3	1	1	2	3	2	3	2	1
Drosera rotundifolia	Round-leaved Sundew	1	1	2	1	3	1	0	1	1	1	1	2	1	0
Dryopteris celsa	Log Fern														
Echinodorus tenellus	Small Burhead														
Eleocharis olivacea	Capitate Spikerush														
Eleocharis pauciflora	Few-flowered Spikerush														
Eleocharis rostellata	Beaked Spike Rush	0	9	6	6	3	2	0	0	5	4	3	3	2	0
Elymus trachycaulus	Bearded Wheat Grass	2	3	7	3	2	2	0	2	3	4	3	2	2	0
Epilobium strictum	Downy Willow Herb	1	3	2	2	3	1	0	1	2	2	2	2	1	0
Equisetum pratense	Meadow Horsetail	2	1	7	3	3	4	0	1	1	3	2	2	3	0
Equisetum scirpoides	Dwarf Scouring Rush														
Equisetum sylvaticum	Woodland Horsetail														
Eriophorum virginicum	Rusty Cotton Grass														
Eryngium prostratum	Eryngo	0	2	3	2	1	0	0	0	2	3	2	1	0	0
Euonymus americanus	American Strawberry Bush	1	0	2	1	3	3	0	2	0	3	1	3	3	0
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euphorbia spathulata	Spurge	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Filipendula rubra	Queen-of-the-Prairie	1	6	7	10	11	9	1	1	5	7	11	9	10	1
Fimbristylis vahlii	Vahl's Fimbristylis														
Galactia mohlenbrockii	Boykin's Dioclea														
Galium lanceolatum	Wild Licorice	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Galium virgatum	Dwarf Bedstraw														
Geranium bicknellii	Northern Cranesbill	0	1	2	1	3	4	0	0	1	2	1	2	3	0
Glyceria arkansana	Arkansas Mannagrass	1	1	1	1	0	2	0	1	1	1	1	0	2	0
Gratiola quartermaniae	Hedge Hyssop														
Gymnocarpium dryopteris	Oak Fern														



Gymnocarpium robertianum	Scented Oak Fern															
Hackelia deflexa var. americana	Stickseed															
Halesia carolina	Silverbell Tree															
Helianthus angustifolius	Narrow-leaved Sunflower															
Helianthus giganteus	Tall Sunflower	0	3	2	2	2	2	0	0	2	1	2	2	2	0	
Heliotropium tenellum	Slender Heliotrope															
Heteranthera reniformis	Mud Plantian															
Hexalectris spicata	Crested Coralroot Orchid	0	0	1	2	3	5	2	0	0	1	2	2	3	2	
Hudsonia tomentosa	False Heather															
Huperzia porophila	Cliff Clubmoss	0	0	2	1	0	0	0	0	0	1	1	0	0	0	
Hydrolea uniflora	One-flowered Hydrolea															
Hymenopappus scabiosaeus	Old Plainsman															
Hypericum adpressum	Shore St. John's Wort															
Hypericum kalmianum	Kalm's St. John's Wort															
Iliamna remota	Kankakee Mallow															
Iresine rhizomatosa	Bloodleaf															
Isoetes butleri	Butler's Quillwort															
Isotria verticillata	Whorled Pogonia															
Juncus alpinus	Richardson's Rush															
Juncus vaseyi	Vasey's Rush															
Juniperus communis	Ground Juniper															
Juniperus horizontalis	Trailing Juniper															
Justicia ovata	Water Willow															
Larix laricina	Tamarack															
Lathyrus ochroleucus	Pale Vetchling															
Lechea intermedia	Pinweed															
Lespedeza leptochachya	Prairie Bush Clover															
Lesquerella ludoviciana	Silvery Bladderpod															
Liatris scariosa var. nieuwlandii	Blazing Star															
Lonicera dioica var. glaucescens	Red Honeysuckle															
Lonicera flava	Yellow Honeysuckle															
Luzula acuminata	Hairy Woodrush															
Lycopodiella inundata	Bog Clubmoss															
Lycopodium clavatum	Running Pine															
Lycopodium dendroideum	Ground Pine															
Lysimachia radicans	Creeping Loosestrife															
Malus angustifolia	Narrow-leaved Crabapple															
Malvastrum hispidum	False Mallow															
Matelea decipiens	Climbing Milkweed															
Matelea obliqua	Climbing Milkweed															
Medeola virginiana	Indian Cucumber Root															
Megalodonta beckii	Water Marigold															

Melanthera nivea	White Melanthera																		
Melanthium virginicum	Bunchflower																		
Melica mutica	Two-Flowered Melic Grass																		
Melothria pendula	Squirting Cucumber																		
Menyanthes trifoliata	Buckbean																		
Mimulus glabratus	Yellow Monkey Flower																		
Minuartia patula	Slender Sandwort																		
Mirabilis hirsuta	Hairy Umbrella-wort																		
Nemophila triloba	Baby Blue-eyes																		
Nothocalais cuspidata	Prairie Dandelion																		
Oenothera perennis	Small Sundrops																		
Opuntia fragilis	Fragile Prickly Pear																		
Orobanche fasciculata	Clustered Broomrape																		
Orobanche ludoviciana	Broomrape																		
Oxalis illinoensis	Illinois Wood Sorrel																		
Paspalum dissectum	Bead Grass																		
Penstemon brevisepalus	Short-sepaled Beard Tongue																		
Penstemon grandiflorus	Large-flowered Beard Tongue																		
Penstemon tubaeflorus	Tube Beard Tongue																		
Phacelia gilioides	Ozark Phacelia																		
Phaeophyscia leana	Lea's Bog Lichen																		
Phegopteris connectilis	Long Beech Fern																		
Phlox pilosa subsp. sangamonensis	Sangamon Phlox																		
Pinus banksiana	Jack Pine																		
Pinus echinata	Shortleaf Pine																		
Pinus resinosa	Red Pine																		
Planera aquatica	Water Elm																		
Plantago cordata	Heart-leaved Plantain																		
Platanthera ciliaris	Orange Fringed Orchid																		
Platanthera clavellata	Wood Orchid																		
Platanthera flava var. flava	Tuberclad Orchid																		
Platanthera flava var. herbiola	Tuberclad Orchid																		
Platanthera leucophaea	Eastern Prairie Fringed Orchid																		
Platanthera psycodes	Purple Fringed Orchid																		
Poa alsodes	Grove Bluegrass																		
Poa languida	Weak Bluegrass																		
Poa wolfii	Wolf's Bluegrass																		
Pogonia ophioglossoides	Snake-mouth																		
Polanisia jamesii	James' Clammyweed																		
Polygala incarnata	Pink Milkwort																		
Polygonatum pubescens	Downy Solomon's Seal																		
Polygonum arifolium	Halberd-leaved Tearthumb																		
Polygonum careyi	Carey's Heartsease																		

<i>Populus balsamifera</i>	Balsam Poplar																			
<i>Potamogeton gramineus</i>	Grass-leaved Pondweed																			
<i>Potamogeton praelongus</i>	White-stemmed Pondweed																			
<i>Potamogeton pulcher</i>	Spotted Pondweed																			
<i>Potamogeton robbinsii</i>	Fern Pondweed																			
<i>Potamogeton strictifolius</i>	Stiff Pondweed																			
<i>Primula mistassinica</i>	Bird's-eye Primrose																			
<i>Ptilimnium nuttallii</i>	Mock's Bishop Weed																			
<i>Quercus montana</i>	Rock Chestnut Oak																			
<i>Quercus phellos</i>	Willow Oak																			
<i>Quercus texana</i>	Nuttall's Oak																			
<i>Ranunculus rhomboideus</i>	Prairie Buttercup																			
<i>Rhamnus alnifolia</i>	Alder Buckthorn																			
<i>Rhexia mariana</i>	Dull Meadow Beauty																			
<i>Rhynchospora alba</i>	Beaked Rush																			
<i>Rhynchospora glomerata</i>	Clustered Beak Rush																			
<i>Ribes hirtellum</i>	Northern Gooseberry																			
<i>Rosa acicularis</i>	Bristly Rose																			
<i>Rubus odoratus</i>	Purple-flowering Raspberry																			
<i>Rubus pubescens</i>	Dwarf Raspberry																			
<i>Rubus schneideri</i>	Bristly Blackberry																			
<i>Rudbeckia missouriensis</i>	Missouri Orange Coneflower																			
<i>Sabatia campestris</i>	Prairie Rose Gentian																			
<i>Sagittaria australis</i>	Arrowhead																			
<i>Salix serissima</i>	Autumn Willow																			
<i>Salix syrticola</i>	Dune Willow																			
<i>Salvia zsurea</i> subsp. <i>pitcheri</i>	Blue Sage																			
<i>Sambucus racemosa</i> subsp. <i>pubens</i>	Red-berried Elder																			
<i>Sanguisorba canadensis</i>	American Burnet																			
<i>Sanicula smallii</i>	Southern Sanicula																			
<i>Sarracenia purpurea</i>	Pitcher Plant																			
<i>Saxifraga virginiensis</i>	Early Saxifrage																			
<i>Schizachne purpurascens</i>	False Melic Grass																			
<i>Schoenoplectus hallii</i>	Hall's Bulrush																			
<i>Schoenoplectus purshianus</i>	Weak Bulrush																			
<i>Schoenoplectus smithii</i>	Smith's Bulrush																			
<i>Scirpus hattorianus</i>	Bulrush																			
<i>Scirpus microcarpus</i>	Bulrush																			
<i>Scirpus polyphyllus</i>	Bulrush																			
<i>Scleria muhlenbergii</i>	Muhlenberg's Nut Rush																			
<i>Scleria pauciflora</i>	Carolina Whipgrass																			
<i>Sedum telephioides</i>	American Orpine																			
<i>Shepherdia canadensis</i>	Buffaloberry																			

Silene ovata	Ovate Catchfly																		
Silene regia	Royal Catchfly																		
Sisyrinchium atlanticum	Eastern Blue-eyed Grass																		
Sisyrinchium montanum	Mountain Blue-eyed Grass																		
Solidago sciaphila	Cliff Goldenrod																		
Sorbus americana	American Mountain Ash																		
Sparganium americanum	American Burreed																		
Sparganium emersum	Green-fruited Burreed																		
Spiranthes lucida	Yellow-lipped Ladies' Tresses																		
Spiranthes vernalis	Spring Ladies' Tresses																		
Stellaria pubera	Great Chickweed																		
Stenanthium gramineum	Grass-leaved Lily																		
Stylisma pickeringii	Patterson's Bindweed																		
Styrax americana	Storax																		
Styrax grandifolius	Bigleaf Snowbell Bush																		
Sullivantia sullivantia	Sullivantia																		
Symphoricarpos ablus var. albus	Snowberry																		
Synandra hispidula	Hairy Synandra																		
Talinum calycinum	Fameflower																		
Talinum parviflorum	Small Flower-of-an-hour																		
Tetranneuris herbacea	Lakeside Daisy																		
Thelypteris noveboracensis	New York Fern																		
Tilia heterophylla	White Basswood																		
Tofieldia glutinosa	False Asphodel																		
Tomanthera auriculata	Ear-leaved Foxglove																		
Torreyochloa pallida	Pole Manna-Grass																		
Tradescantia bracteata	Prairie Spiderwort																		
Trichomanes boschianum	Filmy fern																		
Trichophorum cespitosum	Tufted Bulrush																		
Trientalis borealis	Star-flower																		
Trifolium reflexum	Buffalo Clover																		
Triglochin maritima	Common Bog Arrowgrass																		
Triglochin palustris	Slender Bog Arrowgrass																		
Trillium cernuum	Nodding Trillium																		
Trillium erectum	Ill-scented Trillium																		
Trillium viride	Green Trillium																		
Ulmus thomasii	Rock Elm																		
Urtica chamaedryoides	Nettle																		
Utricularia cornuta	Horned Bladderwort																		
Utricularia intermedia	Flat-leaved Bladderwort																		
Utricularia minor	Small Bladderwort																		
Vaccinium corymbosum	Highbush Blueberry																		
Vaccinium macrocarpon	Large Cranberry																		

Vaccinium oxycoccos	Small Cranberry														
Vaccinium stamineum	Deerberry														
Valeriana uliginosa	Marsh Valerian														
Valerianella chenopodifolia	Corn Salad														
Valerianella umbilicata	Corn Salad														
Veronica americana	American Brooklime														
Veronica scutellata	Marsh Speedwell														
Viburnum molle	Arrowwood														
Viola blanda	White Hairy Violet														
Viola canadensis	Canada Violet														
Viola conspersa	Dog Violet														
Viola primulifolia	Primrose Violet														
Woodsia ilvensis	Rusty Woodsia														
Zigadenus elegans	White Camass														

Table 3. Plant species issues carried over from 2009 List revision:

Species for which evidence was not available in time for listing status decisions relative to the 2009 List revision and for which the Board has already made preliminary approvals: (These are not being evaluated in the current review because they have already received Board preliminary approval)

Species	Common	Listing Status Action	Criteria Note	Date of Board preliminary approval
<i>Utricularia subulata</i>	Hair Bladderwort	Add as endangered	Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including: b. species which exhibit restricted habitats or low populations in Illinois;	142 <sup>nd</sup> meeting (May 2009)
<i>Mentzelia oligosperma</i>	Stickleaf	Add as endangered	Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which: b. have experienced a range reduction;  Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including: b. species which exhibit restricted habitats or low populations in Illinois;	141 <sup>st</sup> meeting (February 2009)
<i>Penstemon brevisepalus</i>	Short-sepaled Beard Tongue	Remove from endangered	Listed in error – <i>P. brevisepalus</i> specimen vouchers now known to have been misidentified.	147 <sup>th</sup> meeting (August 2010)

Table 4. Federally listed species that the Board removed from the IL List and question arose about authority of the Board action:

The Board removed *Isotria medeoloides* (Small Whorled Pogonia) from the IL List as extirpated in 2009. Based on review of the Illinois Endangered Species Protection Act (520 ILCS 10/7) and Ad Rule for the list of Illinois endangered and threatened flora (Title 17 ILL. ADM. CODE., CH. 1, SEC. 1050), the Board does not have the authority to remove a federal species from the Illinois list. Technically, the species remains IL-listed (as do all Federally endangered and threatened species). However, consistent with including on the IL List those Federally listed species that are extant in Illinois, staff recommendation is to re-list the species as Illinois endangered.

Species	Common	Date Board de-listed as extirpated from IL	USFWS status	Board staff recommendation
<i>Isotria medeoloides</i>	Small Whorled Pogonia	10/30/2009	USFWS still lists Illinois in the range for the species and includes Randolph County in its distribution (website checked 03/01/2013).	Add the species back to the IL List as Illinois endangered. This action does not require a public hearing by the Board, but can be done during the same cycle and process as the 2014 List revision.

Table 5. Plant subspecies and varieties:

Per the Illinois Endangered Species Protection Act (520 ILCS 10/7), the Illinois List automatically adopts species and subspecies designated as endangered or threatened by the USFWS and the Board has the authority to list species that qualify as endangered or threatened as those terms are defined in the ESPA. The Board has in some cases listed subspecies or varieties of a species if those subspecies or varieties are the only representative of the species in Illinois – using the reasoning that it effectively serves as the species representative in the state.

**Blue Cells**

Subspecies and varieties that are not the only representative of the species in Illinois. Staff recommendation is to remove these subspecies and varieties from the IL List.

**Uncolored Cells**

Subspecies and varieties that are the only representative of the species in Illinois. Staff recommendation is to leave these subspecies and varieties from the IL List.

Species	Common	Any ESPB scientific name change	Date ESPB name change	NatureServe listings for IL	Mohlenbrock (2002 and 1986)
<i>Alnus incana</i> subsp. <i>rugosa</i>	Speckled Alder	From <i>A rugosa</i> to <i>A incana</i> ssp <i>rugosa</i>	09/01/2004	<i>A incana</i> and <i>A incana</i> ssp <i>rugosa</i>	<i>A incana</i> v <i>incana</i> and <i>A incana</i> v <i>americana</i> . <i>Alnus incana</i> ssp <i>rugosa</i> is listed as a synonym of <i>A incana</i> v <i>incana</i> and <i>A rugosa</i> . <i>A rugosa</i> is not listed as a species in IL.
<i>Astragalus crassicaarpus</i> var. <i>trichocalyx</i>	Large Ground Plum	none		<i>A crassicaarpus</i> and <i>A crassicaarpus</i> v <i>trichocalyx</i>	Only <i>A crassicaarpus</i> v <i>trichocalyx</i>
<i>Cardamine pratensis</i> var. <i>palustris</i>	Cuckoo Flower	none		<i>C pratensis</i> and <i>C pratensis</i> v <i>palustris</i>	Only <i>C pratensis</i> v <i>palustris</i>
<i>Carex canescens</i> var. <i>disjuncta</i>	Silvery Sedge	none		<i>C canescens</i> and <i>C canescens</i> ssp <i>disjuncta</i>	<i>C canescens</i> v <i>disjuncta</i> and <i>C canescens</i> v <i>sublobiacea</i>
<i>Carex inops</i> subsp. <i>heliophila</i>	Plains Sedge	From <i>C heliophila</i> to <i>C inops</i> ssp <i>heliophila</i>	09/01/2004	<i>C inops</i> and <i>C inops</i> ssp <i>heliophila</i>	<i>C inops</i> , ssp or vs, not recognized. <i>C heliophila</i> is the only representative of the species listed in IL (with synonyms: <i>C pensylvanica</i> ssp <i>heliophila</i> and <i>C inops</i> ssp <i>heliophila</i> ) ESPB staff recommends change in nomenclature to <i>C heliophila</i> , include synonym in listing, and retain on IL List.
<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's Slipper	From <i>C calceolus</i> var. <i>parviflorum</i> to <i>C parviflorum</i> v <i>makasin</i>	09/01/2004	<i>C parviflorum</i> , <i>C parviflorum</i> v <i>makasin</i> , <i>C parviflorum</i> v <i>parviflorum</i> , and <i>C parviflorum</i> v <i>pubescens</i>	<i>C parviflorum</i> v <i>makasin</i> , any other ssp or vs, not recognized. <i>C parviflorum</i> is recognized in IL (with synonym <i>C calceolus</i> v <i>parviflorum</i> ) as the only representative of the species. Using Mohlenbrock, ESPB staff would recommend a change in nomenclature to <i>C parviflorum</i> , include synonym in listing, and retain on the IL List. However, ESPB TEC Taft indicates that all three varieties listed by NatureServe are present in Illinois, so if listing as <i>C parviflorum</i> does not exclude other varieties under this species that are present in IL, staff recommends removing <i>C. parviflorum</i> v <i>makasin</i> from the IL List.
<i>Hackelia deflexa</i> var. <i>americana</i>	Stickseed	From <i>H americana</i> to <i>H deflexa</i> var <i>americana</i>	09/01/2004	<i>H deflexa</i> and <i>H deflexa</i> v <i>americana</i>	Only <i>H deflexa</i> v <i>americana</i>
<i>Liatrix scariosa</i> var	Blazing Star	none		<i>L scariosa</i> and <i>L scariosa</i> v <i>nieuwlandii</i>	Only <i>L scariosa</i> v <i>nieuwlandii</i>

nieuwlandii					
<i>Lonicera dioica</i> var. <i>glaucescens</i>	Red Honeysuckle	none		Only <i>L dioica</i>	<i>L dioica</i> v <i>dioica</i> and <i>L dioica</i> v <i>glaucescens</i>
<i>Phlox pilosa</i> subsp. <i>sangamonensis</i>	Sangamon Phlox	none		<i>P pilosa</i> , <i>P pilosa</i> ssp <i>fulgida</i> , <i>P pilosa</i> ssp <i>pilosa</i> , and <i>P pilosa</i> ssp <i>sangamonensis</i>	<i>P pilosa</i> ssp <i>fulgida</i> , <i>P pilosa</i> ssp <i>pilosa</i> , and <i>P pilosa</i> ssp <i>sangamonensis</i>
<i>Platanthera flava</i> var. <i>flava</i>	Tuberclad Orchid	From <i>Habenaria flava</i> v <i>flava</i> to <i>Platanthera flava</i> v <i>flava</i>	01/18/1994	<i>P flava</i> , <i>P flava</i> v <i>flava</i> , and <i>P flava</i> v <i>herbiola</i>	<i>P flava</i> v <i>flava</i> , and <i>P flava</i> v <i>herbiola</i>
<i>Platanthera flava</i> var. <i>herbiola</i>	Tuberclad Orchid	From <i>Habenaria flava</i> v <i>herbiola</i> to <i>Platanthera flava</i> v <i>herbiola</i>	01/18/1994	<i>P flava</i> , <i>P flava</i> v <i>flava</i> , and <i>P flava</i> v <i>herbiola</i>	<i>P flava</i> v <i>flava</i> , and <i>P flava</i> v <i>herbiola</i>
<i>Salvia azurea</i> subsp. <i>pitcheri</i>	Blue Sage	none		<i>S azurea</i> and <i>S azurea</i> v <i>grandiflora</i>	Only <i>S azurea</i> v <i>grandiflora</i> (no synonyms listed in Mohlenbrock 2002; <i>S azurea</i> ssp <i>pitcheri</i> listed as a synonym in Mohlenbrock 1986) <b>ESPB staff recommends a change in nomenclature to <i>S azurea</i> v <i>grandiflora</i>, include synonym in listing, and retain on the IL List.</b>
<i>Sambucus racemosa</i> subsp. <i>pubens</i>	Red-berried Elder	From <i>S racemosa</i> to <i>S racemosa</i> ssp <i>pubens</i>	09/01/2004	<i>S racemosa</i> and <i>S racemosa</i> v <i>racemosa</i> (note - ssp <i>pubens</i> is variably considered the N American ssp of <i>racemosa</i> and ssp <i>racemosa</i> , is considered the European ssp of <i>racemosa</i> )	Only <i>S racemosa</i> ssp <i>pubens</i>
<i>Symphoricarpos albus</i> var. <i>albus</i>	Snowberry	none		<i>S albus</i> , <i>S albus</i> v <i>albus</i> , and <i>S albus</i> v <i>laevigatus</i>	<i>S albus</i> v <i>albus</i> , and <i>S albus</i> v <i>laevigatus</i> ( <b><i>S albus</i> v <i>laevigatus</i> is non-native</b> )

**ESPB TEC comments and Board staff responses for taxa associated with Table 5 (comments organized by taxa, response is at end of all comments).**

**General comments and responses:**

Marcum general comment: In this summary, however, I would like to point out problems with the premise behind delisting subspecific taxa. Both the U.S. Endangered Species Act (ESA) and other states commonly recognize subspecific taxa as Endangered or Threatened Species. It is recognized that these are distinct entities and allowing them to be listed provides the ability to target the most critical taxonomic unit in need of conservation. Many of the subspecific taxa recommended for delisting are the only represented entity in Illinois (*Alnus incana* spp. *rugosa*, *Carex inops* ssp. *heliophila*, *Symphoricarpos albus* var. *albus*, *Salvia azurea* ssp. *pitcheri* [synonym *S. azurea* var. *grandiflora*]) or in other cases both or all subspecific taxa of a particular species are rare in Illinois (*Carex canescens*, *Platanthera flava*, *Lonicera dioica*) etc.). In the case of the Sangamon Phlox (*Phlox sangamonensis* ssp. *sangamonensis*), this subspecific taxon's only known locations are in a very small part of Illinois. This taxon is found nowhere else in the world.

Mankowski response: See response below for all species in Table 5.

Nyboer general comment: Ms. Mankowski, I am having some trouble understanding how you arrived at some of the decisions that were made for delisting some of the plants in this table. Perhaps it depends on what "flora of Illinois" that was used to make the decisions? I thought we had always used the most recent Mohlenbrock publication with some adjustments of some species based on Flora of North America if necessary. I can't find in any of the 3/15/13 document what you used for the taxonomic names. As for the other plants in this table, I understand the logic followed and agree with your reasoning.



Mankowski response: Table 5 in the Part 1, Plant List 1<sup>st</sup> Cut draft document indicated references used in the heading of respective columns. Staff information is the same as yours – that the Board has always used Mohlenbrock as default for occurrence in IL and nomenclature with some adjustments to nomenclature based on Flora of North America.

Taft general comments: The most salient issue is the proposal to delist all subspecific taxa believed to be represented by other taxa with secure populations in the state. If there were subspecific taxa that represented merely ecotonal variants of species otherwise common in the state, this could be something to consider with regard to the listing status for these taxa. However, in no case is that true in the proposed list of taxa to delist. Consequently, I cannot endorse wholesale delisting of these taxa, particularly without an in depth discussion of the rationale of the action and how it would affect efforts to preserve biodiversity in Illinois. Topics such as this and how to treat species at the edge of their geographic ranges deserve thoughtful deliberation and consideration regarding how the Board should evaluate their status. These would be valuable discussions for the Board to participate in to advise Board staff on listing criteria and decision making. Some subspecific taxa represent forms that may be in the process of speciation. Evolutionary differentiation represented by some subspecific taxa could be crucial elements in a species' response to climate change and merit protection through the actions by the Endangered Species Protection Board, consistent with the listing of subspecific taxa by the Board in the past and by the U.S. Fish and Wildlife Service.

The relative costs of maintaining subspecific taxa on the list should be counter balanced with the potentially greater cost to natural resources of delisting. In this case, policy changes merit a particularly cautious approach. In a statistical sense, the risk of Type II errors should have greater allowance when it comes to protecting biodiversity to the extent possible by the actions of the Board.

There are several examples where even if delisting subspecific taxa could be considered a prudent conservation step, there are clear instances in the list of taxa Board staff have proposed for delisting that should be rejected. These are addressed below:

Mankowski response: See response below for all species in Table 5.

#### **Taxa comments (compiled by taxa) and responses (at end of taxa comments):**

Marcum: *Alnus incana* subsp. *rugosa* – Although there are two varieties listed for this species in Mohlenbrock 2002, USDA Plants Database considers them both to be synonyms with *A. incana* ssp. *rugosa*. Furthermore, the Flora of North America only recognizes *A. incana* ssp. *rugosa* for Illinois. The only other recognized subspecies is *A. incana* ssp. *tenuifolia* which is found in the western U.S. and Canada. I recommend keeping this species as Endangered.

Phillippe: *Alnus incana* ssp. *rugosa*: (Remove from Endangered). In the Flora of North America only 2 ssp. are recognized in *Alnus incana*. *Alnus incana* ssp. *rugosa* and *A. incana* ssp. *tenuifolia*. *Alnus incana* ssp. *tenuifolia* is a western subspecies of *Alnus incana*. *Alnus incana* ssp. *rugosa* comprises includes both taxa recognized by Mohlenbrock in the 2002 Flora of Illinois.

Taft: *Alnus incana* ssp. *rugosa* – According to USDA Plants database, there is only a single taxon in the eastern U.S., *A. incana*. Although Mohlenbrock (2002) recognizes a second variety, they are not recognized by many authorities. Delisting *A. incana* ssp. *rugosa* on the assumption that the species is

secure in Illinois may be an invalid conclusion. REVISE TAXONOMY (to *Alnus incana* (L.) Moench); possibly CHANGE TO THREATENED STATUS if data SUPPORT CHANGE.

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Marcum: *Carex canescens* var. *disjuncta* – I believe both varieties from Mohlenbrock 2002 are from the same population, therefore, bringing question to the validity of the identification. Even if distinct both should be considered rare in Illinois, only being known from a single site. I recommend keeping this species as Endangered.

Phillippe: *Carex canescens* var. *disjuncta*: (Maintain as Endangered). *Carex canescens* in the Flora of Illinois by Mohlenbrock 2002 recognizes 2 taxa, *C. canescens* var. *disjuncta* and *C. canescens* var. *subloliacea*. These are both listed as very rare and only known from Lake County. Taken together as *Carex canescens* they would still be recognized as Endangered in Illinois, known only from a sphagnum bog in Lake County, Illinois.

Taft: *Carex canescens* var. *disjuncta* –Although two varieties are mentioned in the Field Guide to the Flora of Illinois (Mohlenbrock 2002) and FNA account, only one variety actually is present. *Carex canescens* was discovered at Volo Bog in 1988 (Taft and Solecki 1990). Voucher specimens (Taft and Solecki #2322 and Taft and Solecki #2323, ILLS) were shown to Dr. Mohlenbrock prior to publication of the 3<sup>rd</sup> edition of the flora. Either he interpreted two specimens from the same very local population as being of two different varieties (Swink and Wilhelm [1994] indicate they are not easily separable) or he made a mistake by including *C. canescens* var. *subloliacea* as a member of the Illinois flora. Linda Curtis collected a specimen she called *C. canescens* from Volo Bog in 2008. This apparently is the basis for the FNA report of *C. canescens* var. *canescens*. She indicates (personal communication) it can be referred to *C. canescens* var. *disjuncta*. Consequently, this small population represents only a single taxon and the species *C. canescens* is still among the rarest in the state and is indicative of high quality oligotrophic peatlands. Delisting *C. canescens* var. *disjuncta* would be based on the mistaken assumption that there are other taxa present in Illinois the species is secure in the state. RECOMMENDATION – MAINTAIN AS ENDANGERED.

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Marcum: *Carex inops* ssp. *heliophila* – Is this species being removed from the List because it is considered extirpated or because it is a ssp? If it is because it is a ssp. then it should not be removed.

Nyboer: *Carex inops* subsp. *heliophila* shouldn't be delisted. Mohlenbrock (2002) lists this plant as *C. heliophila*, they are the same species. He lists only *C. heliophila* as the representative for the flora of Illinois.

Phillipps: *Carex inops* ssp. *heliophila*: (Maintain as Endangered). This taxon is now referred to in Mohlenbrock as *Carex heliophila* and the Flora of North America as *Carex inops* ssp. *heliophila*. However, this taxon has not been vouchered in Illinois since 1985 and perhaps a search for this species might relocate a population. Whatever, there is only one variety of this taxon in Illinois and it is rare. Again, this is a species on the edge of its range.

Taft: *Carex inops* ssp. *heliophila* – this taxon, and the synonym *C. pennsylvanica* var. *heliophila*, is now recognized at the species level as *C. heliophila*. If there was a basis for listing *C. inops* ssp. *heliophila*, this applies to the species. There is no other variety of *C. inops* or *C. heliophila* in Illinois. RECOMMENDATION – MAINTAIN AS ENDANGERED.

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Marcum: *Cypripedium parviflorum* var. *makasin* – I recommend this taxon remain on the List as Endangered.

Nyboer: *Cypripedium parviflorum* var. *makasin* shouldn't be delisted. Mohlenbrock (2002) lists this plant as *C. parviflorum*, they are the same species. He lists only *C. parviflorum* as the representative for the flora of Illinois.

Phillippe: *Cypripedium parviflorum* var. *makasin*: (Change to Threatened). Even when added to the more widespread large flowered yellow lady slipper it may warrant addition due to threats from being collected in the wild for horticultural purposes.

Taft: *Cypripedium parviflorum* var. *makasin* – Charles Sheviak in the FNA account for *Cypripedium* indicates that *C. parviflorum* is a highly variable taxon with three recognized varieties in North America. One of these, *Cypripedium parviflorum* var. *pubescens*, is the more widespread taxon that has had clear decline in recent years and has been on many botanists short list of taxa to consider for listing as threatened in Illinois. *C. parviflorum* var. *makasin*, a more northern variety, is the taxon formerly listed by the Board as *C. parviflorum* or *C. calceolus* var. *parviflorum*. *Cypripedium parviflorum* var. *parviflorum* occurs primarily south of Illinois, but evidently is known from the Ohio River counties in the far south where it would be very rare. The nomenclature for these taxa has been treated variably over the years and is probably still not fully reconciled. However, consistently among these considerations has been recognition of a bog/prairie taxon in the north with morphological distinctions from the woodland variety (or species, by some accounts). However it is treated taxonomically, delisting *C. parviflorum* var. *makasin* would be based on the assumption that the species is secure in the state. That assumption may not be valid. RECOMMENDATION – MAINTAIN AS ENDANGERED or consider the species, including all varieties, as THREATENED.

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Marcum: *Lonicera dioica* var. *glaucescens* – I would recommend keeping this taxon on the List. Even if both varieties are considered together I think this species is rare in Illinois.

Phillippe: *Lonicera dioica* var. *glaucescens*: (Remove from Endangered). The USDA-NRCS Plants Database give *Lonicera dioica* var. *glaucescens* as a synonym of *L. dioica*.

Taft: *Lonicera dioica* var. *glaucescens* – I have never seen this taxon in Illinois. I once saw a single specimen of *L. dioica* var. *dioica* at a Lake Michigan ravine crest in Lake County where it formerly was reported (Swink and Wilhelm 1994) to be common. At the species level, this taxon is still highly restricted in Illinois (limited to portions of 1 or 2 counties). Steve Hill worked on *L. dioica* var. *glaucescens* for the USFS and concluded that the Jackson County specimen might represent introgression with *L. flava*, a rare species of cliffs in three southern Illinois counties. RECOMMENDATION – MAINTAIN AS ENDANGERED (OR THREATENED) at SPECIES LEVEL.

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Marcum: *Phlox pilosa* var. *sangamonensis* – This taxon is an Illinois endemic, with its only known locations on the plant restricted to a very small area within central Illinois. I would recommend keeping this taxon as Endangered.

Phillippe: *Phlox pilosa* ssp. *sangamonensis*: (Maintain as Endangered). This is part of three *Phlox pilosa* subspecies known in Illinois, *Phlox pilosa* ssp. *pilosa* and *P. pilosa* ssp. *fulgida*. However, this is a special case, *Phlox pilosa* ssp. *sangamonensis* is an **Illinois endemic**. If we do not protect this

subspecies it cannot find protection anywhere else, it is found along the Sangamon River, primarily in Champaign County but also recently found in Piatt County, Illinois.

Taft: *Phlox pilosa* ssp. *sangamonensis* – as a geographic variant confined to a narrow stretch of prairie and open woodland habitats near the Sangamon River, *P. pilosa* ssp. *sangamonensis* is the only surviving endemic vascular plant taxon in Illinois. It has distinctive flower color, floral morphology, and phenology compared to recognized varieties of *P. pilosa*. According to Dr. Bill Ruesink, a former INHS assistant director and owner of one of the populations, if it was an insect it would be its own species. There have been substantial land owner contact and conservation efforts to protect known populations of this Illinois endemic. Delisting it would unnecessarily nullify these efforts. Listing this subspecies has been an example of the Board's forward thinking on protecting important elements of biodiversity. It would be more consistent with common biological conservation objectives if delisting this taxon was an outcome of habitat protection and population recovery rather than a result of wholesale policy changes without regard to individualistic taxonomic circumstances. Woody encroachment threatens all populations and in a recent survey, several plants were dug up and removed from a population. RECOMMENDATION – MAINTAIN AS ENDANGERED .

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Marcum: *Platanthera flava* var. *flava* – Both varieties of this species are currently listed as rare. This taxon should not be removed from the List.

Marcum: *Platanthera flava* var. *herbiola* – Same as above for *P. flava* var. *flava*. Both varieties of this species are currently listed as rare. This taxon should not be removed from the List.

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Nyboer: Finally, both varieties of *Platanthera flava* are currently State listed for Illinois (v. *flava* IL-E and v. *herbiola* IL-T) with no other varieties of *P. flava* listed by Mohlenbrock (2002) as representatives to the flora of Illinois. In this case since the two varieties are both listed species on the ESPB list, there should be no confusion in which variety should be listed; both should remain on the list.

Phillippe: *Platanthera flava* var. *flava*: (Maintain as Endangered). This is where the logic of not accepting subspecies or varieties as part of our Threatened and Endangered list if a more widespread subspecies or variety exist in the State. Here we have a variety that is clearly Endangered in Illinois but if we lump it with *Platanthera flava* var. *herbiola* than we have to change its Status. We should not remove it from our list because the other variety, *P. flava* var. *herbiola* is Threatened in Illinois. Because of the rarity of *P. flava* var. *flava* it should not change the status of *P. flava* var. *herbiola* when taken together. So this is a problem. I feel we should maintain *Platanthera flava* var. *flava* as endangered and maintain *Platanthera flava* var. *herbiola* as threatened. It would appear strange to call both varieties of *Platanthera flava* in Illinois as threatened when they are clearly distinct and accepted so widely, you are no longer making a decision based on science.

Phillippe: *Platanthera flava* var. *herbiola*: (Maintain as Threatened). See description above under *Platanthera flava* var. *flava*.

Taft: *Platanthera flava* var. *herbiola* and *P. flava* var. *flava* – both taxa consistently have been recognized by orchid taxonomists (including the recent FNA account) and occur usually in distinctive habitats, distributions, and morphology. Both are rare in the state; combined, *Platanthera flava* is still extremely uncommon. *Platanthera flava* var. *herbiola*, the more common of the two taxa, merits threatened status, as it has been listed since the original

publication. *Platanthera flava* var. *flava* is limited to the southern third of Illinois and is one of the rarest taxa in the state and merits endangered status, as currently listed. Delisting these taxa would be based on the assumption that other variants are secure in the state. Since the data were not provided, it is not possible at this time to conclude, but past EOR numbers do not support this assumption. RECOMMENDATION – MAINTAIN AS LISTED.

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Benda: *Salvia azurea* subsp. *pitcheri* – The document outlines that subspecies can be listed if those subspecies are the only representative of the species in Illinois. This is the only representative of the species in Illinois. The only other native *Salvia* in Illinois is *Salvia lyrata*. This species is known from several limestone sites in southern Illinois but I have only observed it at Cave Creek Glade (EO submitted in 2012). Thus, I do not support delisting this species.

Nyboer: *Salvia azurea* subsp. *Pitcher* shouldn't be delisted. Mohlenbrock (2002) lists this plant as *S. azurea* var. *grandiflora*, they are the same species. He lists only this variety of *S. azurea* as the representative for the flora of Illinois.

Marcum: *Salvia azurea* ssp. *pitcheri*- Only one subspecific taxon is found in Illinois, should be listed as *S. azurea* var. *grandiflora* (synonym of *S. azurea* spp. *pitcheri*). This taxon should not be removed from the List.

Phillippe: *Salvia azurea* ssp. *pitcheri*: (Maintain as Threatened). This species is called *Salvia azurea* ssp. *grandiflora* in Mohlenbrock (2002). However, this is just a synonym. I feel this species, while becoming more common, this is an artifact of the species escaping from cultivation. Wild populations and populations in natural communities in Illinois remains poorly represented.

Taft: *Salvia azurea* ssp. *pitcheri*- This taxon is a synonym of *S. azurea* var. *grandiflora*. There is no other more common taxon in Illinois. It is a species known from a few naturally occurring and wide ranging populations (e.g., Lost Mound and Ohio River bluffs); however, it also is a species in cultivation and some occurrences (e.g., internal Illinois counties) appear to have escaped from cultivation. Delisting this taxon should be based on evidence of recovery of natural populations rather than nomenclatural misperception. RECOMMENDATION – MAINTAIN AS THREATENED.

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Marcum: *Symphoricarpos albus* var. *albus* – This is the only native variety of this species in Illinois. I recommend keeping this taxon as Endangered.

Phillippe: *Symphoricarpos albus* var. *albus*: (Maintain as Endangered). Again this is where the logic of not accepting subspecies or varieties as part of our Threatened and Endangered list if another subspecies or variety is found or more common in the state. In Illinois we have two varieties of *Symphoricarpos albus*, *S. albus* var. *albus* and *S. albus* var. *laevigatus*. *Symphoricarpos albus* var. *albus* is truly endangered in Illinois, known only from the edge of a cliff in Kane County while *S. albus* var. *laevigatus* is a species from western United States and known in Illinois only as a species that sometimes escapes from cultivation.

Taft: *Symphoricarpos albus* var. *albus* – This taxon is known from a single population in Illinois. *Symphoricarpos albus* var. *laevigatus*, a western variety, occurs in Illinois only in adventive populations and is not considered native. Consequently, there is only one native taxon in the state. The assumption that the species is secure in the state is based on non-native material. RECOMMENDATION – MAINTAIN AS ENDANGERED.

Mankowski response for subspecies and varieties highlighted in Table 5: It appears that staff did not adequately explain the issue in question as several ESPB TECs came away with different understandings. The issue staff is trying to address here is that under the Endangered Species

Protection Act, the Board does not have the authority to list sub-specific taxa, but has elected to do so in some cases: the explanation provided staff was that the Board has included subspecies and varieties if they were the only representative of a species in Illinois. This is a legal issue and my recommendations were developed in that respect. Some taxa listed in Table 5 are not the only representative of the species in Illinois - staff is not asserting any evaluation of status or distribution for the taxa listed in Table 5 or any related variants of those taxa. Staff reviewed taxa against NatureServe listings for Illinois and Mohlenbrock (2002) and deferred to Mohlenbrock, since that has always served as the Board's default reference. Staff appreciates that several TECs offered nomenclature and eastern US range information from other sources such as Flora of North America or USDA Plants database, but those are not Illinois-specific references and the Board has always used Mohlenbrock as the default, so that was used here by staff.

Some TECs made reference to evidence and documentation, but did not provide data or documentation. Based on ESPB TEC comments, staff again checked the taxa against Mohlenbrock (2002 and now also 1986) and made four revisions to staff recommendations – 1) *Carex inops* ssp. *heliophila* – staff recommends change in nomenclature to *C. heliophila*, include synonym in listing, and retain on IL List; 2) *Cypripedium parviflorum* var. *makasin* - using Mohlenbrock, staff would recommend a change in nomenclature to *C. parviflorum*, include synonym in listing, and retain on the IL List. However, ESPB TEC Taft indicates that all three varieties listed by NatureServe are present in Illinois, so if listing as *C. parviflorum* does not exclude other varieties under this species that are present in IL, staff recommends removing *C. parviflorum* v *makasin* from the IL List; 3) *Salvia azurea* ssp. *pitcher* - staff recommends a change in nomenclature to *S. azurea* v *grandiflora*, include synonym in listing, and retain on the IL List; and 4) removing *Symphoricarpos albus* var. *albus* from the recommendation for delisting, because the only other variety of the species in Illinois is non-native. (See Table 5 for more details).

Board staff did not find other errors and makes no other changes to the staff recommendation for delisting the high-lighted subspecies and varieties. ESPB TECs made considerable comments and recommendations for many subspecies and varieties and those comments and recommendations will be included in the final draft of the Part 1, Plant list 1<sup>st</sup> cut document for Board consideration.

**Currently listed species individual reviews – for species with reviews, each review includes:**

(Note – In the reviews, I provide “notes and recommendations” for those species for which I am recommending listing status change and for those where I felt it necessary to explain my lack of recommendation for a change in listing status. If a species review does not include “notes and recommendations”, it means that I am not recommending any change in listing status.)

- a. Date of listing, reason for listing;
- b. ESPB status and distribution publication species acct;
- c. species data from Tables 1 and 2;
- d. 1982-2011 5-year element occurrence trend graph;
- e. status review triggers (if any) and listing status change recommendation (if any); and
- f. NatureServe conservation status, lower 48 (for some spp).

**Yellow Cells**

Species with 4 or fewer EOs and with observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. Staff recommendation is for no listing status change based on the low number of EOs, observation within the last 20 years, and habitat for species with no protected EOs has not been destroyed. No individual review produced.

**Red Cells**

Species with 4 or fewer EOs and with no observations within the last 20 years (since 1992). For species with no protected EOs, EOs were reviewed to confirm that habitat had not been reported as destroyed at all EOs. For species listed as threatened, species were reviewed for possible T to E recommendation. Also, surv w/ no obs reports were reviewed to confirm they were insufficient to recommended delisting as extirpated. Staff recommendation is for no listing status change based on the low number of EOs, habitat for species with no protected EOs has not been reported as destroyed, combined ecology/distribution/EO data information was not supportive of T to E recommendation, and surv w/ no obs reports are insufficient to recommend delisting as extirpated. No individual review produced.

**Blue Cells**

Per the Illinois Endangered Species Protection Act (520 ILCS 10/7), the Illinois List automatically adopts species and subspecies designated as endangered or threatened by the USFWS and the Board has the authority to list species that qualify as endangered or threatened as those terms are defined in the ESPA. The Board has in some cases listed subspecies or varieties of a species if those subspecies or varieties are the only representative of the species in Illinois. These subspecies and varieties have been listed as Illinois endangered or threatened, but are not the only representative of the species in Illinois. Staff recommendation is to remove these subspecies and varieties from the IL List. No individual review produced (see Table 5 for more information).

**Gray Cells**

Species not considered in this Part 1, 1<sup>st</sup> cut Plant list review (for May, 2013), but will be considered in the Part 2, 1<sup>st</sup> cut Plant list review (for August, 2013) or a subsequent iteration, if staff is not able to complete all plant reviews in two volumes.

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<i>Equisetum scirpoides</i>	Dwarf Scouring Rush	
<i>Equisetum sylvaticum</i>	Woodland Horsetail	
<i>Eriophorum virginicum</i>	Rusty Cotton Grass	
<i>Eryngium prostratum</i>	Eryngo	203
<i>Euonymus americanus</i>	American Strawberry Bush	205
<i>Eupatorium hyssopifolium</i>	Hyssop-leaved Thoroughwort	208
<i>Euphorbia spathulata</i>	Spurge	211
<i>Filipendula rubra</i>	Queen-of-the-Prairie	214
<i>Fimbristylis vahlii</i>	Vahl's Fimbristylis	
<i>Galactia mohlenbrockii</i>	Boykin's Dioclea	

<i>Galium lanceolatum</i>	Wild Licorice	217
<i>Galium virgatum</i>	Dwarf Bedstraw	
<i>Geranium bicknellii</i>	Northern Cranesbill	220
<i>Glyceria arkansana</i>	Arkansas Mannagrass	222
<i>Gratiola quartermaniae</i>	Hedge Hyssop	
<i>Gymnocarpium dryopteris</i>	Oak Fern	
<i>Gymnocarpium robertianum</i>	Scented Oak Fern	
<i>Hackelia deflexa</i> var. <i>americana</i>	Stickseed	
<i>Halesia carolina</i>	Silverbell Tree	
<i>Helianthus angustifolius</i>	Narrow-leaved Sunflower	
<i>Helianthus giganteus</i>	Tall Sunflower	224
<i>Heliotropium tenellum</i>	Slender Heliotrope	
<i>Heteranthera reniformis</i>	Mud Plantian	
<i>Hexalectris spicata</i>	Crested Coralroot Orchid	226
<i>Hudsonia tomentosa</i>	False Heather	
<i>Huperzia porophila</i>	Cliff Clubmoss	228
<i>Hydrolea uniflora</i>	One-flowered Hydrolea	
<i>Hymenopappus scabiosaeus</i>	Old Plainsman	
<i>Hypericum adpressum</i>	Shore St. John's Wort	
<i>Hypericum kalmianum</i>	Kalm's St. John's Wort	
<i>Iliamna remota</i>	Kankakee Mallow	
<i>Iresine rhizomatosa</i>	Bloodleaf	
<i>Isoetes butleri</i>	Butler's Quillwort	
<i>Isotria verticillata</i>	Whorled Pogonia	
<i>Juncus alpinus</i>	Richardson's Rush	
<i>Juncus vaseyi</i>	Vasey's Rush	
<i>Juniperus communis</i>	Ground Juniper	
<i>Juniperus horizontalis</i>	Trailing Juniper	
<i>Justicia ovata</i>	Water Willow	
<i>Larix laricina</i>	Tamarack	
<i>Lathyrus ochroleucus</i>	Pale Vetchling	
<i>Lechea intermedia</i>	Pinweed	
<i>Lespedeza leptochachya</i>	Prairie Bush Clover	
<i>Lesquerella ludoviciana</i>	Silvery Bladderpod	
<i>Liatris scariosa</i> var. <i>nieuwlandii</i>	Blazing Star	
<i>Lonicera dioica</i> var. <i>glaucescens</i>	Red Honeysuckle	See Table 5
<i>Lonicera flava</i>	Yellow Honeysuckle	
<i>Luzula acuminata</i>	Hairy Woodrush	
<i>Lycopodiella inundata</i>	Bog Clubmoss	
<i>Lycopodium clavatum</i>	Running Pine	
<i>Lycopodium dendroideum</i>	Ground Pine	
<i>Lysimachia radicans</i>	Creeping Loosestrife	
<i>Malus angustifolia</i>	Narrow-leaved Crabapple	
<i>Malvastrum hispidum</i>	False Mallow	
<i>Matelea decipiens</i>	Climbing Milkweed	
<i>Matelea obliqua</i>	Climbing Milkweed	
<i>Medeola virginiana</i>	Indian Cucumber Root	
<i>Megalodonta beckii</i>	Water Marigold	
<i>Melanthera nivea</i>	White Melanthera	
<i>Melanthium virginicum</i>	Bunchflower	
<i>Melica mutica</i>	Two-Flowered Melic Grass	
<i>Melothria pendula</i>	Squirting Cucumber	
<i>Menyanthes trifoliata</i>	Buckbean	
<i>Mimulus glabratus</i>	Yellow Monkey Flower	
<i>Minuartia patula</i>	Slender Sandwort	
<i>Mirabilis hirsuta</i>	Hairy Umbrella-wort	
<i>Nemophila triloba</i>	Baby Blue-eyes	

<i>Nothocalais cuspidata</i>	Prairie Dandelion	
<i>Oenothera perennis</i>	Small Sundrops	
<i>Opuntia fragilis</i>	Fragile Prickly Pear	
<i>Orobanche fasciculata</i>	Clustered Broomrape	
<i>Orobanche ludoviciana</i>	Broomrape	
<i>Oxalis illinoensis</i>	Illinois Wood Sorrel	
<i>Paspalum dissectum</i>	Bead Grass	
<i>Penstemon brevisepalus</i>	Short-sepaled Beard Tongue	See Table 3
<i>Penstemon grandiflorus</i>	Large-flowered Beard Tongue	
<i>Penstemon tubaeiflorus</i>	Tube Beard Tongue	
<i>Phacelia gilioides</i>	Ozark Phacelia	
<i>Phaeophyscia leana</i>	Lea's Bog Lichen	
<i>Phegopteris connectilis</i>	Long Beech Fern	
<i>Phlox pilosa</i> subsp. <i>sangamonensis</i>	Sangamon Phlox	See Table 5
<i>Pinus banksiana</i>	Jack Pine	
<i>Pinus echinata</i>	Shortleaf Pine	
<i>Pinus resinosa</i>	Red Pine	
<i>Planera aquatica</i>	Water Elm	
<i>Plantago cordata</i>	Heart-leaved Plantain	
<i>Platanthera ciliaris</i>	Orange Fringed Orchid	
<i>Platanthera clavellata</i>	Wood Orchid	
<i>Platanthera flava</i> var. <i>flava</i>	Tuberclad Orchid	See Table 5
<i>Platanthera flava</i> var. <i>herbiola</i>	Tuberclad Orchid	See Table 5
<i>Platanthera leucophaea</i>	Eastern Prairie Fringed Orchid	
<i>Platanthera psycodes</i>	Purple Fringed Orchid	
<i>Poa alsodes</i>	Grove Bluegrass	
<i>Poa languida</i>	Weak Bluegrass	
<i>Poa wolfii</i>	Wolf's Bluegrass	
<i>Pogonia ophioglossoides</i>	Snake-mouth	
<i>Polanisia jamesii</i>	James' Clammyweed	
<i>Polygala incarnata</i>	Pink Milkwort	
<i>Polygonatum pubescens</i>	Downy Solomon's Seal	
<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb	
<i>Polygonum careyi</i>	Carey's Heartsease	
<i>Populus balsamifera</i>	Balsam Poplar	
<i>Potamogeton gramineus</i>	Grass-leaved Pondweed	
<i>Potamogeton praelongus</i>	White-stemmed Pondweed	
<i>Potamogeton pulcher</i>	Spotted Pondweed	
<i>Potamogeton robbinsii</i>	Fern Pondweed	
<i>Potamogeton strictifolius</i>	Stiff Pondweed	
<i>Primula mistassinica</i>	Bird's-eye Primrose	
<i>Ptilimnium nuttallii</i>	Mock's Bishop Weed	
<i>Quercus montana</i>	Rock Chestnut Oak	
<i>Quercus phellos</i>	Willow Oak	
<i>Quercus texana</i>	Nuttall's Oak	
<i>Ranunculus rhomboideus</i>	Prairie Buttercup	
<i>Rhamnus alnifolia</i>	Alder Buckthorn	
<i>Rhexia mariana</i>	Dull Meadow Beauty	
<i>Rhynchospora alba</i>	Beaked Rush	
<i>Rhynchospora glomerata</i>	Clustered Beak Rush	
<i>Ribes hirtellum</i>	Northern Gooseberry	
<i>Rosa acicularis</i>	Bristly Rose	
<i>Rubus odoratus</i>	Purple-flowering Raspberry	
<i>Rubus pubescens</i>	Dwarf Raspberry	
<i>Rubus schneideri</i>	Bristly Blackberry	
<i>Rudbeckia missouriensis</i>	Missouri Orange Coneflower	
<i>Sabatia campestris</i>	Prairie Rose Gentian	
<i>Sagittaria australis</i>	Arrowhead	

<i>Salix serissima</i>	Autumn Willow	
<i>Salix syrticola</i>	Dune Willow	
<i>Salvia azurea</i> subsp. <i>pitcheri</i>	Blue Sage	See Table 5
<i>Sambucus racemosa</i> subsp. <i>pubens</i>	Red-berried Elder	
<i>Sanguisorba canadensis</i>	American Burnet	
<i>Sanicula smallii</i>	Southern Sanicula	
<i>Sarracenia purpurea</i>	Pitcher Plant	
<i>Saxifraga virginiana</i>	Early Saxifrage	
<i>Schizachne purpurascens</i>	False Melic Grass	
<i>Schoenoplectus hallii</i>	Hall's Bulrush	
<i>Schoenoplectus purshianus</i>	Weak Bulrush	
<i>Schoenoplectus smithii</i>	Smith's Bulrush	
<i>Scirpus hattorianus</i>	Bulrush	
<i>Scirpus microcarpus</i>	Bulrush	
<i>Scirpus polyphyllus</i>	Bulrush	
<i>Scleria muhlenbergii</i>	Muhlenberg's Nut Rush	
<i>Scleria pauciflora</i>	Carolina Whipgrass	
<i>Sedum telephioides</i>	American Orpine	
<i>Shepherdia canadensis</i>	Buffaloberry	
<i>Silene ovata</i>	Ovate Catchfly	
<i>Silene regia</i>	Royal Catchfly	
<i>Sisyrinchium atlanticum</i>	Eastern Blue-eyed Grass	
<i>Sisyrinchium montanum</i>	Mountain Blue-eyed Grass	
<i>Solidago sciaphila</i>	Cliff Goldenrod	
<i>Sorbus americana</i>	American Mountain Ash	
<i>Sparganium americanum</i>	American Burreed	
<i>Sparganium emersum</i>	Green-fruited Burreed	
<i>Spiranthes lucida</i>	Yellow-lipped Ladies' Tresses	
<i>Spiranthes vernalis</i>	Spring Ladies' Tresses	
<i>Stellaria pubera</i>	Great Chickweed	
<i>Stenanthium gramineum</i>	Grass-leaved Lily	
<i>Stylisma pickeringii</i>	Patterson's Bindweed	
<i>Styrax americana</i>	Storax	
<i>Styrax grandifolius</i>	Bigleaf Snowbell Bush	
<i>Sullivantia sullivantia</i>	Sullivantia	
<i>Symphoricarpos ablus</i> var. <i>albus</i>	Snowberry	
<i>Synandra hispidula</i>	Hairy Synandra	
<i>Talinum calycinum</i>	Fameflower	
<i>Talinum parviflorum</i>	Small Flower-of-an-hour	
<i>Tetranneuris herbacea</i>	Lakeside Daisy	
<i>Thelypteris noveboracensis</i>	New York Fern	
<i>Tilia heterophylla</i>	White Basswood	
<i>Tofieldia glutinosa</i>	False Asphodel	
<i>Tomanthera auriculata</i>	Ear-leafed Foxglove	
<i>Torreyochloa pallida</i>	Pole Manna-Grass	
<i>Tradescantia bracteata</i>	Prairie Spiderwort	
<i>Trichomanes boschianum</i>	Filmy fern	
<i>Trichoporum cespitosum</i>	Tufted Bulrush	
<i>Trientalis borealis</i>	Star-flower	
<i>Trifolium reflexum</i>	Buffalo Clover	
<i>Triglochin maritima</i>	Common Bog Arrowgrass	
<i>Triglochin palustris</i>	Slender Bog Arrowgrass	
<i>Trillium cernuum</i>	Nodding Trillium	
<i>Trillium erectum</i>	Ill-scented Trillium	
<i>Trillium viride</i>	Green Trillium	
<i>Ulmus thomasii</i>	Rock Elm	
<i>Urtica chamaedryoides</i>	Nettle	
<i>Utricularia cornuta</i>	Horned Bladderwort	

<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	
<i>Utricularia minor</i>	Small Bladderwort	
<i>Vaccinium corymbosum</i>	Highbush Blueberry	
<i>Vaccinium macrocarpon</i>	Large Cranberry	
<i>Vaccinium oxycoccos</i>	Small Cranberry	
<i>Vaccinium stamineum</i>	Deerberry	
<i>Valeriana uliginosa</i>	Marsh Valerian	
<i>Valerianella chenopodifolia</i>	Corn Salad	
<i>Valerianella umbilicata</i>	Corn Salad	
<i>Veronica americana</i>	American Brooklime	
<i>Veronica scutellata</i>	Marsh Speedwell	
<i>Viburnum molle</i>	Arrowwood	
<i>Viola blanda</i>	White Hairy Violet	
<i>Viola canadensis</i>	Canada Violet	
<i>Viola conspersa</i>	Dog Violet	
<i>Viola primulifolia</i>	Primrose Violet	
<i>Woodsia ilvensis</i>	Rusty Woodsia	
<i>Zigadenus elegans</i>	White Camass	

**Recommendations for species to be added as endangered or threatened:**

<i>Isotria medeoloides</i>	Small Whorled Pogonia	see Table 4
<i>Mentzelia oligosperma</i>	Stickleaf	see Table 3
<i>Utricularia subulata</i>	Hair Bladderwort	see Table 3

Pale False Foxglove, *Agalinis skinneriana* (Illinois threatened)

Listed as IL T, 01/18/1994

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

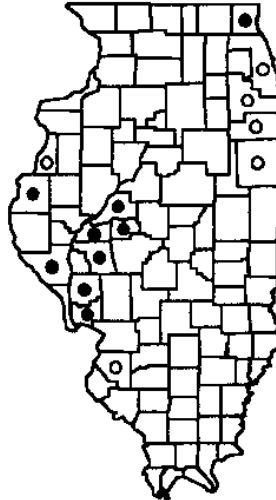
## ***Agalinis skinneriana* (Wood) Britton**

**PALE FALSE FOXGLOVE SCROPHULARIACEAE**

**Status:** Threatened in Illinois.

**Habit:** Annual, hemi-parasitic herb, stems 10-40 cm tall.

**Range:** South-central Canada and adjacent United States.



In Illinois, *Agalinis skinneriana* occurs mostly on moist to wet sandy prairies and on loess hill prairies. It is known from seventeen recent locations in the state, including six locations in state nature preserves. Populations of this taxon have declined in Illinois, with extant populations presently known from half the counties with historic records. Populations of this species in sand prairies have shown substantial declines possibly the result of fire suppression.

**References:** Ostlie (1990), Gleason and Cronquist (1991), Robertson and Phillippe (1993).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

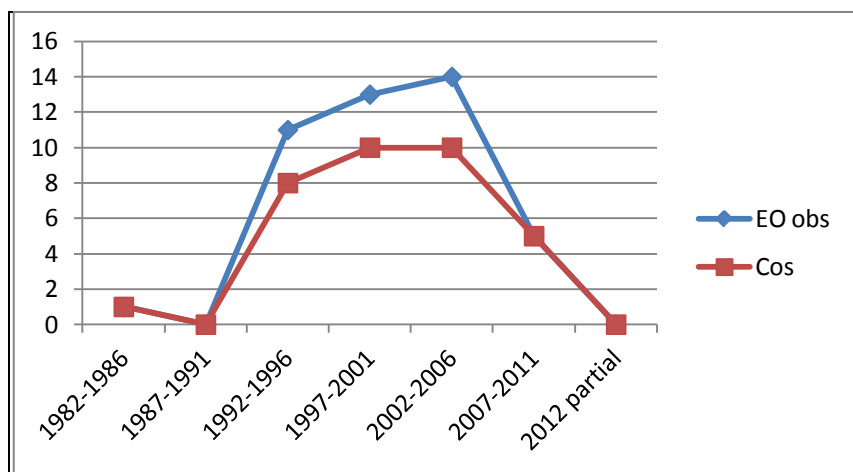
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/14/2010	21	16	12	21	14	12

Last observed EOs and counties with last observations, for 5-year intervals, and any for 2012 (Note – last observed data = most recently observed for each occurrence and observations from previous years for respective occurrences are not illustrated.)

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	11	13	14	5	0
Cos	1	0	8	10	10	5	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Not queried.

Shadbush, *Amelanchier interior* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

## *Amelanchier interior* Nielsen

SHADBUSH

ROSACEAE

**Status:** Endangered in Illinois.

**Habit:** Shrub or small tree, to 3 m tall.

**Range:** Wisconsin, Minnesota, Illinois, Iowa, and South Dakota.



*Amelanchier interior* reaches its southern range limit in extreme northern Illinois, where it occupies sand or dolomite stream bluffs and bogs. It is presently known from nine locations. These sites include mesic sand forests in Winnebago

County, a mesic dolomite bluff in Jo Daviess County, and a stream bluff in DuPage County. All of these sites are protected.

**Note:** According to Gleason and Cronquist (1991), plants called *A. interior* may be a hybrid swarm or a set of segregating polyploids derived from *A. laevis* and *A. sanguinea*.

**References:** Jones (1946), Robinson and Partanen (1980), Robinson (1982), Schwegman (1982a).

### KEY

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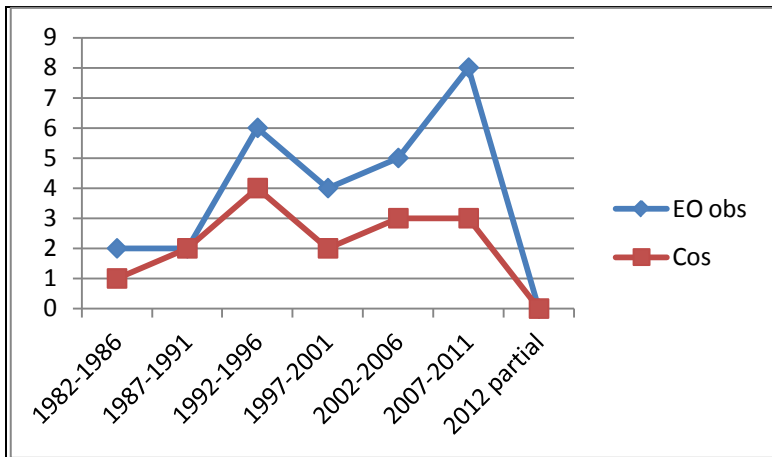
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010	14	10	5	13	6	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	2	6	4	5	8	0
Cos	1	2	4	2	3	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Shadbush, *Amelanchier sanguinea* (Illinois endangered)

Listed as IL E, 03/13/1989

Reason for listing: restricted habitats or low pops in IL;

***Amelanchier sanguinea* (Pursh) DC.**

**SHADBUSH**

**ROSACEAE**

**Status:** Endangered in Illinois.

**Habit:** Erect or straggling shrub, to 3 m tall.

**Range:** Northeastern United States and adjacent Canada, and south in the Appalachians.



In Illinois, *Amelanchier sanguinea* is known from the Northeastern Morainal, Rock River Hill County, and Grand Prairie Natural Divisions, where it occurs on wooded lake and river bluffs. It was first collected in Illinois in Lake County in 1976 and populations are now known to occur in Cook, LaSalle, McHenry and Ogle counties. Two sites are protected as Illinois nature preserves. This shadbush is known to occur throughout the driftless areas of Iowa, Minnesota, and Wisconsin, and should be searched for in the Wisconsin Driftless Natural Division of Illinois.

**References:** Jones (1946), Hartley (1966).

**KEY**

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

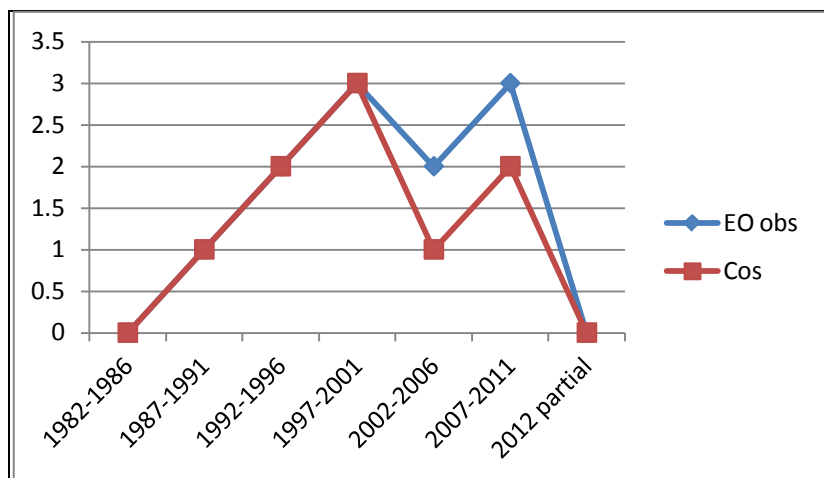
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
06/26/2009	8	3	2	7	5	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	3	2	3	0
Cos	0	1	2	3	1	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Georgia (S1?), Illinois (S1), Iowa (S3), Kansas (SU), Maine (S4), Maryland (S1), Massachusetts (S3), Michigan (SNR), Minnesota (SNR), Missouri (SNR), Nebraska (SNR), New Hampshire (SNR), New Jersey (SNR), New York (S5), North Carolina (S2), Ohio (S3), Pennsylvania (S2), Tennessee (S2), Vermont (SNR), Virginia (S3), West Virginia (S4), Wisconsin (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Marram Grass, *Ammophila breviligulata* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Ammophila breviligulata* Fern.**

**MARRAM GRASS, BEACH GRASS**

**POACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial rhizomatous grass, culms 0.5-1 m tall.

**Range:** Atlantic Coast, from Newfoundland to North Carolina, and the shores of the Great Lakes.



*Ammophila breviligulata* is a coastal species of open dunes. It is limited in Illinois to the beaches of Lake Michigan, where most of its habitat has been destroyed by urban growth. The species is now restricted to Lake and Cook counties, where it occurs in two state nature preserves, state and city parks and on private land. Some populations are threatened by accelerated shoreline erosion.

**References:** Guire and Voss (1963), Mohlenbrock (1972), Greenberg and Milde (1994).

**KEY**

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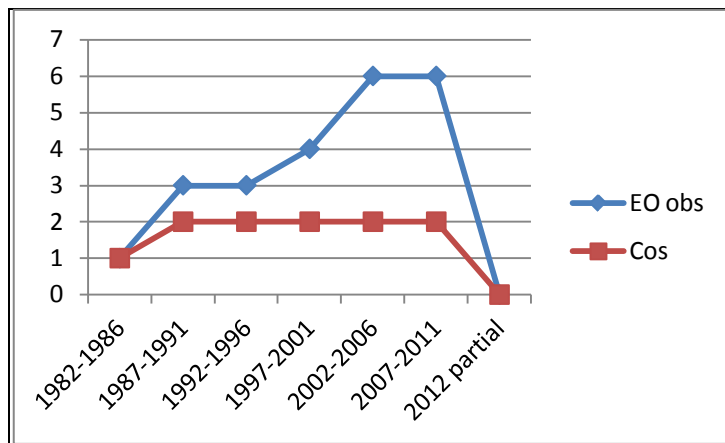
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
11/23/2009	9	9	2	6	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	3	3	4	6	6	0
Cos	1	2	2	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**ESPB TEC Chris Benda 03/29/13 comment:** In comments for two other dune species (*Cakile edentula* and *Chamaesyce polygonifolia*) for which Board staff had made status upgrade recommendations, Mr. Benda questioned why no status upgrade had been considered for *Ammophila breviligulata*, which he described as the dominant plant in dune communities.

**Mankowski 04/19/13 response:** Comment noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff reviewed again the species review for *Ammophila breviligulata* and agreed with Mr. Benda’s recommendation that, consistent with staff recommendations for the other two species, the species review should consider an upgrade in status. Staff acknowledge that they simply overlooked the species when developing the first draft of Part 1, Plan list 1<sup>st</sup> cut document.

This species’ status has improved since it was listed as endangered in 1980. At the time of listing, only one occurrence was known. One EO was added in the 1980s, three EOs were added in the 1990s, and four EOs were added in the 2000s. All 9 current EOs (100% of total ) have had observations in the last 10 years. All counties with known historic occurrences are captured in the current distribution. Two EOs (22% of total) are protected. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to

the List, since most often that level of detail is not available. Because of earlier staff oversight of this species, Ms. Mankowski elected to review the most recent reported population numbers for each EO. Across the 9 EOs there are 14 nested sites. Individual reported numbers in the most recent years of observation for each EO were: significant pops at 1 nested site; approx 140,007 clumps in 2 locations; 2 small clumps; 780 clumps; >800 clumps; approx 2,700 clumps across 3 nested sites; >800 plants; approx 2,000 clumps; and, approx 532,049 clumps.

**Mankowski 04/19/13 final recommendation:** change from endangered to threatened.

NatureServe Conservation Status in United States

California (SNA), Connecticut (SNR), Delaware (S5), Illinois (S1), Indiana (S3), Maine (SNR), Maryland (SNR), Massachusetts (SNR), Michigan (SNR), Minnesota (S2), New Hampshire (S2), New Jersey (S4), New York (S5), North Carolina (S3), Ohio (S2), Pennsylvania (S2), Rhode Island (SNR), South Carolina (SNR), Vermont (SNA), Virginia (S5), Wisconsin (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Woolly Milkweed, *Asclepias lanuginosa* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Asclepias lanuginosa* Nutt.**

**WOOLLY MILKWEED**

**ASCLEPIADACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, with decumbent stems 15-30 cm long.

**Range:** North-central United States.



*Asclepias lanuginosa* reaches its eastern range limit in dry gravel prairies in northern Illinois, where its populations and habitat have been severely reduced by overgrazing and gravel mining. Seven recent populations are known in the state, including four in state nature preserves. This species is particularly vulnerable to local extinction since populations usually consist of only a few plants that rarely produce seeds.

**Note:** Mohlenbrock (1986) uses the name *Asclepias otarioides* Fourn. for this taxon.

**References:** Woodson (1954), Fell and Fell (1956), Sorensen (1984), Hess and Stoyhoff (1989), Betz and Lamp (1992), Betz *et al.* (1994, 1999).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

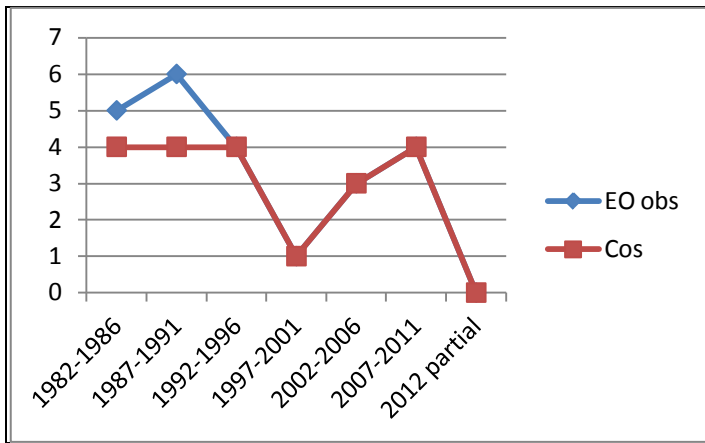
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2009	15	5	7	15	8	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	5	6	4	1	3	4	0
Cos	4	4	4	1	3	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (S1), Iowa (S2), Kansas (S1), Minnesota (SNR), Montana (SNR), Nebraska (S3?), North Dakota (S1), South Dakota (S2), Wisconsin (S1), Wyoming (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Mead’s Milkweed, *Asclepias meadii* (Illinois endangered; Federally threatened)



Listed as IL E, 5/20/1980 (Listed as Fed T, 09/01/1988)

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL;

## *Asclepias meadii* Torr.

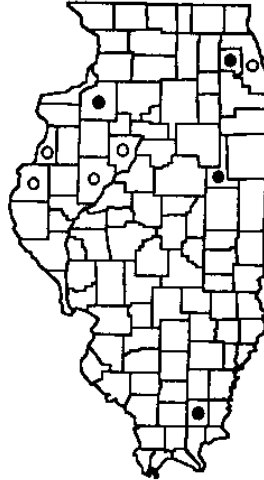
MEAD'S MILKWEED

ASCLEPIADACEAE

**Status:** Endangered in Illinois,  
Federally Threatened.

**Habit:** Perennial herb, stems  
30-60 cm tall.

**Range:** North-central United  
States.



*Asclepias meadii* is one of the rarest plants of the eastern mesic prairies. Apparently it was originally uncommon, and now its habitat has been largely destroyed. Four populations are known in Illinois from barrens remnants in the Shawnee National Forest. Populations have recently been reported from a forest preserve in DuPage County, a state nature preserve in Henry County, and a railroad prairie in Ford County. These populations consist of only a few plants that very rarely produce flowers. This species has recently (1995-1996) been reintroduced into two areas where it still persists.

**References:** Jones (1952), Woodson (1954), Myers and Henry (1976), Betz (1989), Schwegman (1990), Betz and Lamp (1992), Betz *et al.* (1994, 1999), Bowles *et al.* (1993, 1998, 1999a, 2001), Tecic *et al.* (1998), Bowles and Bell (1999a), Phillippe *et al.* (2000).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

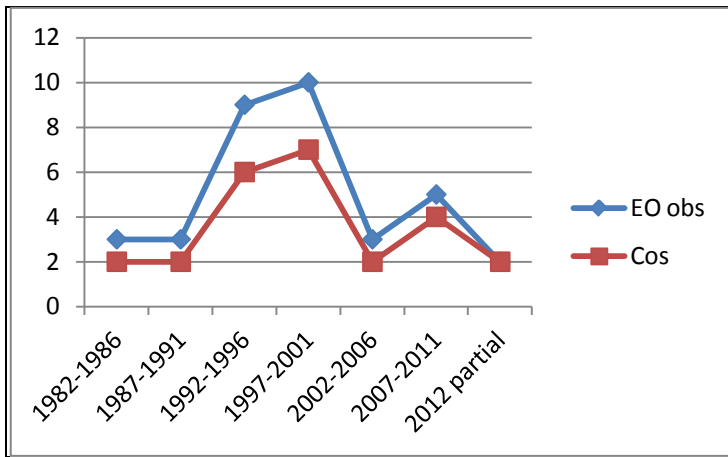
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
06/21/2012	9	8	5	8	7	5

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	3	9	10	3	5	2
Cos	2	2	6	7	2	4	2

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Illinois (S2), Indiana (SX), Iowa (S1), Kansas (S2), Missouri (S2), Wisconsin (SX)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Narrow-leaved Green Milkweed, *Asclepias stenophylla* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

***Asclepias stenophylla* Gray**

**NARROW-LEAVED GREEN MILKWEED**

**ASCLEPIADACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, stems to 1 m tall.

**Range:** Great Plains and central United States, north to Minnesota.



*Asclepias stenophylla* reaches its northeastern range limit on loess hill prairies and limestone glades along the Mississippi River bluffs of western Illinois. Its limited distribution and the general successional trend of its habitat toward forest pose a serious threat to the survival of this species in Illinois. Seven recent populations of this species are known from two Illinois counties including one in a state nature preserve.

**Reference:** Evers (1955), Betz and Lamp (1992).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

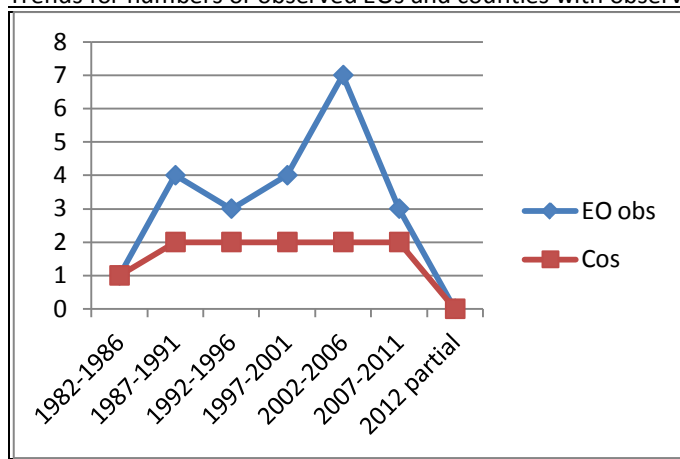
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
7/27/2011	7	7	1	7	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	4	3	4	7	3	0
Cos	1	2	2	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

When the species was originally listed as threatened in 1980, there were three known occurrences that became established as EOs. Two EOs were added in the 1980s, one EO was added in 1999, and one EO was added in 2006. There have been no “surveyed w/ no observation” reports at any EO for which there were not subsequent observations. Fully 100% of EOs have had observations in the last ten years. Three EOs (43% of total) have had repeated observations in each of the three most recent 5-year intervals and one additional EO has had repeated observations in each of the two most recent 5-year intervals.

**Mankowski 03/15/13 recommendation – change from endangered to threatened.**

**ESPB TEC Marcum 03/29/13 comment:** With greatly increased emphasis on hill prairies and dry upland forests in southwest Illinois this species has been documented several times in recent years. Increased management appears to have helped this species, however, it is still only known from a very limited number of sites in just a few Illinois counties. Information lacking in the review of this species includes number of individuals at known sites. Is the species abundant where it is found or is there just a few individuals? I would recommend keeping this species as Endangered until further data is collected.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to

the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

**ESPB TEC Rick Phillippe 03/29/13 comment:** (Maintain as Endangered). This species has only one protected occurrence in Illinois and is presently extant in 2 counties (Calhoun & Pike) while it was historically known from Adams County, Illinois. No new counties of occurrence for at least the last 20 years. The last search, 5 year period of 2007 – 2011 had 2 EO's, down from 4 EO's from the previous 5 year interval that had 7 EO's, the greatest number of EO's ever for this species. In Illinois, this species is on the northeast limit of its range where it is found on loess hill prairie and limestone glades along the Mississippi River Bluff. Species on the edge of their range are especially significant to any species genetic diversity. This is where the species are most pressured for survival, as a result of adapting to a potentially different climate and/or micro community and a reduced gene flow, they may comprise a region of potential speciation. Thus three isolated populations, while rare (threatened or endangered) in Illinois may comprise a significant value to the overall health (survivability to a potentially rapidly changing environment) of the species.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided.

There are a total of seven EOs for the species – all seven have had observation in the last 10 years and three EOs had observations in the most recent 5-year interval. While that is a relatively large reduction in observations, it needs to be considered in the context that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations largely reflects search effort. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. The number of EOs for the species has more than doubled since it was listed as threatened in 1980 – two EOs were added prior to its status change to endangered in 1998 and two EOs have been added since then. The species' known historic distribution includes only three counties and there are recent EOs from two (66%) of those counties. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

**ESPB TEC John Taft 03/28/13 comment:** 7 EORs in 2 counties may not qualify for this change. Recent surveys of hill prairies likely would have yielded more records of this distinctive and readily recognizable species if it was more common. This may be all there is. Not sure this minor increase in EORS supports this change in status. Is there any information on population sizes that might suggest these occurrences were particularly large? If these are small populations, these numbers fall short of suggesting a secure or increasing trend. Hill prairies in

particular are so prone to woody encroachment that the habitat cannot be considered secure.  
RECOMMENDATION - NO CHANGE.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. With regard to number of occurrences, staff recommendation is based on the number of observations relative to known EOs over time and not on whether the species is absent or present at other or additional locations. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 7 EOs there are 21 nested sites; 2 persisting since the 1970s, 8 since the 1980s, 2 since the 1990s, 6 since the 2000s, and 3 since the 2010s. Most recent individual reports for each of the 7 EOs were: observed; 20+ plants; 6+ plants; 13 plants; 75 plants; 6 plants; and, 2 plants. Staff acknowledges that these are not large individual population numbers, but the number of EOs has more than doubled since the species was originally listed as threatened in 1980. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

**Mankowski 04/19/13 final recommendation:** change from endangered to threatened

NatureServe Conservation Status in United States

Arkansas (SH), Colorado (S2), Illinois (S2), Iowa (S1), Kansas (SNR), Louisiana (S1), Minnesota (S1), Missouri (SNR), Montana (S1), Nebraska (SNR), New Mexico (SNR), Oklahoma (SNR), South Dakota (SNR), Texas (SNR), Wyoming (S1S2)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Bradley's Spleenwort, *Asplenium bradleyi* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E 01/18/1994

Reason for listing: restricted habitats or low pops in IL;

***Asplenium bradleyi* D.C. Eat.**

**BRADLEY'S SPLEENWORT**

**ASPLENIACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial evergreen fern from slender rhizomes, fronds to 30 cm long.

**Range:** Eastern United States.



*Asplenium bradleyi* reaches its northern range limit in southern Illinois, where it is restricted to the Shawnee Hills and Ozark Natural Divisions. It occurs primarily in crevices of sandstone cliffs and chert outcrops. Most known populations occur in the Shawnee National Forest; however, one is in a state nature preserve and another is in private ownership. The primary threats to this species seem to be drought and botanical collecting.

**References:** Mohlenbrock (1954, 1967b, 1985a), Mohlenbrock and Engh (1964), Weber (1970), Wagner *et al.* (1993).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

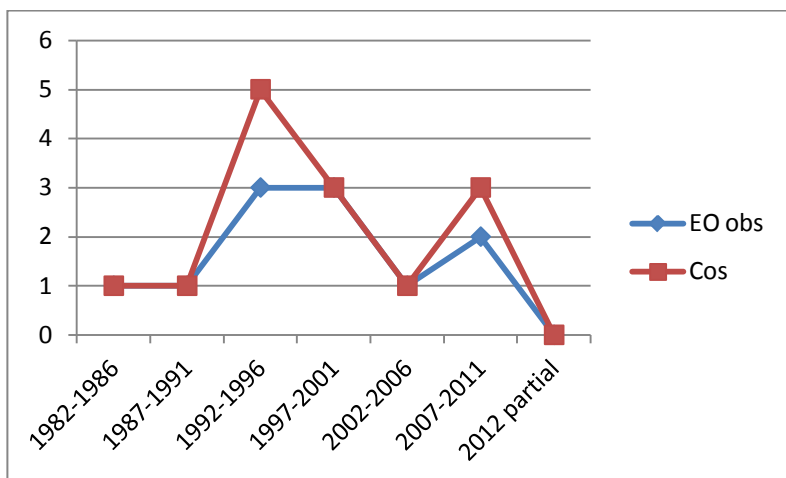
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/17/2011	6	3	1	5	6	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	3	3	1	2	0
Cos	1	1	5	3	1	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Alabama (S2), Arkansas (SNR), Georgia (S3?), Illinois (S1), Indiana (S1), Kentucky (S3S4), Louisiana (SNR), Maryland (SH), Missouri (SNR), New Jersey (S1), New York (SH), North Carolina (S2), Ohio (S2), Oklahoma (S1), Pennsylvania (S1), South Carolina (S1), Tennessee (S2S3), Virginia (S2), West Virginia (SH)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).



Forked Aster, *Aster furcatus* (Illinois threatened)

Listed as IL T 03/13/1989

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Aster furcatus* Burgess

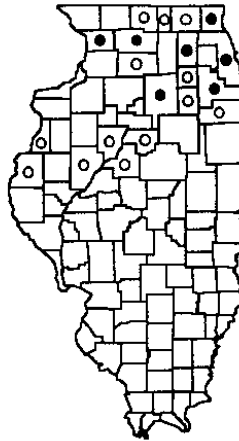
**FORKED ASTER**

**ASTERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial rhizomatous herb, stems to 1 m tall.

**Range:** East-central United States.



*Aster furcatus* is essentially restricted to Illinois and adjoining states, where it usually occurs in seepage zones along north-facing wooded bluffs and stream banks. This species has undergone a fifty percent decline in extant county records in Illinois and now is restricted to seventeen populations in seven northern counties. Since this species is habitat-restricted to seepages, it is vulnerable to drainage or development projects.

**References:** Shinnars (1941), Johnson and Iltis (1963), Jones (1989), Schwegman (1990), Les *et al.* (1991).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

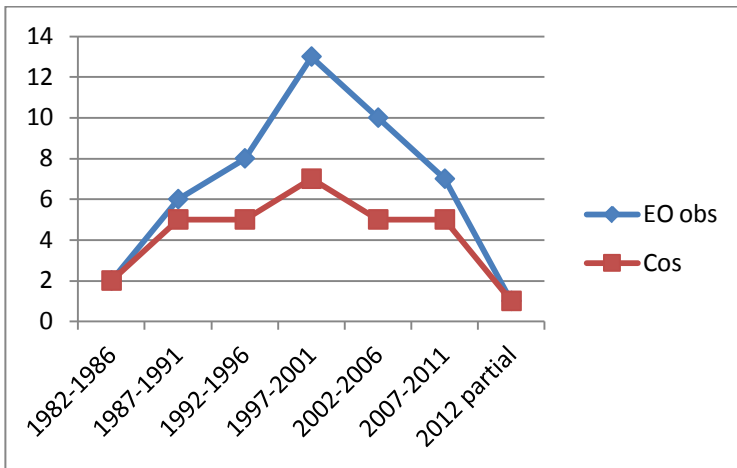
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/30/2012	30	12	12	26	15	7

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	6	8	13	10	7	1
Cos	2	5	5	7	5	5	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Bent Milk Vetch, *Astragalus distortus* (Illinois endangered)

Listed as IL E, 09/01/2004

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

### ***Astragalus distortus* Torr. & Gray**

**BENT MILK VETCH**

**FABACEAE**

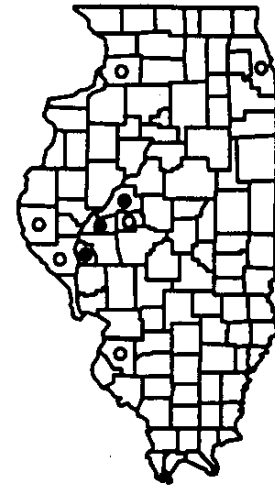
**Status:** Endangered in Illinois

**Habit:** Perennial, taprooted herb, stems to 30 cm tall.

**Range:** South-central United States.

*Astragalus distortus* reaches its northeastern range limit in the sand areas of western and central Illinois. Based on herbarium records the number of extant populations of bent milk vetch in Illinois has declined from 23 in the 1950s to only six at the present time. Of these, four are located along roads and railroads, one is in a mowed cemetery, and one is located in a state nature preserve in Mason County. One of the roadside populations is located at the edge of another nature preserve in Mason County.

**References:** Jones and Fuller (1955), McClain and Ebinger (2003).



### **MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nyboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

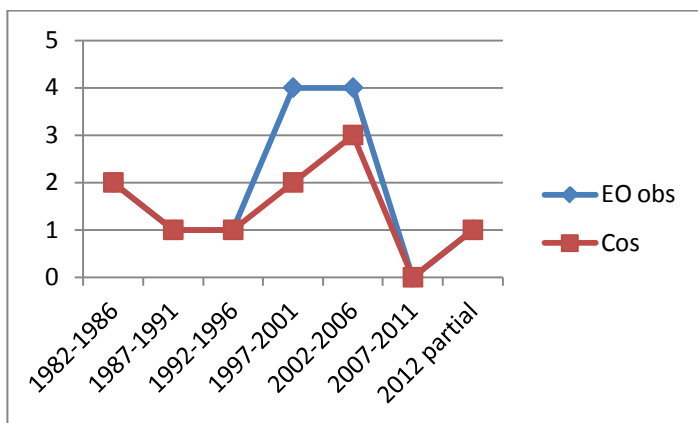
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
04/10/2012	7	6	2	7	5	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	1	1	4	4	0	1
Cos	2	1	1	2	3	0	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Arkansas (SNR), Illinois (SNR), Iowa (S3), Kansas (SNR), Louisiana (SNR), Maryland (S2), Mississippi (S1), Missouri (SNR), Oklahoma (SNR), Texas (SNR), Virginia (S1), West Virginia (S2)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

American Slough Grass, *Beckmannia syzigachne* (Illinois endangered)

Listed as IL E, 05/20/1980

Reason for listing: restricted habitats or low pops in IL

***Beckmannia syzigachne* (Steud.) Fern.**  
**AMERICAN SLOUGH GRASS** **POACEAE**

**Status:** Endangered in Illinois.

**Habit:** Solitary or tufted annual grass, culms 0.5 - 1 m tall.

**Range:** Boreal Alaska and Canada, south into western and north-central United States.



*Beckmannia syzigachne* reaches its southeastern range limit in Illinois, where it occurs in wet prairies. In northeastern Illinois this species is known to occur in two county forest preserves and a tract in private ownership. A collection was also made from a railroad prairie in McDonough County in 1974.

**References:** Mohlenbrock (1972), Henry (1986).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

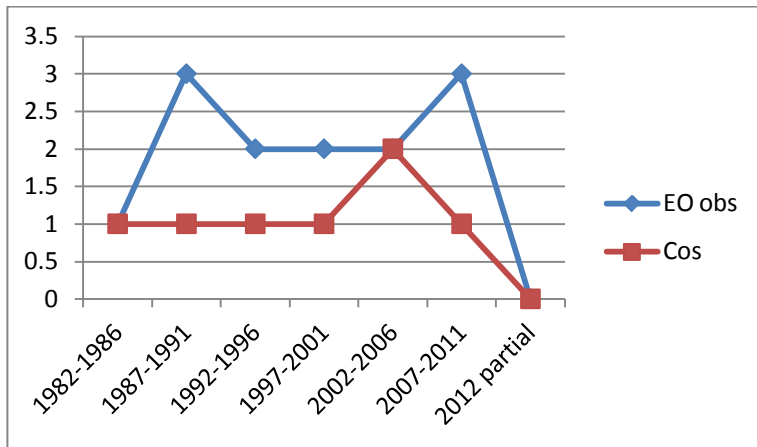
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/31/2009	6	4	0	5	3	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	3	2	2	2	3	0
Cos	1	1	1	1	2	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

Alaska (SNR), Arizona (S1), California (SNR), Colorado (SNR), Idaho (SNR), Illinois (S1), Iowa (S2), Kansas (SNR), Maine (SNR), Michigan (S2), Minnesota (SNR), Missouri (SNR), Montana (S4?), Nebraska (SNR), Nevada (SNR), New Mexico (SNR), New York (SNR), North Dakota (SNR), Ohio (SNR), Oregon (SNR), Pennsylvania (SNR), South Dakota (SNR), Utah (SNR), Washington (SNR), Wisconsin (SNR), Wyoming (S4)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Allegheny Barberry, *Berberis canadensis* (Illinois endangered)

Listed as IL E, 05/20/1980

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL;

## ***Berberis canadensis* P. Mill.**

**ALLEGHENY BARBERRY**

**BERBERIDACEAE**

**Status:** Endangered in Illinois.

**Habit:** Shrub 1-2 m tall, with trifid spines.

**Range:** Southeastern United States, northwest to Illinois and Missouri.



*Berberis canadensis* is extremely rare in the western part of its range with scattered, disjunct populations. As late as 1987 this taxon was in the Shawnee National Forest on a sandstone bluff of the Mississippi River. It probably still persists at that site.

**References:** Mohlenbrock (1981), Mohlenbrock and Wilson (1985), Whittemore (1997a).

### **KEY**

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1987	2	0	0	3	2	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	0	0	0	0
Cos	0	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

No graph produced

**Mankowski notes and recommendation:**

The species is known from two locations and has not been observed since 1977 at the Tazewell County location and 1987 at the Jackson County location. Surveys with no observation were reported in 1988 and twice in 2012 in Jackson County and twice in 2012 in Tazewell County.

**Mankowski recommendation** – Mankowski will conduct surveys at each location during the spring of 2013. If the species is not observed this year, recommend to remove from endangered as extirpated.

NatureServe Conservation Status in United States

Alabama (SH), Georgia (S1), Illinois (S1), Indiana (S1), Kentucky (S1), Maryland (SH), Missouri (S2), North Carolina (S2), Ohio (SNR), Pennsylvania (SX), South Carolina (SNR), Tennessee (S2), Virginia (S3S4), West Virginia (S1)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).



Supple-jack, *Berchemia scandens* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

## *Berchemia scandens* (Hill) K. Koch

SUPPLE-JACK

RHAMNACEAE

**Status:** Endangered in Illinois.

**Habit:** High-climbing woody vine.

**Range:** Southeastern United States.



*Berchemia scandens* reaches its northern range limit in the Shawnee Hills Natural Division of Illinois. A single state population, last seen in 1992, occurs in an upland forest and adjacent pine plantation along a fire lane in the Shawnee National Forest.

**References:** Schwegman (1970), Mohlenbrock (1982).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

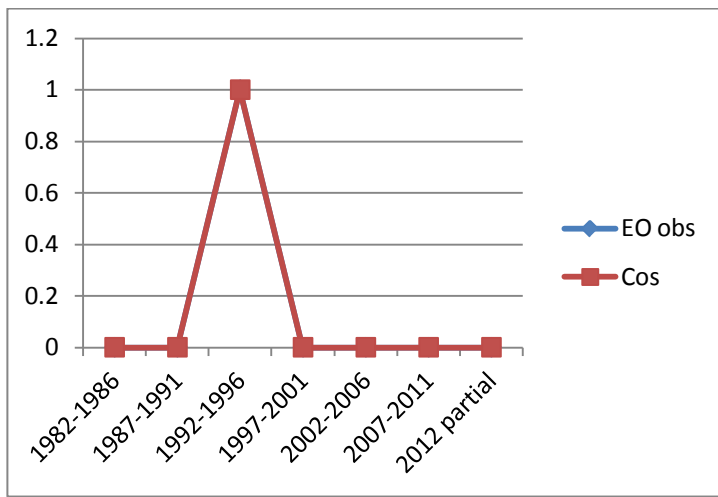
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
11/13/1992	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	0	0	0	0
Cos	0	0	1	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**ESPB TEC John Taft 03/28/13 comment:** Berchemia scandens – T to E; only 1 EOR. Listed as E in 2002.

**Mankowski 04/19/13 response:** No data, evidence, or documentation was provided. This species’ status was changed from endangered to threatened in 2009 for the following reasons presented by the ESTAC for plants – “This species is becoming more abundant in the area where it was first discovered in Illinois. Also, present information suggests that this taxon may be adventive in Illinois, sometimes being planted in the southeastern United States.” Apparently, no data supporting the recommendation was brought forth.

**Mankowski 04/19/13 final recommendation:** Staff overlooked this species review. Agree with the recommendation for a change back to endangered because the previous listing decision was made without sufficient evidence.

NatureServe Conservation Status in United States

None queried.

Kitten Tails, *Besseyia bullii* (Illinois threatened)

Listed as IL T, 04/17/1990

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Besseyia bullii* (Eat.) Rydb.

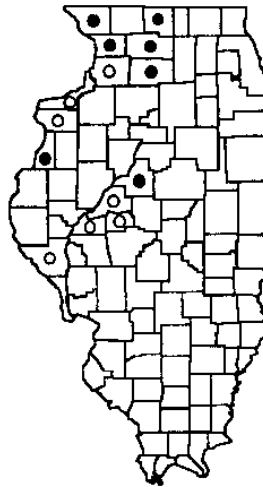
KITTEN TAILS

SCROPHULARIACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial herb, stems to 40 cm tall.

**Range:** Southern Michigan to Minnesota, south to Ohio, Indiana, Illinois, and Iowa.



*Besseyia bullii* occurs in sand savannas and gravel prairies along the Mississippi, Illinois, and Rock rivers in the northwestern part of the state. Formerly known from fourteen Illinois counties, this species is presently known from twenty three populations in seven counties. Three populations occur in state nature preserves, one in a state park, and another in a state forest.

**References:** Pennell (1933, 1935), Schwegman (1990).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

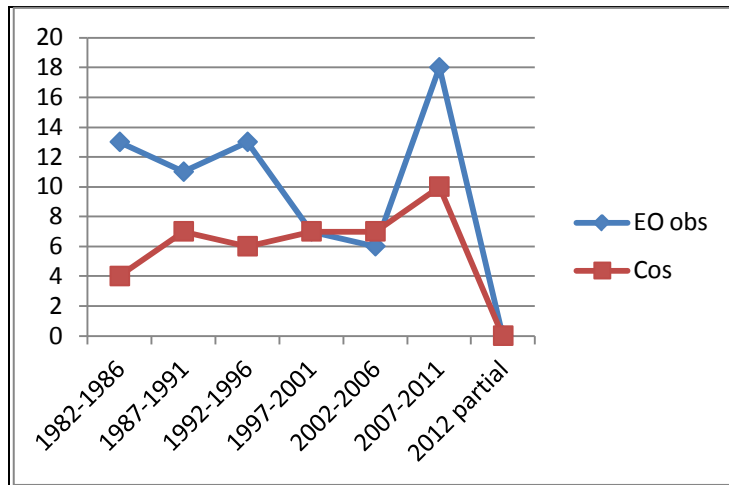
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
09/23/2011	29	19	9	22	11	11

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	13	11	13	7	6	18	0
Cos	4	7	6	7	7	10	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The number of EOs with observations has nearly doubled since the time this species was listed as threatened in 1990. Observations increased significantly during the most recent 5-year interval and within the last 10 years, 19 EOs (66% of total) had observations and 5 new EOs and 3 new counties were added. However, during the same timeframe, 12 EOs were surveyed with no observations, including 3 noted as destroyed. Nine EOs (31%) are protected. It appears the species' status and distribution has improved, but it would be good to see at least the same number of observations sustained into another 5-year interval before considering a recommendation for delisting.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

Not queried.

Decurrent False Aster, *Boltonia decurrens* (Illinois threatened, Federally threatened)

Listed as IL T, 03/13/1989; Listed as Fed T 12/14/1988

Reason for listing: proposed/designated Fed E or T; formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures; very restricted geographic range of which IL is a part

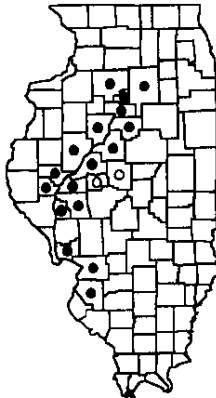
***Boltonia decurrens* (Torr. & Gray) Wood**  
**DECURRENT FALSE ASTER                      ASTERACEAE**

**Status:** Threatened in Illinois, Federally Threatened.

**Synonym:** *Boltonia asteroides* (L.) L'Her. var. *decurrens* (Torr. & Gray.) Engelm.

**Habit:** Perennial herb, stems to 2.5 m tall.

**Range:** Floodplains of the Illinois and Mississippi rivers in Illinois and Missouri.



*Boltonia decurrens* was originally widespread in alluvial prairie and marshland of the Illinois River Section of the Upper Mississippi River and Illinois River Bottomlands Natural Division. Presently this species is known from seventeen counties, mostly in the Illinois River Valley. It commonly invades fallow fields where large populations will exist for a few years. Eleven known sites exist on protected public lands.

**References:** Schwegman and Nyboer (1985), Schwegman (1990), Smith *et al.* (1993, 1995, 1998), Stoecker *et al.* (1995), Smith and Keevin (1998), Smith and Moss (1998), Phillippe *et al.* (2000), Mettler *et al.* (2001).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

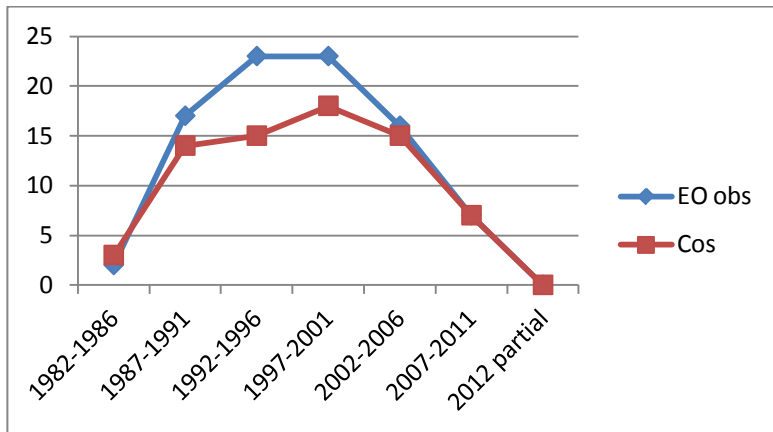
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/10/2012	31	22	2	30	20	17

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	17	23	23	16	7	0
Cos	3	14	15	18	15	7	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Southern Grape Fern, *Botrychium biternatum* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

***Botrychium biternatum* (Sav.) Underw.**  
**SOUTHERN GRAPE FERN      OPHIOGLOSSACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial evergreen fern with fleshy to nearly fibrous roots, to 35 cm tall.

**Range:** Southeastern United States.



*Botrychium biternatum* reaches its northern range limit in southern Illinois. Presently it is known from only three localities in the state. One population occurs near the base of an open hillside in Jackson County, another at the edge of old fields in Pope County, and one in an ecological area in Pope County.

**References:** Mohlenbrock (1966a, 1967b, 1985a), Wagner and Wagner (1993).

**KEY**

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

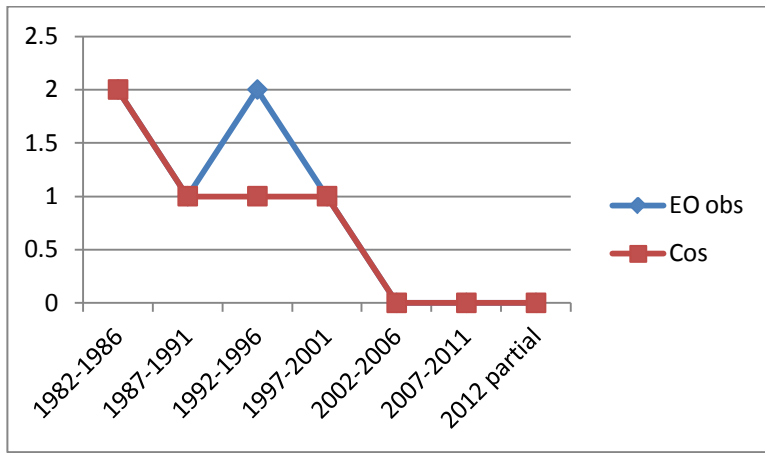
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/26/1997	7	0	0	7	3	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	1	2	1	0	0	0
Cos	2	1	1	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

It appears that the addition of four new EOs in the 1990s may have triggered the Board’s decision to change this species’ status from endangered to threatened. The lack of observations in recent 5-year intervals mostly reflects search effort, with only one “surveyed w/ no observation” report in the last 10 years. Search effort aside, since no EOs are protected and there have been no observations since 1997, it seems the species’ status may no longer meet the definition of state threatened.

**Mankowski 03/15/13 recommendation** – change from threatened to endangered.

**ESPB TEC Rick Phillippe 03/29/13 comment:** (Maintain as Threatened). This proposal of changing from Threatened to Endangered may be more an artifact of the difficulty of recognizing the species than its scarcity. I would feel uncomfortable supporting this change without a pteridologist making an effort at looking for this species in southern Illinois.

Mankowski 04/19/13 response: Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations mostly reflects search effort and that is mentioned in this species’ review. The Board needs to make listing decisions based on the best information available and does not have resources to fund systematic and programmatic surveys for all species.



**Mankowski 04/19/13 final recommendation:** maintains recommendation for change from threatened to endangered for the reasons explained in her species review. If the Board wants staff to contract surveys for the species at known EOs and/or across southern Illinois, then staff recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision

NatureServe Conservation Status in United States

None queried.

Blue Hearts, *Buchnera americana* (Illinois threatened)

Listed as IL T, 10/30/2009

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

*Buchnera americana* L.  
Blue Hearts:

SCROPHULARIACEAE

Illinois Status: Threatened

Federal Status: None

**Present Distribution:** This species ranges from Florida to Texas, north to New Jersey, New York, Ontario, Michigan, Illinois, Missouri, and Kansas (NatureServe 2009). The Illinois Natural Heritage Database documents a recent (post-2000) record in an Illinois Nature Preserve in Morgan County (IDNR 2010).

**Former Illinois Distribution:** In Illinois, it is mostly restricted to the western central part of the state with historic (pre-2000) records from Calhoun, Cass, Greene, Jersey, Madison, Monroe, Morgan, Pike, Randolph, and St. Clair counties (INHS 2010a).

**Habitat:** A species of prairie and fields, particularly loess hill prairie, in Illinois.

**Reason for Status:** With the loss of loess hill prairie due to successional events, this species is becoming more rare in the state.

**Management Recommendations:** Additional surveys for the species, management activities to control and reduce woody succession and encroachment by invasive species of loess hill prairies where the species occurs, and permanent protection of these areas will help conserve and recover this species in Illinois.



**Key**

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

Citation: Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

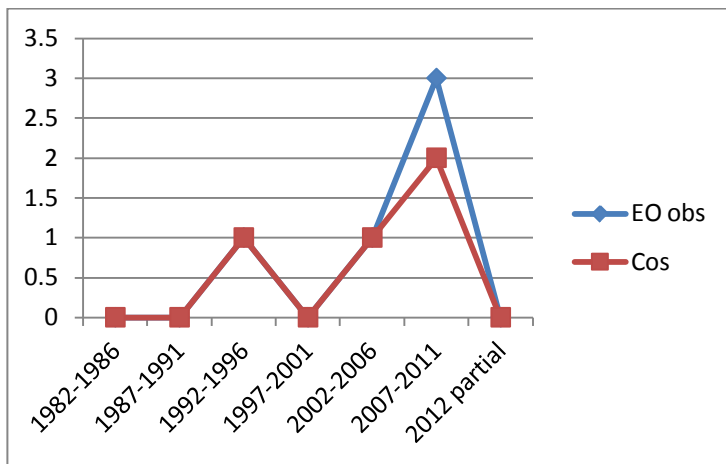
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
7/26/2011	7	4	2	7	7	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	0	1	3	0
Cos	0	0	1	0	1	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Sea Rocket, *Cakile edentula* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## *Cakile edentula* (Bigelow) Hook.

**SEA ROCKET**

**BRASSICACEAE**

**Status:** Threatened in Illinois.

**Habit:** Fleshy annual herb, stems  
10-50 cm tall.

**Range:** Atlantic Coast; Great  
Lakes shores.



*Cakile edentula* is limited in Illinois to the open beaches and sand dunes of Lake Michigan. This plant is frequent to abundant along a few miles of the Lake Michigan shore in Lake County, including a state park and adjacent state nature preserve. Population densities are usually reduced to low levels by recreational use and shoreline erosion.

**Note:** This taxon is represented in Illinois by subspecies *lacustris* (Fern.) Hulten.

**References:** Gates (1912), Patman and Iltis (1961), Guire and Voss (1963), Mohlenbrock (1980), Keddy (1981, 1982), Payne and Maun (1984), Tyndall *et al.* (1986), Greenberg and Milde (1994).

### **KEY**

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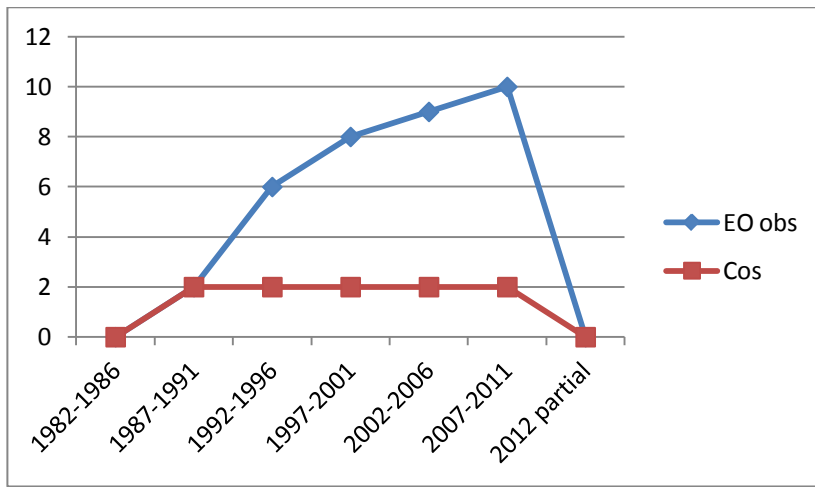
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/18/2009	14	13	2	6	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	6	8	9	10	0
Cos	0	2	2	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

The number of EOs with observation has increased steadily and significantly since the species was listed as threatened in 1980. At the time of listing, there was occurrence information sufficient to establish only one EO. Six EOs were added in the 1990s and seven EOs were added in the 2000s. Thirteen EOs (93% of total) have had observations in the last 10 years and 11 EOs (76% of total) have had repeated observations in at least 2 of the 3 most recent 5-year intervals. Although the species has a very limited range in the state and has restricted habitat, the addition of so many new EOs may indicate that it was more common than thought when initially listed. Additionally, while only two EOs are protected, the large number of EOs with repeated observations suggests the species may be secure.

**Mankowski 03/15/13 recommendation** – delist as recovered/more common than thought.

**ESPB TEC Paul Marcum 03/29/13 comments:** The habitat for this species is extremely limited in Illinois. Despite an increase in EOR’s this taxa is only found in a small area of the state. I recommend maintaining this species as Threatened.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for delisting as recovered/more common than thought.

NatureServe Conservation Status in United States

None queried.

Grass Pink Orchid, *Calopogon tuberosus* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E, 1/18/1994

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

### ***Calopogon tuberosus* (L.) BSP.**

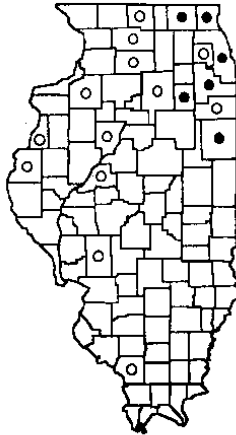
**GRASS PINK ORCHID**

**ORCHIDACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial bulbous herb, stems to 75 cm tall.

**Range:** Eastern United States and adjacent Canada.



*Calopogon tuberosus* formerly occurred fairly commonly in prairies, bogs, and fens in Illinois. Its range and abundance have been severely reduced by agriculture and urban development, and it is now restricted in Illinois to the northeastern counties. Presently, fourteen populations are known including twelve in state nature preserves. Only one population is large, and some are continually plundered by orchidists and other gardeners.

**References:** Gates (1912), Pepoon (1916), Mohlenbrock (1970c), Sheviak (1974a), Myers and Henry (1976), Hess and Stovhoff (1989).

#### **KEY**

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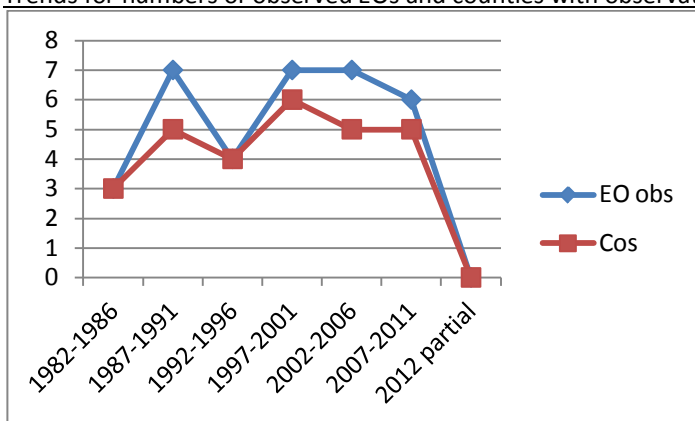
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/03/2011	19	9	17	17	9	5

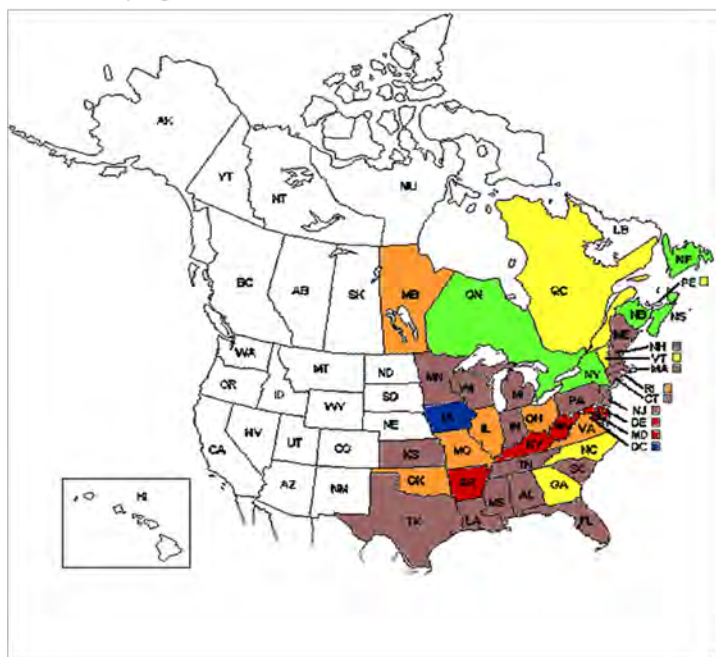
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	7	4	7	7	6	0
Cos	3	5	4	6	5	5	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Calopogon tuberosus*



**State/Province Conservation Status**

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically Imperiled
- S2: Imperiled
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review (SNR/SU)

**Conservation Status Not Applicable (SNA)**

- Exotic
- Hybrid without Conservation Value

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).



Arkansas Sedge, *Carex arkansana* (Illinois endangered)

Listed as IL E, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

## ***Carex arkansana* Bailey**

**ARKANSAS SEDGE**

**CYPERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial cespitose sedge, culms to 60 cm tall.

**Range:** Central United States, north to Illinois.



*Carex arkansana* has only recently been found to occur in Illinois. It was collected in 1992 from a high quality, southern flatwoods in Saline County. Illinois is at the northeastern edge of this species' range, and it is known from only one locality in the state.

**Reference:** Mohlenbrock (1999).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

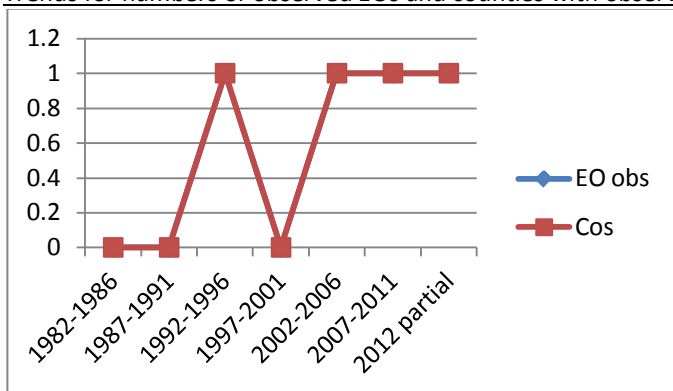
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
9/25/2012	5	4	0	7	3	3

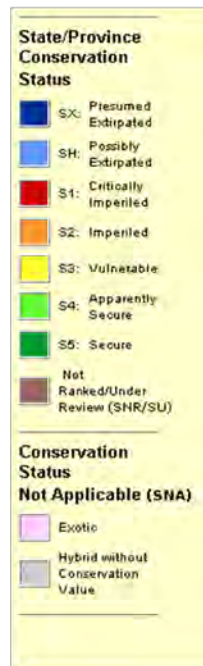
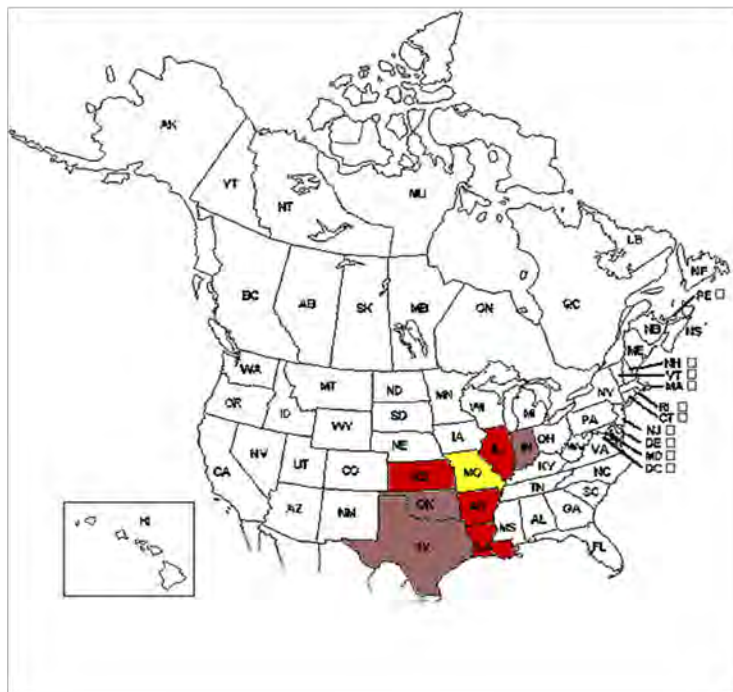
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	0	1	1	1
Cos	0	0	1	0	1	1	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Carex arkansana*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Golden Sedge, *Carex aurea* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

## *Carex aurea* Nutt.

**GOLDEN SEDGE**

**CYPERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial rhizomatous to loosely caespitose sedge, culms to 55 cm tall.

**Range:** Canada, south into northern United States.



In Illinois, *Carex aurea* occurs primarily in interdunal swales and wet meadows bordering Lake Michigan, where it apparently intergrades with *Carex garberi*. This sedge had not been collected in the state since the 1940s until it was rediscovered in a state nature preserve in a Lake County in 1987. Recent collections have also been made in state nature preserves in Kane and McHenry counties and a state conservation area in Cook County.

**References:** Bowles *et al.* (1991), Mohlenbrock (1999).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

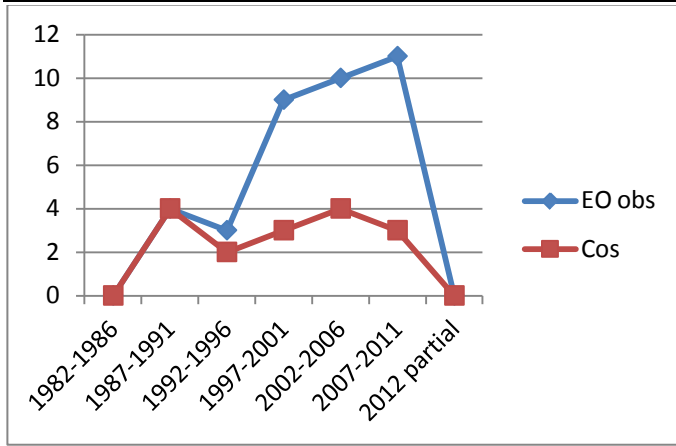
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/01/2011	16	13	4	12	4	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	4	3	9	10	11	0
Cos	0	4	2	3	4	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Sedge, *Carex bromoides* (Illinois threatened)

Listed as IL T 09/01/2004

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

***Carex bromoides* Schk.**

**SEDGE**

**CYPERACEAE**

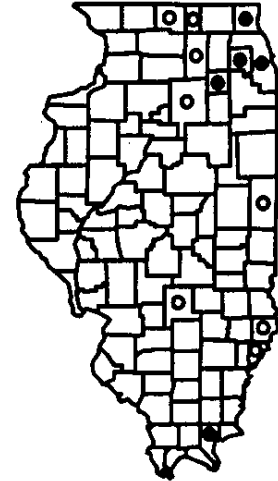
**Status:** Threatened in Illinois

**Habit:** Perennial densely caespitose sedge, culms to 90 cm tall.

**Range:** Eastern United States and adjacent Canada.

*Carex bromoides* is relatively common throughout much of the eastern United States where it occurs in wet woods, swamps, and bogs. In Illinois it is known from scattered populations in the eastern part of the state. It persists in wet depressions in woods in two state nature preserves in Cook County, a county forest preserve in DuPage County, a state nature preserve in Kendall County and a natural area in Pope County. This species has also been found within the past 30 years in a seep spring in a state park in Lawrence County, and from a county park in Vermilion County.

**References:** Naczi (2002).



**MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nýboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

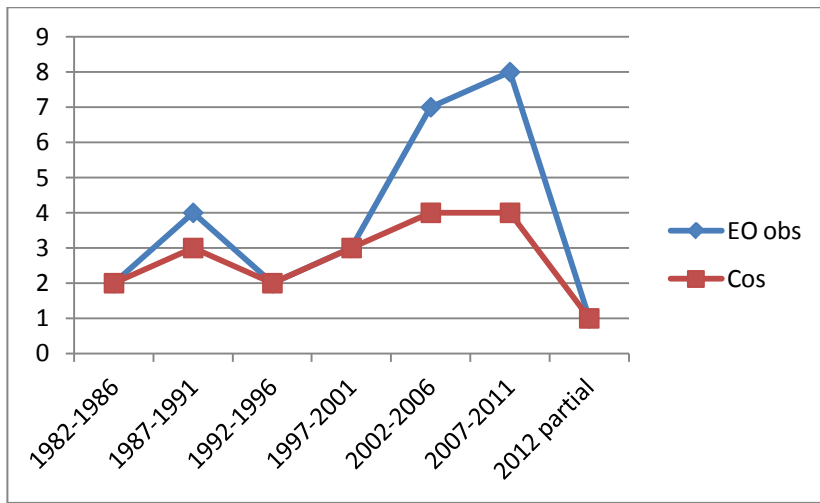
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
05/21/2012	16	12	7	16	9	6

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	4	2	3	7	8	1
Cos	2	3	2	3	4	4	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Fibrous-rooted Sedge, *Carex communis* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## ***Carex communis* Bailey**

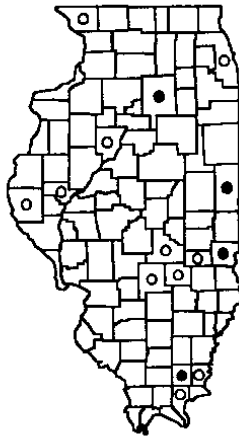
**FIBROUS-ROOTED SEDGE**

**CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial tufted sedge, culms 10-60 cm tall.

**Range:** Northeastern United States and adjacent Canada.



*Carex communis* has been found at only a few scattered localities in Illinois, primarily in open rocky woods. Presently it is known to persist at eight locations in the state, including three in state nature preserves, two in state parks, and one in the Shawnee National Forest.

**References:** Schwegman (1982a), Thomas (1982), Mohlenbrock (1999).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

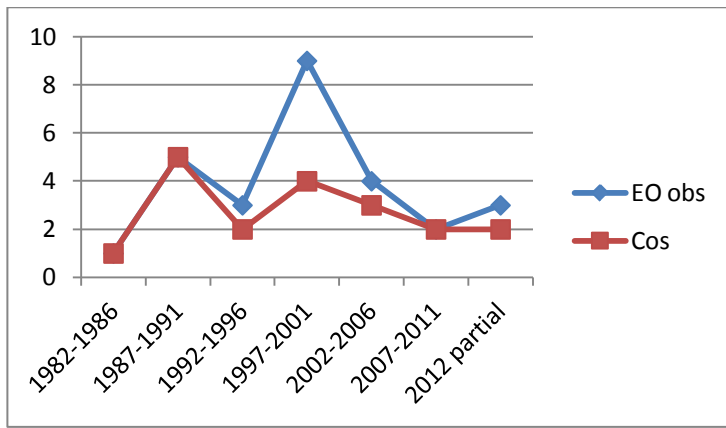
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
05/31/2012	18	8	6	15	11	5

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	5	3	9	4	2	3
Cos	1	5	2	4	3	2	2

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The species was upgraded to threatened in 1998 and since then the number of occurrences with observation has declined back to near the level when the species was listed as endangered. However, this may reflect reduced search effort - for the 5-year intervals from 1997 through 2011, the number of EOs surveyed was 10, 5, and 2, respectively. Since 1997, 12 EOs (92% of EOs surveyed and 67% of total) had observations. Since 2002, eight EOs (87% of EOs surveyed and 44% of total) and five counties (47% of counties with EOs) had observations and only two EOs had “surveyed w/ no observation” reports and no subsequent observations. Three new EOs and one new county have been added since 2010. Six EOs (33% of total) are protected. Very conflicted on this species – it would be good to see additional years of survey data.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.



Yellow Sedge, *Carex cryptolepis* (Illinois endangered)

Listed as IL E, 01/18/1994

Reason for listing: restricted habitats or low pops in IL;

## *Carex cryptolepis* Mack.

**YELLOW SEDGE**

**CYPERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial cespitose sedge with short rhizomes, culms to 50 cm tall.

**Range:** Northeastern United States and adjacent Canada.



In Illinois, *Carex cryptolepis* is restricted to the extreme northeastern counties of the Northeastern Morainal Natural Division. It is presently known from fen communities on forest preserves in DuPage and Lake counties, and was recently found on private land in McHenry County.

**References:** Gleason and Cronquist (1991), Mohlenbrock (1999).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

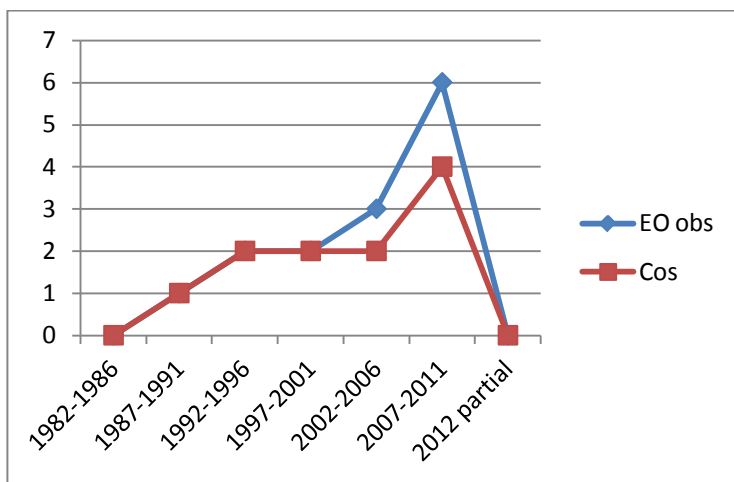
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/01/2011	8	6	0	9	5	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	2	3	6	0
Cos	0	1	2	2	2	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

It appears this species' status and distribution have improved since it was listed as endangered in 1994. At the time of listing, there were three known occurrences that became established as EOs. Since that time, five additional EOs have been added, more than doubling known occurrences. Those additional EOs also added two counties, bringing to six the number of counties with EOs. Six EOs (75% of total) in four counties (80% of counties with EOs) have had observations in the last 10 years. There have been no "surveyed w/ no observation" reports without subsequent observation. While no EOs are protected, some degree of security may be reflected by the fact that three EOs (43% of total) have had observations in repeated years across at least two of the three most recent 5-year intervals.

**Mankowski 03/15/13 recommendation** – change from endangered to threatened.

**ESPB Paul Marcum 03/29/13 comments:** Recent increase in the number of EO's, however, there are still only 6. Also, the review lacks the same information as above for *A. stenophylla*. How many plants at known sites? I would recommend keeping this species as Endangered.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List

review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. There were two errors in the Part 1, Plant list 1<sup>st</sup> cut draft document where the number of observed EOs in the 2007-2011 window and trend graph only showed 5 EOs, when it should have been 6. The same error was reflected in “Mankowski notes and recommendations”, where the number of EOs added since listing was noted as 5 instead of 6. Respective corrections have been made to the final draft of the Part 1, Plant list 1<sup>st</sup> cut document. Across the 6 EOs with recent observations individual most recent reports were: 101-200 clumps; 20 clumps, 40% reproductive; >800 reproductive clumps; healthy, scattered pop. w/ fruiting/flowering; 340 individuals; and, observed.

**Mankowski 04/19/13 final recommendation:** Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

NatureServe Conservation Status in United States

None queried.

Sedge, *Carex decomposita* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## *Carex decomposita* Muhl.

**CYPRESS-KNEE SEDGE**

**CYPERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial cespitose sedge, culms 0.5-1.5 m tall.

**Range:** Southeastern United States, extending north to southern Illinois.



*Carex decomposita* reaches its northwestern range limit in the swamp forests of extreme southern Illinois, where it occurs on floating logs and at the bases of trees. This species is presently known from four Illinois localities, two in state nature preserves in the Shawnee National Forest. A former Gallatin County population was recently destroyed by logging.

**References:** Swayne and Bailey (1953), Mohlenbrock (1959a, 1985a, 1999), Mohlenbrock *et al.* (1961), Mohlenbrock and Voigt (1965), Bowles *et al.* (1991).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

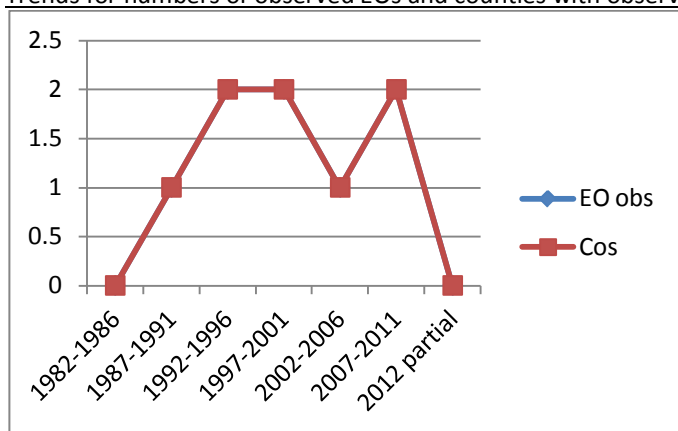
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/15/2008	5	3	1	5	4	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	2	1	2	0
Cos	0	1	2	2	1	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Carex decomposita*



**State/Province Conservation Status**

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically Imperiled
- S2: Imperiled
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review (SHR/SU)

**Conservation Status Not Applicable (SNA)**

- Exotic
- Hybrid without Conservation Value

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Sedge, *Carex echinata* (Illinois endangered)

Listed as IL E, 4/17/1990

Reason for listing: restricted habitats or low pops in IL;

## *Carex echinata* Murr.

SEDGE

CYPERACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial cespitose sedge, culms to 90 cm tall.

**Range:** Canada, northern United States and south into the Appalachians.



*Carex echinata* was not verified from Illinois until 1988, when it was collected from a privately owned sedge meadow and nearby state nature preserve in Winnebago County. This species was recently observed from wet meadows in a forest preserve in Lake County and a state forest in Ogle County.

**References:** Reznicek and Ball (1980), Bowles *et al.* (1991), Mohlenbrock (1999).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

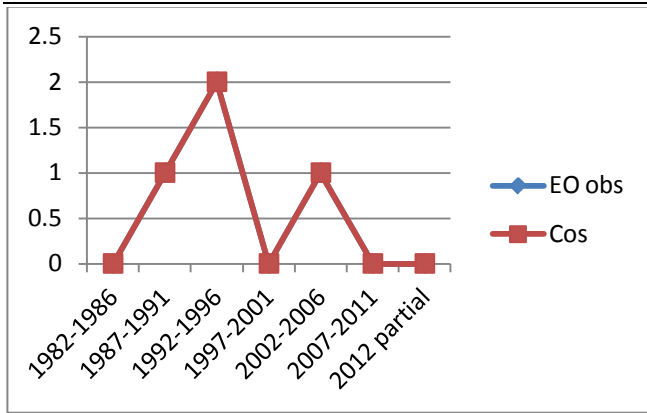
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
06/17/2002	5	1	1	5	4	3

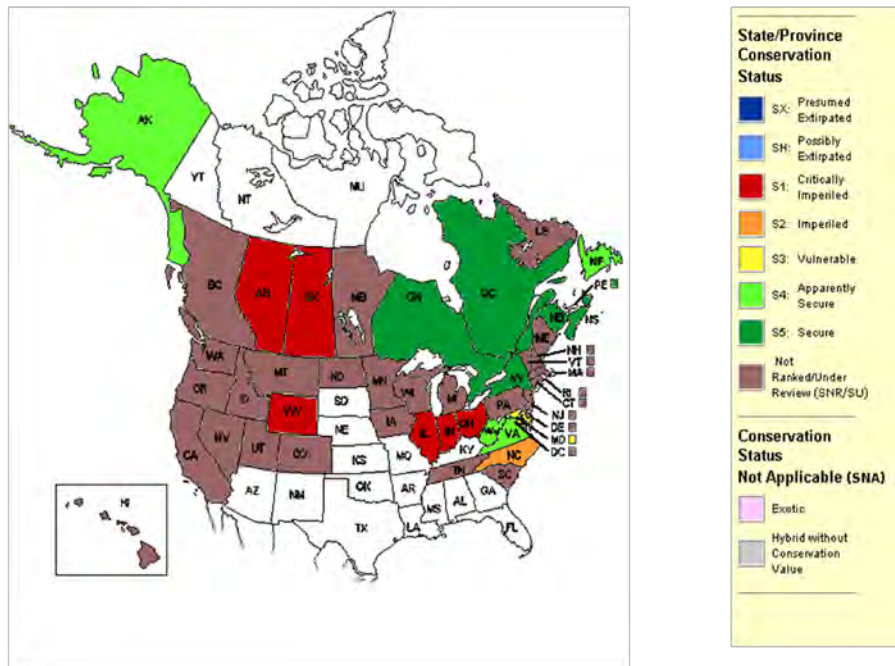
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	0	1	0	0
Cos	0	1	2	0	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Carex echinata*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Sedge, *Carex formosa* (Illinois endangered)

Listed as IL E, 9/1/2004

Reason for listing: restricted habitats or low pops in IL;

### ***Carex formosa* Dewey**

**HANDSOME SEDGE**

**CYPERACEAE**

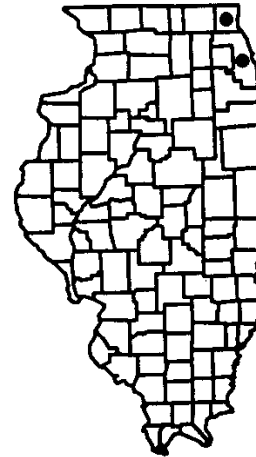
**Status: Endangered in Illinois**

**Habit:** Perennial densely caespitose sedge, culms to 80 cm tall.

**Range:** Northeastern United States and adjacent Canada.

Handsome sedge appears to be confined to areas with calcareous soils, making it uncommon and sparsely distributed throughout its range. It is usually associated with mesic to dry savannas and open forests but is also found in moist meadows where populations can become quite large. *Carex formosa* is restricted to extreme northeastern Illinois where it is known from three county forest preserves in Cook County and a roadside thicket in Lake County.

**References:** Waterway (2002).



### **MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nyboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.



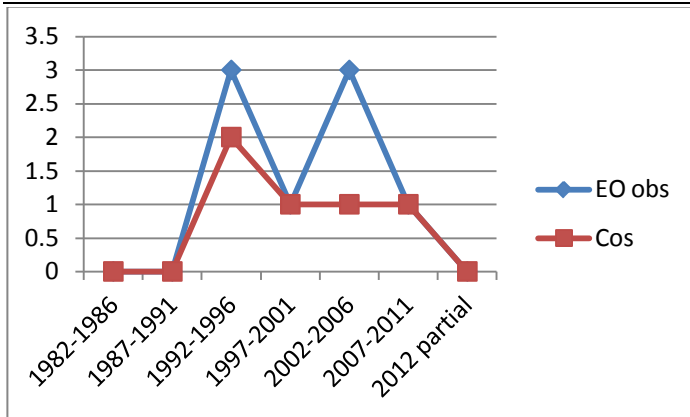
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/03/2009	5	3	0	4	2	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	3	1	3	1	0
Cos	0	0	2	1	1	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Carex formosa*



**State/Province Conservation Status**

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically imperiled
- S2: Imperiled
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review (SNR/SU)

**Conservation Status Not Applicable (SNA)**

- Exotic
- Hybrid without Conservation Value

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Swollen Sedge, *Carex intumescens* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Carex intumescens* Rudge

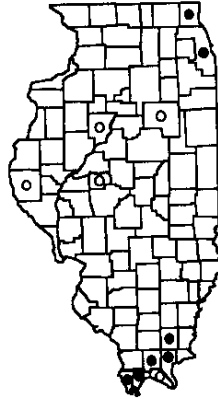
SWOLLEN SEDGE

CYPERACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial caespitose sedge, culms to 80 cm tall.

**Range:** Eastern United States and adjacent Canada.



*Carex intumescens* occurs in forested wetlands and is rarely encountered in Illinois. It has recently been observed in state nature preserves in Cook and Johnson counties, a forest preserve in Lake County, and a few areas in the Shawnee National Forest.

**References:** Fernald (1942a), Menapace *et al.* (1986), Bowles *et al.* (1991), Mohlenbrock (1999).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

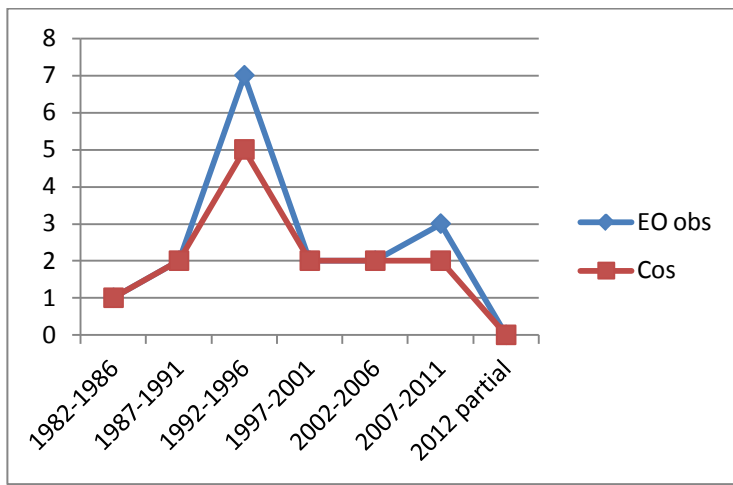
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
09/26/2011	13	5	3	12	7	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	2	7	2	2	3	0
Cos	1	2	5	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

The species was upgraded to threatened in 1998 and since then the number of occurrences with observation has declined back to near the level when the species was listed as endangered. However, this may reflect reduced search effort - for the 5-year intervals from 1992 through 2011, the number of EOs surveyed was 7, 3, 2, and 3, respectively. Since 1997, six EOs (86% of EOs surveyed and 46% of total) had observations. Since 2002, five EOs (100% of EOs surveyed and 38% of total) had observations. One new EO was added in 1999 and two new EOs were added in 2011. Only 3 EOs (23% of total) are protected. While it would be good to see additional years of survey data, the reduced number of observations has been sustained for three 5-year intervals.

**Mankowski 03/15/13 recommendation** – change from threatened to endangered.

**ESPB TEC Paul Marcum 03/29/13 comments:** Probably still occurs at most of the known sites as indicated by the high percentage when resurveying past EO’s (Since 1997 – 86% of EO’s surveyed; Since 2002 – 100% of EO’s surveyed). I would recommend keeping this species as threatened until more and better data is obtained.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not

looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs for the species are single sites, except for one EO that has two nested sites. Across the 5 EOs with recent observations individual most recent reports were: observed; observed; 70 clumps, 15% reproductive; 1 fruiting clump; and, several fruiting clumps. The inclusion in the original species review by Mankowski of the % of EOs with observations as compared to the number surveyed needs to be taken in the context that very few “surveyed with no obs” reports are actually made to the Database, so most likely these %s would be similar for any species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Threatened). Known from 7 counties and has 3 protected occurrences in Illinois. While looking for a rarely seen Illinois taxon, *Tragia cordata*, observed a large healthy protected population of this species in 2010 at Heron Pond, Johnson County, Illinois. Habitat for this species is still common and through search I feel more populations would likely be found in Illinois. However, probably not enough localities to ever have it removed from the Illinois Threatened status.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. The Database shows no records from 2010 for this species. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations mostly reflects search effort and that is mentioned in this species' review. The Board needs to make listing decisions based on the best information available and does not have resources to fund systematic and programmatic surveys for all species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review. If the Board wants staff to contract surveys for the species at known EOs and/or statewide, then staff recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision

**Mankowski 04/19/13 final recommendation:** change from threatened to endangered for the reasons explained in her species review. If the Board wants staff to contract surveys for the species at known EOs and/or statewide, then staff recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision

NatureServe Conservation Status in United States

None queried.

Sharp-scaled Sedge, *Carex oxylepis* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

***Carex oxylepis* Torr. & Hook.**

**SHARP-SCALED SEDGE**

**CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial cespitose sedge, culms to 1 m tall.

**Range:** Southeastern United States, north to southern Illinois.



*Carex oxylepis* reaches its northwestern range limit in extreme southern Illinois, where it occurs in swamp forests. Presently, populations are known from a state nature preserve and from the Shawnee National Forest, including one on a federal ecological area. Some populations are also known from private land.

**References:** Mohlenbrock and Schwegman (1969a), Bowles *et al.* (1991), Mohlenbrock (1999).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

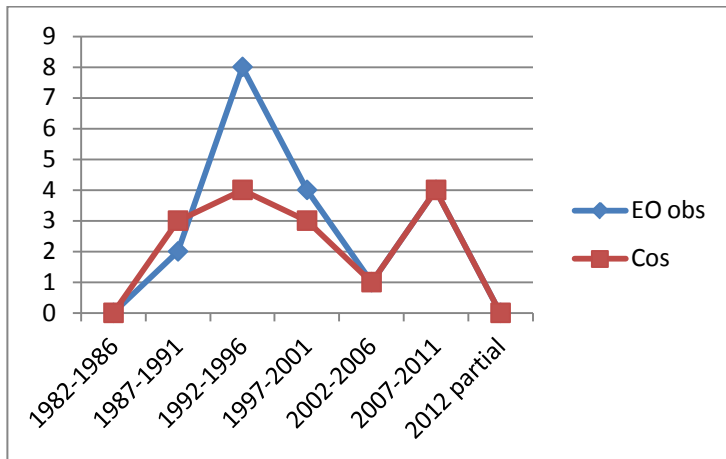
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/24/2010	16	5	1	13	7	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	8	4	1	4	0
Cos	0	3	4	3	1	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The species was upgraded to threatened in 1998 and since then the number of occurrences with observation has largely declined back to a level near when the species was listed as endangered. However, this may reflect reduced search effort - for the 5-year intervals from 1992 through 2011, the number of EOs surveyed was 8, 4, 1, and 4, respectively. Five EOs (31% of total) have had observations and no EOs have had “surveyed w/ no observation” reports since 2002. All seven of the EOs surveyed since 1997 have had observations, representing 44% of total EOs. The “uptick” in observations during the most recent 5-year interval is encouraging and it would be good to see additional years of survey data before considering a recommendation for a change from threatened to endangered.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.

Drooping Sedge, *Carex prasina* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Carex prasina* Wahlenb.

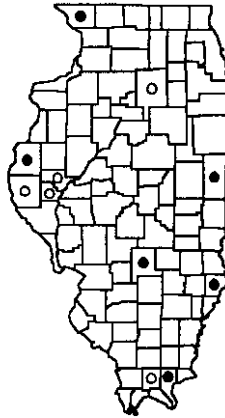
**DROOPING SEDGE**

**CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial cespitose sedge, culms to 80 cm tall.

**Range:** Northeastern United States and adjacent Canada.



*Carex prasina* occupies rich lowland forests in most of its range and is restricted to forested seeps and sandstone undercuts in Illinois. Seven Illinois populations are presently known, two in state nature preserves, one in a state park, two in state natural areas, and one in the Shawnee National Forest.

**References:** Schwegman (1972, 1991), Mohlenbrock (1999).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

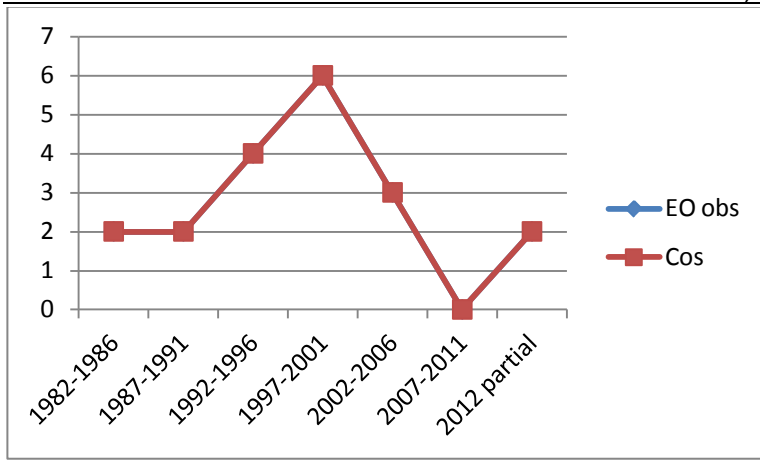
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
05/22/2012	9	4	2	9	9	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	2	4	6	3	0	2
Cos	2	2	4	6	3	0	2

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The number of observations has declined since the species’ status was upgraded to threatened in 1998, but that may be mostly explained by search effort. Only four EOs (44% of total) have had observations in the last 10 years. While there were no observations in the 2007-2011 window, there are also no “surveyed w/ no observation” reports in that time period (or for any EOs for this species in any year). Despite the reduction in observations, a new EO and a new county were added in both 1999 and 2001. So, it is not clear whether the species has experienced a real setback and it would be good to see additional years of survey data before considering a recommendation to change its listing status back to endangered.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.



Tuckerman's Sedge, *Carex tuckermanii* (Illinois endangered)

Listed as IL E, 3/13/1989

Reason for listing: restricted habitats or low pops in IL;

## *Carex tuckermanii* Boott

TUCKERMAN'S SEDGE

CYPERACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial loosely caespitose sedge, culms to 1 m tall.

**Range:** Northeastern United States, and adjacent Canada.



*Carex tuckermanii* is restricted to the Northeastern Moraine Natural Division in Illinois, where it occupies flatwoods and wet-mesic forest habitats. Until recently only historic Cook, Lake, and Winnebago county records were known for this sedge, and it was presumed extirpated. In 1983 it was discovered in two DuPage County forest preserves and in a state nature preserve in Cook County and still persists at these locations. This species was relocated in a state nature preserve in Lake County in 1988 and persists at that site.

**References:** Gleason and Cronquist (1991), Mohlenbrock (1999).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

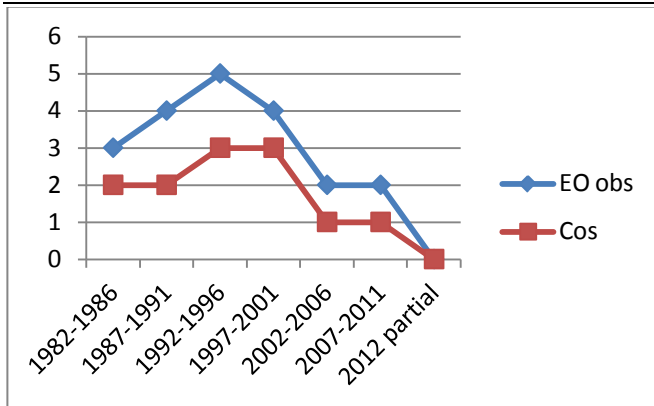
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010	6	2	3	6	3	1

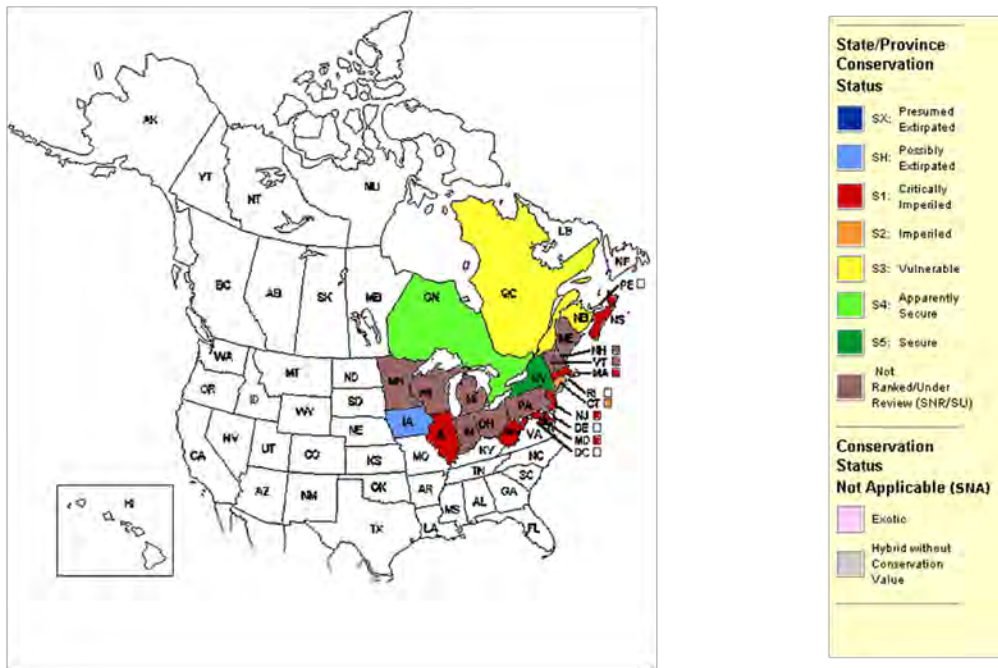
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	4	5	4	2	2	0
Cos	2	2	3	3	1	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Carex tuckermanii*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Little Green Sedge, *Carex viridula* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

## *Carex viridula* Michx.

LITTLE GREEN SEDGE

CYPERACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial cespitose sedge, culms to 45 cm tall.

**Range:** Circumboreal south into northeastern United States, and in the Rocky Mountains.



*Carex viridula* is restricted to the Northeastern Morainal Natural Division in Illinois. It occurs in dune swales near Lake Michigan and spring runs, marl flats, and disturbed calcareous sites in the far northeastern counties. It has been almost exterminated in northeastern Illinois by urban growth, and many of its wetland habitats are threatened with drainage. This species is presently known from fifteen localities, including two state nature preserves, a state conservation area, and a few forest preserves.

**References:** Mohlenbrock (1966b, 1968a, 1999), Moran (1981).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

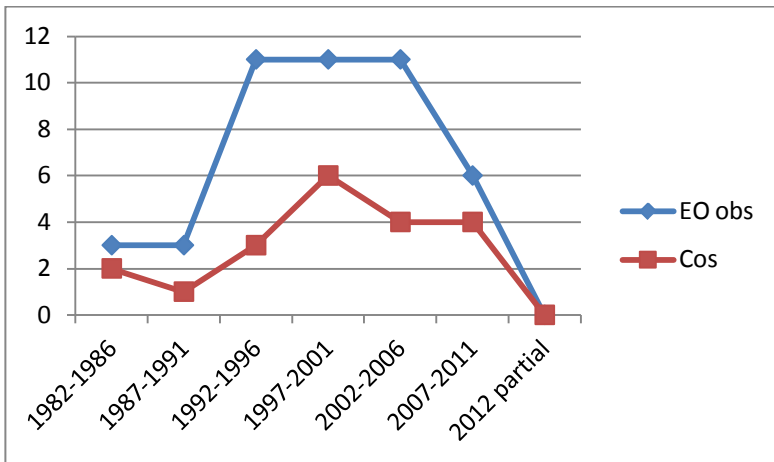
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/07/2011	21	11	5	17	6	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	3	11	11	11	6	0
Cos	2	1	3	6	4	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Willdenow's Sedge, *Carex willdenowii* (Illinois threatened)

Listed as IL E, 03/13/1989; Listed as IL T 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

## *Carex willdenowii* Schkuhr

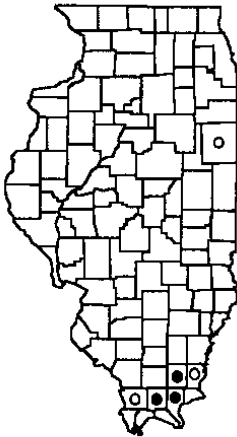
WILLDENOW'S SEDGE

CYPERACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial, mat-forming sedge, culms to 30 cm tall.

**Range:** Eastern United States and adjacent Canada.



*Carex willdenowii* is restricted in Illinois to the Shawnee Hills Natural Division, where it occurs in dry to mesic upland forest habitats. It was first found in Illinois in 1984 during a floristic survey of a Gallatin County sandstone canyon. It is presently known from a state nature preserve, ecological areas, research natural areas, and national natural landmarks in the Shawnee National Forest. This nondescript sedge can be easily overlooked due to its similarity to other sedges and may be more frequent in southern Illinois than records now suggest.

**References:** Parker (1985), Bittner (1995), Mohlenbrock (1999).

### KEY

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

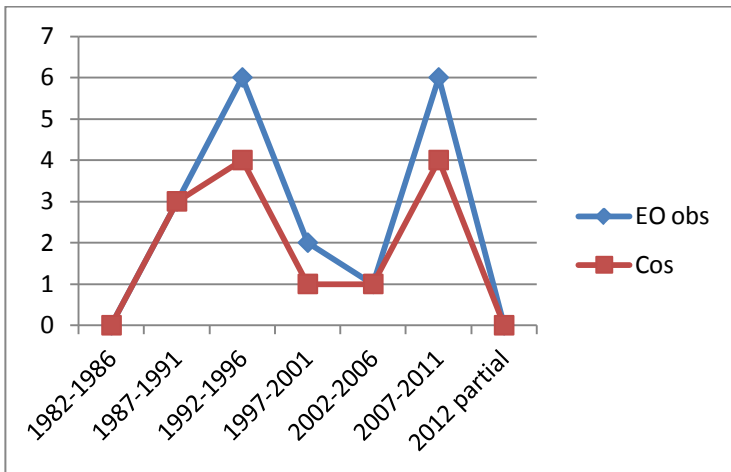
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
5/20/2011	14	6	0	10	7	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	3	6	2	1	6	0
Cos	0	3	4	1	1	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Pretty Sedge, *Carex woodii* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## *Carex woodii* Dewey

**PRETTY SEDGE**

**CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial rhizomatous sedge, culms to 50 cm tall.

**Range:** Northeastern United States and adjacent Canada.



*Carex woodii* reaches the southern edge of its range in mesic calcareous forests in northern Illinois. It has been observed recently in two state nature preserves, eight forest preserves, and a few sites under private ownership. Populations of this species may be threatened by overgrazing from deer.

**References:** Evert (1988), Bowles (1991b), Mohlenbrock (1999).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

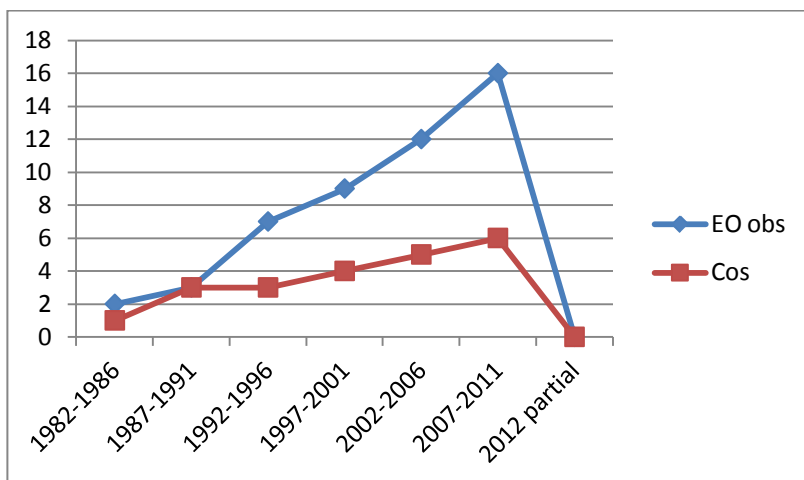
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010	22	17	10	15	8	7

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	3	7	9	12	16	0
Cos	1	3	3	4	5	6	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

This species’ status and distribution appears to have improved greatly since it was listed as threatened in 1980, with the addition of two new EOs in the 1980s, nine new EOs in the 1990s, and eight new EOs in the 2000s. One of the EOs added in 2001 also added a new county. Fully 77% of EOs have had observations in the last 10 years and the number increases to 86% with observations in the last 15 years. Eleven EOs (50% of total) have had repeated observations in at least two of the three most recent 5-year intervals. There are EOs in eight of the nine counties (89%) with known historic occurrences and there have been observations in the last ten years at EOs in seven counties (88% of counties with EOs and 78% of counties with known historic occurrences). With 10 EOs protected, certainly recovery efforts in the form of management and protection have helped the species, but all the EO additions may also indicate the species was more common than thought at the time of its initial listing.

**Mankowski 03/15/13 recommendation** – deilst as recovered/more common than thought.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Threatened). I think this is a candidate but is on the border and I would rather error on the safe side. This species is under threat from overgrazing by deer, a serious threat in northeastern Illinois. Also, in Illinois this is a species on the southern edge of its range.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and threats and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs



over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 10 EOs (45% of total) are protected and specific to deer browse, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 7 EOs (32% of total) have had repeated obs in at least 3 of the 4 most recent 5-year intervals and 11 EOs (50% of total) have had repeated obs in both of the 2 most recent 5-year intervals.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for removal from threatened as recovered/more common than thought for reasons explained here and in her species review.

NatureServe Conservation Status in United States

None queried.

Water Hickory, *Carya aquatica* (Illinois threatened)

Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

***Carya aquatica* (Michx. f.) Nutt.**

**WATER HICKORY**

**JUGLANDACEAE**

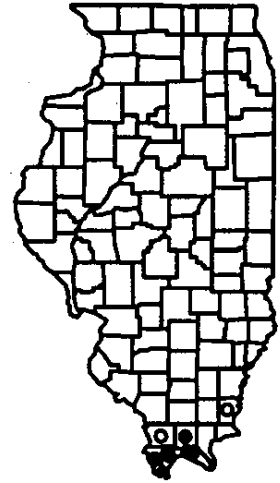
**Status:** Threatened in Illinois

**Habit:** Tree, to 45 m tall.

**Range:** Southeastern United States.

*Carya aquatica* reaches its northern range limit in the swamps and wet lowland woods of the Mississippi embayment of southern Illinois. Not uncommonly a large forest tree, water hickory is occasionally found at scattered sites along the Cache River. It has been found in a state conservation area in Alexander County, a state natural area in Johnson County, a state nature preserve in Pulaski County, and on private land in Gallatin, Massac, and Union counties.

**References:** Gleason and Cronquist (1991), Stone (1997).



**MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nyboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

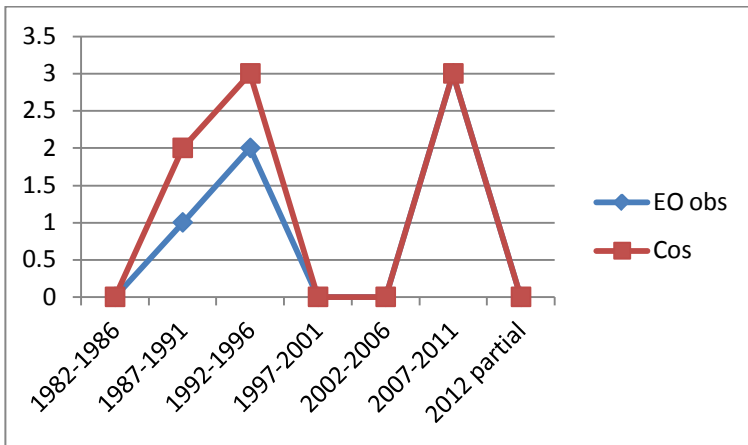
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/2/2009	5	3	1	6	5	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	0	0	3	0
Cos	0	2	3	0	0	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Downy Yellow Painted Cup, *Castilleja sessiliflora* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## *Castilleja sessiliflora* Pursh

DOWNY YELLOW-PAINTED CUP

SCROPHULARIACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, stems 10-40 cm tall.

**Range:** Central United States and adjacent Canada.



*Castilleja sessiliflora* reaches its eastern range limit in northern Illinois, where it occurs in dry-mesic gravel and sand prairies primarily along Lake Michigan. This species was formerly distributed across northern Illinois, but agriculture and urban development have severely reduced its populations. Presently seven stations are known in the state, three occur in state nature preserves, one in a county forest preserve, and others on private land.

**References:** Gates (1912), Pepoon (1916), Pennell (1935), Fell and Fell (1956).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

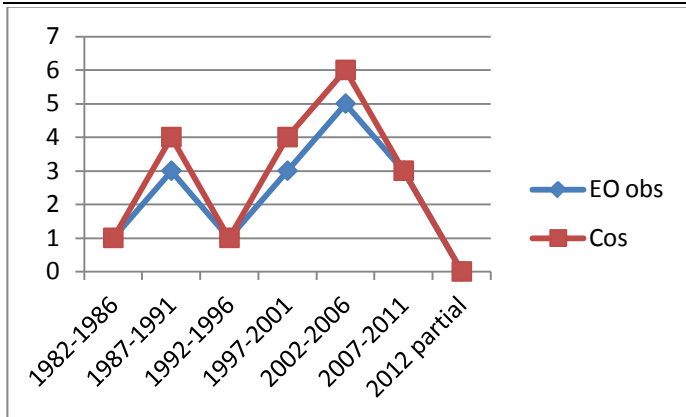
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2009	7	6	7	8	7	6

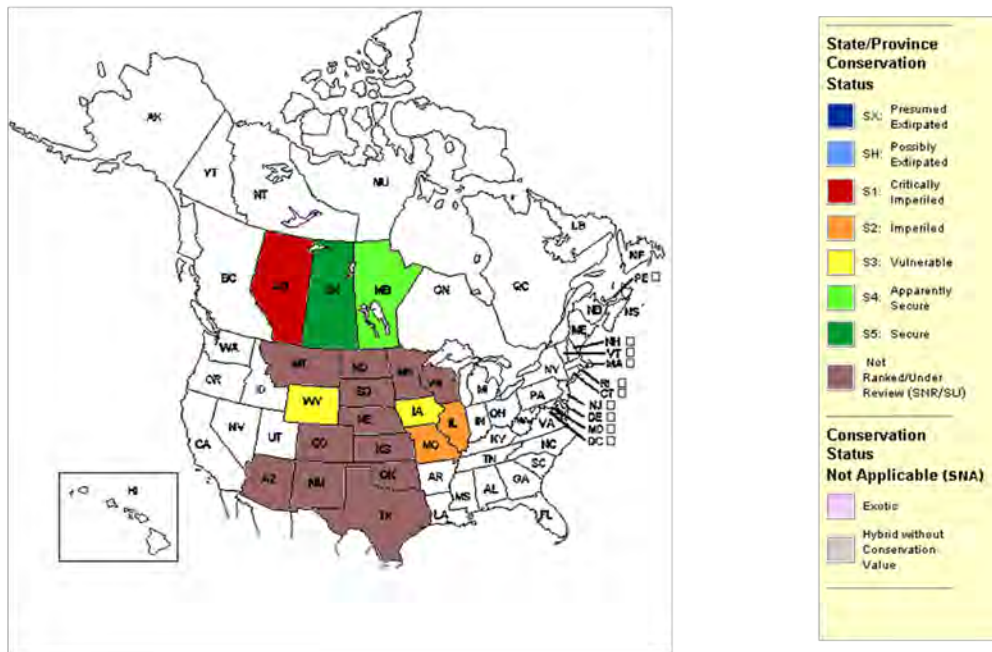
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	3	1	3	5	3	0
Cos	1	4	1	4	6	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Castilleja sessiliflora*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Redroot, *Ceanothus herbaceus* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## ***Ceanothus ovatus* Desf.**

**REDROOT**

**RHAMNACEAE**

**Status:** Endangered in Illinois.

**Habit:** Shrub, to 1 m tall.

**Range:** East-central and eastern United States and adjacent Canada.



*Ceanothus ovatus* occurs in sand prairies and sand savannas in northern Illinois. It is presently known from six stations. One population is in a state nature preserve and adjacent state park, two others on protected lands, and the remaining stations are on private property.

**Note:** The scientific name of this species is presently considered to be *Ceanothus herbaceus* Raf.

**References:** Gleason (1909, 1910), Tehon (1942), Mohlenbrock (1982).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

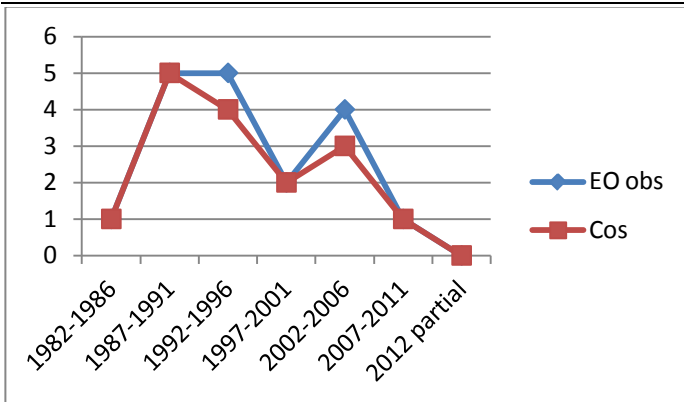
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
09/28/2009	6	4	2	6	5	3

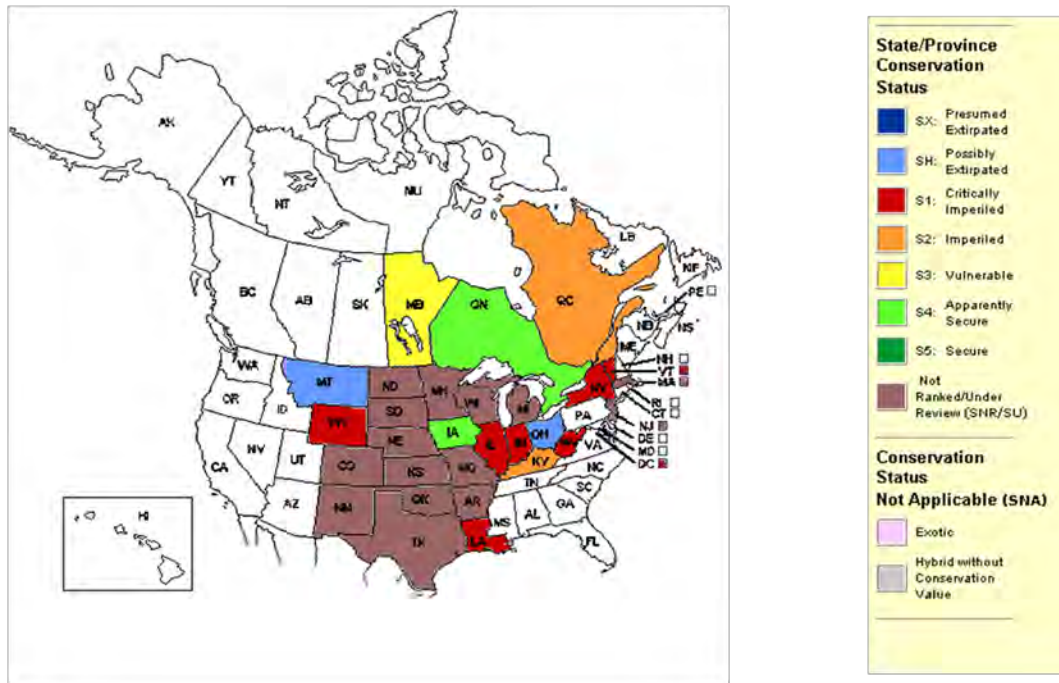
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	5	5	2	4	1	0
Cos	1	5	4	2	3	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Ceanothus herbaceus*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Leatherleaf, *Chamaedaphne calyculata* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Chamaedaphne calyculata* (L.) Moench**

**LEATHERLEAF**

**ERICACEAE**

**Status:** Threatened in Illinois.

**Habit:** Shrub, to 1.5 m tall.

**Range:** Circumboreal, south into eastern United States.



*Chamaedaphne calyculata* occurs in northeastern Illinois in sphagnum bogs and rarely in peaty sand deposits. Presently it is known from three Illinois bogs and probably persists at three other. Presently two populations occur in state nature preserves.

**Note:** This taxon is represented by variety *angustifolia* (Ait.) Rehder in Illinois.

**References:** Waterman (1923), Tehon (1942), Sheviak and Haney (1973), Evers and Page (1977), Mohlenbrock (1978), Evert (1988), Taft and Solecki (1990).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.



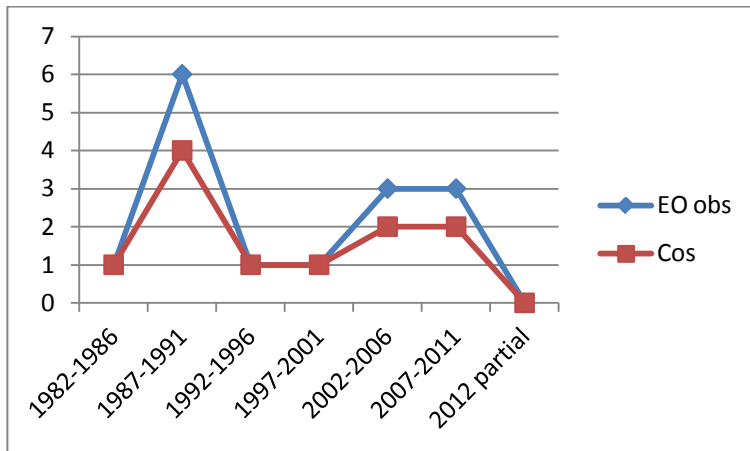
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
06/23/2009	7	3	5	7	4	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	6	1	1	3	3	0
Cos	1	4	1	1	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

When this species was listed as threatened in 1980, there were five known locations for which EO records were established and two additional EOs were added in the 1980s (1988). In each of the two most recent 5-year intervals, the same three EOs (43% of total) have had observations. Expanding to the last 15 years, a total of 4 EOs (57% of total) have had observations. There is only one “surveyed w/ no observation” report for any EO across all years (2002) and there have been no subsequent observations at that EO. Five EOs (71% of total) are protected (three of which had observations in the last ten years). Although only three EOs have had recent observation, taking into consideration the species’ limited range in the state, that when it was listed as threatened only five locations were known, and that five EOs are protected, it seems that a change to endangered may not be warranted in the absence of better data.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.

Fairy Wand, *Chamaelirium luteum* (Illinois threatened)

Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

### ***Chamaelirium luteum* (L.) Gray**

**FAIRY WAND, DEVIL'S BIT**

**LILIACEAE**

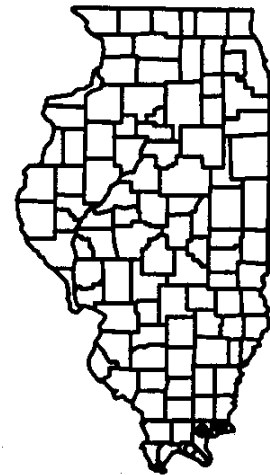
**Status:** Endangered in Illinois

**Habit:** Long-lived perennial, rhizomatous herb, stems to 1 m tall.

**Range:** Eastern United States.

*Chamaelirium luteum* is a dioecious species with terminal racemes of white flowers produced in the late spring and early summer. In Illinois, fairy wand is found rarely in moist meadows, thickets, and on rich wooded slopes in the extreme southern part of the state. Historically this species is known from 13 areas in Hardin, Massac, and Pope counties. Fairy Wand was recently found at three of these areas, one population in a state nature preserve in Hardin County.

**References:** Jones (2004), Utech (2002).



#### **Key**

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

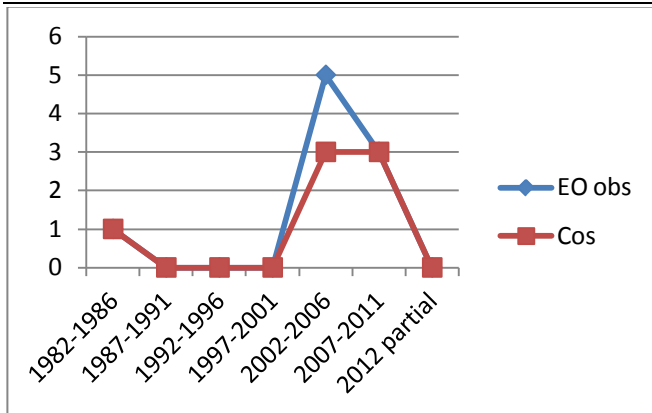
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
8/3/2009	7	3	1	8	3	3

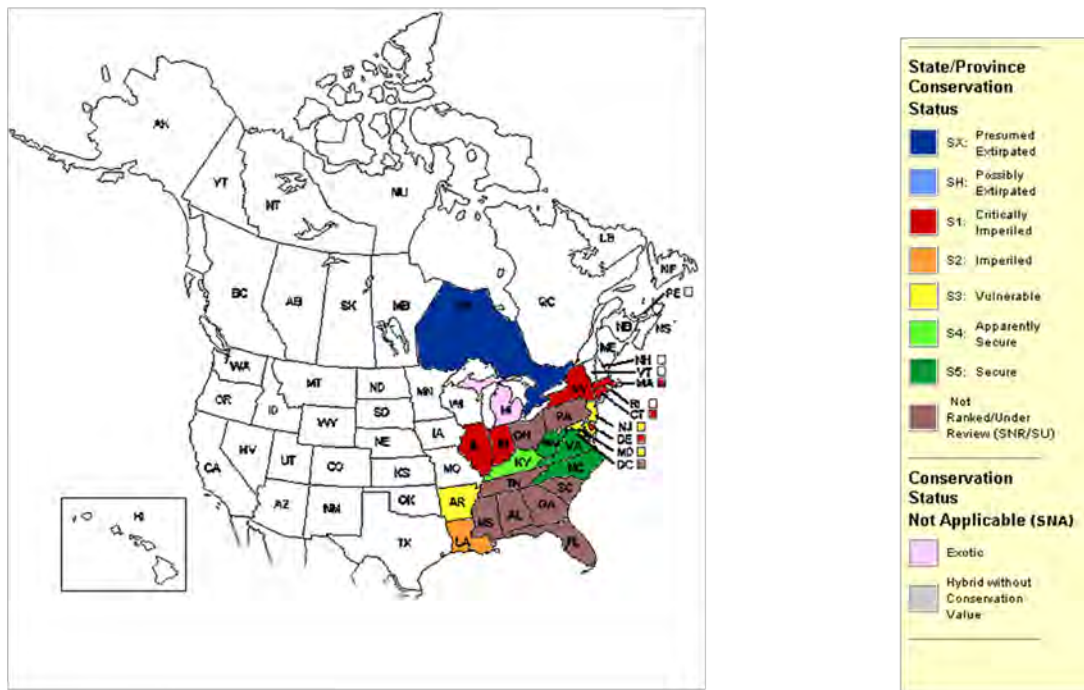
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	0	0	5	3	0
Cos	1	0	0	0	3	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Chamaelirium luteum*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Seaside Spurge, *Chamaesyce polygonifolia* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Chamaesyce polygonifolia* (L.) Small**  
**SEASIDE SPURGE** **EUPHORBIACEAE**

**Status:** Endangered in Illinois.

**Synonym:** *Euphorbia polygonifolia* L.

**Habit:** Annual prostrate herb, branching and forming small mats.

**Range:** Atlantic Coast and shores of the Great Lakes.



*Chamaesyce polygonifolia* is restricted in Illinois to the beach and foredunes of Lake Michigan. Most of the habitat for this species has been destroyed by urban growth, and the plant is presently known from Lake and Cook counties, where it occurs in two state nature preserves, a state park and a municipal park. Beach use and lakeshore erosion continue to affect this species in Illinois. The Peoria County record for this species may represent an error in recording collection information. There are also unverified reports of this species from Fulton County.

**References:** Gates (1912), Wheeler (1941), Guire and Voss (1963), Mohlenbrock (1982), Richardson *et al.* (1987), Greenberg and Milde (1994).

**KEY**

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

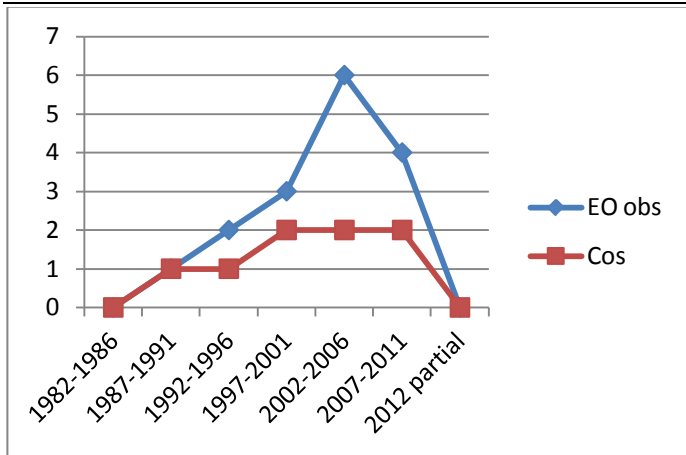
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/20/2010	6	6	2	6	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	3	6	4	0
Cos	0	1	1	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

This species’ status appears to have improved since the time of listing as endangered with the addition of three EOs in the 1990s and two EOs in the 2000s. All six EOs (100% of total) have had observations in the last ten years and five EOs (83% of total) have had repeated observations in at least two of the three most recent 5-year intervals. All counties with EOs and with known, naturally occurring historic occurrences are captured in the current distribution. Two EOs (33% of total) are protected.

**Mankowski 03/15/13 recommendation** – change from endangered to threatened.

**ESPB TEC Paul Marcum 03/29/13 comments:** Although the number of EO’s have increased since the species was first listed this species is still limited to a unique habitat in Illinois with occurrences in only a few areas. I would recommend keeping this species as Endangered.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 6 EOs there are 18 nested sites; 3 persisting since the 1970s, 1 since

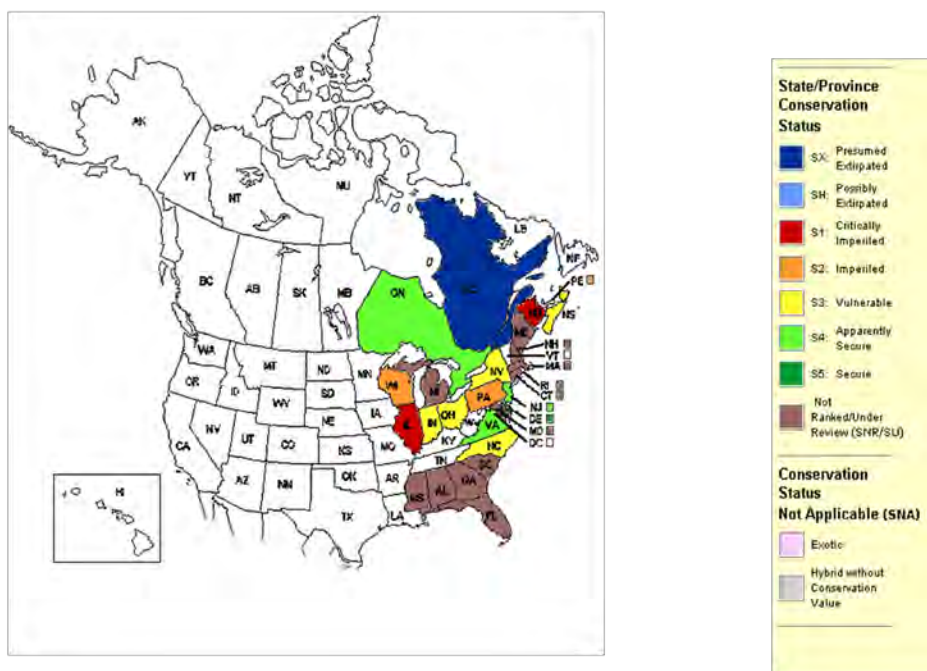
the 1980s, 3 since the 1990s, and 11 since the 2000s. Individual reported numbers in the most recent years of observation for each EO were 80 plants; 1,801-2,000+ stems; 1,100 reproductive stems; 10 plants; 213,000+ stems; and, 800+ plants. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

**ESPB TEC John Taft 03/29/13 comments:** 4 to 6 populations in 2 counties seems to fall short of a species not at risk of extirpation, particularly in its shore habitat that is so often disturbed by urban and visitor activities. My observations suggest it occurs in low density on the beach at Illinois Beach State Park. Any idea about the sizes of the other populations? This recommended change might be justified, but it seems to be an in-between state of security, albeit 2 occur in protected sites. RECOMMENDATION – MAYBE, DEPENDING ON POPULATION SIZES.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Across the 6 EOs there are 18 nested sites; 3 persisting since the 1970s, 1 since the 1980s, 3 since the 1990s, and 11 since the 2000s. Individual reported numbers in the most recent years of observation for each EO were 80 plants; 1,801-2,000+ stems; 1,100 reproductive stems; 10 plants; 213,000+ stems; and, 800+ plants. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

**Mankowski 04/19/13 final recommendation:** change from endangered to threatened.

*Chamaesyce polygonifolia*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 29, 2012).

Black Cohosh, *Cimicifuga rubifolia* (Illinois threatened)

Listed as IL T, 01/18/1994

Reason for listing: restricted habitats or low pops in IL;

## *Cimicifuga rubifolia* Kearney

APPALACHIAN BUGBANE, BLACK COHOSH

RANUNCULACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial rhizomatous herb, stems to 1.5 m tall.

**Range:** Appalachians, disjunct in western Kentucky and southern Illinois.



*Cimicifuga rubifolia*, a species of cool mesic woods, is restricted to the extreme southern part of Illinois. It is presently known from twelve sites in the state, mostly in the Shawnee National Forest. Populations of this species may be threatened by herb collectors.

**References:** Mohlenbrock (1981), Gleason and Cronquist (1991), Ramsey (1997).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

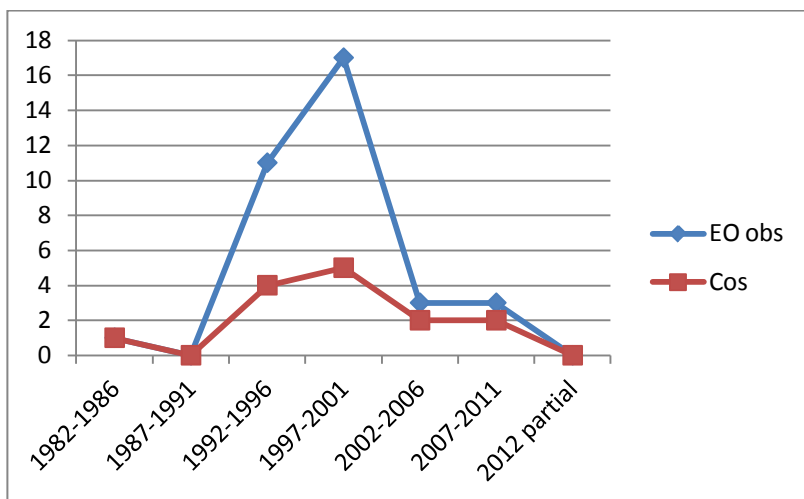
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
9/17/2010	18	5	1	14	7	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	11	17	3	3	0
Cos	1	0	4	5	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

The number of EOs with observation peaked during the 1997-2001 5-year interval, shortly following the species' listing in 1994. Since that time, there has been a significant reduction in the number of EOs with observation, with only 3 (17% of total) in each the 2002-2006 and 2007-2011 windows and totaling only 5 EOs (28% of total) with observation in 3 of 7 counties with occurrences. There are no "surveyed with no observation" reports for any EOs for this species.

**Mankowski 03/15/13 recommendation** – change from threatened to endangered.

**ESPB TEC Paul Marcum 03/19/13 comments:** Most old records are from the Shawnee. This species is probably still present at known sites. It's decline in EO's probably just represents a lack of effort rather than reduced numbers. The review for this species mentions that there are no surveyed with no observation reports for any EO for this species. I recommend keeping this species as Threatened.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Board recognizes that search effort and reporting across species and across EOs is not systematic nor standardized and that the number of observations reflects search effort. The lack of observations has been sustained over the last two five-year intervals. While the species may be present at sites without reported observations, staff recommendation is based on the best available current information. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to



only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs are single sites, except for one EO that has two nested sites. Across the 5 EOs with recent observations individual most recent reports were: 100-150 plants; 29 plants; 20-25 fruiting plants; 9 flowering plants; and, observed.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

NatureServe Conservation Status in United States

None queried.

*Clematis crispa*, Blue Jasmine (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Clematis crispa* L.**

**BLUE JASMINE**

**RANUNCULACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial climbing herb.

**Range:** Southeastern United States.



*Clematis crispa* reaches its northern range limit in swamps and floodplain forests of southern Illinois. Presently three populations of this species are known, two in the Shawnee National Forest, one of the populations is in a right-of-way ditch between a road and a railroad in a state conservation area.

**References:** Palmer (1921), Mohlenbrock *et al.* (1961), Mohlenbrock (1981), Pringle (1997).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

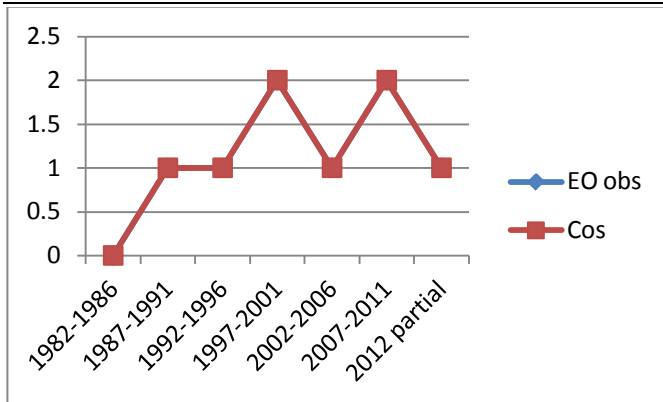
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
5/21/2009	5	2	0	5	4	2

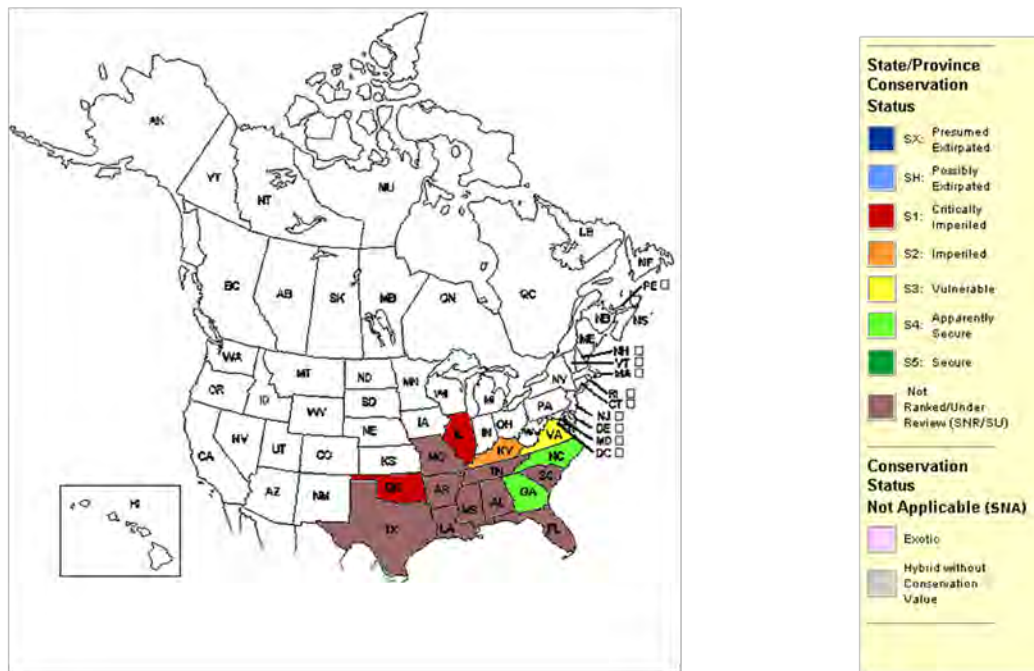
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	1	2	1	2	1
Cos	0	1	1	2	1	2	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Clematis crispa*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 6, 2012).

Spotted Coral-root Orchid, *Corallorhiza maculata* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

***Corallorhiza maculata* Raf.**

**SPOTTED CORAL-ROOT ORCHID ORCHIDACEAE**

**Status:** Threatened in Illinois.

**Habit:** Saprophytic rhizomatous herb, stems to 60 cm tall.

**Range:** Southern Canada, south into northeastern United States and the Appalachians.



*Corallorhiza maculata* is restricted in Illinois to mesic forests in the northern part of the state. Presently it is known from four sites, one in a county forest preserve, the rest on private land. It also may persist at state nature preserves in McHenry and Will counties where it was observed in the 1980s.

**References:** Pepon (1916), Fell and Fell (1957), Mohlenbrock (1970c), Sheviak (1974a).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

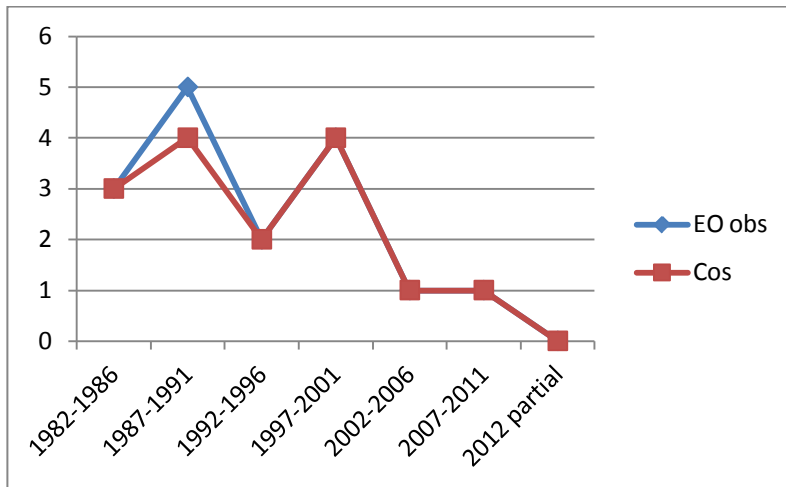
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
05/15/2009	13	2	5	12	9	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	5	2	4	1	1	0
Cos	3	4	2	4	1	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

Only two EOs (15% of total) have had observations in the last ten years, capturing only 22% of counties with EOs and 20% of counties with known historic occurrences. In each the 2002-2006 and 2007-2011 five-year intervals, only one EO (8% of total) had observations. During the same time period, there were “surveyed w/ no observation” reports and no subsequent observations at three EOs (23% of total). Including the 1997-2001 five-year interval, the number of EOs with observations increases to five (38% of total) and the number of EOs with “surveyed w/ no observation” increases to four (31% of total).

**Mankowski 03/15/13 recommendation** – change from threatened to endangered.

**ESPB TEC John Taft 03/28/13 comment:** not sure this change to E is justified based on the numbers.

**Mankowski 04/19/13 response:** Comment noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for change from threatened to endangered for the reasons explained in her species review.

NatureServe Conservation Status in United States

None queried.

Bunchberry, *Cornus canadensis* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Cornus canadensis* L.**

**BUNCHBERRY**

**CORNACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial herb from woody rhizome, stems to 20 cm tall.

**Range:** Circumboreal, south into northeastern United States, the Appalachians and Rocky Mountains.



In Illinois, *Cornus canadensis* is known from forested bogs and sandstone canyons in the northern part of the state and from other sites near Lake Michigan. Presently two state populations are known, one in a state nature preserve, and the other on private land. Historic stations in LaSalle and McHenry counties may still support this species, but attempts to relocate them have not been successful.

**Reference:** Fuller (1944).

**KEY**

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Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

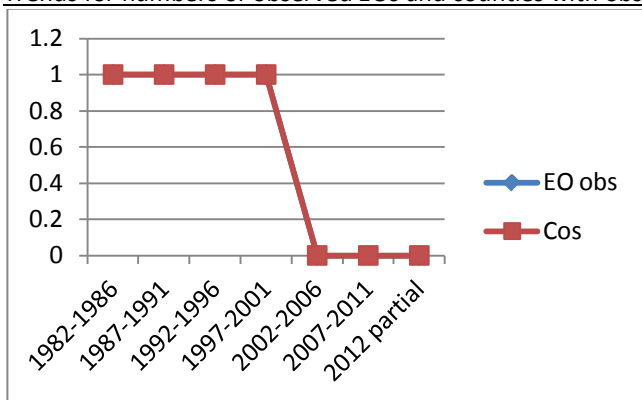
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/14/2001	5	0	3	5	3	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

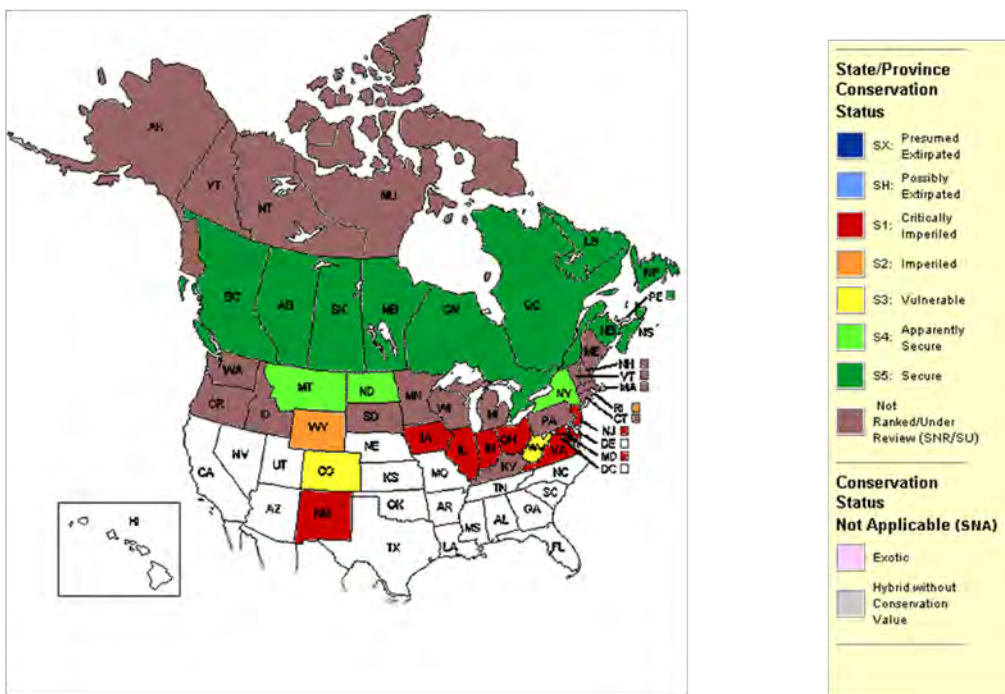
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	1	1	0	0	0
Cos	1	1	1	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski note:** Surveyed w/ no obs data insufficient to recommend delisting as extirpated.

*Cornus canadensis*



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 6, 2012).

Umbrella Sedge, *Cyperus grayioides* (Illinois threatened)

Listed as IL T, 03/13/1989

Reason for listing: restricted habitats or low pops in IL;

### *Cyperus grayioides* Mohlenbr.

**UMBRELLA SEDGE, GRAY'S SEDGE CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial sedge, culms to 60 cm tall.

**Range:** Northwestern and central Illinois; disjunct in Louisiana and Texas.



*Cyperus grayioides* is restricted to blowout disturbances in dry sand prairies of the Illinois River and Mississippi River Sand Areas Natural Divisions. Thirteen stations occur in Jo Daviess, Whiteside, Carroll, Mason, and Cass counties. Eight of these sites are on public land, while another site is on federal property. Some sites are threatened by use from off-road vehicles. Population sizes vary greatly between different sites in relation to the extent of suitable blowout habitat.

**References:** Mohlenbrock (1959b, 1976), Schwegman (1990), Bowles *et al.* (1995).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.



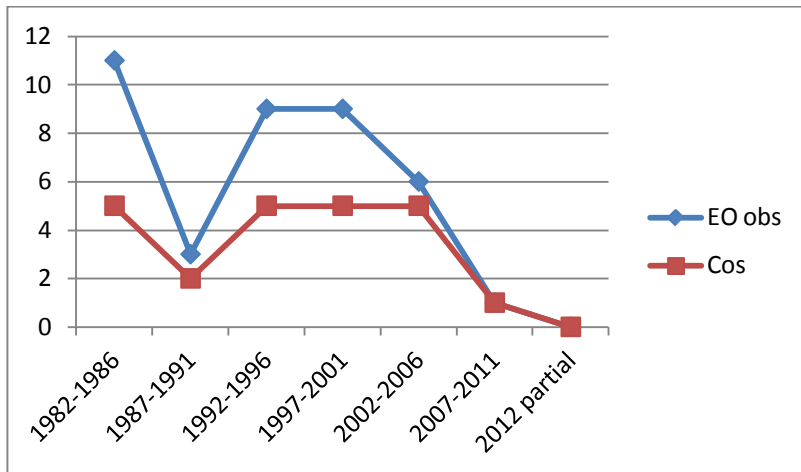
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/2007	12	7	5	13	6	4

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	11	3	9	9	6	1	0
Cos	5	2	5	5	5	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

While there was a significant reduction of EOs with observation in the most recent 5-year interval, it may be explained by a lack of search effort since there are no “surveyed with no observation” reports for any EOs during the same period. Fully 58% of EOs have had observations in the last 10 years and 42% of EOs are protected. It would be good to see data over the next 5-year interval before making a recommendation for a change in status from threatened to endangered.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.

White Lady's Slipper, *Cypripedium candidum* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: proposed Fed E or T; formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Cypripedium candidum* Willd.

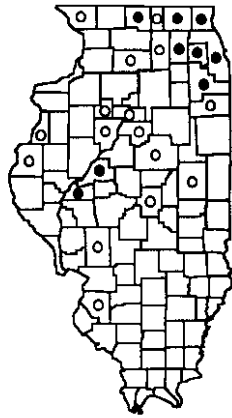
WHITE LADY'S SLIPPER

ORCHIDACEAE

**Status:** Threatened in Illinois.

**Habit:** Perennial orchid, to 40 cm tall.

**Range:** North-central and northeastern United States.



*Cypripedium candidum* formerly was abundant across much of northern Illinois, primarily in wet-mesic prairies and fens.

Agriculture and urban growth have greatly reduced its frequency and have restricted it primarily to northeastern Illinois. It is known from several state nature preserves, county forest preserves, and private tracts, but many populations are small and their habitat is usually threatened with woody invasion due to fire protection, drainage, and other ecological changes. This attractive plant is also threatened by collecting, even in protected sites.

**References:** Mohlenbrock (1970c), Sheviak (1974a), Myers and Henry (1976), Bowles (1983), Carroll *et al.* (1984), Hess and Stoyhoff (1989), Taft and Solecki (1990), Cribb (1997).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

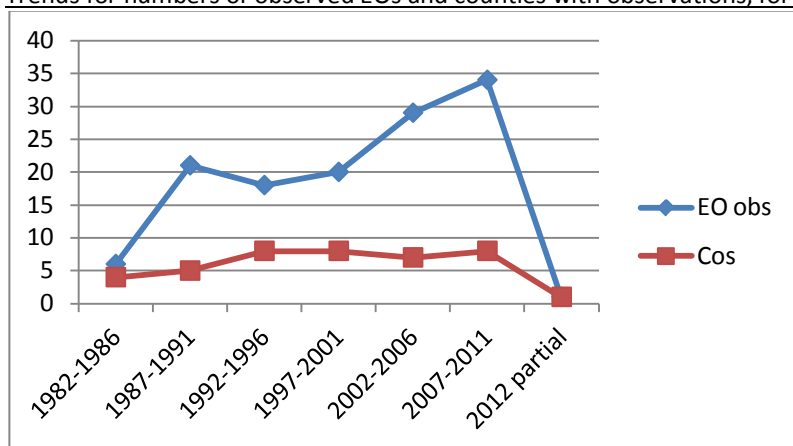
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
04/19/2012	49	37	30	36	9	8

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	6	21	18	20	29	34	1
Cos	4	5	8	8	7	8	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

This species’ status and distribution has improved since its initial listing as endangered in 1980 and has continued to improve since its upgrade to threatened in 1998. There are 9 EOs dated for the 1970s, 12 EOs and 1 county were added in the 1980s, 15 EOs and 1 county were added in the 1990s, and 13 EOs were added in the 2000s. This species has more EOs (49) and more protected EOs (30; 61% of total) than any other species. Fully 71% of EOs (35/49) have had observations in the past ten years, with only four EOs reported as surveyed w/ no observation in more than one year and without subsequent observation during the same period. An additional 4 EOs had observations in the 1997-2001 window, bringing to 80% of EOs (39/49) having had observation in the past 15 years, and only 1 additional EO was reported as surveyed w/ no observation in more than one year and without subsequent observation during the same period (bringing that total to 5 EOs or 8% of total). Three EOs were established from plantings without report of additional population augmentation or other manipulation. Two of those planted EOs have had subsequent observations and one has not. The number and distribution of counties with occurrences in the last 15 years is restricted to the northern ¼ of the state except for Cass and Mason Counties. While this falls short of known historic distribution, all other information suggests that species could be considered secure. With 30 EOs protected, certainly recovery efforts in the form of management and protection have helped the species, but all the EO additions may also indicate the species was more common than thought at the time of its initial listing.

**Mankowski 03/15/13 recommendation** – deilst as recovered/more common than thought.

**ESPB TEC Paul Marcum 03/29/13 comments:** This species is known from several populations, however, I would like to see numbers on population size at known EOR’s since listing. I recommend keeping this species as Threatened until further information is obtained.

**Mankowski 04//19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided.

As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

first obs	# nested sites	most recent reported #s 1997-2001	most recent reported #s 2002-2006	most recent reported #s 2007-2012
1988	1		several dozen observed	3,070 clumps across 4 locations
1977	8		26 clumps at one nested site	203+ clumps across 6 nested sites
1993	1	several colonies		
1980	1		22 clumps, 90% flowering	
1977	1	49 clumps, 45% reproductive	63 clumps, 35% flowering	61 clumps, 67% flowering
1990	2	20 plants at one nested site		16 stems across 2 nested sites
1976	1		sno	
1988	1	101-300 clumps, 30% reproduction	130 clumps, 59% flowering	75 clumps, 70% flowering
1992	1		162 stems, 10% flowering	72 clumps, 40% flowering
1977	1	several hundred flowering stems		705 total plants, 325 flowering
1988	1		54 clumps in 4 pops	357 clumps across 4 pops
1991	1	101-300 plants, 14% reproductive	201-400 plants, 53% flowering	401-800 clumps, 83% reproductive
1977	1	>800 plants	>800 plants in 1 pop	295 clumps across 5 pops
1977	2		66 clumps at 1 location, 54% reprod.	152 clumps across 2 nested sites
1977	1	38 plants in 1 pop	100 clumps in 2 pops	757 plants across 4 subpops
1977	1	401-800 clumps, 88% reproductive	802-1,600 clumps in 2 pops	100 stems, 25% reproductive
1989	1			3,910 plants across 2 pops
1970	1	18 clusters, 2 with flowering stems		
1990	1	sno	sno	sno
1983	1		201-400 flowering clumps	707 clumps, 95% flowering
1986	1			
1988	1	observed	observed	3 clumps
1985	1	2 clumps	49 stems in approx 8 clumps	7 genets
1989	1	many plants	6 clumps, 43% flowering	30 plants, 50% flowering
1985	1			sno
1991	1	16 clumps	sno	16 clumps
1991	1		sno	
1992	1	150 clumps, 35% reproductive	165 clumps, 15.2% flowering	117 clumps, 67% flowering
1992	1	6 clumps, 4% reproductive	14 fruiting clumps	19 clumps, 89% flowering
1993	1		23 clumps at 2 locations	19 clumps across 2 locations
1993	1	5 flowering stalks		
1997	7	observed at one nested site	220 clumps across 6 nested sites	222-421 clumps across 5 nest. sites
1993	1			sno
1999	1	1 clump	2 clumps at 2 locations	4 clumps across 2 locations
2001	1	2 plants		
2002	1		27 clumps at 3 locations	66 clumps, 90% flowering
2002	1		5 plants in 2 pops	5 clumps in 2 pops

2005	1		1 clump	sno
2001	1	8 clumps, 100% reproductive	sno	99 stems, 52% flowering
2005	1		24 inflorescences	
1988	1			
2001	1	1 clump with 5 flowering stems		
2007	1			sno
2009	1			1 clump
2009	1			3 clumps with 18 flowering stems
2008	1			2 stems, 50% flowering
2006	1		observed	5 stems, 60% flowering
2008	1			sno
2009	1	18 clumps, 122 blooms	16 stems	66 clumps. 60% flowering

notes: yellow cell = established from plantings; blank cell = no report; sno = surveyed w/ no obs.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Threatened). This species has had a great reduction from its original range in Illinois (extant in only 9 of its historical known range of 25 counties) and its threat from being collected in the wild for horticultural purposes.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about threats and comparison to historic range and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 30 EOs (61% of total) are protected and specific to collecting, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 27 EOs (55% of total) have had repeated obs in at least 2 of the 3 most recent 5-year intervals and 13 EOs (27% of total) have had repeated obs in all of the 3 of the most recent 5-year intervals. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below (*TABLE NOT REPEATED BELOW IN SP. REVIEW, SEE ABOVE FOR TABLE*). Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

**ESPB TEC John Taft 04/19/13 comments:** This species will continue to be vulnerable to collection, woody encroachment and other factors. I monitored a population at Black Partridge (Goose Lake fen) for several years and observed it to go from just over 200 plants to 1 in about 25 years. After management of the fen habitat, a few additional plants were observed. While this still counts as an EOR, it is a greatly diminished population, making me wonder about trends elsewhere (I have heard similar trends occurred at Gavin Bog Prairie). Perhaps Susanne Masi can suggest whether trends data from her census work supports this change. RECOMMENDATION – CONSULT WITH PLANTS OF CONCERN PROJECT MANAGER PRIOR TO FINAL DECISION.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about threats and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution and making recommendations in the species review. With regard to threats, fully 30 EOs (61% of total) are protected and specific to collecting, staff considers the persistence of repeated observations over many years at multiple EOs suggests the impacts may not be too severe - 27 EOs (55% of total) have had

repeated obs in at least 2 of the 3 most recent 5-year intervals and 13 EOs (27% of total) have had repeated obs in all of the 3 of the most recent 5-year intervals. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers. Individual EO most recent reports during each of the three most recent 5-year intervals (except 2012 data was added when available to the most recent interval) are provided below (TABLE NOT REPEATED BELOW IN SP. REVIEW, SEE ABOVE FOR TABLE). Susanne Masi is an ESPB TEC and did not provide any comments for this species. Mankowski maintains recommendation for delisting as recovered/more common than thought for reasons explained here and in her species review.

**Mankowski 04/19/13 final recommendation:** delist as recovered/more common than thought.

NatureServe Conservation Status in United States

None queried.

Showy Lady's Slipper, *Cypripedium reginae* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

## *Cypripedium reginae* Walt.

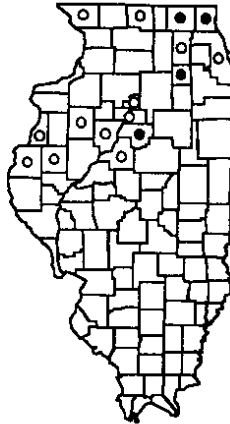
SHOWY LADY'S SLIPPER

ORCHIDACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial orchid, to 90 cm tall.

**Range:** Eastern Canada, south into northeastern United States and the Appalachians.



*Cypripedium reginae* was formerly found across the northern half of Illinois in a variety of habitats, including prairies, forests, barrens, bogs, and fens. This species has been almost exterminated in Illinois by agriculture, urban development, and the removal of plants by commercial florists, orchidists, and gardeners. Extant populations are threatened by the exotic purple loosestrife and by deer browsing. Presently, populations are known in Illinois from four state nature preserves.

**References:** Gates (1912), Pepoon (1916), Mohlenbrock (1970c), Sheviak (1974a), Myers and Henry (1976), Evers and Page (1977), Moran (1978), Cribb (1997).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

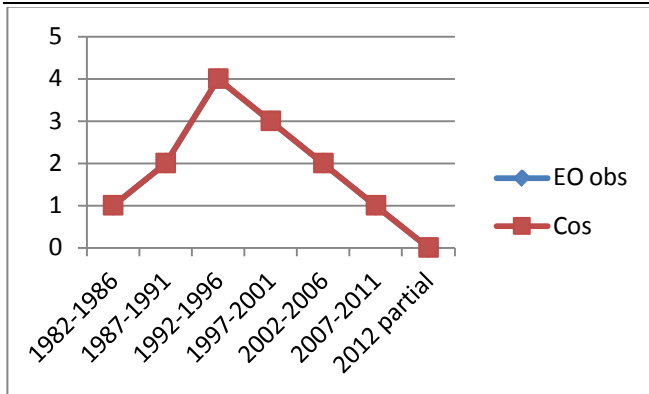
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
9/15/2009	5	2	5	4	4	2

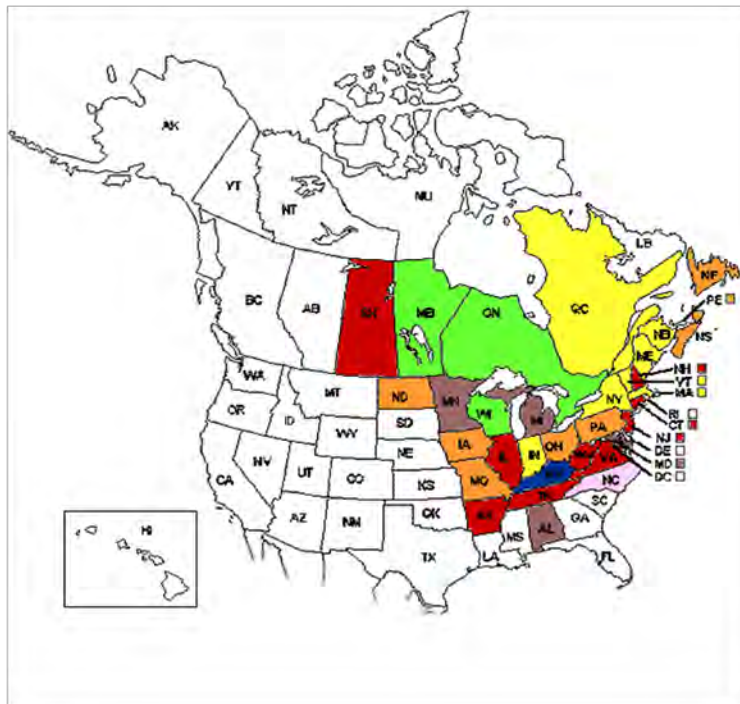
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	2	4	3	2	1	0
Cos	1	2	4	3	2	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Cyripedium reginae* - Walt.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).



Leafy Prairie Clover, *Dalea foliosa* (Illinois endangered, Federally endangered)

Listed as IL E, 5/20/1980; Listed as Fed E, 05/01/1991

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL; significant disjuncts in IL - IL pop far removed from rest of species' range

## ***Dalea foliosa* (Gray) Barneby**

**LEAFY PRAIRIE CLOVER**

**FABACEAE**

**Status:** Endangered in Illinois, Federally Endangered.

**Synonym:** *Petalostemum foliosum* Gray.

**Habit:** Perennial herb, stems to 80 cm tall.

**Range:** Tennessee to Alabama; disjunct in Illinois.



*Dalea foliosa* was originally widespread in northern Illinois, but highly localized in mesic dolomite prairie habitat. Until rediscovered in 1974, it was thought to have been extirpated from the state early in the last century. Presently it is known from two state nature preserves, a forest preserve, and a national heritage corridor.

**References:** Hill (1879), Jones (1952), Baskin and Baskin (1973, 1989, 1998), Barneby (1977), Schwegman (1990), U.S. Fish and Wildlife Service (1991), Bowles *et al.* (1999a, 1999b), Phillippe *et al.* (2000).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

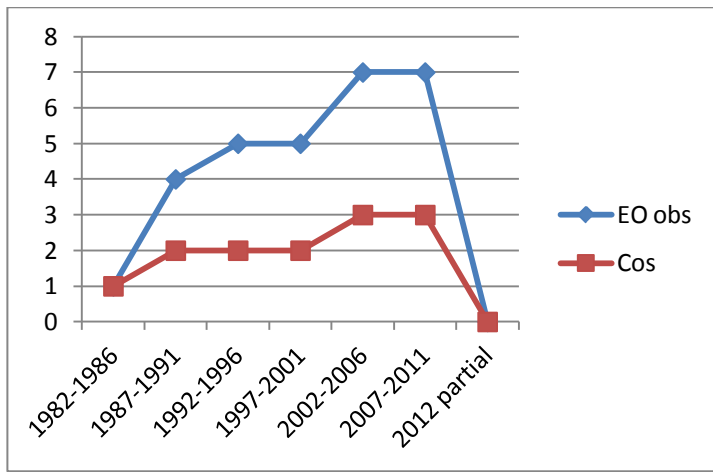
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/07/2010	9	8	3	6	3	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	4	5	5	7	7	0
Cos	1	2	2	2	3	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

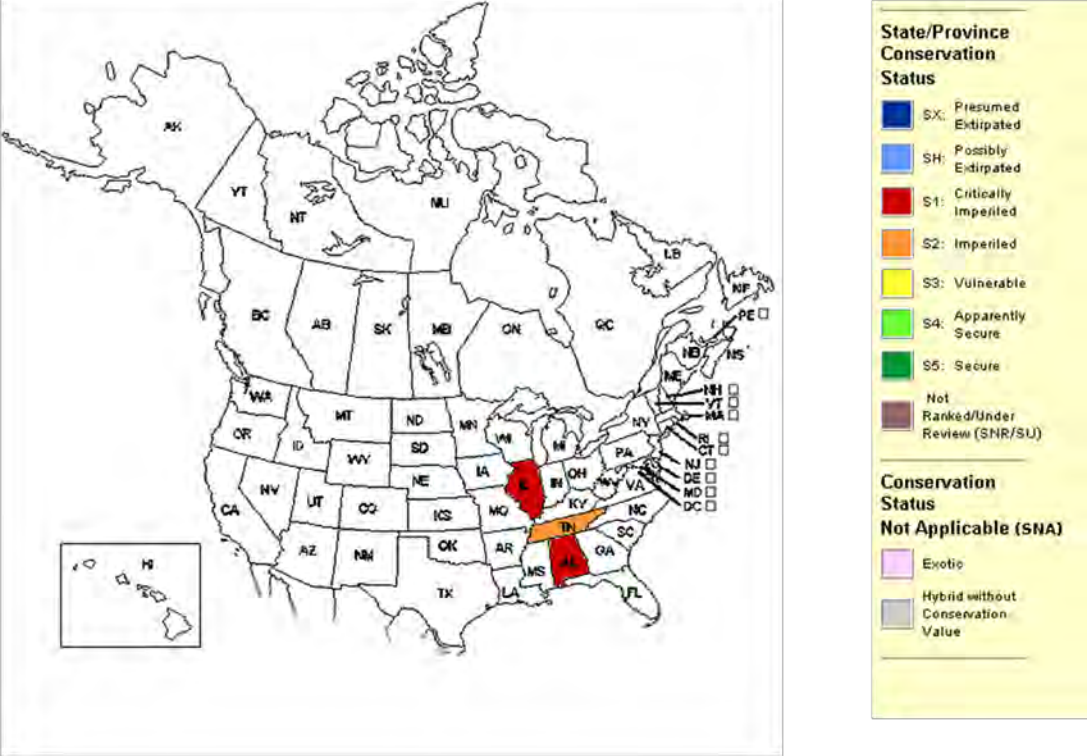


**Mankowski notes and recommendation:**

This species has received a great deal of conservation and monitoring effort directed by a federal recovery plan. The number of EOs with observation has steadily increased since the species was listed in 1980, with two EOs being established from plantings and three others receiving augmenting plantings. In each of the two most recent 5-year intervals, there were seven EOs (78% of total) with observation, resulting in a total of eight EOs (89% of total) with observation in the last 10 years. However, 4/8 (50%) of those have received population augmentations during the same period. Three EOs (33% of total) are protected. There were observations in all counties with known occurrences, although this represents only 43% of counties known for historic distribution. While there is clearly an improvement in status and distribution, it would be good to see occurrence numbers sustained over several intervals without population augmentations prior to making a recommendation for a change from endangered to threatened.

**Mankowski recommendation** – no change in status.

*Dalea foliosa* - (Gray) Barneby



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Wild Blue Larkspur, *Delphinium carolinianum* (Illinois threatened)

Listed as IL T 10/30/2009

Reason for listing: restricted habitats or low pops in IL;

*Delphinium carolinianum* Walt.

Wild Blue Larkspur

RANUNCULACEAE

**Illinois Status:** Threatened

**Federal Status:** None

**Present Distribution:** North Carolina to Florida, west to Texas, north to Kansas and Iowa, and east to Ohio (NatureServe 2009). In Illinois, it is currently known from only three counties (Calhoun, Henderson, and Pike) in the west-central part of the state, where one location is protected in an Illinois Nature Preserve (IDNR 2010).

**Former Illinois Distribution:** Historically, this species was considered rare and only known from two additional counties (Adams and Mercer) (INHS 2010a).

**Habitat:** Dry prairies and open ground, in Illinois all populations are restricted to limestone glades.

**Reason for Status:** There are currently only eight populations in the State and all are small and restricted to limestone glade communities (IDNR 2010).

**Management Recommendations:** Management of habitat to control woody succession and invasion by non-native species, as well as permanent protection of areas where the species occurs, will help with its conservation in Illinois.



#### Key

The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

**Citation:** Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

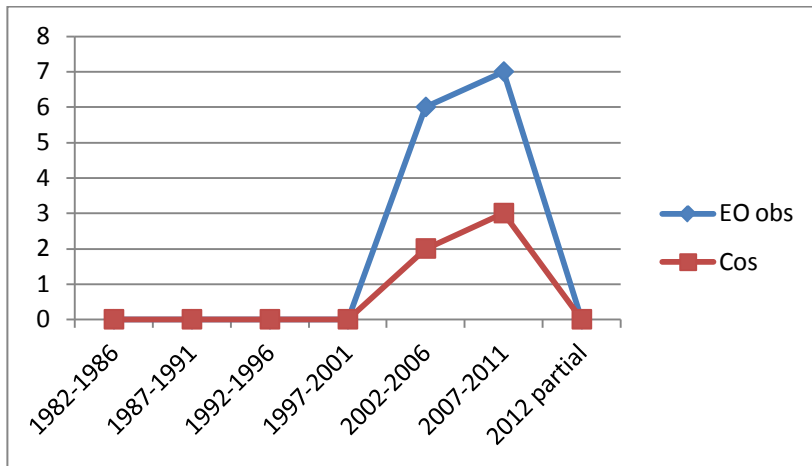
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010	10	8	1	11	4	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	0	6	7	0
Cos	0	0	0	0	2	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Hay-scented Fern, *Dennstaedtia punctilobula* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

## *Dennstaedtia punctilobula* (Michx.)

Moore

HAY-SCENTED FERN

DENNSTAEDTIACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial from a slender branching rhizome, fronds to 70 cm long.

**Range:** Eastern United States and adjacent Canada.



*Dennstaedtia punctilobula* typically occurs on moist, north-facing, shaded sandstone cliffs in extreme southern Illinois. One known population occurs in an ecological area in Pope County. Five earlier collections are known from the Shawnee National Forest and some of these probably persist.

**References:** Skorepa and Snider (1967), Schwegman and Mohlenbrock (1966, 1968), Schwegman (1972), Nauman and Evans (1993).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

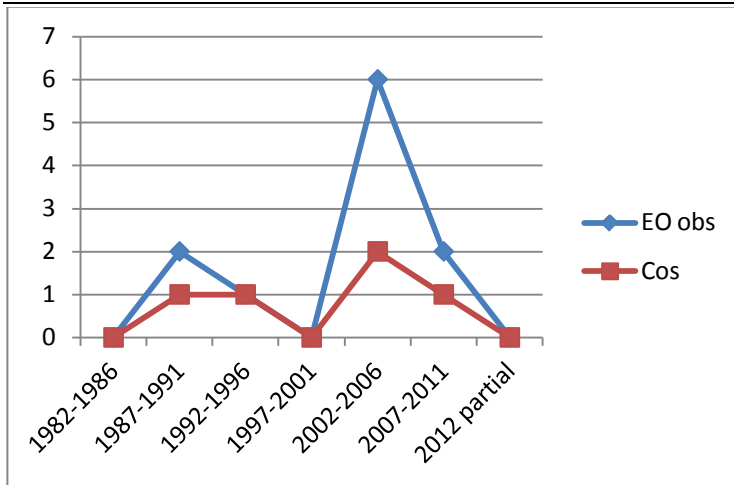
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/22/2011	8	7	1	5	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	1	0	6	2	0
Cos	0	1	1	0	2	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

EO records suggest that the species was known from six locations when listed as threatened in 1980. The Board changed the status from threatened to endangered in 1998 after the number of observations had declined over several years. The 2002-2006 window saw a significant increase in observations with a total of six EOs (75% of total) having observations, including the addition of a new EO in 2002. Since 2002, a total of seven EOs (86% of total) have had observations. There is only one EO with a “surveyed w/ no observation” report (in 2004) and for which there has been no subsequent observation. The species has a limited distribution and both counties are captured in recent observations. While the increase in observations is mostly represented in a single five-year interval, it is a significant increase, and the additional recent discovery of a new EO suggests the species’ status may warrant a change from endangered to threatened.

**Mankowski 03/15/13 recommendation** – change from endangered to threatened.

**ESPB TEC Rick Phillippe 03/29/13 comment:** (Maintain as Endangered). This species is much like that for *Asclepias stenophylla*. Has only one protected Illinois population and is a species on the edge of its range.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Staff appreciates and agrees with the concern regarding only one protected EOs, but notes again the significant increase in number of EOs for the species. There are eight EOs for the species and seven have had observation in the last ten years. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

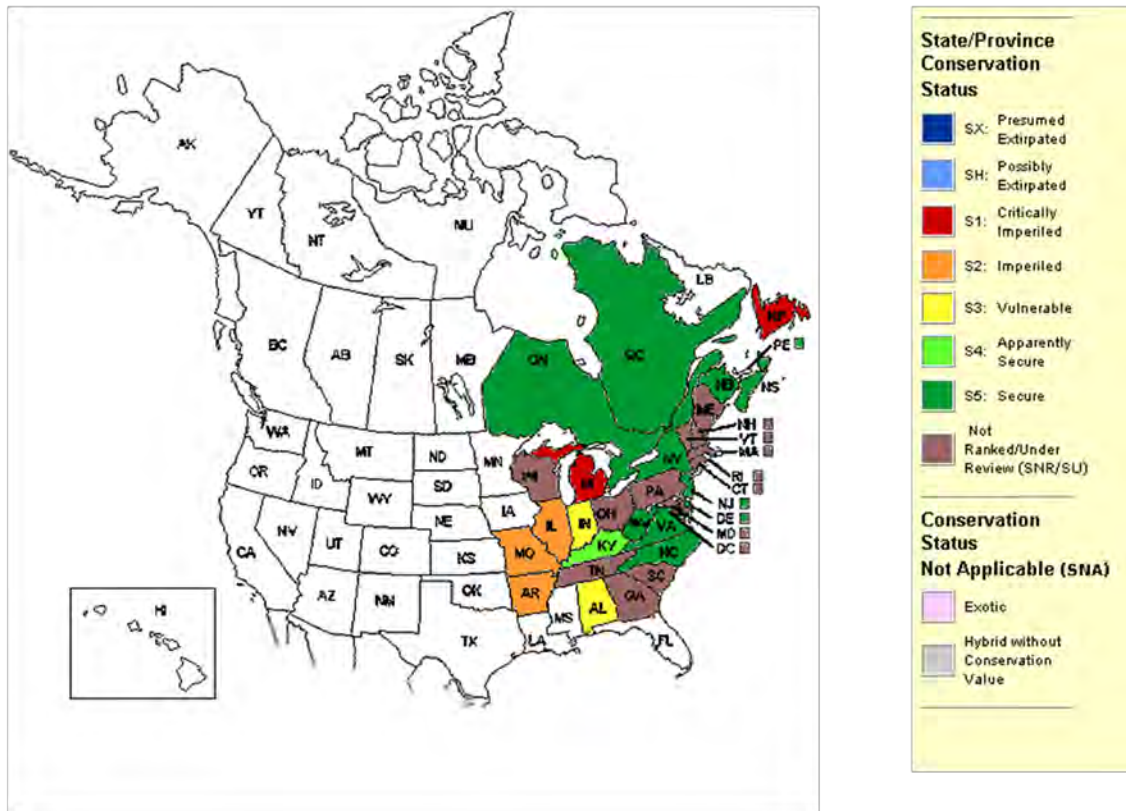


**ESPB TEC John Taft 03/28/13 comments:** 2 to 6 populations in 1 or 2 counties for a cliff dwelling species may be inadequate to assume a species not prone to extinction. This fern primarily is a shaded cliff species; depending on climate trends, these could be some of the most vulnerable taxa with climate change. Since the INAI update included cliff communities and there appears to be limited evidence of an increase from those observations, the known numbers might be fairly comprehensive and this change in status seems not to be warranted. RECOMMENDATION – NO CHANGE UNTIL FURTHER TRENDS COULD ASSESS STABILITY WITH CHANGING CLIMATE.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. Staff appreciates concerns about edge of range and restricted habitat species and has tried to consider those concerns in context when reviewing the number of observations relative to known EOs over time and to known historic range and distribution. As the Board discussed within the last few years with regard to bats and the anticipated potential threat from white nose syndrome, the Board is not supposed to make listing decisions out of anticipation of a potential threat, but rather based on best available information regarding current status and distribution. With regard to number of occurrences, staff recommendation is based on the number of observations relative to known EOs over time and not on whether the species is absent or present at other or additional locations. There are eight EOs for the species and seven have had observation in the last ten years. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review.

**Mankowski 04/19/13 final recommendation:** change from endangered to threatened.

*Dennstaedtia punctilobula* - (Michx.) T. Moore



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).



Panic Grass, *Dichanthelium yadkinense* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## **Panicum yadkinense Ashe**

**PANIC GRASS**

**POACEAE**

**Status:** Endangered in Illinois.

**Synonym:** *Dichanthelium yadkinense* (Ashe) Mohlenbr.

**Habit:** Perennial cespitose grass, culms to 1 m tall.

**Range:** Southeastern United States.



A species of mesic forests, wet soil and gravelly stream beds, *Panicum yadkinense* extends north to extreme southern Illinois. It has been recorded in the state only four times, with two recent collections in the Shawnee National Forest in Pope County, one in an ecological area.

**Reference:** Mohlenbrock (1973).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

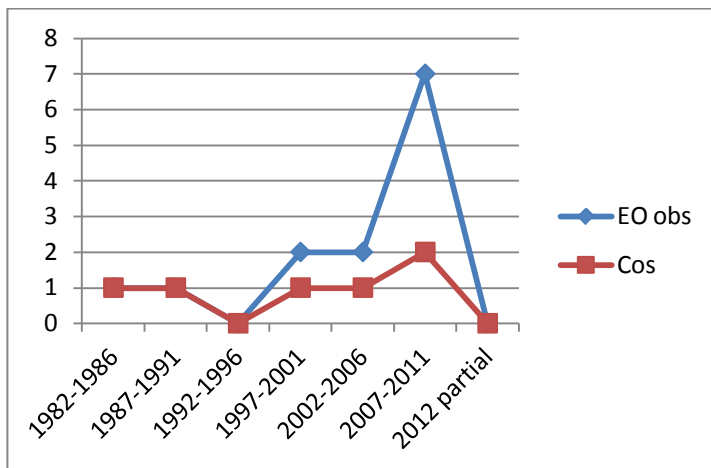
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
8/3/2009	8	7	0	7	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	0	2	2	7	0
Cos	1	1	0	1	1	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

The species was known from only four locations when listed in 1980. Five new EOs were located in the most recent 5-year interval, although only one had more than one year of observation. The new EOs added a new county to the known historic and current distribution. There was also observation in repeated years at 2 of 3 previously existing EOs since 2002, bringing to 7 (88% of total) the number of EOS with observation in last 10 years. Although still rare and having a very limited range in Illinois, with the recent new EOs more than doubling the total number of EOs for the species, it appears it may be more common than previously thought.

**Mankowski 03/15/13 recommendation** – change status from endangered to threatened.

**ESPB TEC Rick Phillippe 03/29/13 comment:** (Maintain as Endangered). I would like to see vouchers from this species sent to an expert for varification.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Database is responsible for conducting quality assurance/quality control of EO reports. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review. If the Board wants voucher specimens verified, Mankowski recommends the species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision – it is then recommended that the commenter provide specific information to the Database about which EO reports may be based on misidentified specimens

for their evaluation and investigation and Ms. Mankowski can follow-up with the Database, the individual who reported the observations, and the commenter, accordingly.

**ESPB TEC John Taft 03/28/13 comment:** A total of 8 EORs from 7 quad sheets in 2 counties. I understand some of the recent observations from the INAI update from southern Illinois may be based on misidentifications (personal communication with Chris Benda). Voucher specimens should be evaluated by a botanist with experience with *Dichantheium* species before making this adjustment. RECOMMENDATION – SPECIMENS SHOULD BE VALIDATED BEFORE STATUS CHANGE.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Chris Benda is an ESPB TEC and did not provide recommendation regarding misidentified observations. The Database is responsible for conducting quality assurance/quality control of EO reports. Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review. If the Board wants voucher specimens verified, Mankowski recommends the species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision – it is then recommended that the commenter provide specific information to the Database about which EO reports may be based on misidentified specimens for their evaluation and investigation and Ms. Mankowski can follow-up with the Database, the individual who reported the observations, and the commenter, accordingly.

**Mankowski 04/19/13 final recommendation:** Mankowski maintains recommendation for change from endangered to threatened for the reasons explained in her species review. If the Board wants voucher specimens verified, Mankowski recommends the species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision – it is then recommended that the commenter provide specific information to the Database about which EO reports may be based on misidentified specimens for their evaluation and investigation and Ms. Mankowski can follow-up with the Database, the individual who reported the observations, and the commenters, accordingly.

NatureServe Conservation Status in United States

None queried.

French's Shooting Star, *Dodecatheon frenchii* (Illinois threatened)

Listed as IL T 09/01/2004

Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

### ***Dodecatheon frenchii* (Vasey) Rydb.**

**FRENCH'S SHOOTING-STAR**

**PRIMULACEAE**

**Status:** Threatened in Illinois

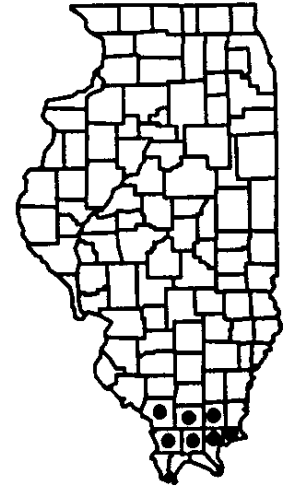
**Habit:** Perennial herb with a basal rosette of leaves, scapes to 70 cm tall.

**Range:** Southern Illinois and adjacent Missouri, Arkansas, Indiana, and western Kentucky.

French's shooting-star is a rare Midwestern endemic that is found associated with sandstone ledges throughout its limited range. This species often grows in linear colonies in thin sandy soil in shade directly below the outer edges of overhanging sandstone ledges. These rocky shelters are commonly used by people which results in the trampling and loss of many shooting-star individuals and the extirpation of some populations. In Illinois this species is mostly restricted to the Shawnee Hills Natural Division where it is known from seven counties.

**Note:** Gleason and Cronquist (1991) consider the name of this taxon to be *Dodecatheon meadia* L. var. *frenchii* Vasey.

**References:** Mohlenbrock (1978), Olah and DeFilipps (1969), Voigt and Swayne (1955).



### **MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nýboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

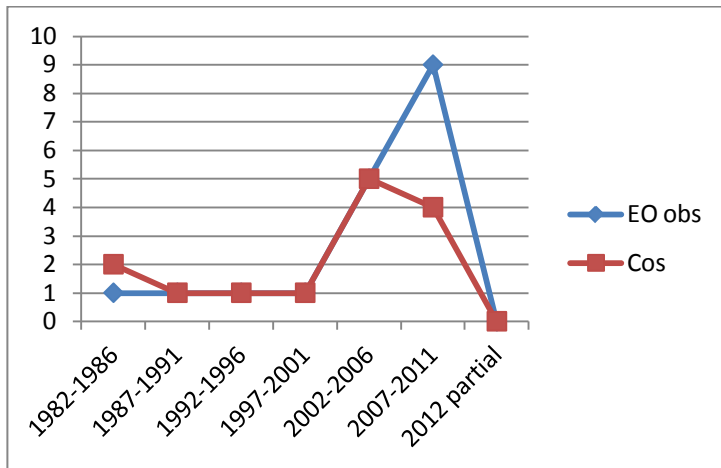
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
06/22/2011	20	12	0	14	6	5

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	1	1	5	9	0
Cos	2	1	1	1	5	4	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Whitlow Grass, *Draba cuneifolia* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Draba cuneifolia* Nutt.**

**WHITLOW GRASS**

**BRASSICACEAE**

**Status:** Endangered in Illinois.

**Habit:** Annual or winter annual herb, stems 10-25 cm tall.

**Range:** Southern United States and adjacent Mexico.



*Draba cuneifolia* reaches its northern range limit in Illinois on rock ledges of the bluffs along the Mississippi River. This species is presently known from a single Illinois station, where it occurs in a state nature preserve.

**Note:** This taxon is represented in Illinois by variety *cuneifolia* and variety *foliosa* Mohlenbrock.

**References:** Fernald (1934), Mohlenbrock (1980).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

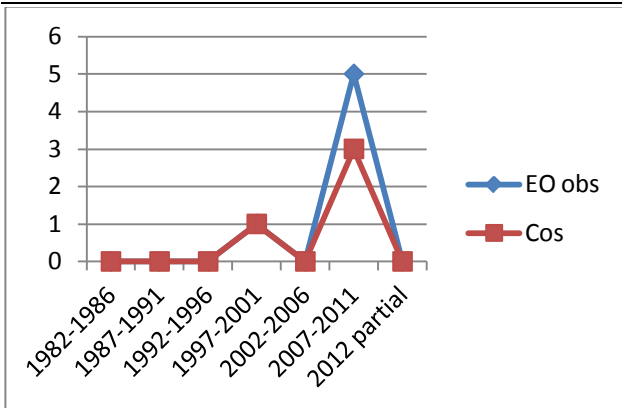
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
7/23/2008	5	5	4	5	3	3

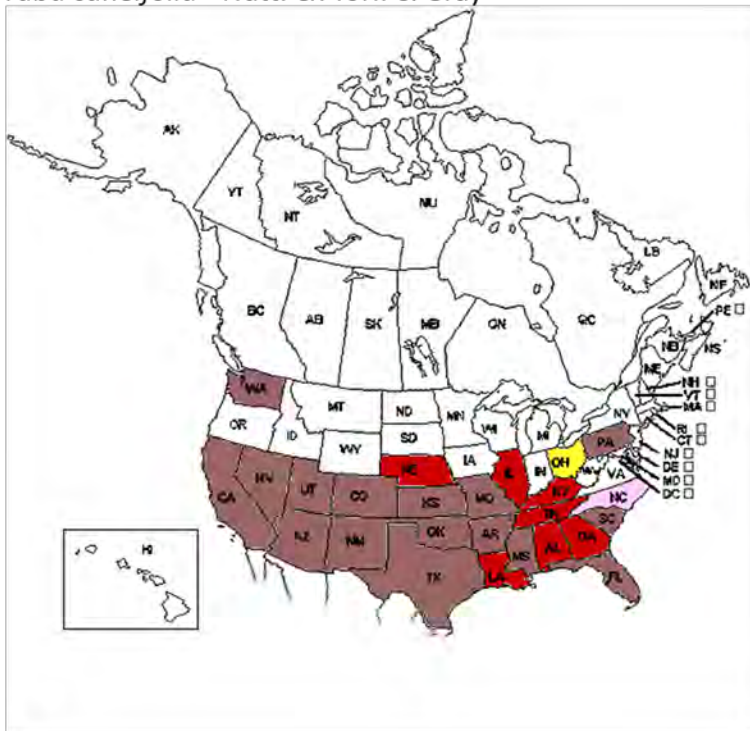
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	1	0	5	0
Cos	0	0	0	1	0	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Draba cuneifolia* - Nutt. ex Torr. & Gray



**State/Province Conservation Status**

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically Impaired
- S2: Impaired
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review (SNR/SU)

**Conservation Status Not Applicable (SNA)**

- Exotic
- Hybrid without Conservation Value

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Narrow-leaved Sundew, *Drosera intermedia* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## ***Drosera intermedia* Hayne**

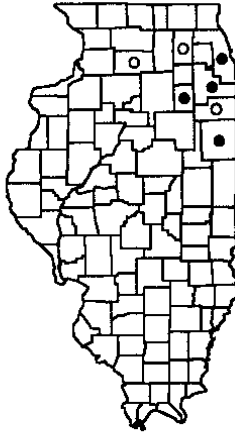
**NARROW-LEAVED SUNDEW**

**DROSERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial insectivorous herb, scapes 1-8 cm tall.

**Range:** Circumboreal, eastern United States.



*Drosera intermedia* occupies peat bogs and wet sand prairies in Illinois. Presently three populations are known from state nature preserves and a fourth from a state conservation area. A few stations also occur on private land.

**Reference:** Gleason and Cronquist (1991).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.



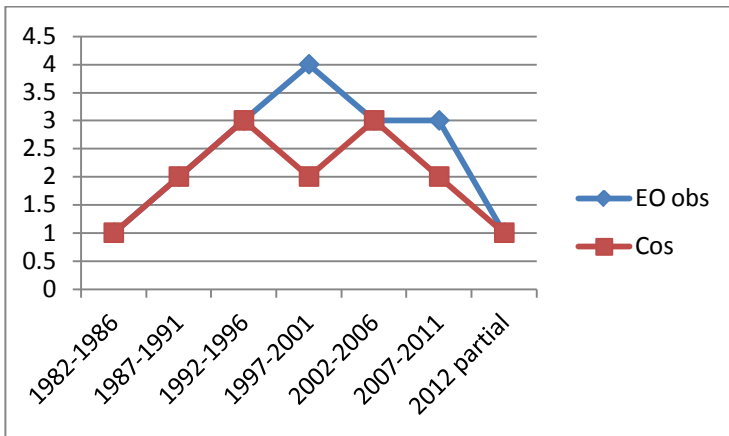
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/13/2012	13	5	7	8	7	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	2	3	4	3	3	1
Cos	1	2	3	2	3	2	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Round-leaved Sundew, *Drosera rotundifolia* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Drosera rotundifolia* L.**

**ROUND-LEAVED SUNDEW**

**DROSERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial insectivorous herb, scapes to 35 cm tall.

**Range:** Circumboreal, eastern and western United States.



In Illinois, *Drosera rotundifolia* has been collected in sphagnum bogs and occasionally in wet peaty sand in the northern part of the state. Populations are presently known from one state nature preserve, and from one locality on private land.

**References:** Gates (1911), Emerson (1921), Sheviak and Haney (1973).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

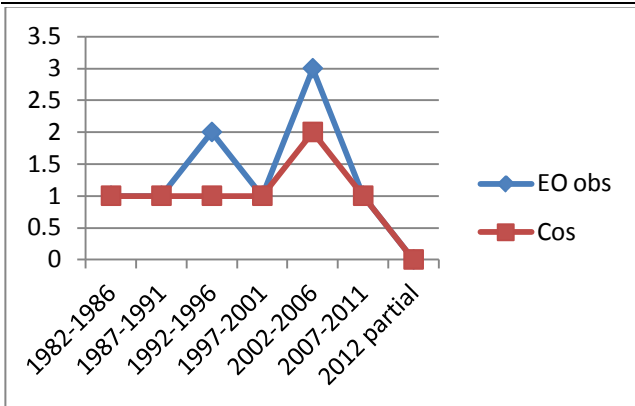
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/11/2009	7	3	6	6	3	2

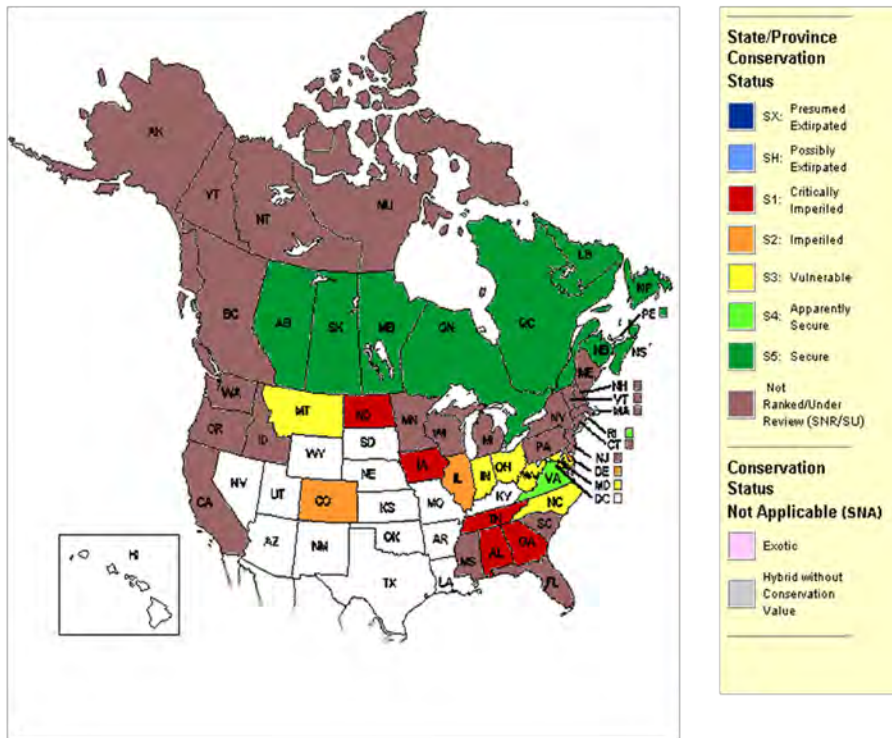
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	2	1	3	1	0
Cos	1	1	1	1	2	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Drosera rotundifolia* - L.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Beaked Spike Rush, *Eleocharis rostellata* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Eleocharis rostellata* (Torr.) Torr.**

**BEAKED SPIKE RUSH**

**CYPERACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial cespitose spike rush, culms to 1.7 m long.

**Range:** Atlantic Coast and locally inland.



*Eleocharis rostellata* is restricted in Illinois to the northeastern part of the state, where it occurs in calcareous seeps of graminoid fens. This species is known from twelve localities in five counties, including a state park, six state nature preserves and private holdings. Its habitat is dependent upon strong groundwater conditions, and it could be vulnerable to water table manipulations.

**References:** Svenson (1929), Mohlenbrock and Drapalik (1962), Moran (1981), Mohlenbrock (1976), Seischab *et al.* (1985), Stoyhoff and Hess (1986), Hess and Stoyhoff (1989), Bowles (1991b).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

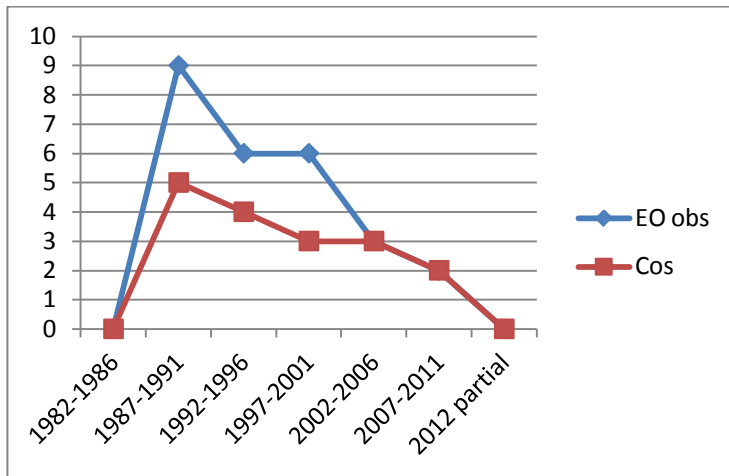
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/7/2009	13	5	12	8	5	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	9	6	6	3	2	0
Cos	0	5	4	3	3	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The decrease in EOs with observation may be explained by search effort as there are no “surveyed with no observation” reports for any EOs for this species. There are 5 EOs (38%) with observation in the last 10 years, and 9 EOs (69% of total) with observation in the last 15 years. Despite the reduced number of observations in the most recent 5-year intervals, fully 12 EOs (92% of total) are protected (of those, comments on EOs noted good to excellent habitat at 3 EOs, a need for brush removal/burning at 3 EOs, and no comments on the remainder). It would be good to see another 5-year interval of data before recommending a change from threatened to endangered.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.

Bearded Wheat Grass, *Elymus trachycaulus* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

## *Elymus trachycaulus* (Link) Gould

**BEARDED WHEAT GRASS**

**POACEAE**

**Status:** Endangered in Illinois.

**Synonym:** *Agropyron*

*subsecundum* (Link) A.S. Hitchc.;

*Agropyron trachycaulum* (Link)

Malte.

**Habit:** Perennial cespitose grass, culms 0.4-1 m tall.

**Range:** Southern Canada and adjacent northern United States.



*Elymus trachycaulus* ranges south into northern Illinois, where it occurs in mesic prairies and on wet dolomite outcrops. Most populations apparently are small, with few flowering culms. Eight populations are known in Illinois; two occur in state nature preserves, two in county forest preserves, one in a state park, one on a military installation and some on private property.

**References:** Mohlenbrock (1972), Taft and Solecki (1990).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

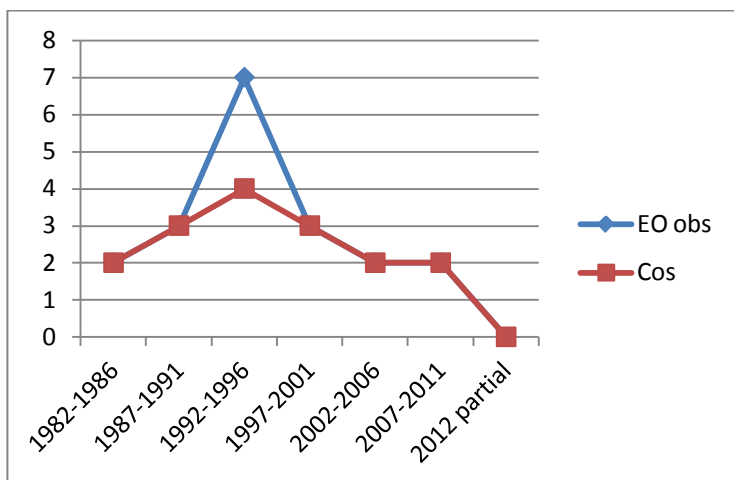
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
08/12/2009	11	3	6	9	6	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	3	7	3	2	2	0
Cos	2	3	4	3	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

It appears that an increase in observations in the mid 1990s triggered a change in status from endangered to threatened by the Board in 2004. Since that time, the number of observations has declined to three (27% of total) in the 1997-2001 window and to two (18% of total) in each the 2002-2006 and 2007-2011 windows. Only 3 EOs (27% of total) in 2 counties (33% of counties with EOs and 22% of those with known historic occurrences) have had observations in the last 10 years and while 1 new EO was added (in 2011), 2 EOs had “surveyed w/ no observation” reports and no subsequent observations, during the period. Within the last 15 years, only 5 EOs (45% of total) in 4 counties (66% of counties with EOs and 44% of those with known historic occurrences) have had observations. It appears the species’ status may now warrant a change back to endangered.

**Mankowski 03/15/13 recommendation** – change from threatened to endangered.

**ESPB TEC Paul Marcum 03/29/13 comment:** Note, the specific epithet is spelled incorrectly in the List Review. Most populations of this species are in protected places (state nature preserves, county forest preserves, state park). I recommend maintaining this species as Threatened.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. Spelling error is not noted – commenter is asked to please provide specific direction as to where in the document the spelling error occurs. No data, evidence, or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of

review for other species during this current List review, the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. All EOs are single sites. Across the 3 EOs with recent observations individual reports were: 2 stems, followed by “surveyed with no obs” in the subsequent year; 20 plants across 8 colonies; and, 2 fruiting stems. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Threatened). This species has a number of recent collections and 6 EO's are from protected areas.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. The Database shows only three observations in the last 10 years. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained in her species review.

**ESPB TEC John Taft 03/28/13 comments:** this grass is actually fairly common at a long-term research site of mine in Lake County. While the EORs were reported once from this site, I have not been continually reporting the occurrences with each year of observation (from 2006 to 2012). It is unclear how these reports are interpreted when the number of occurrence are tabulated or whether lack of reports is taken to represent absence. This leads to the concern that the Heritage records can be over interpreted if based on trends of reported populations. It is interesting to consider this circumstance where absence of reports suggests a change from T to E. The best decisions might not always in the numbers. RECOMMENDATION – NO CHANGE (KEEP AS THREATENED); HOWEVER, REVIEW POC DATA.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been explained to TECs and discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn't in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. As has also been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review, the Board is not generally looking at individual population numbers, has only rarely looked at “surveyed with no observation” reports – which is mentioned in this species review – and has been looking at number of reported observations for each species. Mankowski maintains recommendation for change from threatened to endangered for the reasons explained here and in her species review.

**Mankowski 04/19/13 final recommendation:** change from threatened to endangered.

NatureServe Conservation Status in United States

None queried.



Downy Willow Herb, *Epilobium strictum* (Illinois threatened)

Listed as IL T, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

## ***Epilobium strictum* Muhl.**

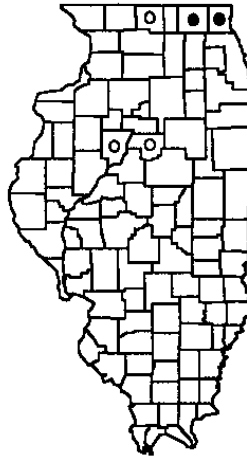
**DOWNY WILLOW HERB**

**ONAGRACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial rhizomatous herb, stems 30-60 cm tall.

**Range:** Northeastern United States and adjacent Canada.



*Epilobium strictum* is rare and local in Illinois, occurring in open calcareous bogs, fens, and seeps. Three Illinois stations are presently known, two in state nature preserves, and one in a county forest preserve.

**References:** Gleason and Cronquist (1991).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

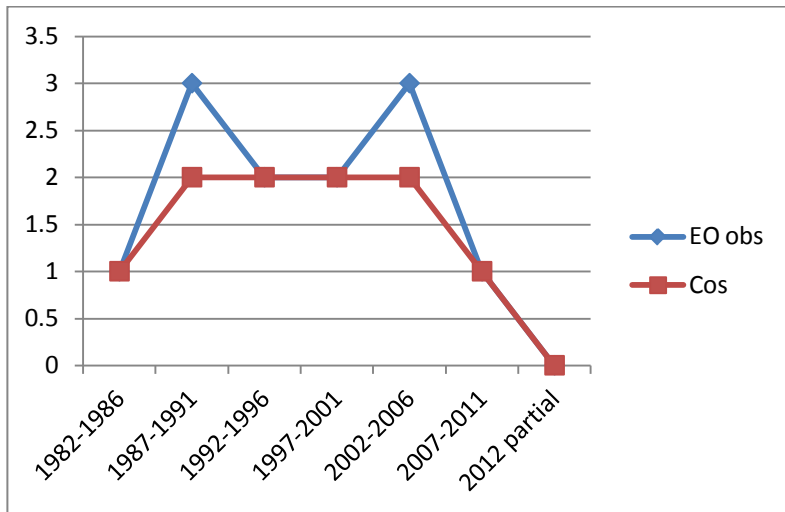
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
09/15/2009	10	4	9	5	2	2

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	3	2	2	3	1	0
Cos	1	2	2	2	2	1	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



NatureServe Conservation Status in United States

None queried.

Meadow Horsetail, *Equisetum pratense* (Illinois threatened)

Listed as IL E, 5/20/1980; Listed as IL T 12/03/1998

Reason for listing: restricted habitats or low pops in IL;

***Equisetum pratense* Ehrh.**

**MEADOW HORSETAIL**

**EQUISETACEAE**

**Status:** Threatened in Illinois.

**Habit:** Perennial rhizomatous horsetail, annual stems 15-50 cm tall.

**Range:** Circumboreal, south into northerneastern United States.



*Equisetum pratense* occurs in Illinois on north-facing slopes of dry-mesic sand forests in the Rock River Hill Country and Wisconsin Driftless Natural Divisions. Nine populations are known to persist in Illinois, one in a state nature preserve, one in a state park, one in a state forest, and the others on private land.

**References:** Tryon *et al.* (1940), Hauke (1965, 1993), Mohlenbrock (1970a), Peck (1982).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

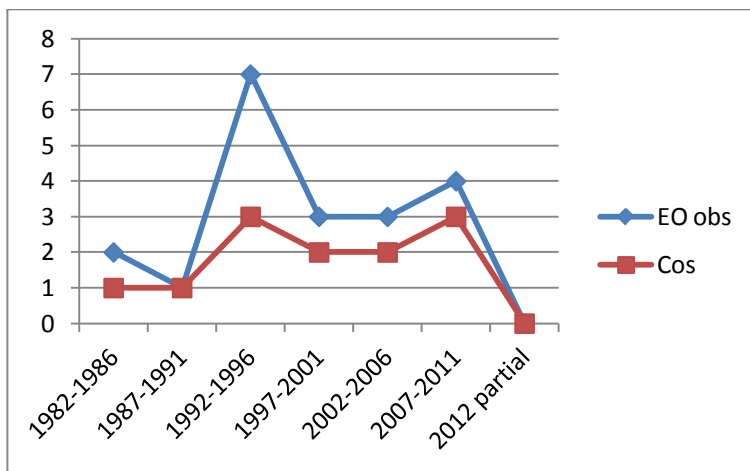
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/28/2011	10	6	2	8	3	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	2	1	7	3	3	4	0
Cos	1	1	3	2	2	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

It appears that a significant increase in observations triggered a change in status from endangered to threatened by the Board in 1998. Since that time, the number of observations has declined to three (30% of total) in each the 1997-2001 and 2002-2006 windows and to four (40% of total) in the 2007 window. However, a total of 6 EOs (60% of total) had observations in the last 10 years, 8 EOs (80% of total) had observations in the last 15 years, and all counties with EOs and with known historic distribution were captured. One new EO was also added in 2011. Only two EOs (20% of total) are protected. While the number of observations in recent individual 5-year interval suggests that a change back to endangered may be warranted, the total number of observations in the last 10 and 15 years and the addition of a new EO in 2011 may indicate a less dire status at this time.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.

Eryngo, *Eryngium prostratum* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Eryngium prostratum* Nutt.**

**ERYNGO**

**APIACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial prostrate herb, stems to 50 cm long.

**Range:** Southeastern United States.



*Eryngium prostratum* reaches its northern range limit on muddy and sandy shores in the southern tip of Illinois. Presently it is known from six state localities, three at the edges of artificial impoundments in the Shawnee National Forest and a national wildlife refuge, the fourth in a state conservation area, and others on private land.

**References:** Schwegman (1972), Hayden (1985).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

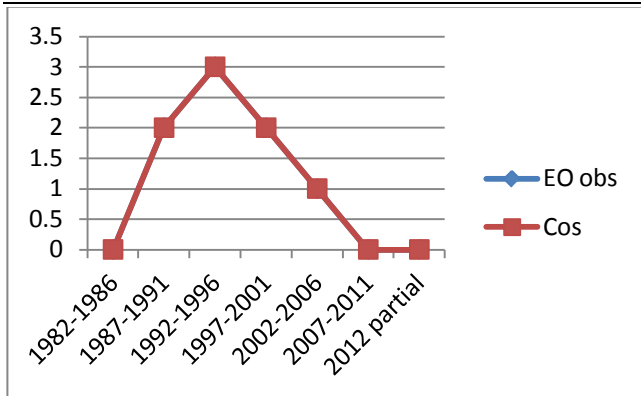
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
8/8/2002	6	1	0	7	5	1

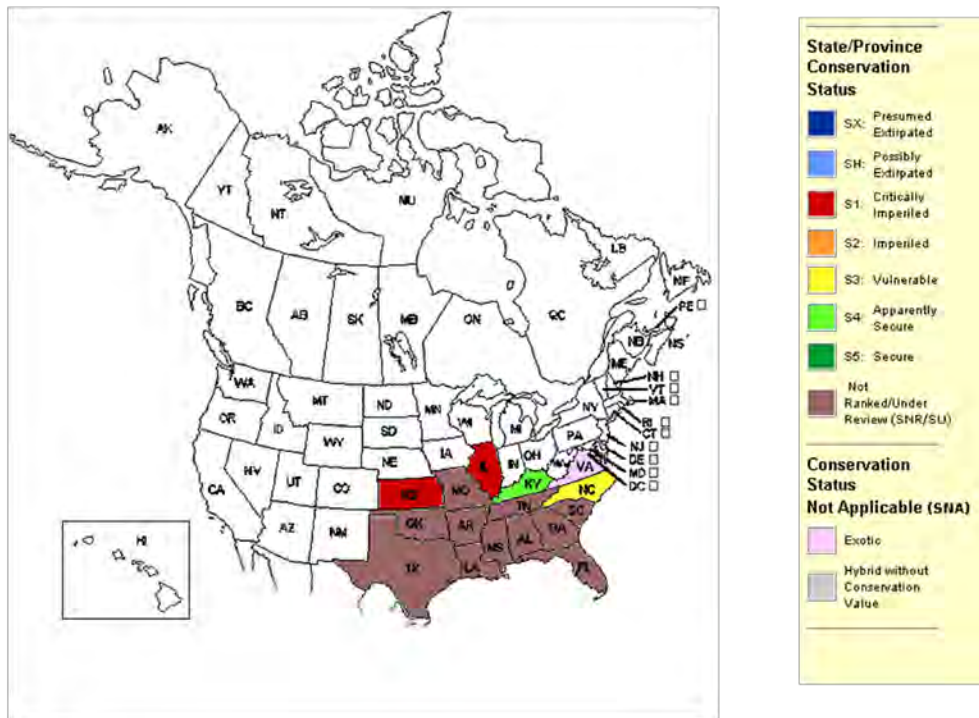
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	3	2	1	0	0
Cos	0	2	3	2	1	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Eryngium prostratum* - Nutt. ex DC.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

American Strawberry Bush, *Euonymus americanus* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E, 01/18/1994

Reason for listing: restricted habitats or low pops in IL;

***Euonymus americanus* L.**

**AMERICAN STRAWBERRY BUSH CELASTRACEAE**

**Status:** Endangered in Illinois.

**Habit:** Shrub to 2.5 m tall.

**Range:** Eastern United States.



*Euonymus americanus* reaches its northern range limit in floodplain forests of southern Illinois. Presently six populations are known from Hardin, Johnson, Pope and Pulaski counties, where they occur in two state nature preserves, two state natural areas, and two other protected sites.

**References:** Schwegman (1968a), Mohlenbrock (1990).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

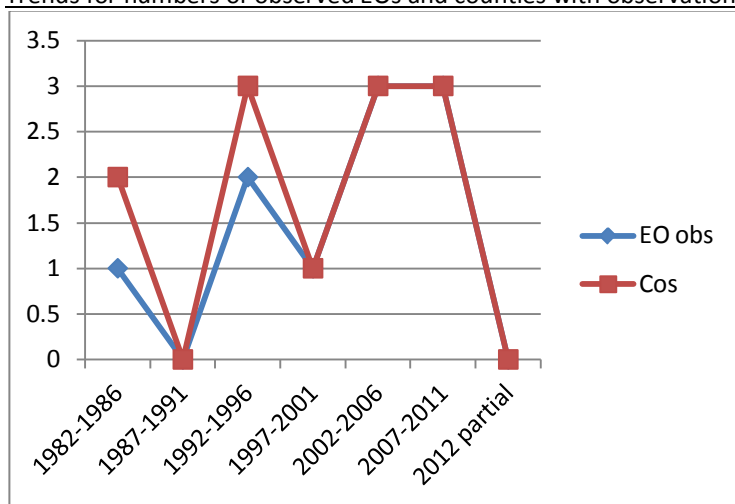
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/16/2011	5	4	2	7	4	3

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	0	2	1	3	3	0
Cos	2	0	3	1	3	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski 03/15/13 notes and recommendation:**

While the species account above (Herkert et al, 2002) describes that this species was known from six populations at that time, there were only three EOs for it from the time of initial listing in 1980 until 1994 when a fourth was added, and then in 2009 a fifth EO was added. The number of observations has increased since the Board changed this species’ status from threatened to endangered in 1994. In the last ten years, four EOs (80% of total) have had observations representing 80% of counties with EOs and 50% of counties with known historic occurrences. During each the 2002-2006 and 2007-2011 windows, three EOs (60% of total) had observations, and in 2009 a new EO was added. Relative to the number of EOs known for the species when it was originally listed, the number of observations reported since 2002 suggest that the status and distribution has improved sufficiently to warrant a change from endangered to threatened.

**Mankowski 03/15/13 recommendation** – change from endangered to threatened.

**ESPB TEC John Taft 03/28/13 comments:** 3 EORs in 3 counties (1 per county) seems to fall short of suggesting a recovering or secure species. I know of three of these populations and two are very small (<5 plants); it seems to be locally occasional at Little Black Slough. RECOMMENDATION – NO CHANGE (unless it can be determined there are more populations than the three I know from Johnson and Pulaski counties).

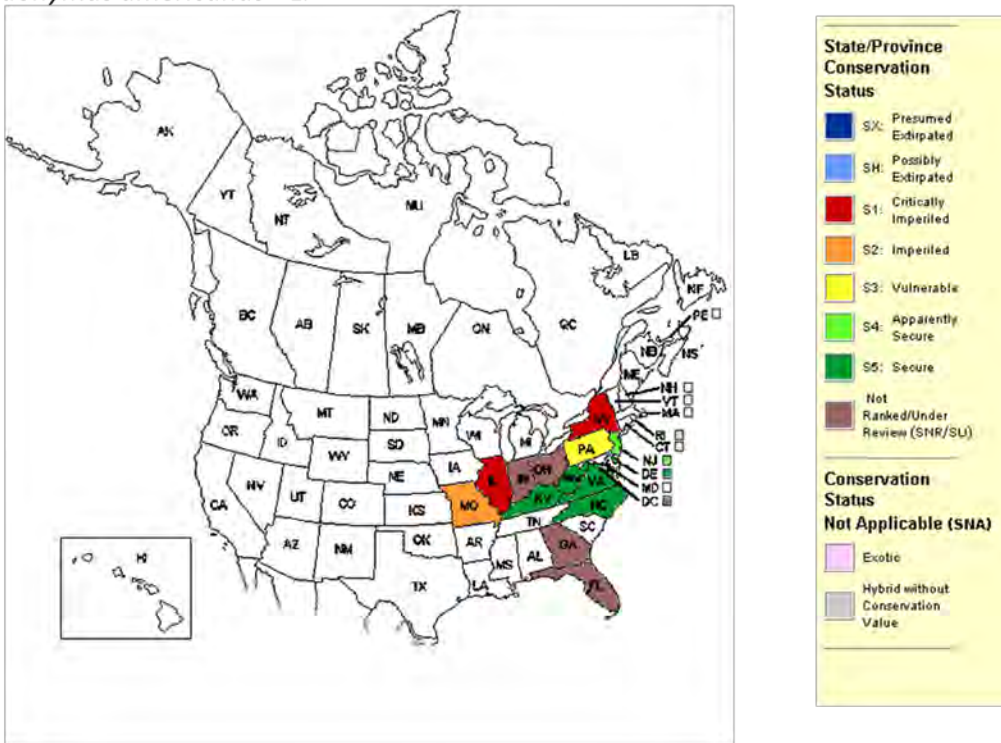
**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data or documentation supporting contrary recommendation was provided. As has been discussed during the reviews of other taxonomic groups to date, data in the Database is very inconsistent with regard to reports of population sizes and absence of presence. For this reason, due to only being staffed at 25%, and consistent with the level of review for other species during this current List review,



the Board is not generally looking at individual population numbers. The Board has generally not looked at individual population numbers in many past reviews and even when making decisions to add species to the List, since most often that level of detail is not available. Additionally, specific location information is not being included in these reviews – the commenter can make request to the Database for the specific location information. There are five EOs for this species and four have had observations in the last ten years. Across the five EOs there are seven nested sites; two persisting since the 1970s, two since the 1980s, two since the 1990s, and one since the 2000s. Individual reports for the four EOs with recent observations noted several hundred plants at two EOs, twenty-three plants an one EO, and several plants at one EO.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for change from endangered to threatened for the reasons explained here and in her species review.

*Euonymus americanus* - L.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Hyssop-leaved Thoroughwort, *Eupatorium hyssopifolium* (Illinois endangered)

Listed as IL E, 12/03/1998

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL;

***Eupatorium hyssopifolium* L.**

**HYSSOP-LEAVED THOROUGHWORT**

**ASTERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, stem 30-100 cm tall.

**Range:** Eastern United States.



Hyssop-leaved thoroughwort occurs in fields and other open places, especially in areas of dry, sandy soil. It was not known from Illinois until it was discovered in the Shawnee National Forest in a Pope County barren in 1993. A second, recently discovered, large population in Johnson County may be adventive. This species is very common in western Kentucky, occurring in roadsides, succession fields, and barrens.

**Reference:** Bassinger (1995).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
none	0	0	0	0	0	0

**Mankowski 03/15/13 notes and recommendation:**

Data sufficient to establish any EO records for this species has not been brought forth since its listing in 1998.

**Mankowski 03/15/13 recommendation** – remove from endangered. Data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

**ESPB TEC Paul Marcum 03/29/13 comments:** Should not be removed from the List. I know of a recent collection made within the last 5 years. Is there an official number of years without records that needs to be surpassed to recommend as extirpated? If so, it should certainly be longer than 15 years. Otherwise, we will just be taking things off the list to add them the next time around.

**Mankowski 04/19/13 response:** No species is recommended for delisting due to extirpation after only 15 years. The Board’s listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species’ reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Endangered). This taxon was recently vouchered in Pope County, Illinois (17 August 2011) by Rick Phillippe, Paul Marcum, and Jason Zylka. It was collected while working on a project for some species that are Rarely Seen In Illinois. This is a problem with some taxa that are poorly known and may not have been extensively searched for in Illinois. Though it had not been seen in Illinois for about 13 years, not many individuals are looking for the species. I feel some of these species that have not been seen or vouchered in a number of years may just have not had a botanist searching for them. Eupatorium hysopifolium is not a species I was familiar with and we just picked it up to see what it was as we did not recognize it for certain at that time. We were actually looking for Hypericum denticulatum which we also found here as well as Rhexia mariana.

**Mankowski 04/19/13 response:** The Board’s listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species’ reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered

as extirpated for reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

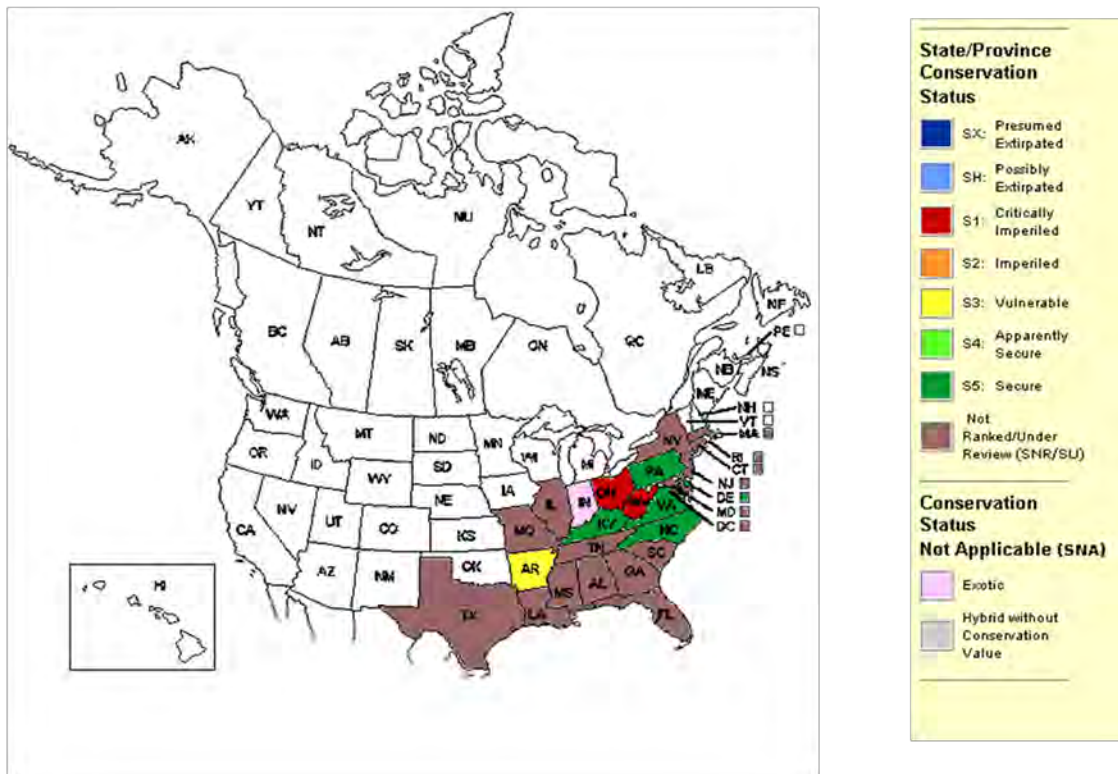
**ESPB TEC John Taft 03/28/13 comment:** recently verified as extant by Phillippe and Marcum.  
RECOMMENDATION – KEEP AS ENDANGERED.

**Mankowski 04/19/13 response:** Comment noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. As has been explained to TECs and discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for removal from endangered as extirpated for reasons explained in her species review and recommends this species be included with other “outstanding species issues” that she will try to revisit prior to the Board confirming preliminary approval of the entire List revision.

NatureServe Conservation Status in United States

*Eupatorium hyssopifolium* – L.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Spurge, *Euphorbia spathulata* (Illinois endangered)

Listed as IL E, 05/20/1980

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL;

## ***Euphorbia spathulata* Lam.**

**PRAIRIE SPURGE**

**EUPHORBIACEAE**

**Status:** Endangered in Illinois.

**Habit:** Annual herb, stems to 40 cm tall.

**Range:** Western and central United States and adjacent Mexico.



A plant of dry open ground, *Euphorbia spathulata* reaches its eastern range limit in southwestern Illinois. This species is known from a single locality in the state, where it was collected in 1965 from a dry limestone ledge on a Mississippi River bluff. A single specimen of this species was seen at this station in 1987, and it may persist at this site.

**References:** Mohlenbrock (1982), Bowles *et al.* (1991).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
5/12/1987	1	0	1	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	0	0	0	0
Cos	0	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

No graph produced

**Mankowski 03/15/13 notes and recommendation:**

The species is known from a singular location and has not been observed since 1987. Surveys with no observation were reported in 1998, 2001, 2008, and 2012.

**Mankowski 03/15/13 recommendation** – remove from endangered as extirpated.

**ESPB TEC Paul Marcum 03/29/13 comments:** May be extirpated, however, more thorough searches of the known site should be made before delisting. Although with increased effort at other similar sites in this area it is possible this species could be rediscovered elsewhere. Only 25 years since it has been seen. Many plants reoccur at sites after years of observation. I don't think we should be too quick to delist these taxa.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

**ESPB TEC Rick Phillippe 03/29/13 comments:** (Maintain as Endangered). This taxon was last seen in 1987. Has a botanist made a concerted effort to relocate?

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, evidence, or documentation supporting contrary recommendation was provided. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. The Database is responsible for conducting quality assurance/quality control of EO reports. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

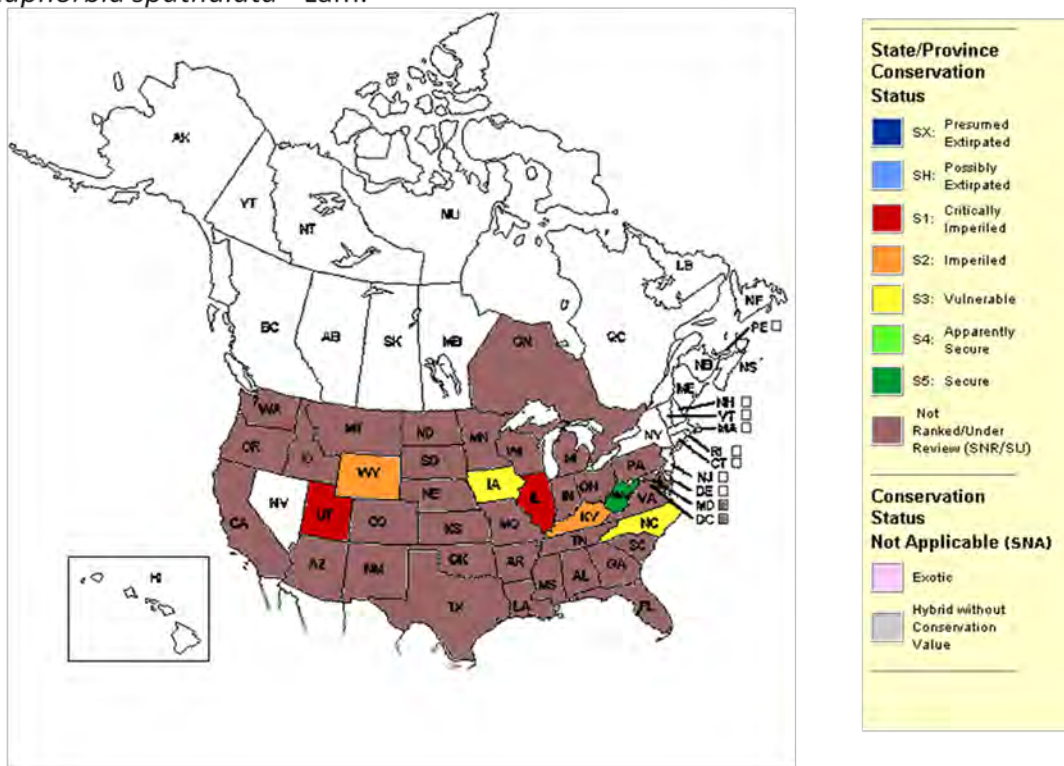
**ESPB TEC John Taft 03/28/13 comments:** I last saw this species on 12 May 1987 (photo documented). Previously, it had been collected by Robert Evers from the same site – Fults Hill Prairie, now a state nature preserve. I checked the exact locality of my previous observation of this species in mid June of 2007; however, it was not seen. I have not checked since. Unless there was knowledge of its specific habitat niche and locality, any

other searches easily could miss this diminutive species. Rare annuals merit some leniency when considering extirpation, particularly when they occur in seldom searched locations. RECOMMENDATION – KEEP AS ENDANGERED UNTIL 30 YEARS SINCE OBSERVATION.

**Mankowski 04/19/13 response:** Comments noted and will be added to species review for Board information. No data, or documentation supporting contrary recommendation was provided. Database records indicate the date of 2008-06-23 for a report by you – commenter is asked to please contact the Database and provide them information necessary to correct the record. Board staff contracted a qualified vendor to conduct surveys in 2012 and the vendor was provided location information from the Database. The Database is responsible for conducting quality assurance/quality control of EO reports. While the Board has not established criteria, it has considered in the past using a 30-year threshold, although with what degree and interval of search effort was never identified. As with many guidelines developed during any of the List review and revision processes, it is very difficult to establish thresholds for many parameters across all species in any taxonomic group that all experts and Board members agree upon. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

**Mankowski 04/19/13 final recommendation:** removal from endangered as extirpated.

*Euphorbia spathulata* - Lam.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Queen-of-the-Prairie, *Filipendula rubra* (Illinois endangered)

Listed as IL T, 5/20/1980; Listed as IL E 12/03/1998

Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

***Filipendula rubra* (Hill) Robins.**

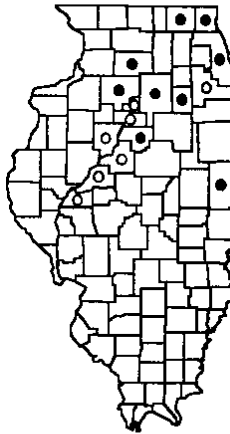
**QUEEN-OF-THE-PRAIRIE**

**ROSACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, stems 1-2 m tall.

**Range:** Eastern United States.



*Filipendula rubra* is found occasionally in fens, mesic sand prairies, and seeps in northern and central Illinois. Presently thirteen Illinois populations are known to persist. These occur in six state nature preserves, a natural heritage landmark, a county forest preserve, and on private land. A few other populations likely persist, but two in the Peoria area are known to have been destroyed.

**References:** Steyermark and Swink (1955), Monoson and Schertz (1985), Evert (1988).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants*. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.



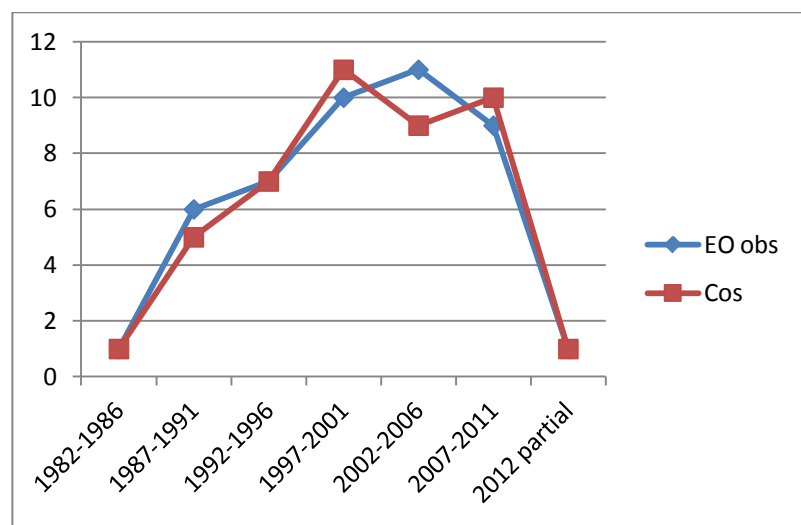
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/20/2012	23	15	11	22	13	13

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	6	7	10	11	9	1
Cos	1	5	7	11	9	10	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

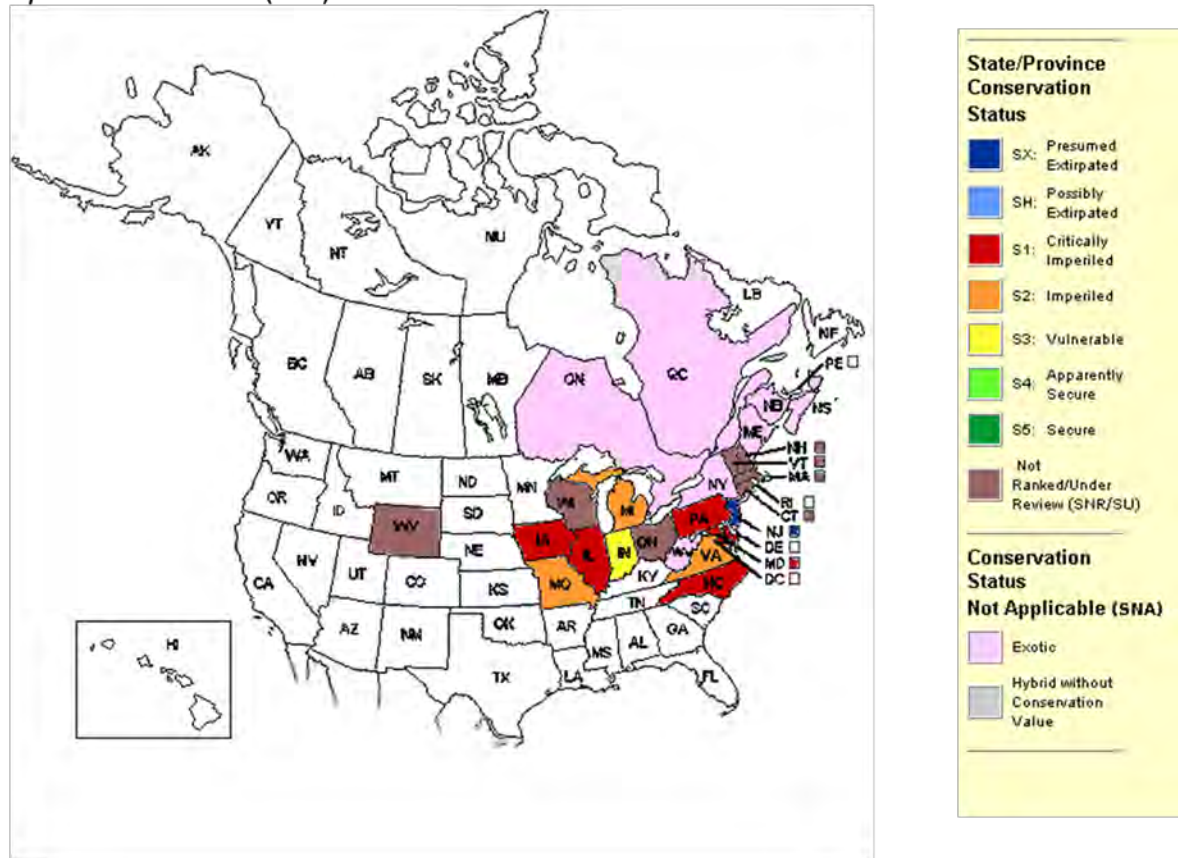


**Mankowski notes and recommendation:**

The 1998 listing status change from threatened to endangered seems inconsistent with the EO data, although some of the data may not have been known at the time when the Board made that listing status decision. Fifteen EOs (65% of total) have had observation in the last 10 years and 18 EOs (78% of total) have had observation in the last 15 years, with both time periods representing all counties with EOs and 81% of counties with known historic distribution. Since 1997, there is only one EO that was surveyed with no observation where there has not been subsequent observation. Eleven EOs (48% of total) are protected. It appears the status and distribution of the species has improved sufficiently to warrant a change in listing status from endangered to threatened.

**Mankowski recommendation** – change from endangered to threatened.

*Filipendula rubra* - (Hill) B.L. Robins.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Wild Licorice, *Galium lanceolatum* (Illinois endangered)

Listed as IL E, 12/03/1998

Reason for listing: proposed Fed E or T; restricted habitats or low pops in IL;

## *Galium lanceolatum* Torr.

WILD LICORICE

RUBIACEAE

**Status:** Endangered in Illinois.

**Habit:** Perennial herb, stems to 70 cm tall.

**Range:** Eastern United States, adjacent Canada.



A species of dry woods and thickets, *Galium lanceolatum* is extremely rare in Illinois, being restricted to a few northern counties. Historically this species has been collected in both Cook and Kane counties. Neither of these historic localities are thought to have extant populations. The only extant population occurs in a state nature preserve in McHenry County.

**References:** Gleason and Cronquist (1991), Swink and Wilhelm (1994).

### KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
none	0	0	0	0	0	0

**Mankowski 03/13/15 notes and recommendation:**

Data sufficient to establish any EO records for this species has not been brought forth since its listing in 1998.

**Mankowski 03/15/13 recommendation** – remove from endangered. Data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

**ESPB TEC Paul Marcum 03/29/13 comment:** It has only been since 1998 since EOR for this species. In my opinion, this is not long enough to remove from the List.

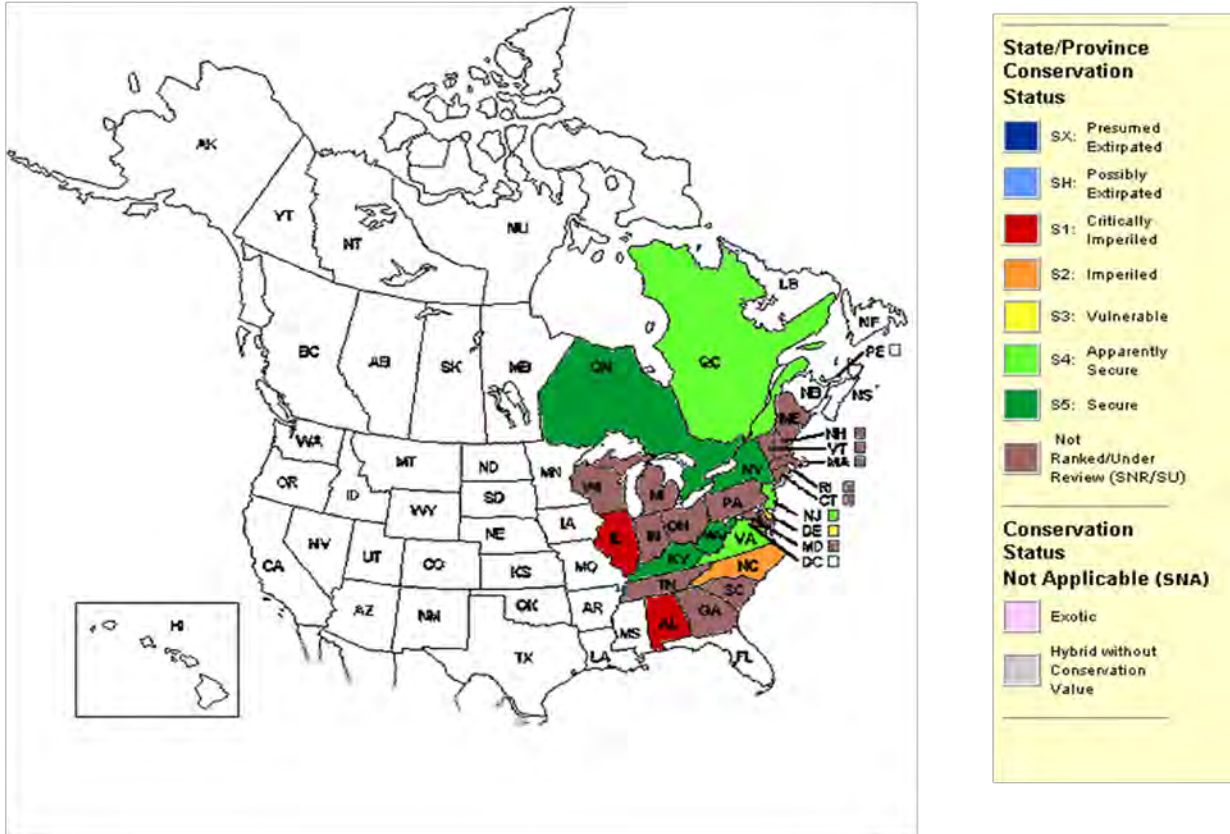
**Mankowski 04/19/13 response:** No species is recommended for delisting due to extirpation after only 15 years. The Board’s listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species’ reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered as extirpated for reasons explained in her species review.

**ESPB TEC Rick Phillippe 03/29/13 comment:** (Maintain as Endangered). This taxon was last seen in ????. Has a botanist made a concerted effort to relocate?

**Mankowski 04/19/13 response:** The Board’s listing decision are by law, required to be based on scientific evidence – the staff recommendation for delisting the two species after being on the List 15 years with no EO data ever submitted is FIRST because the Board did not have sufficient evidence to support the initial listing decision and then because no data has been brought forth since sufficient to establish an EO. The Board staff recommendation in these species’ reviews has been modified to better reflect that. As has been explained to TECs and also discussed by the Board during each meeting that reviewed other taxonomic groups to date, the Board is considering data that is in the Database – if it isn’t in the Database, TECs can submit it to the Database and Board staff will conduct a new review of the species with the new data as time and resources allow. Mankowski maintains recommendation for removal from endangered for reasons explained in her species review.

**Mankowski 04/19/13 final recommendation:** maintains recommendation for removal from endangered because data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

*Galium lanceolatum* – Torr.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Northern Cranesbill, *Geranium bicknellii* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Geranium bicknellii* Britton**

**NORTHERN CRANESBILL**

**GERANIACEAE**

**Status:** Endangered in Illinois.

**Habit:** Annual or biennial herb, stems to 50 cm tall.

**Range:** Central and eastern Canada, and adjacent northern United States.



A plant of dry woodland openings, rock outcrops, and disturbed sites, *Geranium bicknellii* frequently appears in abundance following fires. It reaches the southern margin of its range in the Northeastern Morainal Natural Division of Illinois. This species was never common in Illinois, and much of its habitat has been destroyed by urban growth. Presently two stations are known from Lake County, a state nature preserve and on private land. It was also found in 1995 in a Cook County forest preserve. This species often reappears after disturbance by fire and may remain extant in other northern Illinois locations.

**References:** Abrams and Dickman (1984), Bowles *et al.* (1991), Greenberg and Milde (1994).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

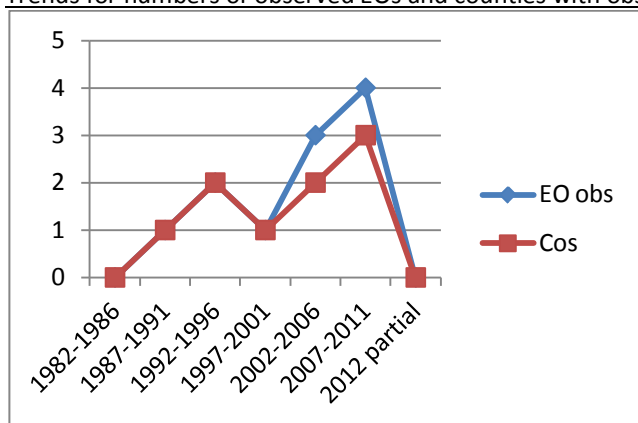
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/31/2011	8	6	3	5	3	3

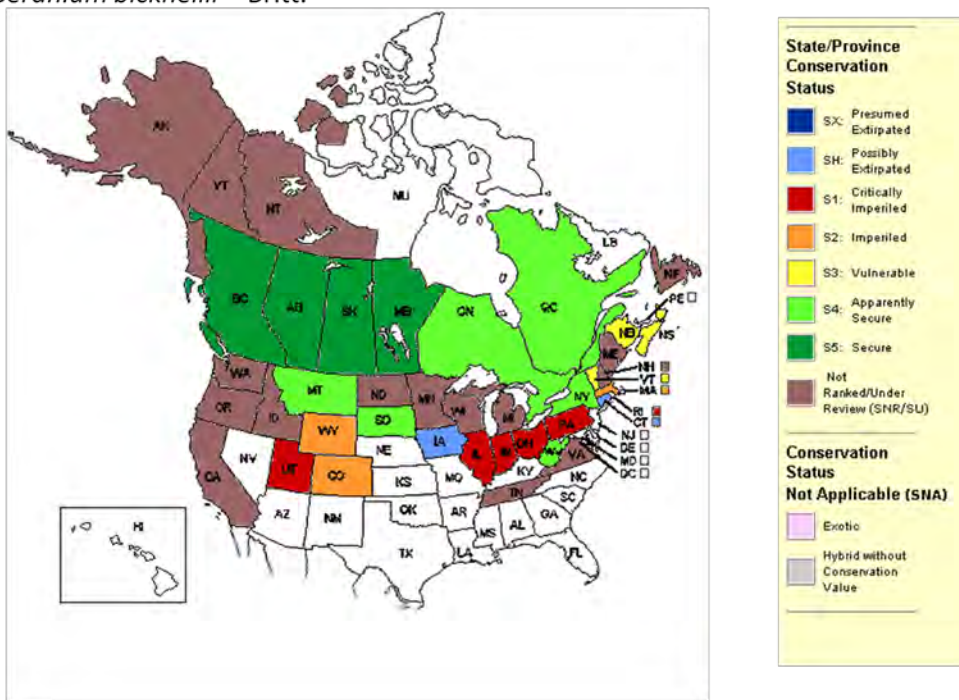
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	2	1	3	4	0
Cos	0	1	2	1	2	3	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Geranium bicknellii* – Britt.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Arkansas Mannagrass, *Glyceria arkansana* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

### ***Glyceria arkansana* Fern.**

**ARKANSAS MANNA-GRASS**

**POACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial grass, rooting at the lower nodes, culms to 2 m tall.

**Range:** Eastern United States.



A species of wet floodplains and swamps, *Glyceria arkansana* reaches its northwestern range limit in southern Illinois. Presently it is known from one site in Illinois, where it occurs in the shallow waters of a Big Muddy River floodplain swamp in the Shawnee National Forest.

**References:** Church (1949), Mohlenbrock (1959a, 1972, 1985a), Mohlenbrock *et al.* (1961), Mohlenbrock and Voigt (1965), Bowles *et al.* (1991).

### **KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.



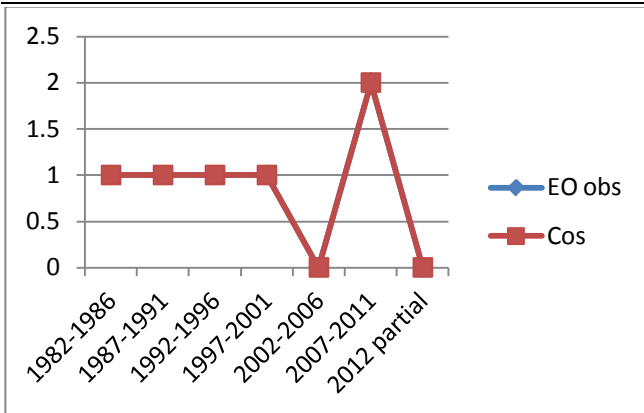
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
5/24/2007	5	2	0	5	3	2

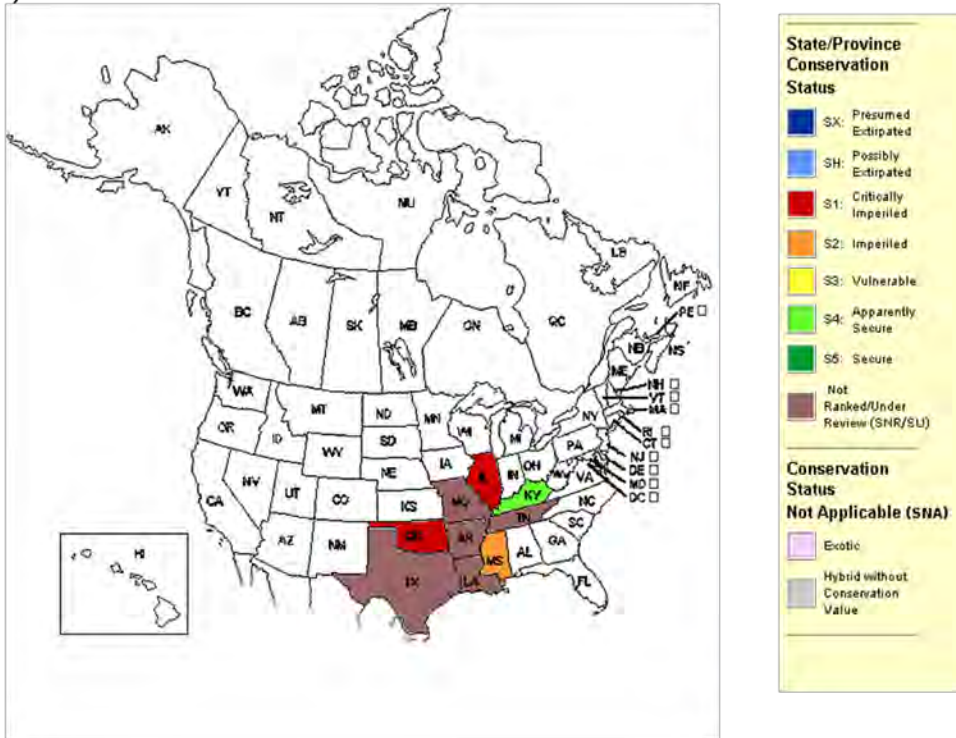
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	1	1	0	2	0
Cos	1	1	1	1	0	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Glyceria arkansana* - Fern.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Tall Sunflower, *Helianthus giganteus* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Helianthus giganteus* L.**

**TALL SUNFLOWER**

**ASTERACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial rhizomatous herb, stems 1-3 m tall.

**Range:** Central and eastern Canada, and adjacent northeastern United States.



In Illinois, *Helianthus giganteus* is known from fens and sedge meadows in the northern part of the state. Until 1987, this species was known only from historic collections made prior to 1952. In 1987, populations were found in two sedge meadows in Winnebago County, one in a state nature preserve and may persist at these sites. The plant has been collected recently from a graminoid fen in a state nature preserve in Cook County. It is possible that this sunflower also occurs in fens in Lake and McHenry counties.

**References:** Long (1961), Bowles *et al.* (1991).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

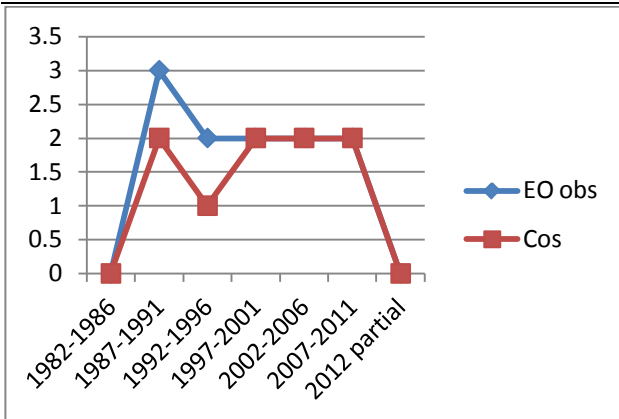
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
10/5/2010	10	4	4	9	6	4

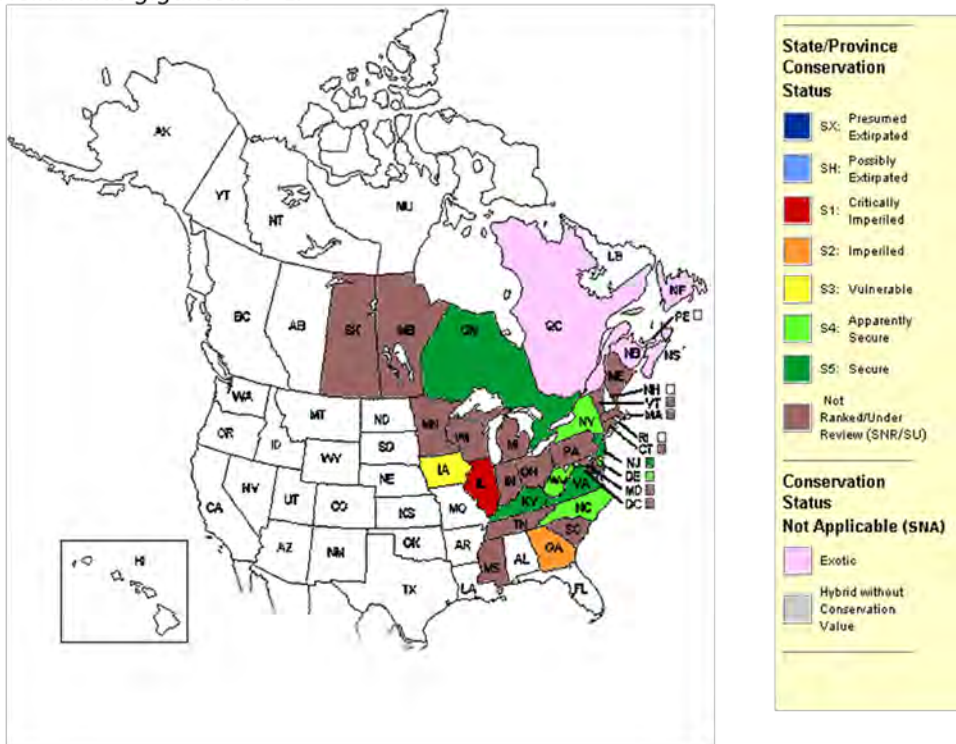
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	3	2	2	2	2	0
Cos	0	2	1	2	2	2	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Helianthus giganteus* – L.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Crested Coralroot Orchid, *Hexalectris spicata* (Illinois endangered)

Listed as IL E, 5/20/1980

Reason for listing: restricted habitats or low pops in IL;

***Hexalectris spicata* (Walt.) Barnh.**

**CRESTED CORALROOT ORCHID ORCHIDACEAE**

**Status:** Endangered in Illinois.

**Habit:** Perennial rhizomatous, saprophytic orchid, stems to 80 cm tall.

**Range:** Southern United States and northern Mexico.



*Hexalectris spicata* occurs in southern Illinois in dry calcareous woods and dry prairie openings primarily along the Mississippi River bluffs and locally eastward in limestone glades. Presently it is known from three localities in the state, two in the Shawnee National Forest, one in a research natural area, and one population on private land. It has been observed recently in a state nature preserve in Monroe County.

**References:** Winterringer (1950, 1951), Bailey and Swayne (1951), Mohlenbrock (1955, 1970c), Sheviak (1974a), Mohlenbrock and Wilson (1985).

**KEY**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Herkert, J.R., and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

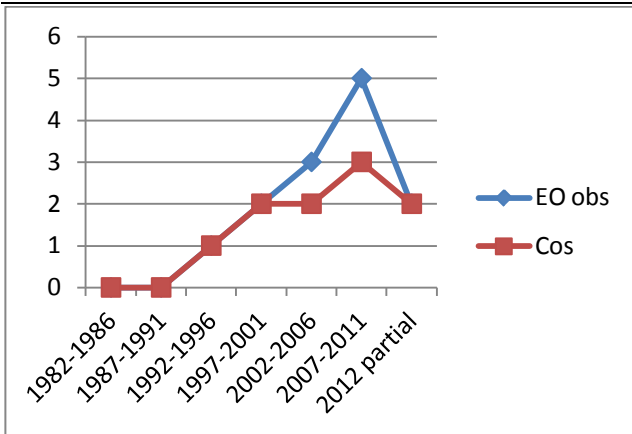
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
07/10/2012	7	5	2	7	4	3

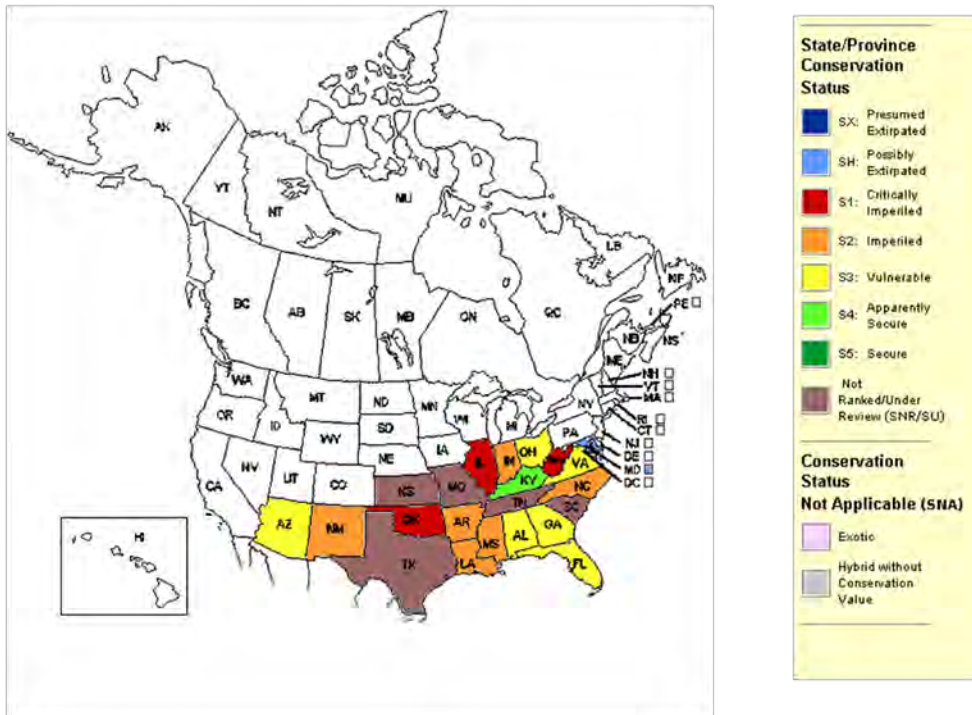
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	1	2	3	5	2
Cos	0	0	1	2	2	3	2

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



*Hexalectris spicata* - (Walt.) Barnh.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed January 10, 2013).

Cliff Clubmoss, *Huperzia porophila* (Illinois threatened)

Listed as IL T 09/01/2004

Reason for listing: restricted habitats or low pops in IL;

***Huperzia porophila* (Lloyd & Underw.) Holub.**

**CLIFF CLUBMOSS**

**LYCOPODIACEAE**

**Status:** Threatened in Illinois

**Synonym:** *Lycopodium porophilum* Lloyd & Underw.

**Habit:** Perennial evergreen clubmoss from a creeping stem, erect stems to 15 cm tall.

**Range:** Northeastern United States.

A species of moist, shaded, acidic sandstone, *Huperzia porophila* is mostly restricted to cliff faces and ledges at scattered localities throughout the northeastern United States. Cliff clubmoss has been reported from three counties in northern Illinois (Lake, La Salle, and Ogle counties), and four in extreme southern Illinois (Gallatin, Jackson, Johnson and Pope counties). Presently no extant populations are known from northern Illinois and cliff clubmoss has only rarely been encountered in southern Illinois. All known populations are small and could easily be eliminated by rock climbers or natural disasters.



**References:** Wagner, Jr. and Beitel (1993).

**MAP**

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle.

Citation: Nyboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

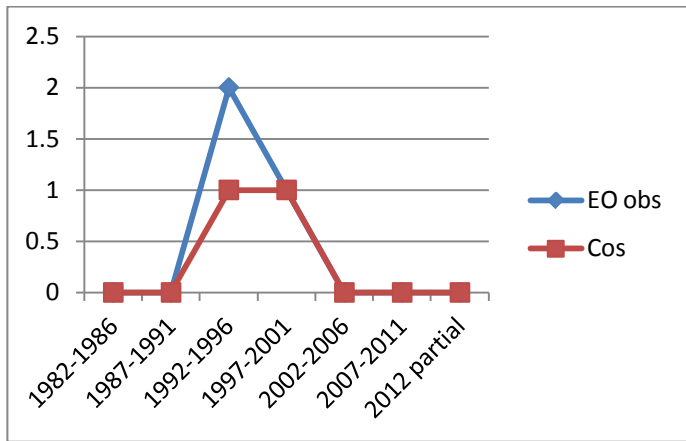
Illinois – Natural Heritage (Biotics 4) Database – last updated, February 2013  
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
6/22/2011	5	1	1	3	2	1

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	2	1	0	0	0
Cos	0	0	1	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



**Mankowski notes and recommendation:**

The apparent reduction in observations for this species reflects a lack of search effort. There are only three survey reports across the five EOs since 1982 (two reports for one EO and one report for another EO). There are no “surveyed w/ no observation” reports for any EO. The EO survey data for this species is too sparse to consider making a recommendation for a change in status from threatened to endangered.

**Mankowski recommendation** – no change in status.

NatureServe Conservation Status in United States

None queried.