ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

MINUTES OF THE 161st MEETING

MIDEWIN NATIONAL TALLGRASS PRAIRIE, WILMINGTON, IL

21 FEBRUARY, 2014
(Approved at the 162nd Meeting, May 16, 2014)

BOARD MEMBERS PRESENT: Ms. Lenore Beyer-Clow, Chair Dan Gooch, Dr. Joyce Hofmann, Ms. Susanne Masi, Mr. Jim Robinett, Ms. Laurel Ross, Dr. John Taft, Dr. Jeff Walk.

BOARD MEMBERS ABSENT: Secretary John Clemetsen and Dr. Jim Herkert

BOARD MEMBER VACANCIES: None

OTHERS PRESENT: Mr. Scott Ballard, Mr. Bob Bluett, Ms. Bridget Henning, and Ms. Jenny Skufca (Illinois Department of Natural Resources); Ms. Jeannie Barnes, Dr. Mike Dreslik, and Mr. Jeremy Tiemann (Illinois Natural History Survey); Mr. Ken Klick and Mr. Matt Ueltzen (Lake County Forest Preserve District); Mr. Rob Sulski (Great Lakes Falconers Association); and, Mr. Randy Heidorn (Illinois Nature Preserves Commission); and, Ms. Anne Mankowski (Endangered Species Protection Board).

161-1 Call to Order Welcome and Introduction of Guests
Chair Gooch called the meeting to order at 9:30 A.M., asked Board members to introduce themselves, and noted that there was a quorum. He then asked audience members to introduce themselves.

161-2 Adoption of Agenda
Chair Gooch asked for a motion to approve the agenda. Mr. Robinett so **moved** and Dr. Walk seconded the motion. Chair Gooch noted two changes that he and Ms. Mankowski had been made aware of the day prior; presenter for item 9 (*Nomination to add Crystal Darter (Crystallaria asprella) as an Illinois endangered species by Chris Taylor of INHS*) would be Mr. Jeremy Tiemann instead of Dr. Chris Taylor and agenda item 10 (*Nomination to add Eastern Small-footed Myotis (Myotis leibii) as an Illinois endangered species by Joe Kath of IDNR*) would be dropped. Mr. Robinett and Dr. Walk accepted the amendments to their motion and the agenda as amended was **approved** unanimously.

161-3 ESPB Staff Report
Ms. Mankowski, Director of the Illinois Endangered Species Protection Board, gave her report (Attachment A).

161-4 IDNR Staff Report
Ms. Henning, IDNR Natural Heritage Resident, gave the DNR report (Attachment B).

161-5 INPC Staff Report
Mr. Heidorn, Director of the Illinois Nature Preserves Commission, gave his report (Attachment C).

161-6 Board Appointments
Ms. Mankowski reported that the Board reviewed this agenda item in the previous day's meeting and there had been no news about Board appointments.

161-7 Semi-Annual Review of Whether to Keep Closed Minutes from Previous Closed Meetings
Ms. Mankowski reviewed that the Open Meetings Act requires that the Board semi-annually review and

approve keeping closed the minutes from previous closed-sessions. The Board is required to make a determination that (1) the need for confidentiality still exists as to all or part of those minutes, or (2) that the minutes or portions thereof no longer require confidential treatment and are available for public inspection.

Ms. Mankowski reviewed a list of closed sessions and noted that all closed sessions have been held to review personnel matters. She noted that the discussion of personnel matters is allowed under closed session and minutes from closed session are allowed to remain closed because the need for confidentiality still exists. She recommended that the minutes remain closed.

Dr. Walk **moved** to keep closed minutes from previous closed meetings, Dr. Hofmann seconded the motion, and it was **approved** unanimously.

161-8 PRESENTATION – Nomination to Add *Andromeda glaucophylla* (Bog Rosemary) as an Illinois Endangered Species

Ms. Mankowski reviewed that Board members had received the Messrs. Klick and Ueltzen's proposal for the recommended action and her review of the same (Attachment D). She introduced Messrs. Klick and Ueltzen of the Lake County Forest Preserve District and they reviewed parts of their nomination document.

The Board engaged in discussion about the rarity of bog habitat in Illinois and its likely increasingly threatened status due to habitat destruction and alteration and effects of climate change. It was noted that the species occurs in other wetland habitats, but is strongly associated with bogs in Illinois.

Ms. Masi **moved** to approve adding *Andromeda glaucophylla* (Bog Rosemary) as an Illinois endangered species, Ms. Ross seconded the motion, and it was **approved** unanimously. Chair Gooch thanked Messrs. Klick and Ueltzen for their submittal and presentation.

161-9 PRESENTATION – Nomination to Add Crystal Darter *(Crystallaria asprella)* as an Illinois Endangered Species

Ms. Mankowski reviewed that Board members had received Dr. Taylor's proposal for the recommended action and her review of the same (Attachment E). She introduced Mr. Tiemann of the Illinois Natural History Survey and he reviewed parts of Dr. Taylor's nomination document.

The Board discussed that while some recent observations seem to confirm the species' presence in Illinois, there appears to still be much that is not known about the full extent of its status and distribution and especially since it is a border-river species.

Dr. Walk **moved** to approve adding Crystal Darter *(Crystallaria asprella)* as an Illinois threatened species, Ms. Ross seconded the motion, and it was **approved** unanimously. Chair Gooch thanked Mr. Tiemann for his presentation of Dr. Taylor's submittal.

161-10 PRESENTATION – Recommendation to Delist Golden Mouse (*Ochrotomys nuttalli*) from Illinois Threatened

Ms. Mankowski reviewed that Board members had received the IDNR's official proposal for the recommended action and her review of the same (Attachment F) and her updated species review included as part of the outstanding issues document (Attachment H). She introduced Mr. Bluett of the Illinois Department of Natural Resources and he reviewed parts of the IDNR's official proposal and additional information that was not part of the proposal.

The Board discussed that when the species was reviewed in 2012, data cited in the IDNR's proposal had not yet been confirmed and entered into the Illinois Natural Heritage Database and it appeared that data had now been

confirmed and entered. It was noted that the number of observed occurrences differed between literature citations and the Database and that while it was difficult to reconcile those discrepancies, it appeared the Board's previously approved status review triggers had been satisfied. There was general discussion about survey results and information presented about habitat use. The Board discussed that it appears the species has both expanded its range in Illinois and it may also be more common than previously thought.

Dr. Hofmann **moved** to approve delisting Golden Mouse (*Ochrotomys nuttalli*) from Illinois threatened due to recovery and that it is more common than previously thought. Dr. Taft seconded the motion, and it was **approved** unanimously. Chair Gooch thanked Mr. Bluett for his presentation of the IDNR's official proposal.

161-11 PRESENTATION – Recommendation to Delist Rice Rat (*Oryzomys palustris*) from Illinois Threatened

Ms. Mankowski reviewed that Board members had received the IDNR's official proposal for the recommended action and her review of the same (Attachment G) and her updated species review included as part of the outstanding issues document (Attachment H). Mr. Bluett reviewed parts of the IDNR's official proposal and additional information that was not part of the proposal.

The Board discussed that when the species was reviewed in 2012, data cited in the IDNR's proposal had not yet been confirmed and entered into the Illinois Natural Heritage Database and it appeared that data had now been confirmed and entered. It was noted that the number of observed occurrences differed between literature citations and the Database and that while it was difficult to reconcile those discrepancies, it appeared the Board's previously approved status review triggers may be satisfied.

Mr. Bluett answered some questions from the Board about survey design and results as related to lower capture rates in Illinois as compared to other parts of the species' range. Mr. Bluett felt that the differences were explained by differences in survey design. There was also discussion about information presented about habitat changes. The Board discussed that it appears the species may have both expanded its range in Illinois and it may also be more common than previously thought.

Chair Gooch asked for a motion to approve delisting Rice Rat (*Oryzomys palustris*) from Illinois threatened. Dr. Hofmann recused herself voting, noting her previous employment working on several surveys and studies involved in the recommendation.

Mr. Robinett **moved** to approve delisting Rice Rat (*Oryzomys palustris*) from Illinois threatened due to recovery and that it may be more common than previously thought and Ms. Ross seconded the motion. Mr. Robinett asked Ms. Mankowski about her review comment that no EOs showed observations for five years as called for in the status review triggers. Ms. Mankowski explained that her review looked at Database data for the last seven years and did not show repeated observations at any EO over a five-year period during the seven years. She and Mr. Bluett reviewed that his current presentation information differed from that submitted previously and it illustrated those EOs with any observation, although absent population numbers, over a 20+-year timeframe, so that Mr. Bluett considered any persistence of observation at five locations over the broader timeframe to indicate viable populations. Ms. Mankowski stated that she did not understand that to be what was prescribed in the status review trigger and had not reviewed it that way. Following some additional brief discussion, the Board voted and the motion was **approved** unanimously. Chair Gooch thanked Mr. Bluett for his presentation of the IDNR's official proposal.

There was a short recess from 10:45 A.M. -11:00 A.M..

161-12 2014 Illinois List Review: A Review of the Process, Board Preliminary Approvals to Date, and Outstanding Species Issues

Ms. Mankowski reviewed with the Board the list of outstanding species issues that had been compiled over the

course of the current List review and her recommendations for preliminary listing decisions based updated data and other information that she had been able to confirm (Attachment H). She noted that she would not review items where no action was recommended unless they involved federal listing actions. Chair Gooch asked that the Board vote on each preliminary listing decision as Ms. Mankowski reviewed each outstanding issue and related evidence, noting that in the subsequent agenda item the Board would confirm all preliminary decisions to date.

Ms. Mankowski reviewed the updated species review for the Peregrine Falcon (*Falco peregrinus*), noted that the Board's approved reclassification criteria had been satisfied for several years running, and recommended delisting the species due to recovery. Dr. Walk **moved** to approve delisting Peregrine Falcon (*Falco peregrinus*) from Illinois threatened due to recovery and Ms. Masi seconded the motion. The Board voted and the motion was **approved**, with members Beyer-Clow, Gooch, Hofmann, Masi, Robinett, Ross, and Walk voting for and Dr. Taft voting against.

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding Chuck-will's-widow (*Caprimulgus carolinensis*) as an Illinois threatened species. Dr. Walk **moved** to approve adding Chuck-will's-widow (*Caprimulgus carolinensis)* as an Illinois threatened species, Dr. Taft seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to the federal listing proposal for Red Knot (*Calidris canatus rufa*) and recommended that Board take no action at this time since the species is not known to breed in Illinois. If the USFWS includes Illinois in the range as part of the final listing decision, the Board can reassess an Illinois listing status.

Ms. Mankowski reviewed information related to a name change for Common Moorhen (Gallinula chloropus) to Common Gallinule (*Gallinula galeata*) and recommended the Board approve the name change. Ms. Ross so **moved**, Dr. Hofmann seconded the motion, and it was **approved** unanimously.

Ms. Mankowski reviewed that the Board had already taken action during the current meeting for delisting the Golden Mouse (*Ochrotomys nuttalli*) and the Rice Rat (*Oryzomys palustris*).

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding Eastern Small-footed Bat (*Myotis leibii*) as an Illinois threatened species. Dr. Hofmann noted that she agreed with Ms. Mankowski's reasoning for a threatened status and **moved** to approve adding Eastern Small-footed Bat (*Myotis leibii*) as an Illinois threatened species, Mr. Robinett seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed her species review for the Northern Long-eared Bat (*Myotis septentrionalis*) and recommended adding the species as Illinois threatened. Dr. Hofmann **moved** to approve adding Northern Long-eared Bat (*Myotis septentrionalis*) as an Illinois threatened species, Dr. Taft seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to a name change for Franklin's Ground Squirrel (*Spermophilus franklinii*) to Franklin's Ground Squirrel (*Poliocitellus franklinii*) and recommended the Board approve the name change. Dr. Walk so **moved**, Ms. Beyer-Clow seconded the motion, and it was **approved** unanimously.

Ms. Mankowski reviewed her species review for the Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) and recommended adding the species as Illinois threatened. Ms. Masi **moved** to approve adding Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) as an Illinois threatened species and Mr. Robinett seconded the motion. The Board voted and the motion was **approved**, with members Beyer-Clow, Gooch,

Hofmann, Masi, Robinett, Ross, and Taft voting for, and member Walk voting against.

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding American Brook Lamprey (*Lethenteron appendix*), American Eel (*Anguilla rostrata*), and Brassy Minnow (*Hybognathus hankinsoni*) as Illinois threatened species. Mr. Robinett **moved** to approve adding American Brook Lamprey (*Lethenteron appendix*), American Eel (*Anguilla rostrata*), and Brassy Minnow (*Hybognathus hankinsoni*) as Illinois threatened species, Dr. Hofmann seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to recent observation in Illinois of the federal endangered Scaleshell (*Leptodea leptodon*) and the need to establish an Illinois listing status for the species. She recommended adding Scaleshell (*Leptodea leptodon*) as an Illinois endangered species. Dr. Taft **moved** to approve adding Scaleshell (*Leptodea leptodon*) as an Illinois endangered species, Dr. Walk seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding Onyx Rocksnail (*Leptoxis praerosa*) as an Illinois endangered species. Dr. Walk **moved** to approve adding Onyx Rocksnail (*Leptoxis praerosa*) as an Illinois endangered species, Ms. Beyer-Clow seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to the Federal listing proposals for Dakota Skipper (*Hesperia dacotae*) and Poweshiek Skipperling (*Oarisma poweshiek*) and recommended that Board take no action at this time since neither species is known to be extant in Illinois. If the USFWS includes Illinois in the range as part of the final listing decision for either species, the Board can reassess Illinois listing statuses.

Ms. Mankowski reviewed that data necessary to confirm non-observation of the species at all known locations from multiple visit over multiple years had been confirmed and entered into the Database and recommended delisting *Berberis canadensis* (Allegheny Barberry) from endangered as extirpated. Dr. Walk **moved** to approve delisting *Berberis canadensis* (Allegheny Barberry) from endangered as extirpated, Dr. Taft seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed that the Board had during the previous List review and revision in error delisted from the Illinois list the Federally-listed *Isotria medeoloides* (Small Whorled Pogonia). She noted that while Illinois data suggests the species is no longer extant in Illinois, the USFWS still lists the species as extant in Illinois. She noted that since it is a federally designated threatened species, it is automatically on the Illinois List and since it is considered to occur in Illinois, the Board needs to address an Illinois listing status. She recommended adding *Isotria medeoloides* (Small Whorled Pogonia) as Illinois endangered. Ms. Masi so **moved**, Dr. Taft seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding *Mentzelia oligosperma* (Stickleaf) as an Illinois endangered species. Dr. Taft **moved** to approve adding *Mentzelia oligosperma* (Stickleaf) as an Illinois endangered species, Ms. Robinett seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed that the Board had obtained confirmation of the misidentification of vouchers for *Penstemon brevisepalus* (Short-sepaled Beard Tongue) and recommended delisting the species as misidentified. Dr. Taft **moved** to approve delisting *Penstemon brevisepalus* (Short-sepaled Beard Tongue) as misidentified, Ms. Ross seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to the Board's decision to combine two varieties of Platanthera flava at the species level and the need to delist one variety and change the name of the other variety. She

recommended delisting *Platanthera flava* var. *flava* (Tubercled Orchid) from endangered to accommodate the change. Dr. Walk **moved** to approve delisting *Platanthera flava* var. *flava* (Tubercled Orchid) from endangered, Dr. Hofmann seconded the motion, and it was **approved** unanimously.

Ms. Mankowski reviewed that data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and recommended adding *Utricularia subulata* (Hair Bladderwort) as an Illinois endangered species. Dr. Taft **moved** to approve adding *Utricularia subulata* (Hair Bladderwort) as an Illinois endangered species, Ms. Masi seconded the motion and it was **approved** unanimously.

Ms. Mankowski reviewed information related to name changes for *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*, *Juncus alpinus* to *Juncus alpinoarticulatus, Platanthera flava* var. *herbiola* to *Platanthera flava, Polygonum arifolium* to *Tracaulon arifolium*, and *Salvia azurea* subsp. *pitcher* to *Salvia azurea* and recommended the Board approve the name changes. Ms. Beyer-Clow so **moved**, Dr. Taft seconded the motion, and it was **approved** unanimously.

161-13 2014 Illinois List Review: Board Confirmation of All Preliminary Listing Decisions for the Illinois List of Endangered and Threatened Species Review and Revision Ending in 2014, and an Overview of Next Steps in the List Revision Process

Ms. Mankowski reviewed with the Board the following list of all preliminary decisions made by the Board to date during the current List review.

Change from Endangered to Threatened:

Fish
None

Amphibians
None

Reptiles
None

Birds

Tyto alba	Barn owl

Mammals
None

Invertebrates
BUTTERFLIES

Papaipema eryngii	Eryngium Stem Borer

Plants

Ammophila breviligulata	Marram Grass
Carex cryptolepis	Yellow Sedge
Euonymus americanus	American Strawberry Bush
Filipendula rubra	Queen-of-the-Prairie
Oxalis illinoensis	Illinois Wood Sorrel
Polygonatum pubescens	Downy Solomon's Seal
Rubus odoratus	Purple-flowering Raspberry
Stenanthium gramineum	Grass-leaved Lily
Synandra hispidula	Hairy Synandra

Change from Threatened to Endangered:

Fish
None

Amphibians
None

Reptiles
None

Birds
None

Mammals
None

Invertebrates
MUSSELS

Elliptio crassidens	Elephant-ear
Fusconaia ebena	Ebonyshell

BUTTERFLIES

Hesperia metea	Cobweb Skipper

Plants

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
Lechea intermedia	Pinweed
Rhynchospora alba	Beaked Rush
Sisyrinchium atlanticum	Eastern Blue-eyed Grass
Tradescantia bracteata	Prairie Spiderwort

Remove from Endangered:
Fish
None

Amphibians
None

Reptiles
None

Birds
None

Mammals
None

Invertebrates
CRUSTACEANS

Caecidotea spatulata	Isopod

LEAFHOPPERS

Paraphlepsius lupalus	Leafhopper

BUTTERFLIES

Atrytone arogos	Arogos Skipper

Plants

Berberis canadensis	Allegheny Barberry
Galium lanceolatum	Wild Licorice
Paspalum dissectum	Bead Grass
Penstemon brevisepalus	Short-sepaled Beard Tongue
Platanthera flava var. flava	Tubercled Orchid

Remove from Threatened:

Fish
None

Amphibians
None

Reptiles
None

Birds

Falco peregrinus	Peregrine Falcon

Mammals

Orchrotomys nuttallii	Golden Mouse
Oryzomys palustris	Rice Rat

Invertebrates
None

Plants

Carex woodii	Pretty Sedge
Cypripedium candidum	White Lady's Slipper
Liatris scariosa var. nieuwlandii	Blazing Star
Matelea obliqua	Climbing Milkweed
Oenothera perennis	Small Sundrops
Tomanthera auriculata	Ear-leafed Foxglove
Viola conspersa	Dog Violet

Add as Endangered:

Fish
None

Amphibians
None

Reptiles
None

Birds
None

Mammals
None

Invertebrates
SNAILS

Leptoxis praerosa	Onyx Rocksnail

MUSSELS

Leptodea leptodon	Scaleshell (Fed E)

Plants

Andromeda glaucophylla	Bog Rosemary
Isotria medeoloides	Small Whorled Pogonia (Fed T)
Mentzelia oligosperma	Stickleaf
Utricularia subulata	Hair Bladderwort

Add as Threatened:

Fish

Anguilla rostrata	American Eel
Crystallaria asprella	Crystal Darter
Hybognathus hankinsoni	Brassy Minnow
Lethenteron appendix	American Brook Lamprey

Amphibians

None

Reptiles

Nerodia erythrogaster neglecta	Copper-bellied Watersnake (Fed T)

Birds

Caprimulgus carolinensis	Chuck-will's-widow

Mammals

Myotis leibii	Eastern Small-footed Bat
Myotis septentrionalis	Northern Long-eared Bat (proposed Fed E)

Invertebrates

None

Plants

None

No Change in Listing Status:

Fish

Acipenser fulvescens	Lake Sturgeon	IL E
Ammocrypta clarum	Western Sand Darter	IL E
Ammocrypta pellucidum	Eastern Sand Darter	IL T
Catostomus catostomus	Longnose Sucker	IL T
Coregonus artedi	Cisco	IL T
Erimystax x-punctatus	Gravel Chub	IL T
Etheostoma camurum	Bluebreast Darter	IL E
Etheostoma exile	Iowa Darter	IL T
Etheostoma histrio	Harlequin Darter	IL E
Fundulus diaphanus	Banded Killifish	IL T
Fundulus dispar	Starhead Topminnow	IL T
Hybognathus hayi	Cypress Minnow	IL E
Hybopsis amblops	Bigeye Chub	IL E
Hybopsis amnis	Pallid Shiner	IL E
Ichthyomyzon fossor	Northern Brook Lamprey	IL E
Lampetra aepyptera	Least Brook Lamprey	IL T
Lepomis miniatus	Redspotted Sunfish	IL E
Lepomis symmetricus	Bantam Sunfish	IL T
Macrhybopsis gelida	Sturgeon Chub	IL E
Moxostoma carinatum	River Redhorse	IL T
Moxostoma valenciennesi	Greater Redhorse	IL E
Nocomis micropogon	River Chub	IL E
Notropis anogenus	Pugnose Shiner	IL E
Notropis boops	Bigeye Shiner	IL E
Notropis chalybaeus	Ironcolor Shiner	IL T
Notropis heterodon	Blackchin Shiner	IL T

Notropis heterolepis	Blacknose Shiner	IL E
Notropis maculatus	Taillight Shiner	IL E
Notropis texanus	Weed Shiner	IL E
Noturus stigmosus	Northern Madtom	IL E
Scaphirhynchus albus	Pallid Sturgeon	IL E, Fed E

Amphibians

Ambystoma platineum	Silvery Salamander	IL E
Ambystoma jeffersonianum	Jefferson Salamander	IL T
Cryptobranchus alleganiensis	Eastern Hellbender	IL E
Desmognathus conanti	Spotted Dusky Salamander	IL E
Gastrophryne carolinensis	Eastern Narrowmouth Toad	IL T
Hemidactylium scutatum	Four-toed Salamander	IL T
Hyla avivoca	Bird-voiced Treefrog	IL T
Nectrurus maculosus	Mudpuppy	IL T
Pseudacris illinoensis	Illinois Chorus Frog	IL T

Reptiles

Apalone mutica	Smooth Softshell	IL E
Clemmys guttata	Spotted Turtle	IL E
Clonophis kirtlandi	Kirtland's Snake	IL T
Crotalus horridus	Timber Rattlesnake	IL T
Emydoidea blandingii	Blanding's Turtle	IL E
Heterodon nasicus	Plains Hog-Nosed Snake	IL T
Kinosternon flavescens	Yellow Mud Turtle	IL E
Macrochelys temminckii	Alligator Snapping Turtle	IL E
Masticophis flagellum	Coachwhip	IL E
Nerodia cyclopion	Mississippi Green Watersnake	IL T
Nerodia fasciata	Broad-banded Watersnake	IL E
Pantherophis emoryi	Great Plains Rat Snake	IL E
Pseudemys concinna	River Cooter	IL E
Sistrurus catenatus	Eastern Massasauga	IL E
Tantilla gracilis	Flathead Snake	IL T
Terrapene ornata	Ornate Box Turtle	IL T
Thamnophis sauritus	Eastern Ribbonsnake	IL T
Tropidoclonion lineatum	Lined Snake	IL T

Birds

Asio flammeus	Short-eared Owl	IL E
Bartramia longicauda	Upland Sandpiper	IL E
Botaurus lentiginosus	American Bittern	IL E
Buteo swainsoni	Swainson's Hawk	IL E
Charadrius melodus	Piping Plover	IL E, Fed E
Chlidonias niger	Black Tern	IL E
Circus cyaneus	Northern Harrier	IL E
Coccyzus erythropthalmus	Black-billed Cuckoo	IL T
Dendroica cerulea	Cerulean Warbler	IL T
Egretta caerulea	Little Blue Heron	IL E
Egretta thula	Snowy Egret	IL E
Gallinula chloropus	Common Moorhen	IL E
Ictinia mississippiensis	Mississippi Kite	IL T
Ixobrychus exilis	Least Bittern	IL T
Lanius ludovicianus	Loggerhead Shrike	IL E
Laterallus jamaicensis	Black Rail	IL E
Limnothlypis swainsonii	Swainson's Warbler	IL E

Nyctanassa violacea	Yellow-crowned Night-Heron	IL E
Nycticorax nycticorax	Black-crowned Night-Heron	IL E
Pandion haliaetus	Osprey	IL E
Phalaropus tricolor	Wilson's Phalarope	IL E
Rallus elegans	King Rail	IL E
Sterna forsteri	Forster's Tern	IL E
Sterna hirundo	Common Tern	IL E
Sternula antillarum	Least Tern	IL E, Fed E
Thryomanes bewickii	Bewick's Wren	IL E
Tympanuchus cupido	Greater Prairie-Chicken	IL E
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	IL E

Mammals

Canis lupus	Gray/timber Wolf	IL T, Fed E
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	IL E
Myotis austroriparius	Southeastern Myotis	IL E
Myotis grisescens	Gray Bat	IL E, Fed E
Myotis sodalis	Indiana Bat	IL E, Fed E
Neotoma floridana	Eastern Wood Rat	IL E
Spermophilus franklinii	Franklin's Ground Squirrel	IL T

Invertebrates

SNAILS

Discus macclintocki	Iowa Pleistocene Snail	IL E, Fed E
Fontigens antroecetes	Hydrobiid Cave Snail	IL E
Lithasia obovata	Shawnee Rocksnail	IL E

MUSSELS

Alasmidonta viridis	Slippershell	IL T
Cumberlandia monodonta	Spectaclecase	IL E, Fed E
Cyclonaias tuberculata	Purple Wartyback	IL T
Cyprogenia stegaria	Fanshell	IL E, Fed E
Ellipsaria lineolata	Butterfly	IL T
Elliptio dilatata	Spike	IL T
Epioblasma rangiana	Northern Riffleshell	IL E, Fed E
Epioblasma triquetra	Snuffbox	IL E, Fed E
Lampsilis abrupta	Pink Mucket	IL E, Fed E
Lampsilis fasciola	Wavy-rayed Lampmussel	IL E
Lampsilis higginsii	Higgens Eye	IL E, Fed E
Ligumia recta	Black Sandshell	IL T
Plethobasus cooperianus	Orangefoot Pimpleback	IL E, Fed E
Plethobasus cyphyus	Sheepnose	IL E, Fed E
Pleurobema clava	Clubshell	IL E, Fed E
Pleurobema cordatum	Ohio Pigtoe	IL E
Potamilus capax	Fat Pocketbook	IL E, Fed E
Ptychobranchus fasciolaris	Kidneyshell	IL E
Quadrula cylindrica	Rabbitsfoot	IL E, Fed T
Simpsonaias ambigua	Salamander Mussel	IL E
Villosa iris	Rainbow	IL E
Villosa lienosa	Little Spectaclecase	IL T

CRUSTACEANS

Caecidotea lesliei	Isopod	IL E
Crangonyx anomalus	Anomalous Spring Amphipod	IL E
Crangonyx packardi	Packard's Cave Amphipod	IL E
Gammarus acherondytes	Illinois Cave Amphipod	IL E, Fed E
Orconectes indianensis	Indiana Crayfish	IL E
Orconectes kentuckiensis	Kentucky Crayfish	IL E

Orconectes lancifer	Shrimp Crayfish	IL E
Orconectes placidus	Bigclaw Crayfish	IL E
Stygobromus iowae	Iowa Amphipod	IL E
SCORPIONS		
Centruroides vittatus	Common Striped Scorpion	IL E
DRAGONFLIES		
Nannothemis bella	Elfin Skimmer	IL T
Somatochlora hineana	Hine's Emerald Dragonfly	IL E, Fed E
SPRINGTAILS		
Pygmarrhopalites madonnensis	Madonna Cave Springtail	IL E
STONEFLIES		
Diploperla robusta	Robust Springfly	IL E
Prostoia completa	Central Forestfly	IL E
LEAFHOPPERS		
Aflexia rubranura	Redveined Prairie Leafhopper	IL T
Anthysanella incongrua	Leafhopper	IL E
BUTTERFLIES & MOTHS		
Calephelis mutica	Swamp Metalmark	IL E
Hesperia ottoe	Ottoe Skipper	IL E
Incisalia polios	Hoary Eflin	IL E
Lycaeides melissa samuelis	Karner Blue Butterfly	IL E, Fed E
Speyeria idalia	Regal Fritillary	IL T
Plants		
Adoxa moschatellina	Moschatel	IL E
Agalinus skinneriana	Pale False Foxglove	IL T
Alnus incana subsp. rugosa	Speckled Alder	IL E
Amelanchier interior	Shadbush	IL T
Amelanchier sanguinea	Shadbush	IL E
Amorpha nitens	Smooth False Indigo	IL E
Arctopstaphylos uva-ursi	Bearberry	IL E
Artemisia dracunculus	Dragon Wormwood	IL E
Asclepias lanuginosa	Wooly Milkweed	IL E
Asclepias meadii	Mead's Milkweed	IL E, Fed T
Asclepias ovalifolia	Oval Milkweed	IL E
Asclepias stenophylla	Narrow-leaved Green Milkweed	IL E
Asplenium bradleyi	Bradley's Spleenwort	IL E
Asplenium resiliens	Black Spleenwort	IL E
Aster furcatus	Forked Aster	IL T
Astragalus distortus	Bent Milk Vetch	IL E
Astragalus tennesseensis	Tennessee Milk Vetch	IL E
Baptisia tinctoria	Yellow Wild Indigo	IL E
Bartonia paniculata	Screwstem	IL E
Beckmannia syzigachne	American Slough Grass	IL E
Bessya bullii	Kitten Tails	IL T
Betula alleghaniensis	Yellow Birch	IL E
Boltonia decurrens	Decurrent False Aster	IL T, Fed T
Botrychium campestre	Prairie Moonwort	IL E
Botrychium matricariifolium	Daisyleaf Grape Fern	IL E
Botrychium multifidum	Northern Grape Fern	IL E
Botrychium simplex	Dwarf Grape Fern	IL E
Bouteloua gracilis	Blue Grama	IL E
Buchnera americana	Bluehearts	IL T
Bumelia lanuginosa	Wooly Buckthorn	IL E
Cakile edentula	Sea Rocket	IL T

Calamagrostis insperata	Bluejoint Grass	IL E
Calla palustris	Water Arum	IL E
Calopogon oklahomensis	Oklahoma Grass Pink Orchid	IL E
Calopogon tuberosus	Grass Pink Orchid	IL E
Camassia angusta	Wild Hyacinth	IL E
Carex alata	Winged Sedge	IL E
Carex arkansana	Arkansas Sedge	IL E
Carex atlantica	Sedge	IL T
Carex aurea	Golden Sedge	IL T
Carex bromoides	Sedge	IL T
Carex brunnescens	Brownish Sedge	IL E
Carex canescens var. disjuncta	Silvery Sedge	IL E
Carex chordorrhiza	Cordroot Sedge	IL E
Carex communis	Fibrous-rooted Sedge	IL T
Carex crawfordii	Crawford's Sedge	IL E
Carex cumulata	Sedge	IL E
Carex decomposita	Cypress-knee Sedge	IL E
Carex diandra	Sedge	IL E
Carex disperma	Shortleaf Sedge	IL E
Carex echinata	Sedge	IL E
Carex formosa	Sedge	IL E
Carex garberi	Elk Sedge	IL E
Carex gigantea	Large Sedge	IL E
Carex inops subsp. heliophila	Plains Sedge	IL E
Carex nigromarginata	Black-edged Sedge	IL E
Carex oligosperma	Few-seeded Sedge	IL E
Carex oxylepis	Sharp-scaled Sedge	IL T
Carex physorhyncha	Bellow's Beak Sedge	IL E
Carex plantaginea	Plaintain-leaved Sedge	IL E
Carex prasina	Drooping Sedge	IL T
Carex reniformis	Reniform Sedge	IL E
Carex trisperma	Three-seeded Sedge	IL E
Carex tuckermanii	Tuckerman's Sedge	IL E
Carex viridula	Little Green Sedge	IL T
Carex willdenowii	Willdenow's Sedge	IL T
Carya aquatica	Water Hickory	IL T
Carya pallida	Pale Hickory	IL E
Castilleja sessiliflora	Downy Yellow Painted Cup	IL E
Ceanothus herbaceus	Redroot	IL E
Chamaedaphne calyculata	Leatherleaf	IL T
Chamaelirium luteum	Fairy Wand	IL E
Chamaesyce polygonifolia	Seaside Spurge	IL E
Chimaphila maculata	Spotted Wintergreen	IL E
Chimaphila umbellata	Pipsissewa	IL E
Cimicifuga americana	American Bugbane	IL E
Cimicifuga racemosa	False Bugbane	IL E
Circaea alpina	Small Enchanter's Nightshade	IL E
Cirsium pitcheri	Pitcher's (Dune) Thistle	IL T, Fed T
Cladrastis lutea	Yellowwood	IL E
Clematis crispa	Blue Jasmine	IL E
Clematis occidentalis	Mountain Clematis	IL E
Clematis viorna	Leatherflower	IL E
Collinsia violacea	Violet Collinsia	IL E
Comptonia peregrina	Sweetfern	IL E
Conioselinum chinense	Hemlock Parsley	IL E
Cornus canadensis	Bunchberry	IL E
Corydalis aurea	Golden Corydalis	IL E
Corydalis halei	Hale's Corydalis	IL E
Corydalis sempervirens	Pink Corydalis	IL E
Corylus cornuta	Beaked Hazelnut	IL E
Cynosciadium digitatum	Cynosciadium	IL E

Cyperus grayioides	Umbrella Sedge	IL T
Cyperus lancastriensis	Galingale	IL T
Cypripedium acaule	Moccasin Flower	IL E
Cypripedium parviflorum var. makasin	Small Yellow Lady's Slipper	IL E
Cypripedium reginae	Showy Lady's Slipper	IL E
Cystopteris laurentiana	Laurentian Fragile Fern	IL E
Dalea foliosa	Leafy Prairie Clover	IL E, Fed E
Delphinium carolinianum	Wild Blue Larkspur	IL T
Dennstaedtia punctilobula	Hay-scented Fern	IL E
Deschampsia flexuosa	Hairgraass	IL E
Dichanthelium boreale	Northern Panic Grass	IL E
Dichanthelium joori	Panic Grass	IL E
Dichanthelium portoricense	Hemlock Panic Grass	IL E
Dichanthelium ravenelii	Ravenel's Panic Grass	IL E
Dichanthelium yadkinense	Panic Grass	IL E
Dodecatheon frenchii	French's Shootingstar	IL T
Draba cuneifolia	Whitlow Grass	IL E
Drosera intermedia	Narrow-leaved Sundew	IL T
Drosera rotundifolia	Round-leaved Sundew	IL E
Dryopteris celsa	Log Fern	IL E
Echinodorus tenellus	Small Burhead	IL E
Eleocharis olivacea	Capitate Spikerush	IL E
Eleocharis pauciflora	Few-flowered Spikerush	IL E
Eleocharis rostellata	Beaked Spike Rush	IL T
Epilobium strictum	Downy Willow Herb	IL T
Equisetum pratense	Meadow Horsetail	IL T
Equisetum scirpoides	Dwarf Scouring Rush	IL E
Equisetum sylvaticum	Woodland Horsetail	IL E
Eriophorum virginicum	Rusty Cotton Grass	IL E
Eryngium prostratum	Eryngo	IL E
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	IL E
Euphorbia spathulata	Spurge	IL E
Fimbristylis vahlii	Vahl's Fimbristylis	IL E
Galactia mohlenbrockii	Boykin's Dioclea	IL E
Galium virgatum	Dwarf Bedstraw	IL E
Geranium bicknellii	Northern Cranesbill	IL E
Glyceria arkansana	Arkansas Mannagrass	IL E
Gratiola quartermaniae	Hedge Hyssop	IL E
Gymnocarpium dryopteris	Oak Fern	IL E
Gymnocarpium robertianum	Scented Oak Fern	IL E
Halesia carolina	Silverbell Tree	IL E
Helianthus angustifolius	Narrow-leaved Sunflower	IL T
Helianthus giganteus	Tall Sunflower	IL E
Heliotropium tenellum	Slender Heliotrope	IL E
Heteranthera reniformis	Mud Plantian	IL E
Hexalectris spicata	Crested Coralroot Orchid	IL E
Hudsonia tomentosa	False Heather	IL E
Huperzia porophila	Cliff Clubmoss	IL T
Hydrolea uniflora	One-flowered Hydrolea	IL E
Hymenopappus scabiosaeus	Old Plainsman	IL T
Hypericum adpressum	Shore St. John's Wort	ILE
Hypericum kalmianum	Kalm's St. John's Wort	IL E
Iliamna remota	Kankakee Mallow	IL E
Iresine rhizomatosa	Bloodleaf	IL E
Isoetes butleri	Butler's Quillwort	IL E
Isotria verticillata	Whorled Pogonia	IL T
Juncus alpinus	Richardson's Rush	IL T
Juncus vaseyi	Vasey's Rush	IL E
Juniperus communis	Ground Juniper	IL T
Juniperus horizontalis	Trailing Juniper	IL E

Justicia ovata	Water Willow	IL E
Larix laricina	Tamarack	IL T
Lathyrus ochroleucus	Pale vetchling	IL T
Lespedeza leptostachya	Prairie Bush Clover	ILT
Lesquerella ludoviciana	Silvery Bladderpod	IL E
Lonicera dioica var. glaucescens	Red Honeysuckle	IL E
Lonicera flava	Yellow Honeysuckle	IL E, Fed T
Luzula acuminata	Hairy Woodrush	IL E
Lycopodiella inundata	Bog Clubmoss	IL E
Lycopodium clavatum	Running Pine	IL E
Lycopodium dendroideum	Ground Pine	IL E
Lysimachia radicans	Creeping Loosestrife	IL E
Malus angustifolia	Narrow-leaved Crabapple	IL E
Malvastrum hispidum	False Mallow	IL E
Matelea decipiens	Climbing Milkweed	IL E
Medeola virginiana	Indian Cucumber Root	IL E
Megalodonta beckii	Water Marigold	IL E
Melanthera nivea	White Melanthera	IL E
Melanthium virginicum	Bunchflower	IL T
Melica mutica	Two-Flowered Melic Grass	IL E
Melothria pendula	Squirting Cucumber	IL T
Menyanthes trifoliata	Buckbean	IL T
Mimulus glabratus	Yellow Monkey Flower	IL E
Minuartia patula	Slender Sandwort	IL T
Mirabilis hirsuta	Hairy Umbrella-wort	IL E
Nemophila triloba	Baby Blue-eyes	IL E
Nothocalais cuspidata	Prairie Dandelion	IL E
Opuntia fragilis	Fragile Prickly Pear	IL E
Orobanche fasciculata	Clustered Broomrape	IL E
Orobanche ludoviciana	Broomrape	IL T
Penstemon grandiflorus	Large Flowered Beard Tongue	IL E
Penstemon tubaeflorus	Tube Beard Tongue	IL E
Phacelia gilioides	Ozark Phacelia	IL E
Phaeophyscia leana	Lea’s Bog Lichen	IL T
Phegopteris connectilis	Long Beech Fern	IL E
Phlox pilosa subsp. sangamonensis	Sangamon Phlox	IL E
Pinus banksiana	Jack Pine	IL E
Pinus echinata	Shortleaf Pine	IL E
Pinus resinosa	Red Pine	IL E
Planera aquatica	Water Elm	IL E
Plantago cordata	Heart-leaved Plantain	IL E
Platanthera ciliaris	Orange Fringed Orchid	IL E
Platanthera clavellata	Wood Orchid	IL E
Platanthera flava var. herbiola	Tubercled Orchid	IL T
Platanthera leucophaea	Eastern Prairie Fringed Orchid	IL E, Fed T
Platanthera psycodes	Purple Fringed Orchid	IL E
Poa alsodes	Grove Bluegrass	IL E
Poa languida	Weak Bluegrass	IL E
Poa wolfii	Wolf's Bluegrass	IL E
Pogonia ophioglossoides	Snake-mouth	IL E
Polanisia jamesii	James' Clammyweed	IL E
Polygala incarnata	Pink Milkwort	IL E
Polygonum arifolium	Halberd-leaved Tearthumb	IL E
Polygonum careyi	Carey’s Smartweed	IL E
Populus balsamifera	Balsam Poplar	IL E
Potamogeton gramineus	Grass-leaved Pondweed	IL T
Potamogeton praelongus	White-stemmed Pondweed	IL E
Potamogeton pulcher	Spotted Pondweed	IL E
Potamogeton robbinsii	Fern Pondweed	IL E

Potamogeton strictifolius	Stiff Pondweed	IL E
Primula mistassinica	Bird's-eye Primrose	IL E
Ptilimnium nuttallii	Mock's Bishop Weed	IL E
Quercus montana	Rock Chestnut Oak	IL T
Quercus phellos	Willow Oak	IL T
Quercus texana	Nuttall's Oak	IL E
Rhamnus alnifolia	Alder Buckthorn	IL E
Rhexia mariana	Dull Meadow Beauty	ILE
Rhynchospora glomerata	Clustered Beak Rush	IL E
Ribes hirtellum	Northern Gooseberry	IL E
Rosa acicularis	Bristly Rose	IL E
Rubus pubescens	Dwarf Raspberry	IL T
Rubus schneideri	Bristly Blackberry	IL T
Rudbeckia missouriensis	Missouri Orange Coneflower	IL T
Sabatia campestris	Prairie Rose Gentian	IL E
Sagittaria australis	Arrowhead	IL E
Salix serissima	Autumn Willow	IL E
Salix syrticola	Dune Willow	IL E
Salvia azurea subsp. pitcher	Blue Sage	IL T
Sambucus racemosa subsp. pubens	Red-berried Elder	IL E
Sanguisorba canadensis	American Burnet	IL E
Sanicula smallii	Southern Sanicula	IL E
Sarracenia purpurea	Pitcher Plant	IL E
Saxifraga virginiensis	Early Saxifrage	IL E
Schizachne purpurascens	False Melic Grass	IL E
Schoenoplectus hallii	Hall's Bulrush	IL T
Schoenoplectus purshianus	Weak Bulrush	IL E
Schoenoplectus smithii	Smith's Bulrush	IL E
Scirpus hattorianus	Bulrush	IL E
Scirpus microcarpus	Bulrush	IL E
Scirpus polyphyllus	Bulrush	IL T
Scleria muhlenbergii	Muhlenberg's Nut Rush	IL E
Scleria pauciflora	Carolina Whipgrass	IL E
Sedum telephioides	American Orpine	IL T
Shepherdia canadensis	Buffaloberry	IL E
Silene ovata	Ovate Catchfly	IL E
Silene regia	Royal Catchfly	IL E
Sisyrinchium montanum	Mountain Blue-eyed Grass	IL E
Sorbus americana	American Mountain Ash	IL E
Solidago sciaphila	Cliff Goldenrod	IL T
Sparganium americanum	American Burreed	IL E
Sparganium emersum	Green-fruited Burreed	IL E
Spiranthes lucida	Yellow-lipped Ladies' Tresses	IL E
Spiranthes vernalis	Spring Ladies' Tresses	IL E
Stellaria pubera	Great Chickweed	IL E
Stylisma pickeringii	Patterson's Bindweed	IL E
Styrax americana	Storax	IL T
Styrax grandifolius	Bigleaf Snowbell Bush	IL E
Sullivantia sullivantii	Sullivantia	IL T
Symphoricarpos albus var. albus	Snowberry	IL E
Talinum calycinum	Fameflower	IL E
Talinum parviflorum	Small Flower-of-an-hour	IL T
Tetraneuris herbacea	Lakeside Daisy	IL E, Fed T
Thelypteris noveboracensis	New York Fern	IL E
Tilia heterophylla	White Basswood	IL E
Tofieldia glutinosa	False Asphodel	IL T
Torreyochloa pallida	Pole Manna-Grass	IL E
Trichomanes boschianum	Filmy fern	IL E
Trichophorum cespitosum	Tufted Bulrush	IL E

Trientalis borealis	Star-flower	IL E
Trifolium reflexum	Buffalo Clover	IL T
Triglochin maritima	Common Bog Arrowgrass	IL T
Triglochin palustris	Slender Bog Arrowgrass	IL T
Trillium cernuum	Nodding Trillium	IL E
Trillium erectum	Ill-scented Trillium	IL E
Trillium viride	Green Trillium	IL E
Ulmus thomasii	Rock Elm	IL E
Urtica chamaedryoides	Nettle	IL T
Utricularia cornuta	Horned Bladderwort	IL E
Utricularia intermedia	Flat-leaved Bladderwort	IL T
Utricularia minor	Small Bladderwort	IL E
Vaccinium corymbosum	Highbush Blueberry	IL E
Vaccinium oxycoccos	Small Cranberry	IL E
Vaccinium macrocarpon	Large Cranberry	IL E
Vaccinium stamineum	Deerberry	IL E
Valeriana uliginosa	Marsh Valerian	IL E
Valerianella chenopodifolia	Corn Salad	IL E
Valerianella umbilicata	Corn Salad	IL E
Veronica americana	American Brooklime	IL E
Veronica scutellata	Marsh Speedwell	IL T
Viburnum molle	Arrowwood	IL T
Viola blanda	White Hairy Violet	IL E
Viola canadensis	Canada Violet	IL E
Viola primulifolia	Primrose Violet	IL E
Woodsia ilvensis	Rusty Woodsia	IL E
Zigadenus elegans	White Camass	IL E

Change Common Name:

Fish
None

Amphibians
None

Reptiles
None

Birds
Common Moorhen to Common Gallinule

Mammals
None

Invertebrates
None

Plants
None

Change Scientific Name:

Fish
None

Amphibians
None

Reptiles
None

Birds
Gallinula chloropus to Gallinula galeata (Lichenstein, 1818)

Mammals
Spermophilus franklinii to Poliocitellus franklinii (Sabine, 1822)

Invertebrates
None

Plants
Alnus incana subsp. rugosa to Alnus incana (Moench)
Carex canescens var. disjuncta to Carex canescens (L.)
Carex inops subsp. heliophila to Carex heliophila (Mack)
Cypripedium parviflorum var. makasin to Cypripedium parviflorum (Salisb)
Juncus alpinus to Juncus alpinoarticulatus (Chaix)
Platanthera flava var. herbiola to Platanthera flava (L.) (Lindl)
Polygonum arifolium to Tracaulon arifolium (L.)
Salvia azurea subsp. pitcher to Salvia azurea (Michx. ex. Lam.)

Typographic corrections:
Fish
None

Amphibians
None

Reptiles
None

Birds
None

Mammals
None

Invertebrates
None

Plants
Agalinus skinneriana to Agalinis skinneriana
Cyperus grayioides to Cyperus grayoides

Chair Gooch asked for a motion to approve confirmation of all preliminary listing decisions. Ms. Ross so **moved**, Dr. Taft seconded the motion, and it was **approved** unanimously.

161-14 PRESENTATION – Proposed Approval of the Illinois Alligator Snapping Turtle Recovery Plan
Ms. Mankowski introduced Mr. Ballard of the IDNR and he reviewed parts of the draft final document. Chair Gooch asked Ms. Mankowski whether she had completed a review of the draft for the Board and she replied that she had reviewed and provided comment to IDNR on previous iterations, but had not reviewed the current iteration.

Dr. Walk noted that the draft plan does not explain if or how habitat was evaluated for the sites where pilot translocations had already taken place or where they were prescribed for the future. Mr. Ballard explained that they had visited sites with a field biologist from another state who had a good deal of experience with the species' habitat to confirm suitability and they are also using historic sites. Dr. Walk noted that the since the historic sites have not had observations for decades there may be something unsuitable about the habitat and

questioned how the team is evaluating habitat suitability of those sites to support the decision to put animals back into those locations? Mr. Ballard stated that the out-of-state biologist had stated that the historic locations look as good as any others during their field visits.

Drs. Walk and Hofmann expressed concern and confusion about the explanations in the document for one of the status review triggers - that radio-tagged translocated animals were considered alive and represented successful translocations if radio-tag on-air transmission was found rather than if animals were actually captured and confirmed alive and well. Mr. Ballard replied that they felt it was necessary to consider on-air transmission as a sign of success because they really can't be sure that animals associated with those signals are not alive.

Dr. Hofmann asked about the fate of animals that were being raised in classroom settings, noting that the draft plan does not explain what will become of them and there may be safety concerns for children handling large turtles and biological concerns if those animals are released into the wild without some type of oversight and coordination. Mr. Ballard replied that all of those issues would be coordinated via the recovery team and the use of IDNR endangered species permits.

Chair Gooch noted that the draft plan did not review the potential for impacts to other listed species from the introductions. Mr. Ballard replied that the team would consider those things as they were implementing.

The Board noted that there was apprehension about approving the draft plan and discussed the possibility of tabling the approval until some questions were better answered and some information further fleshed-out. It was suggested that Ms. Mankowski could work on additional review and commenting with the IDNR and another version could be brought back to the Board at a subsequent meeting. It was noted that it would be best to have approved plans in place prior to implementing actions and the project is already well under way and a good deal of funding has been secured. After some discussion about species' biology and habitat, it was noted that some members felt there was a lack of clarity for specifically what questions needed to be answered and what information needed to be further fleshed-out. Chair Gooch asked if there was further discussion and there was none.

Chair Gooch asked for a motion to approve the Board's Chair signing the final document as the official Illinois Alligator Snapping Turtle Recovery Plan when it is received from the IDNR. Mr. Robinett so **moved** and Ms. Masi seconded the motion. The Board voted, and it was **approved**, with members Beyer-Clow, Masi, Robinett, Ross, and Taft voting for, members Gooch and Hofmann voting against, and member Walk abstaining.

161-15 Next Regular Meeting Information

The Board's next regularly scheduled meeting will be at the Helen Matthes Public Library, Effingham, IL, May 16, 2014 at 9:00 AM.

161-16 Public Comment Period (3 minutes per person)

There were no public comments.

161-17 Other Business (Board members complete travel forms and time reporting sheets)

There was no other business.

161-18 Adjournment

Chair Gooch asked for a motion to adjourn. Dr. Hofmann **moved** to adjourn, Ms. Ross seconded the motion, and it was **approved** unanimously. The meeting was adjourned at 1:00 P.M.

Attachment A

Illinois Endangered Species Protection Board staff report
for the 161st Meeting, February 21, 2013
Submitted by Anne Mankowski, Director

The Board has one full-time staff person, 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: November: claimed = 10.5, donated = 4.0; December: claimed = 33.0, donated = 6.0; January: claimed = 53.0, donated = 1.0.

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 IDNR staff about Database data and the ESPB List review process. She responded to multiple other inquiries from individuals asking for information about the List review and revision and how to make recommendations to the Board for changes to the List.

2. ESPB Staff Hiring

Executive Assistant

Ms. Christina Selvaggio was hired as s a part-time, temporary, contractual Executive Assistant. Ms. Selvaggio's contract was not executed correctly and had to be terminated after two weeks. Until a time when the Board has headcount to hire staff directly, Ms. Mankowski will work with IDNR Human Resources for new contractual hiring of an Executive Assistant.

Listing and Recovery Coordinators

Until a time when the Board has headcount to hire staff directly, Ms. Mankowski continues working with the IDNR Human Resources staff on scoping for hiring two full-time, contractual ESPB Listing and Recovery Coordinators.

3. ESPB Member appointments

Conducted administration for on-boarding newly appointed Board member Lenore Beyer-Clow. Conducted outreach and interview and vetting of potential nominees for Board recommendation to the Governor's Office for member appointment. Communicated with and responded to requests for information about Board appointments from the Governor's Office.

4. ESPB Website

Spent time working with IDNR web support staff and made ongoing updates to the ESPB website. In December the Board's 2014 quarterly meeting schedule was posted. The ESPB website serves as the web portal for ESPB and IDNR administered endangered and threatened species program information.

5. ESPB Budget

Ms. Mankowski continues working with IDNR on multiple budget assignments related to the FY2014 and FY2015 budgets.

6. ESPB Research/Strategic Projects Program

There was no ESPB research project administration during the last quarter.

7. Meetings, Presentations, and Publications

- Ms. Mankowski participates in IDNR ORC twice-monthly administrative meetings, when possible.
- There have been no meetings of the IDNR Natural Areas Evaluation Committee since the Board's 160th meeting held in November, 2014. Each of the November and December, 2013, and the January and February, 2014, NAEC meetings were cancelled. The Board is voting member of the committee
- Ms. Mankowski participated in the November 20, 2013 meeting of the Illinois Wildlife Action Team held at IDNR Headquarters in Springfield, Illinois. The February 11, 2014 meeting was cancelled. The Board is a voting member of the team.
- Ms. Mankowski participated in the January 15, 2014 meeting of the Chicago Wilderness Executive Council. The Board is voting member of the council.
- Ms. Mankowski attended the January 28, 2014 meeting of the Illinois Nature Preserves Commission and presented a report of Board 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

- No follow-up to report about vouchering and translocation issues discussed at the ESPB 157th meeting, held February 8, 2013.

E&T consultation

- At the request of IDNR OLC, provided copy of the Board's comments and questions about IDNR OREP's proposed amendments to the 17 Ill. Admin. Code Part 1075 Consultation Procedures for Assessing Impacts of Agency Action on Endangered and Threatened Species and Natural Areas.
- At the request of IDNR OLC, provided review and comment on an overview of issues and recommendations regarding address of nests of endangered and threatened species in IDNR E&T consultation and E&T incidental take authorization.

E&T incidental take authorization
- No activity.

E&T translocation
- Continued working with INPC and IDNR ORC staff on development of a joint animal translocation policy. The Board should expect a joint policy to be consistent with the Board's current E&T animal translocation policy and a draft joint policy will need to be approved by all three agencies before becoming official.
- Responded to inquiries from IDNR ORC staff regarding the status of the joint animal translocation policy and issues related to recovery planning for the Blanding's Turtle (*Emydoidea blandingii*).

E&T recovery planning and implementation
- Reviewed and provided comment to IDNR ORC on a first draft of the proposed Illinois Alligator Snapping Turtle (*Macrochelys temminckii*) Recovery Plan.
- Attended an Illinois Prairie Chicken (*Tympanuchus cupido*) recovery planning meeting. Coordinated with IDNR Prairie Ridge Site Manager, Scott Simpson, and researchers at INHS about a possible genetic study to complement ongoing research and translocation activities. Also coordinated with IDNR staff about assisting with translocation activities in the spring of 2014.
- Continued working on preparation of a Year-3 Illinois Barn Owl (*Tyto alba*) Recovery Plan Implementation Report of Accomplishments. Coordinated with IDNR staff about presenting a paper and poster about Illinois recovery planning and implementation results at the Wildlife Society meeting in Pittsburg, in October, 2014.
- Provided guidance to and coordinated with INPC and IDNR ORC staff about development of recovery planning documents for *Melanthium virginicum* (Bunchflower) and Lined Snake (*Tropidoclonion lineatum*).

ESPB/IDNR review and approval coordination
- No activity.

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
- Provided review and comments to IDNR OLC regarding recommendations for consideration of endangered and threatened species' nests under several laws and regulations, including the IL Endangered Species Protection Act.
- Ms. Mankowski, Board Vice-chair Glen Kruse and Member Jeff Walk, held a coordination meeting with staff from IDNR ORC.
- Ms. Mankowski, Board Chair Dan Gooch and Member Jeff Walk, held introductory and coordination meetings with staff from IDNR ORC, IDNR OLC, and IDNR Fiscal.
- Responded to requests from the IDNR Ethics Officer regarding Board membership and annual economic interest reporting.
- Prepared and provided to IDNR Fiscal, Board FY2015 Legislative Budget Submittal documents.
- Provided assistance to IDNR ORC Fisheries staff with questions about management recommendations for herpetofauna.
- 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 responded to inquiries from the conservation organization, Common Ground, in Pennsylvania about the State of Illinois Barn Owl Recovery Plan and implementation.
- Ms. Mankowski assisted Winnebago County Forest Preserve District staff with accessing 2014 List review and other information from the ESPB website.
- Ms. Mankowski communicated with Shedd Aquarium, Vice President of Communications and Public Relations, Andrea Rodgers about partnering on endangered and threatened species outreach opportunities.
- Ms. Mankowski assisted Lake County Forest Preserve staff with accessing 2014 List review and participation information from the ESPB website and provided recommendations and engaged IDNR staff for advice regarding

disclosure and sharing of Database endangered and threatened species information.
- Ms. Mankowski assisted INHS staff with accessing 2014 List review and participation information from the ESPB website and answered questions about listing criteria and the List review.
- Ms. Mankowski sent a "Season's Greetings" email to the Board's email distribution list. The email included highlight activities from 2013 and some anticipated for 2014 as well as posting notice of the Board's 2014 quarterly meeting schedule.

11. Field Work
- None.

12. Other General Administration and Clerical Work
- Prepared and routed Board member and staff travel vouchers and timesheets.
- Conducted updates to ESPB budget tracking on ORC sharepoint.
- Regularly distributed information to Board members via email and hardcopy mailings.
- Completed purchasing new ESPB meeting recording equipment and office supplies.
- Continued worked on development of contracts for hiring staff during FY2014.
- Conducted administration necessary for ESPB Executive Assistant new employee hiring and termination.
- Worked on draft proposed revisions to the Board's Policy Manual.
- Worked on preparation for moving the Board's cube and files.
- All aspects of preparation for the February 20, 2014, ESPB special meeting.
- All aspects of preparation for the February 21, 2014, 161st ESPB meeting.
- Made meeting location arrangements for ESPB 2014 regularly scheduled meetings.

Illinois Department of Natural Resources
report to the Illinois Endangered Species Protection Board
at the 161st meeting, February 21, 2014

Personnel
Duane Ambroz started work with DNRs Natural Heritage Division as a district Natural Heritage Biologist January 16. Duane will cover the 10 county area of northwestern Illinois including the Driftless area, Upper Mississippi, Rock River Hill Country and Green River sand areas. Duane has a master's degree from Northwestern University in conservation plant biology and has been working on implementation of the Illinois Lake Michigan Management Plan with DNRs Coastal Management Program. Duane is a former Natural Heritage Resident Intern.

Natural Heritage Database

In January, Natural Heritage Database staff mapped and/or did data entry of 59 E and T occurrences, both new and updates and received 135 records of E and T species. They did quality control of 153 E and T occurrence records.

Endangered Species Possession Permits
For the fourth quarter of 2013 (October 1 – December 31), two E and T Possession Permits were issued by the IDNR.

Incidental Take Authorization
As of February 6, 2013, the status of Incidental Take Authorizations (ITA) is as follows:

1. Kane County Department of Transportation, LaFox Road at Mill Creek (Blanding's turtle) – awaiting Office Director approval

2. Illinois Rural Electric Cooperative, Pittsfield Wind Turbine, Pike County (Indiana bat) – in preparation for Office Director review and approval

3. Peabody Arclar Mining, Rocky Branch Mine, Saline County (marsh rice rat) – ITA draft under development

4. FutureGen Alliance, Morgan County (IL chorus frog, ornate box turtle, regal fritillary, western hognose snake) – public comment period ends March 6, 2014

5. ComEd Habitat Conservation Plan for power corridor maintenance, Will/Cook/DuPage Counties (Hine's emerald dragonfly, Blanding's turtle, spotted turtle, black-billed cuckoo) – preparing for public comment period

6. Illinois Department of Transportation, Herrin to Johnston City Road, Williamson County (marsh rice rat) – public comment period ends February 28, 2014

7. Allen Township, East 30th Railroad approach and crossing, LaSalle/Grundy Counties (slippershell) – returned Conservation Plan for additional information on December 13, 2013

8. Holcim (US) Inc., Barge Receiving System, Rock Island County (black sandshell) – returned Conservation Plan for additional information on January 29, 2014

9. Dresden Island Hydroelectric Project, Grundy County (river redhorse, greater redhorse, pallid shiner) – preparing for public comment period

10. Illinois Department of Natural Resources Office of Water Resources, Ellsworth Park Dam Removal, Vermilion County (bluebreast darter, eastern sand darter, bigeye chub, river redhorse, wavy-rayed lampmussel, black sandshell) - public comment period begins February 13, 2014

Wildlife Preservation Fund

The Wildlife Preservation Fund is expected to generate about $150,000 this year. $25,000 is budgeted from the Fund for ESPB Status Surveys. Applications for other projects that preserve, protect, perpetuate or enhance non-game wildlife and/or native plant resources in Illinois are due to the DNR April 1, 2014. Applications are made online at DNR.SPECIALFUNDS@illinois.gov.

Item 161-5: the Illinois Nature Preserves Commission Report

Illinois Nature Preserves Commission
memorandum

To: Endangered Species Protection Board

From: Randy Heidorn

Date: February 20, 2014

Subject: Illinois Nature Preserves Commission Staff Report Compiled for the February 21, 2014 Meeting of the Endangered Species Protection Board

KEY TO ABBREVIATIONS

INPC = Illinois Nature Preserves Commission
ISGS = Illinois State Geological Survey
NP = Nature Preserve
SP = State Park
INAI = Illinois Natural Areas Inventory
IDNR = Illinois Department of Natural Resources
PD = Park District
NHL = Natural Heritage Landmark
LWR = Land and Water Reserve

AREAS/PROJECTS

Area 1 - John Nelson
Area 2 - Steven Byers
Area 3 - Kim Roman & Tom Engbrecht
Area 4 - Angella Moorehouse & Jared Ruholl
Stewardship Project - Kelly Neal
Area 5 - Thomas Lerczak
Area 6 - Mary Kay Solecki
Area 7 - Debbie Newman
Area 8 - Bob Edgin & Meaghan Collins

SIGNIFICANT COMMISSION ACTIONS

The following sites were given approval for legal protection at the 216th meeting of the INPC held at the IDNR Headquarters, January 28, 2014:

- Approved as LWR:
  - **Additions to Iroquois Sands LWR, Iroquois County**, 1.8 acres owned by Friends of the Kankakee protecting wet-mesic and mesic sand prairie and sand flatwoods.
- Preliminary approval as NP:
  - **Buffer Addition to Reed Turner Woodland NP, Lake County**, 4.318 acres owned by the Long Grove PD protecting and buffering high quality upland forest and a state-threatened plant.
  - **Covington Buffer Addition to Grainger Woods NP, Lake County,** 18.2 acres owned by a private individual protecting a state-threatened plant and buffering the NP.
  - **Illinois Ozarks, Monroe County,** 34.18 acres owned by a private family protecting high quality hill prairie and glade and populations of state-threatened plant and reptile and state-endangered plant
  - **Hahnaman Sand Prairie, Whiteside County,** 14.6 acres owned by a private individual protecting high quality sand prairie, a state-endangered plant, four state-threatened plants, a state-threatened butterfly, and two state-threatened reptiles.
- Final approval as NP
  - **Buffer Addition to Oakwood Hills Fen NP, McHenry County,** 17.8 acres owned by the Village of Oakwood Hills that buffers high quality fen by protecting a portion of the recharge area of the wetland.
  - **Bohbrink Woods, Washington County,** 10 acres owned by IDNR containing high quality southern flatwoods.

INPC approved a protection guideline on the protection of historic and cultural properties within the Nature Preserves System.

INPC OPERATIONS

- The administrative rule establishing a fee structure for the use of the data in the Natural Heritage Database (17 Ill Admin. Code 4020, Inventories, Registers and Records) was approved by the Joint Committee on Administrative Rules on January 10, 2014. Prompted by the IDNR sustainability bill passed in 2012 which changed an INPC authority to gather and maintain inventories on natural areas, plants, animals and other significant resources, to require the collection of a fee "....to recover the actual cost of collecting, storing, managing, compiling and providing access to such inventories, registers and records." (525 ILCS 30/6.01) The administrative rule sets out procedures and fees and provides for the ability to negotiate mutually beneficial agreements for access to the data.
- Staff changes:
  - Debbie Reider, INPC Office Specialist accepted a position as Executive Secretary 2 in the IDNR Office of Legal Counsel effective January 1, 2014.
  - The following Natural Heritage Resident Interns were hired and assigned to INPC Area Staff: Tom Engbrecht, assigned to Kim Roman, Jared Ruholl, assigned to Angella Moorehouse, and Meaghan Collins assigned to Bob Edgin.
- FY 2015 Budget Discussions:
  - At the direction of Chair Thomas, Randy Heidorn prepared FY2015 budget "ask" documents (attached). These documents are designed for commissioner use and lay out recommended priorities for the coming fiscal year.
  - Chair Thomas and Vice Chair Dann met with IDNR Director Miller on December 2, 2013 and presented our requests for hires and additional land acquisition. Director Miller though non-committal, was supportive.
- Appointments:
  - Dr. Jo-Elle Mogerman was appointed to replace Jill Riddell as of September. Commissioner Mogerman serves as the Vice-President for Institutional Planning and Inclusion at Brookfield Zoo.
  - Dr. Abigail Derby Lewis was appointed to replace Lauren Rosenthal as of January 24, 2014. Dr. Lewis serves as a climate change mitigation specialist at the Field Museum in Chicago.
  - Dr. Charles Ruffner was appointed to replace Mare Payne as of January 24, 204. Dr. Ruffner is a professor of forestry at Southern Illinois University specializing in forest management including a strong emphasis on fire ecology and restoration.
  - Commissioner Donnie Dann, and Commissioner Bill McClain were reappointed.

BIOLOGICAL INVENTORIES

Routine inventories were conducted at the following sites (target group of species or species if applicable):

Stewardship Project

- Attended Plants of Concern Advisory Group meeting.

Area 1

- Nachusa Grasslands (herpetological)

Area 2

- Forested Fen INAI site (botanical)
- Trout Park NP (botanical)
- Trout Park River's Edge INAI site (botanical)

Area 3

- Blackball Mines-Pecumsaugen Creek NP (white nose syndrome in hibernating bats)
- Gooseberry Island NP (Kankakee mallow [*Iliamna remota*])

Area 4

- Cedar Glen NP (bird)
- Mississippi River – Nauvoo INAI (bird)
- West Bushnell Railroad Prairie INAI (bunchflower)
- Cedar Glen NP (bunchflower [*Melanthium virginicum*])
- Sciota Railroad Prairie INAI (bunchflower)
- Bald Bluff Hill Prairie INAI (botanical)
- Tartan Bluff Hill Prairie NHL (botanical)

Area 5

- Revis Hill Prairie NP (botanical)

Area 6

- Embarras River INAI site (botanical, mussel)
- Jean Claude Spitler Woods INAI site (botanical)

Area 7

- Salt Lick Point LWR (Missouri coneflower (*Rudbeckia missouriensis)* and woolly buckthorn (*Bumelia lanuginosa*)

Area 8

- Lawrenceville (leather flower [*Clematis viorna*])
- Embarras River Bottoms State Habitat Area (SHA) – Assisted Office of Realty and Environmental Planning (OREP) with establishing and sampling 10 permanent monitoring stations
- Stephen A. Forbes SP – Vegetation sampling of barrens following repeated prescribed burning
- Ellery Woods INAI site (grass-leaved lily [*Stenanthium gramineum*])
- Little Grand Canyon - Cedar Creek INAI site (buffalo clover [*Trifolium reflexum*])
- Simpson Barrens INAI site - (buffalo clover and climbing milkweed [*Matelea obliqua*])
- Giant City SP - (buffalo clover)

INAI UPDATE

The following sites were evaluated by INPC staff for inclusion in the INAI:

Area 1

- Whiteside 003 (Hahnaman Sand Prairie)

Area 4

- Mercer County site
- Rock Island County Site

Area 5

- Letcher Basin ParkLands Foundation site

Area 6

- Jean Claude Spitler Woods (AKA Johnson Woods)

Area 7

- Jersey County # 122
- Jersey County # 123
- Jersey County # 125

STEWARDSHIP

Planning

Stewardship Project

- Attended Chicago Wilderness meeting on seed/plant sourcing in context of climate change.

Area 8

- Reviewed state-wide recovery outline for Eryngium stem borer moth (*Papaipema eryngii*)

Excerpts from Threats to Sites Report for the 216th Meeting of the Illinois Nature Preserves Commission (reporting period: September-December 2013)

Rocky Branch NP, Clark County – Mary K. Solecki

- **Issue:** All-terrain vehicle trespass; fencing to prevent trespass was compromised.
- **Threat:** Damage to vegetation, soil compaction, stream impacts.
- **Status:** Ongoing. Fencing will be repaired and additional signs will be installed.

Kennicott's Grove NP, Cook County – Steven Byers

- **Issue:** Residential development near NP.
- **Threat:** Proposed development will reduce forest cover and could disrupt surface hydrology upon which this site is dependent.
- **Status:** INPC staff working with IDNR (Endangered and threatened species consultation, developer, Glenview PD) to secure more information about the proposed development and will work with PD and City of Glenview to raise issues and concerns re: the proposed project. .

Karchers Post Oak Woods NP, Hamilton County

- **Issue 1 – Bob Edgin, Randy Heidorn**
  - **Issue:** Ownership of mineral rights and long wall coal mining under/near NP.
  - **Threat:** Direct and indirect impact to terrestrial community.
  - **Status:** Ongoing. Determined that Illinois Audubon Society owned the mineral rights and did not wish to sign lease with coal company. Staff reviewed consultation comments developed by Office of Mines and Minerals and reserved right to review/approve revised mining plan to be submitted by coal company at a later date.
- **Issue 2 – Bob Edgin**
  - **Issue:** Illegal all terrain vehicle access at several points, removal of boundary signs by unknown parties.
  - **Threat:** Direct impacts to terrestrial community.
  - **Status:** Ongoing. Trails were "brushed in" with available dead wood. Boundary survey will be conducted. Signs will be replaced as time permits after boundary survey is complete.

Tomlin Timber NP, Mason County – Tom Lerczak

- **Issue:** Utility line maintenance along NP boundary.
- **Threat:** Excessive cutting of vegetation and herbicide use.
- **Status:** New. Proactive meeting on Nov. 20 with Spoon River Electric Coop, at their request, to outline parameters. Monitoring by INPC staff is ongoing.

Salt Lick Point LWR, Monroe County – Debbie S. Newman

- **Issue:** Power line spraying in sensitive area of LWR
- **Threat:** Direct impact to Grade B Prairie and two threatened or endangered plant species at the LWR
- **Status:** Ongoing. Staff of the INPC, Village of Valmeyer, and Salt Lick Point LWR Committee met with representatives of Ameren to examine and discuss the spraying, and potential remediation as well as plans to prevent future spraying.

Singing Woods NP, Peoria County - Angella Moorehouse

- **Issue:** Neighboring landowner continues to harvest trees within NP.
- **Threat:** Illegal removal of trees from a NP.
- **Status:** The owners of the preserve, Peoria PD, are pursuing legal action against the violator at this time.

Culley Barrens LWR, Pope County – Bob Edgin

- **Issue:** Unauthorized camping by unknown parties, removal of boundary signs.
- **Threat:** Direct impacts to terrestrial communities.
- **Status:** Ongoing. Landowner notified, tent other camping items removed, signs will be replaced as time permits.

Dirksen-McNaughton Woods LWR, Tazewell County

- **Issue 1 – Tom Lerczak**
  - **Issue:** Utility line maintenance along LWR boundary.
  - **Threat:** Excessive cutting of vegetation and herbicide use.
  - **Status:** Resolved. Site photodocumented on Aug. 16 by INPC staff. No encroachments.
- **Issue 2 – Tom Lerczak**
  - **Issue:** Bridge replacement at Sheridan Road within LWR.
  - **Threat:** INPC-approved disturbance of LWR features.
  - **Status:** Ongoing. Work to begin during summer of 2014. INPC-approved mitigation for disturbance to be coordinated by INPC staff beginning in early 2014.

Crevecoeur NP, Tazewell County – Tom Lerczak

- **Issue:** Neighbor encroachments.
- **Threat:** Disturbance of NP features, dumping, unauthorized activities.
- **Status:** Ongoing. At least six different neighbors have been encroaching on the southern boundary of the NP. The Village of Creve Coeur has contacted the three worst offenders. Progress at correcting encroachments is ongoing with one neighbor. However, the other two of the three have continued to encroach. A photodocumented site inspection was conducted on November 8, 2013, with an update report completed and submitted to the Village. The report includes suggestions for further strategies, including firm deadlines and contacting all encroaching neighbors. Monitoring by INPC staff is ongoing.

Fondulac Seep NP, Tazewell County – Tom Lerczak

- **Issue:** Soil erosion and flooding during excessive precipitation events from the NP onto a neighboring property.
- **Threat:** Encroachments from actions by the neighbor to control sedimentation and flooding.
- **Status:** New. A site meeting occurred on Oct. 30 with the NP landowner (Fondulac PD), the neighbor experiencing sedimentation and flooding, and INPC staff. Plans were outlined to improve drainage on the neighbor's property, just outside of the NP boundary. Fondulac PD paid for a professional surveyor to set several markers to clearly define the NP boundary. NP boundary signs were posted at the survey markers. Monitoring by INPC staff is ongoing.

Romeoville Prairie NP, Will County—Kim Roman

- **Issue:** A salt storage facility is proposed by the Valley View School District, immediately adjacent to the NP, which is owned by the FPD Will County.
- **Threat:** Chloride from the new storage facility can enter the NP through surface and groundwater, and adversely affect plant communities.
- **Status:** New. INPC staff has been engaged in discussions with the project proponent and IDNR, providing input on best management practices, and coordinating a groundwater monitoring plan with the landowner and ISGS.

Black Partridge Park Woods LWR, Woodford County – Tom Lerczak

- **Issue:** Request from the Village of Metamora for a water line easement across the registered reserve along its southern boundary.
- **Threat:** Disturbance of LWR features.
- **Status:** New. An informational meeting occurred on Dec. 18 with the LWR landowners (Metamora PD), Village of Metamora, and representatives from the neighbors to the west of the reserve (Girl Scouts of Central Illinois), where the water line would terminate. Plans are being made for a May 2014 presentation to the INPC.

Attachment D

Item 161-8: Nomination to add *Andromeda glaucophylla* (Bog Rosemary) as an Illinois endangered species and ESPB staff review

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

Nomination Form for recommending addition of a species to the Illinois List of Endangered and Threatened Species

Form 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
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.

Andromeda glaucophylla Link

Date: January 9, 2014

A. **Proposer Information**

Name: Ken Klick and Matt Ueltzen

Address: 1899 West Winchester Road, Libertyville, Illinois

Phone number: (847) 968-3284

Email address: kklick@lcfpd.org

Title: Restoration Ecologist II

Institution/Organization affiliation: Lake County Forest Preserve District

B. **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: *Andromeda glaucophylla* Link

Common Name: Bog Rosemary

Nomenclature Citation: Gray's Manual of Botany 8th edition,
New York; American Book Company. M.L. Fernald 1950

C. **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 X

Recommend listing as threatened ____

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

Bog rosemary is a plant of far northern latitudes, reaching its southern-most limits in Illinois and Indiana, but extending north into the Arctic Circle. Throughout its northern range, bog rosemary is a denizen of bogs, fens, and tundra communities associating with tamarack and spruce, pitcher plants and sundews among others.

In northern Illinois as the last glacier melted around 11,000 year ago, numerous depressional wetlands developed into bog and calcareous floating mat communities. As the climate warmed and successional processes advanced, most bog and calcareous floating mat communities shifted into new habitats eliminating most of Andromeda's Illinois niche. Today, Illinois likely has less than 300 acres (Lake and McHenry Counties only) that contain suitable habitat for Andromeda. These habitat locations are well known and represent some of the most thoroughly botanized locales in the region; places like Volo, Pistakee, Gavin, and Bradenburg Bog State Natural Areas and Elizabeth Lake State Nature Preserves.

Botanical surveys of these sites started early in the 19th century, with botany and ecology luminaries as Professor Henry Chandler Cowles, Reverend E. J. Hill, and Dr. George Vasey. These great botanists provided the State's only herbarium exsiccate, housed at the University of Illinois (ILL) and Illinois State Museum (ISM) herbaria. Illinois' last documented occurrence of Andromeda is a vouchered herbarium specimen collected on August 27, 1908 by Reverend E. J. Hill in Lake County's Grant Township (T45N, R9E; section 13 & 24). This specimen is housed at the University of Illinois' herbarium. Its herbarium label states collected from "Cranberry marsh, open placed with Tamarack; Grant Township." Two additional *Andromeda* herbarium specimens collected from Lake County were made by Henry Cowles, collected on 6/24/1906 and July 10, 1906 and housed at ILL and Illinois State Museum, respectively. No location information is given. A McHenry County specimen collected by Dr. George Vasey is at ILL with no date or location information though likely collected around 1860.

More recently, since the Illinois Natural Area Inventory began in 1976, many of the region's preeminent botanists have made on-going plant inventories of these unique habitats and have not reported *Andromeda*. These botanist include: the late Floyd Swink and Ray Schulenberg of the Morton Arboretum, the late Julian Steyermark—Field Museum of Natural History, and contemporary botanists such as Laurie Ryan of McHenry County Conservation District, Wayne

Schennum of the Illinois Natural Area Inventory, Marlin Bowles, Morton Arboretum, Gerould Wilhelm—Conservation Design Forum, Ken Dritz—freelance botanist, Margo Milde—freelance botanist, John Taft -Illinois Natural History Survey, Mary Kay Solecki of Illinois Nature Preserve, Susanne Masi—Chicago Botanic Garden, and Laura Riecha—Cook County Forest Preserve. In 1990, Taft and Solecki calculated similarity indices for 6 Illinois bogs with species lists and Andromeda was not on any of the lists.

Based on the long history of botanical searches in Andromeda's suitable habitat, it is likely that the discovered population at Fourth Lake Fen Nature Preserve represents Illinois' largest and perhaps last population of this species. A specimen was collected from the Fourth Lake Fen population and is housed at the Morton Arboretum herbarium.

D. **Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.**

Bog Rosemary is a plant requiring very specific habitat containing unique soil and water chemistry attributes. Bogs with their low pH and calcareous floating mats with high pH support a specialized list of plant species able to tolerate the extremes of pH. This habitat supports a unique plant assemblage and is extremely rare in Illinois; less than 300 acres.

Andromeda is likely vulnerable to increased water temperature changes brought upon by greater frequency and duration of surface run off coupled with high siltation and chloride levels from adjacent urban development. Conversely, the drop in the groundwater table due to human-use extraction is altering this plant's vital groundwater connection. Furthermore, the presence of invasive species such as Phragmites, reed canary grass, and hybrid cattails pose a threat to the species. Climate change is especially menacing to this boreal relict.

E. **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.**

The *Andromeda* population, consisting of approximately 73 individual plants, found at Fourth Lake Fen Nature Preserve occurs within the one-acre area in the southwestern corner of the Nature Preserve. GPS coordinates for the population polygon's cardinal edge limits are: North border=42.398616; -88.033147, South border= 42.398143,-88.033267, east border= 42.398518, -88.32995, West border= 42.398398 - 88.034118. (NAD83 State Plan East FIPS 1201 Feet decimal degree). Attachment 1 contains an aerial exhibit depicting the population's location.

F. **Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.**

Fourth Lake Fen was first recognized as a high quality natural area during the initial Illinois Natural Area Inventory (site #62 INAI) as containing a high quality calcareous floating mat containing several state-listed and rare plant species. *Andromeda* was not found during this 1976 inventory, though the habitat area was labeled as Grade A calcareous floating mat. Lake County Forest Preserve began land acquisition of the site in 1983. The Preserve was dedicated as a state nature preserve in 2002. To date, the District has partially controlled purple loosestrife

through the release of the biocontrol beetles. No other management prescriptions have been initiated in the wetland. A single wildfire in 18 years has burnt a portion of the marsh, though it is uncertain if it affected the Andromeda habitat. Extensive invasive plant species such as reed canary grass, glossy buckthorn, hybrid cattails, and Phragmites pose serious threat to the site.

G. **Information regarding the status of the species over all or a significant portion of its range.** Bog rosemary is a plant of northern latitudes beyond Illinois, reaching its southern-most limits in Illinois and Indiana, but extending north into the Arctic Circle. Throughout its northern range, bog rosemary is a member of bog, fen, and tundra communities associating with tamarack and spruce, pitcher plants and sundews among others. In the Midwest, Andromeda is listed as extirpated in Ohio and considered state rare in Indiana. It is found Wisconsin, Minnesota and Michigan but not listed. Andromeda is not known from Iowa.

H. **Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.**

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:

1. Taft, J. B., and M. K. Solecki. 1990. Vascular flora of the wetland and prairie communities at Gavin Bog and Prairie Nature Preserve, Lake County, Illinois. Rhodora 92: 142-165.

Provide a list of attachments here:

1. *Andromeda glaucophylla*: Rediscovered in Illinois. In-house report by Lake County Forest Preserve District. June 2013.
2. Plants of Concern Monitoring Report for *Andromeda glaucophylla* submitted to Chicago Botanic Garden on July 17, 2013.
3. PowerPoint presentation images prepared by Lake County Forest Preserve District staff. Dec. 2014

General Offices 1899 West Winchester Road Libertyville Illinois 60048 Telephone 847-367-6640 Fax 847-367-6649

LAKE COUNTY FOREST PRESERVES
www.LCFPD.org

Rediscovered in Illinois

Andromeda glaucophylla Link

On June 12, 2013, Lake County Forest Preserve ecologists found a population of *Andromeda glaucophylla* growing in the +185-acre cattail-dominated marsh at Fourth Lake Fen Nature Preserve, located in Lake County, Illinois near the town of Lindenhurst. **This find is significant because Illinois' last documented occurrence of *Andromeda glaucophylla* is a vouchered herbarium specimen (ILL) collected by Reverend E. J. Hill in Grant Township (T45N, R9E) on August 27, 1908. No other observation or collections have been made of this species in Illinois since the early collections made in Lake and McHenry Counties between 1906 and 1908** (Appendix I) Botanical surveys in suitable habitats in northeastern Illinois during the last 25 years, especially Lake and McHenry Counties have failed to locate this species (per. com. Laurie Ryan, Gerould Wilhelm, Wayne Schennum, Marlin Bowles, Margo Milde, Ken Klick).

The *Andromeda* population found at Fourth Lake Fen Nature Preserve consists of approximately 73 plants occurring within the one-acre area in the southwestern corner of the Preserve. GPS coordinates for the population's polygon cardinal edge limits are: North border=42.398616; -88.033147, South border= 42.398143,-88.033267, east border= 42.398518, -88.32995, West border= 42.398398 -88.034118. (NAD83 State Plan East FIPS 1201 Feet decimal degree). Fourth Lake Fen was first recognized as a high quality natural area during the Illinois Natural Area Inventory (site #62 INAI) as containing a high quality calcareous floating mat containing several rare plant species (Appendix II). There was no mention of Andromeda's occurrence.

Approximately 50% of the 73 observed *Andromeda* plants were in flower. The most common associate was *Typha angustifolia.* This cattail's coverage is extremely extensive throughout its habitat and may be a limiting factor in *Andromeda's* distribution. Other associates of *Andromeda* are: *Salix pedicellaris hypoglauca, Salix candida, Betula pumila, Hypericum virginicum. Menyanthes trifoliata minor, Potentilla palustris, Carex stricta, Aster borealis, Galium labradoricum, Dryopteris thelypteris pubescens and Lysimachia thyrsiflora. Andromeda's* habitat was visually recognized by the presence of a shrubby component and the presence of *Typha angustifolia. Typha latifolia* and hybrid species did not occur with *Andromeda* but was found in monocultures elsewhere throughout the wetland.

Lake County Forest Preserve began land acquisition of the fen in 1983. The Preserve was dedicated as a state nature preserve in 2002. The Lake County Forest Preserve District (District) will develop management strategies to protect this species and the associated community, and discuss these with Illinois Nature Preserve Commission staff before implementation. To date, the District has controlled purple loosestrife at the site through the release of the biocontrol beetles. No other management prescriptions have been initiated in the wetland. A single wildfire in 18 years has burnt the marsh, though it is uncertain if it affected the Andromeda habitat.

It is recommended that Andromeda glaucophylla be listed as endangered in Illinois due to its single Illinois population occurrence and low numbers of individuals. Threats to the species at this site include water quality and hydro-period changes, invasive species dominance, and climate change.

A collected voucher specimen is housed at Morton Arboretum herbarium and a Plants of Concern monitoring form has been submitted to the Chicago Botanic Garden and the Lake County Forest Preserve Natural Resource Division database.

Submitted by:
Ken Klick, Restoration Ecologist II
on behalf of the Lake County Forest Preserve District

Contact information for Ken:
Ph: 847-968-3284
email: kklick@lcfpd.org

ANDROMEDA GLAUCOPHYLLA POPULATION

Lake County Forest Preserves

0 380 760 1,520 2,280 3,040
Feet

Date Created: 6/26/2013
Aerial Date: 2010
Created By: Ken Klick

N

Andromeda glaucophylla in fruit. Photo taken June 12, 2013

Andromeda glaucophylla in fruit. Photo taken June 12, 2013

Lake County Forest Preserve staff. Photo depicting extensive cattail growth and dwarf birch

PLANTS OF CONCERN MONITORING REPORT

SECTION 1: GENERAL SPECIES AND SITE IDENTIFICATION

ANDROMEDA GLAUCOPHYLLA

FOURTH LAKE FEN - SUBPOP 1

MONITORING DATE: 06/12/2013
PLANTS IN SUBPOPULATION FOUND? Yes

EOR NUMBER: POC-ANPOG*102
COUNTY: Lake County
STATE: IL
LAND OWNER: FPD Lake County
LAND MANAGER: FPD Lake County

SECTION 2: GPS

COORDINATE SYSTEM: Decimal Degrees ** (dd.ddddd)
DATUM: NAD-83

	Latitude	Longitude	Acc (m)
east	42.398518	-88.32995	1
north	42.398616	-88.033147	1
south	42.398143	-88.033267	1
west	42.398398	-88.034118	1

CONVERTED COORDINATES (DECIMAL DEGREES, WGS-84)

	Latitude	Longitude	Acc (m)
north	42.398616	-88.033147	1
south	42.398143	-88.033267	1
east	42.398518	-88.32995	1
west	42.398398	-88.034118	1
center	42.39841875	-88.1076205	1

SECTION 3: POPULATION INFORMATION

Distance covered by population (m): E-W: 183 **N-S:** 116
Today's soil condition: Saturated
Plant Count Range: <=100 **Total number:** 73
Count estimated: No
Growth form: Stems
Reproductive state: Flower **% Reproductive:** 50
Juveniles present: Yes

SECTION 4: NATIVE ASSOCIATE SPECIES INFORMATION

ASSOCIATE TREES

ASSOCIATE SHRUBS/VINES

Salix pedicellaris hypoglauca; salix candids; Betula pumila; Typha angustifolia;

ASSOCIATE HERBACEOUS PLANTS

Hypericum virginicum fraseri; Menyanthes trifoliata minor; Potentilla palustris; Carex stricta; Aster borealis; Galium labradoricum; Lysimachia thyrsiflora; Dryopteris thelypteris pubescens;

SECTION 5: THREATS TO THE POPULATION

THREATS

Invasive woody brush encroachment <1m tall: None
Invasive brush/tree encroachment >1m tall: None
Deer browse (% of study plants browsed): None
Deer browse (% of all plants browsed): None
Erosion (% of area with visible signs): None
Authorized trails impacting the population: None
Unauthorized trails impacting the population: None

THREATS NOTES:

OTHER THREATS

INVASIVE SPECIES

Typha angustifolia - 81-100%

SECTION 6: MANAGEMENT WITHIN THE SUBPOPLUATION IN THE PAST YEAR

	DONE?	% POP AFFECTED	EVIDENCE	
BURNING	No	None		
BRUSH OR INVASIVE TREE REMOVAL	No	None		**Spp. rem:**
HERBACEOUS INVASIVE REMOVAL	No	None		**Spp. rem:**
MOWING	No	None		

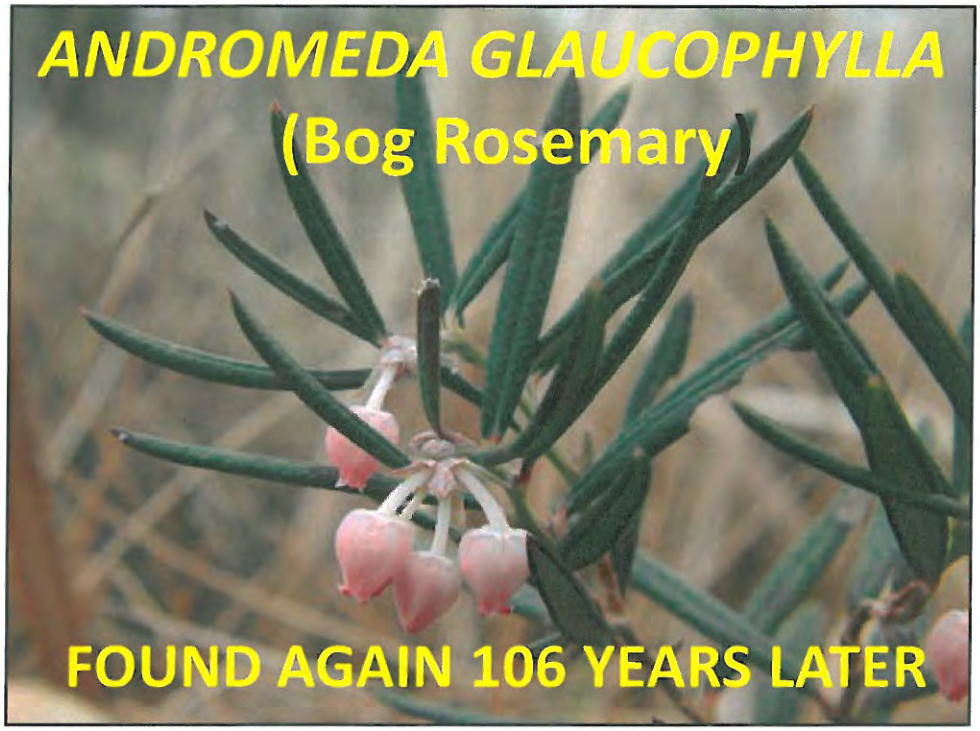
OTHER MANAGEMENT WITHIN OR AFFECTING THE POPULATION:
No management has occurred at the site other than the release of bio-control of purple loosetrife, which is working effectively. No burning has occurred in the wetland other than a wildfire approximately 15 years ago; uncertain if it burnt the Andromeda population.

SECTION 7: DIRECTIONS TO POPULATION & NOTES

DIRECTIONS:
Approach population from south end of Preserve along residential street bordering marsh.
NOTES:

SECTION 8: MONITORS

MONITOR	HOURS
Ken Klick **(Primary)**	5
Debbie Maurer	1
Matt Ueltzen	5


ANDROMEDA GLAUCOPHYLLA
(Bog Rosemary)
FOUND AGAIN 106 YEARS LATER


BOG ROSEMARY
found JUNE 12, 2013
consisting of 74 PLANTS OCCUPYING ~½ ACRE
at FOURTH LAKE FEN NATURE PRESERVE /Lake County
growing in a CALCAROUS FLOATING MAT community

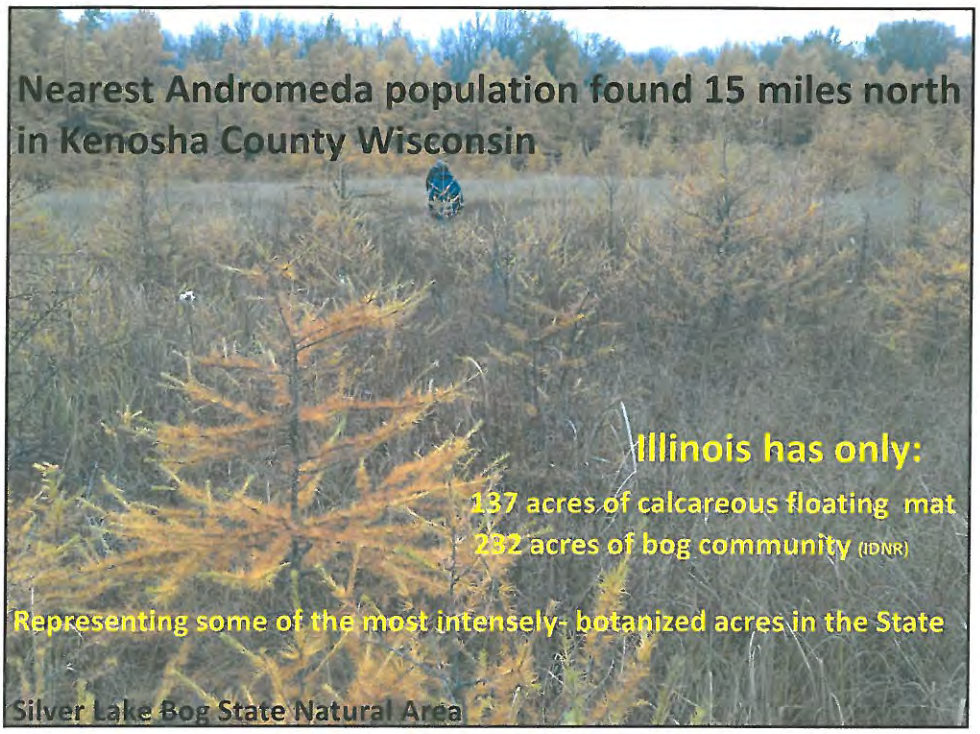
Fourth Lake Fen Nature Preserve

LCFPD purchased site in 1984, now totals 621 acres

Dedicated 240 acres as Illinois Nature Preserve in 2002

In 1976 INAI identified 85 acres of Grade A/B quality calcareous floating mat; no mention of Andromeda

Bog Rosemary
A Northern Species



ILLINOIS' FIRST VOUCHERD SPECIMEN

1822-1893
Dr. George Vasey
Lake and McHenry Counties
No Date (~1858-1863)
University of Illinois herbarium

1869-1939
Henry Chandler Cowles

Lake County "Bog"
June 24, 1906 and July 10, 1906
University of Illinois and Illinois State Museum herbaria

ILLINOIS' LAST VOUCHERED SPECIMEN

Reverend E.J. Hill
1833- 1917

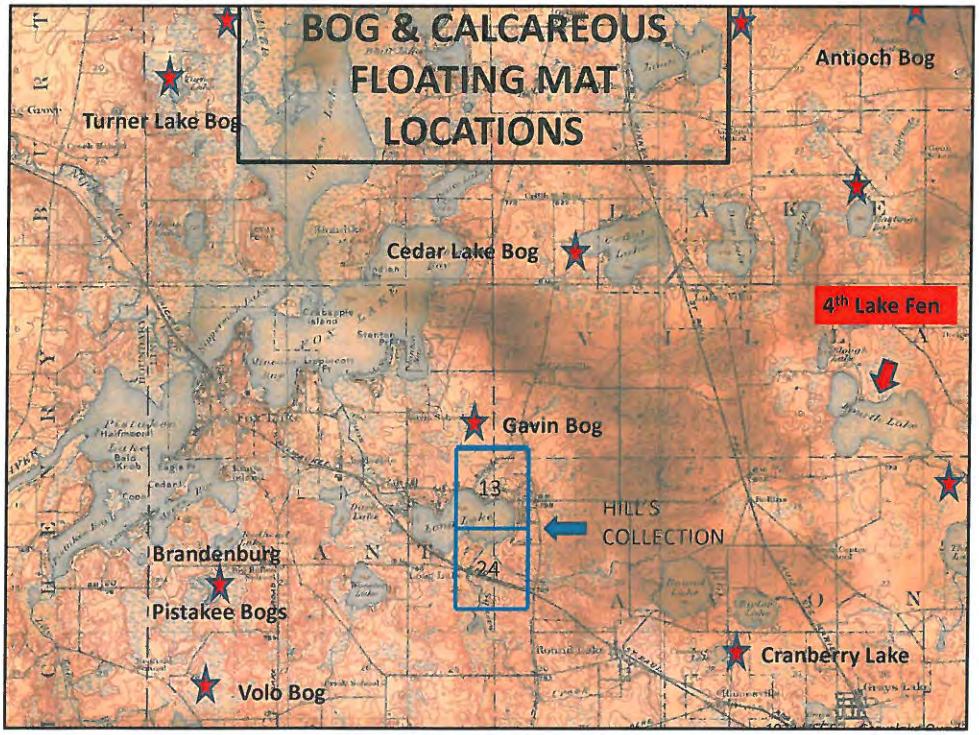
- T45N,R9E Section 13,24

Tamarack Swamp

August 22,1908; ILL

- Grant Township T45N,R9E;

Cranberry marsh, open placed with Tamarack
August 27, 1908;ILL



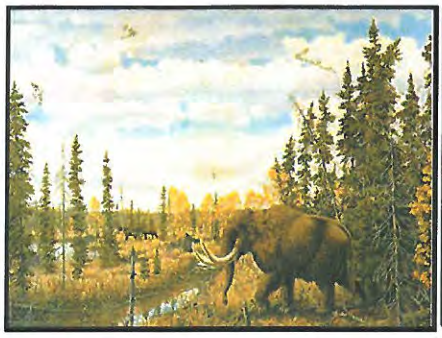
ILLINOIS' ANDROMEDA TIMELINE and CITATIONS:

~1860	Collection made by Dr. George Vasey in Lake and McHenry Counties
1906	Collections made by Dr. Henry Cowles in Lake County
1908	Collections made by Revered E. J. Hill in Lake County
1955	Vascular Plants of Illinois by Jones and Fuller citation
1963	Flora of Illinois by George Neville Jones citation
1983	Guide to the Vascular Flora of Illinois by Dr. Mohlenbrock citation
1994	Plants of the Chicago Region by Swink and Wilhelm citation
2013	Collection made by Klick and Ueltzen deposited at MOR

NOT CITED

1981 Endangered and Threatened Species of Illinois:

10,000 YEARS BEFORE PRESENT



6 MONTHS AGO

Thank You For Your Consideration

Ken Klick and Matt Ueltzen of Lake County Forest Preserve District

Lake County Forest Preserves
www.LCFPD.org

Mankowski comments and recommendation on the nomination to add *Andromeda glaucophylla* (Bog Rosemary*)* as an Illinois endangered species. (02/03/2014)

General comments
It appears the species was likely never common in Illinois and may have never been more than a minor or occasional representative where it did/does occur; the bogs of northeastern Illinois represent the edge of range for the species (Mohlenbrock 2002; NatureServe 2014).

Despite the apparent rarity, the species has never been listed as endangered or threatened in Illinois. Although specific reasons for not listing the species are not known at this time, the "Literature Cited" list from the first Illinois List of Endangered and Threatened Plants includes many statewide and local floras and survey reports, suggesting the species was considered. A list of references from the first IL List of Endangered and Threatened Plants included, but was not limited to: *Cowles. 1901. The physiographic ecology of Chicago and vicinity: a study of the origin, development, and classification of plant societies. Bot.Gaz. 31(2):73-108, (3):145-182.; Dolbeare, B., and J. Ebinger. 1974. Distribution of the common vascular hydrophytes in Illinois. Trans. Illinois Acad. Sci. 67:402-417.; Evers and Evers et. al. – multiple citations; Jones and Jones et. al. – multiple citations; Mohlenbrock and Mohlenbrock et. al. – multiple citations; Pepoon – multiple citations; Steyermark and Steyermark et. al. – multiple citations; Swink, F., and G. Wilhelm. 1979. Plants of the Chicago Region. Rev. ed. The Morton Arboretum.; and, Vasey, G. 1870. New plants, Am. Entomol. Andn Bot. 2:228* (Bowles et. al. 1981)

Scientific Name
Mohlenbrock (2002) lists Andromeda glaucophylla as the only representative of the species in Illinois and identifies a synonym of Andromeda polifolio L. var. glaucophylla (Link). The synonym (Andromeda polifolio var. glaucophylla) is the nomenclature recognized by NatureServe (2013). Flora of North America (2013) currently lists the species as currently under review and an account is not available.

Nomination form modification
The nominator altered the ESPB nomination form, so Sections are off by one letter heading in the submitted nomination.

Incomplete information/form
Several areas of the nomination are incomplete or lack sufficient evidence.

1) The nomination does not identify which ESPB listing criteria are affecting the species and for which the proposal provides supporting evidence (ESPB nomination form Section D, current nomination Section C).

   1. Species or subspecies designated as federally endangered or threatened.
   2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
   3. 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:
      a. are experiencing reproductive impairment;
      b. have experienced a range reduction;
      c. occur in reduced numbers even though range or number of populations remains steady.

4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:

a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
b. species which exhibit restricted habitats or low populations in Illinois;
c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

2) Under the item for identifying ESPB listing criteria, the nomination reviews some historic records and notes herbarium specimen locations. There is one reference to a publication that is listed in the references section (Taft and Solecki 1990), but no copy of the document was provided. No other citations are included in the text for any descriptions of biological information on the species, including threats (current nomination Section D), past and present numbers and distribution (current nomination Section E), or information regarding the status of the species over all or a significant portion of its range (current nomination Section G). Without citations and copies of references, ESPB staff is not able to verify information presented.

3) The review of present numbers and distribution includes presence survey information from only the subject site, Fourth Lake Fen Bog. There is no indication of how many surveys at the subject site over what number of years failed to find the species there, nor whether surveys have recently been conducted at any other site to determine if it currently occurs elsewhere.

   The species is capable of self-pollination and may reproduce from seeds. It primarily reproduces vegetatively by rhizomes. While considered a calcareous wetland obligate, from 75-98% of the plant's biomass is below ground and it is able to grow in dry soils and can persist in drained bogs long after the sphagnum mosses have disappeared (several citations *in* Taylor 2007). This seems to indicate that the species could escape detection for a number of years at any location and while the current proposal presents very good presence survey data for the subject site, it seems to lack sufficient evidence to support the statement that the species is likely found nowhere else in Illinois and for the Board to accurately evaluate its Illinois status and distribution.

Protection gained from listing the species as Illinois endangered or threatened

There are 11 Illinois Natural Areas Inventory (INAI) sites identified for at least high-quality calcareous floating mat communities and 7 INAI sites identified for at least high-quality calcareous seep; many of the sites have additional INAI qualifying features. Seven of the 11 INAI calcareous floating mat sites and 6 of the 7 INAI calcareous seep sites are protected as Illinois Nature Preserves (Illinois Natural Heritage (Biotics 4) Database 2014).

The nomination states that the species is known from the subject site and may not occur elsewhere in Illinois, although as noted above, the nomination does not review recent survey efforts at other sites. The subject site is an Illinois Nature Preserve. Dedication as an Illinois Nature Preserve provides the highest level of protection to <u>all</u> features of the site; as a feature of a Nature Preserve, individuals of any species receive greater protection under the Illinois Nature Preserves Act than they would as endangered or threatened species under the Illinois Endangered Species Protection Act.

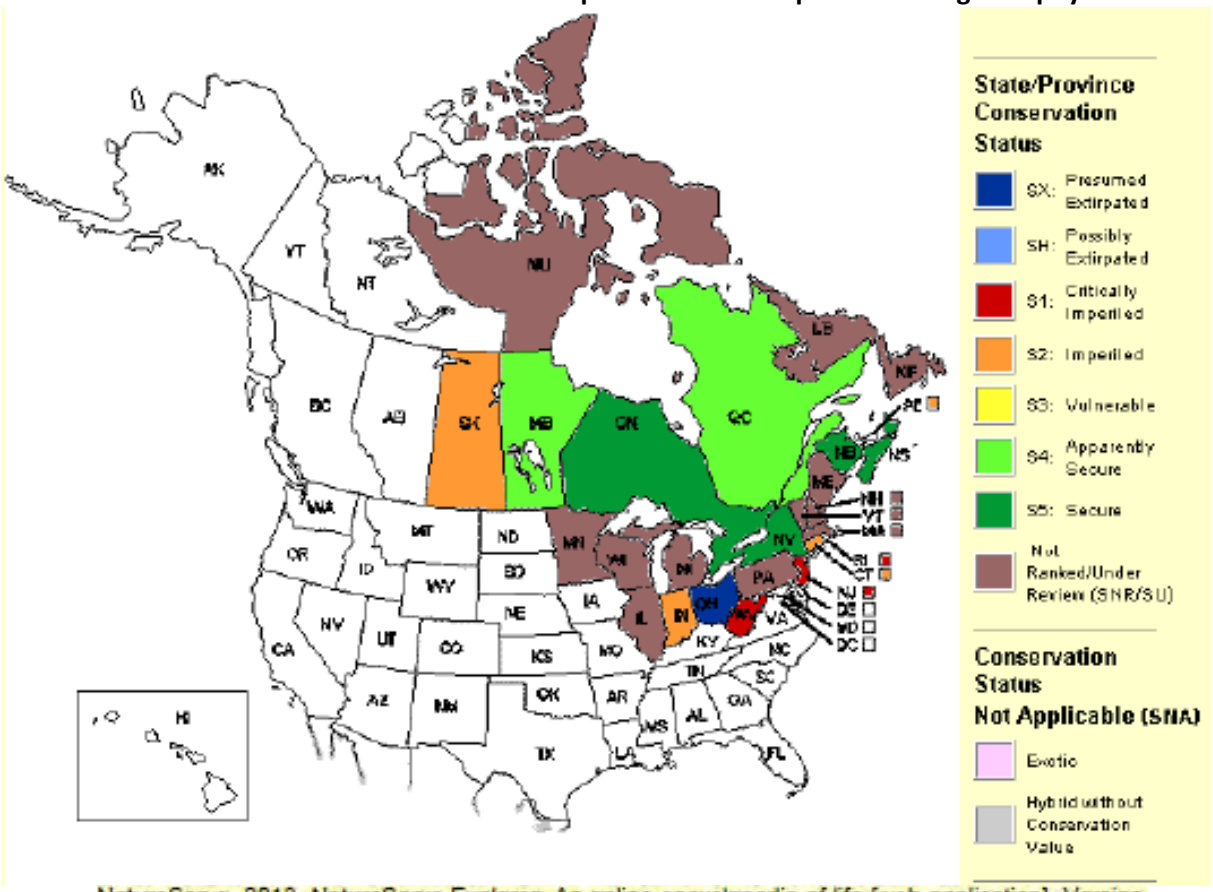
Given the information presented and if this is the only location in Illinois, as a proposed initial listing, Board staff questions what additional protection would be afforded the species by listing? While the species may qualify for listing according to ESPB criteria, listing it would not functionally protect it

beyond the current protections it receives as a plant (listed or non- listed) occurring in an IL Nature Preserve.

Staff recommendation

As has been discussed over the course of the current List review, staff struggles with how best to address edge of range species. Board staff recommendation is that the evidence provided may warrant listing the species as Illinois endangered or threatened – however, while the species is seemingly rare and its habitat is rare, the proposal lacks sufficient information for the Board to accurately evaluate current Illinois status and distribution.

NatureServe Conservation Status Map for Andromeda polifolio var. glaucophylla



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 3, 2014).

References:

Bowles, M.L., V.E. Diersing, J.E. Ebinger, and H.C. Schultz, editors. 1981. Endangered and Threatened Vertebrate Animals and Vascular Plants of Illinois. Natural Land Institute, Illinois Natural History Survey, Illinois Department of Conservation, Illinois State Museum, Illinois Endangered Species Protection Board, Illinois Nature Preserves Commission, U.S. Fish and Wildlife Service. Illinois Department of Conservation. Springfield, Illinois. vii + 189 pp and Appendices.

Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. (Accessed online 02/03/2014).

Illinois Natural Heritage Biotics 4 Database. 2014. Illinois Natural Heritage Biotics 4 Database, Illinois Department of Natural Resources, Springfield, Illinois. (Accessed February, 2014).
Mohlenbrock, R.H. 2002. Vascular Flora of Illinois. Southern Illinois University Press, Carbondale. 490 pp.

NatureServe. 2013. NatureServe Explorer. An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, VA. Available at http://www.natureserve.org/explorer. (Accessed: February 3, 2014.

Taylor, Jane E. 2007. Andromeda polifolia. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2014, February 3].

Attachment E

Item 161-9: Nomination to add Crystal Darter *(Crystallaria asprella)* as an Illinois endangered species and ESPB staff review

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

Nomination Form for recommending addition of a species to the Illinois List of Endangered and Threatened Species

Form 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
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: 8 January 2014

B. **Proposer Information**

Name: Christopher A. Taylor

Address: 1816 S. Oak, Champaign, IL 61820

Phone number: 217-244-2153

Email address: ctaylor@inhs.illinois.edu

Title: Curator of Fishes, Senior Research Scientist

Institution/Organization affiliation: Illinois Natural History Survey, University of Illinois Urbana-Champaign

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: *Crystallaria asprella*

Common Name: Crystal Darter

Nomenclature Citation: Jordan, D. S. 1878. A catalogue of the fishes of Illinois. Illinois State Laboratory of Natural History Bulletin 1(2): 37-70.

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 __X__

Recommend listing as threatened ____

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

3. 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;
4. 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;

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**.

The Crystal Darter is known to occur in runs and riffles of large creeks and rivers with substrates of clean sand or gravel. Water depths at which the species has been encountered is not available. Reproductive activities of the species have not been recorded in Illinois waters. In Alabama, spawning occurs from late February to mid-April in water temperatures of 12 to 15^0 C (Boschung and Mayden 2004). A gravid female Crystal Darter was collected in Wisconsin in June. Spawning in Alabama occurs when females move into shallower (60 – 90 cm) side channels of rivers. Males spawn with females while they are partially buried in the sand. The fertilized eggs are adhesive and become attached to sand and gravel. Boschung and Mayden (2004) report that Crystal Darters occupy deeper water during the day and move into shallower water at night to feed on drifting aquatic insects.

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.**

Currently listed as Extirpated by the IL ESPB, fieldwork conducted over the past 15 years has indicated that the Crystal Darter is extant, but still rare in the Mississippi River bordering Illinois. On 6 June 1998, one Crystal Darter was collected from a side channel of the River between river miles 77.7 and 79.5, Union Co. (lat. longs unavailable) (Stewart et al. 2005). On 9 June 2004 another individual was collected from the River at Picayne Chute, Alexander Co. (37.3219, -89.4505) (Stewart et al 2005). More northern records for the species include the July 2013 collection of one individual from river mile 165, Monroe Co. (38.4325 -90.2930) and the 8 October 2009 collection of one individual from river mile 506, Rock Island Co. (41.7264 -90.3124). These specimens have had their identifications confirmed by taxonomic experts and are vouchered into museum collections (SIUC and INHS).

Additionally, the Missouri Department of Conservation has reported that two Crystal Darters have been collected from Mississippi River between Missouri and Illinois in recent years (D. Herzog, MDOC per. com.). They report one specimen collected from river mile 48, across from Alexander Co., (lat. longs. not available) on 10 June 2010 and one from river mile 78, across from Union Co., (lat. longs. not available) on 3 April 2009.

Small-bodied benthic fishes that occur in wide, deep rivers are more difficult to capture with traditional gear types than larger fishes. They are more tolerant of electrical gradient fields and/or stay submerged when electroshocked. Their small body size makes them immune to capture with mesh sizes most commonly used in most hoop or gill nets. The fact that six specimens have been captured in water along Illinois' border in the past 15 years using traditional gear types is strong evidence that these records of Crystal Darters are not waif individuals migrating from out of state upstream or downstream populations. The likelihood of capturing those few waif individuals is extremely low given the species' low detectability. Rather, these records suggest that the species permanently occurs in the Mississippi River along the Illinois border in small population. As such, l believe that listing the species as Endangered is warranted and future targeted field work is needed to determine the species' true population size in Illinois.

G. **Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat**.

None known

H. **Information regarding the status of the species over all or a significant portion of its range**.
The Crystal Darter is considered a species of Special Concern across its North American range (Williams et al. 1989). It is historically known to occur in isolated regions from the upper Mississippi River drainage to the Gulf Coast and east to the Kanawha River drainage of West Virginia. It is believed to be extirpated from Ohio, Kentucky, and Tennessee and is no longer abundant in Missouri (Boschung and Mayden 2004). It is still known to occur with some regularity in southern Alabama, northern Wisconsin and in West Virginia. The species is listed as State Endangered in Wisconsin. Increased siltation levels in the middle Mississippi River drainage has been implicated for its population declines in large rivers of that region.

I. **Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps**.

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:

Stewart, J. G., V. A. Barko, D. B. Henry, D. P. Herzog, J. W. Ridings, A. F. Kelley, and J. E. Wallace. 2005. New records of the Crystal Darter (*Crystallaria asprella*) in the Middle Mississippi River. American Midland Naturalist 154: 471-473.

Boschung, H. T. and R. L. Mayden. 2004. Fishes of Alabama. Smithsonian Books, Washington, D.C.

Williams, J. E., J. E. Johnson, D. A. Hendrickson, S. Contreras-Balderas, J. D. Williams, M. Navarro_Mendoza, D. E. McAllister, and J. E. Deacon. 1989. Fishes of North America endangered, threatened, or of special concern: 1989. Fisheries 14: 2-20.

Provide a list of attachments here:
1) Stewart et al. (2005)

Mankowski comments and recommendation on the nomination to add Crystal Darter (*Crystallaria asprella)* as an Illinois endangered species. (02/02/2014)

General comments

Crystal Darter has never been listed on the Illinois List of Endangered and Threatened Species; it was deemed extirpated by Smith in 1979 (*in* Page et al, 1991).

The USFWS evaluated the species in a 2009 range-wide status assessment and in a 2011 finding for a petition for listing. Neither evaluation found substantial scientific or commercial information indicating that federal listing may be warranted at the time.

ESPB listing criteria for the species and the proposal's evidence for each:

3. 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;

The current proposal does not seem to present sufficient evidence to demonstrate the species has experienced a range reduction in Illinois. Board staff reviewed status and distribution information from NatureServe (2013) and an USFWS 2011 partial 90-day finding on a petition for listing; both NatureServe and the USFWS note declines in range-wide status and distribution, but neither addresses specifically Illinois status and distribution. The species is generally considered rare (USFWS 2011; NatureServe 2013) and may have only ever been quite rare in Illinois, but historic sampling methods are described as relatively ineffective and may at least partly explain its identification as rare and previously extirpated in Illinois and other parts of its range. The records reported by Stewart (2005) for the Middle Mississippi River, are new occurrences for that river reach and while not representing a range expansion because it is central to the species' range, the reports do represent an expansion of known distribution.

There is limited Illinois occurrence information presented or readily available for assessment. In March 2013, Board staff queried the Illinois Natural History Survey database and found only two historic records (one 1877 Mississippi River record in Hancock County and one 1901 MR record in Whiteside County) and one recent record, a 2009 occurrence for the MR in Rock Island County – the current proposal provides five additional reports since 1998. All of these Illinois historic and recent records are restricted to border waters.

4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:

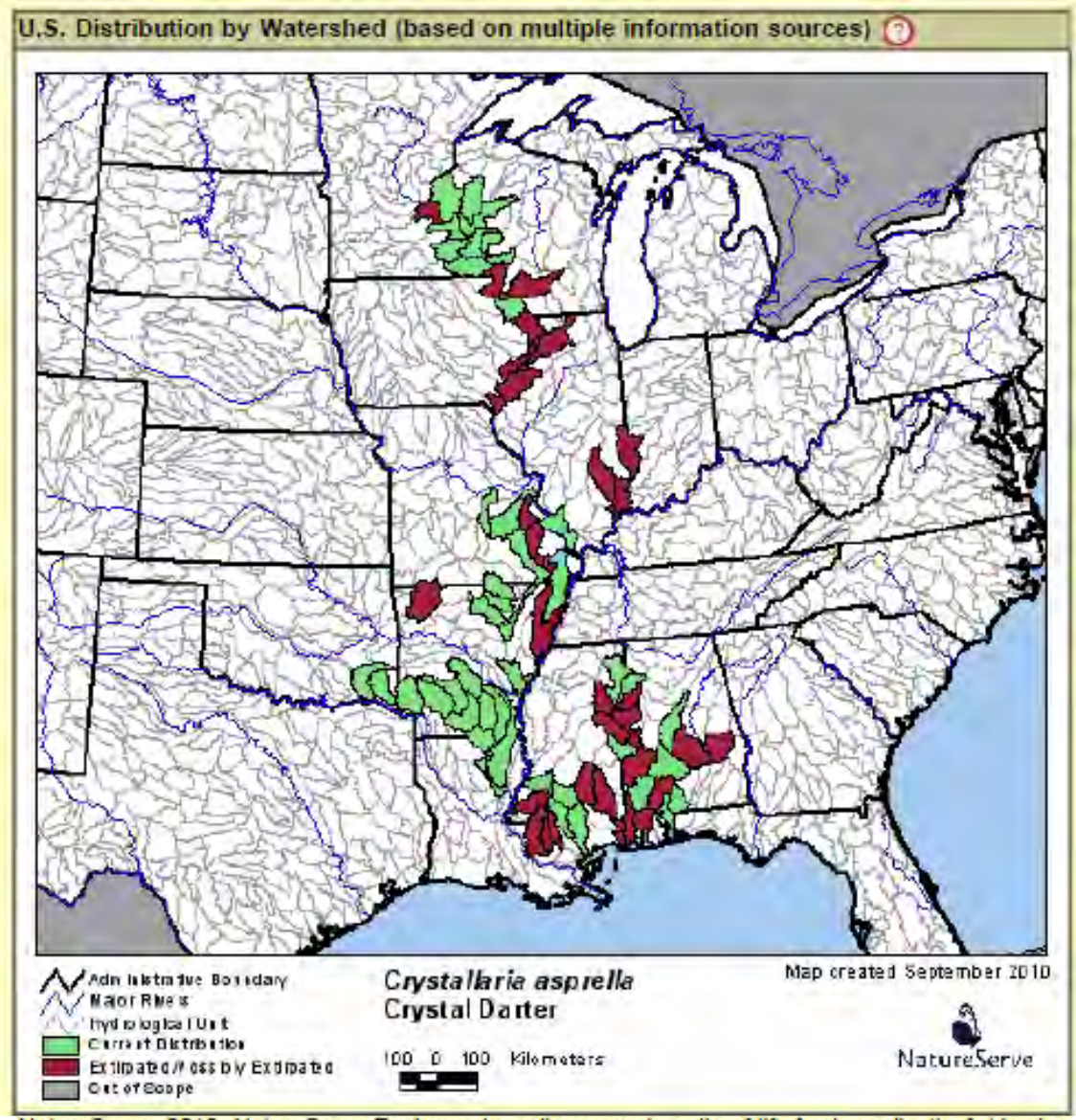
b. species which exhibit restricted habitats or low populations in Illinois;

Historic and recent observation information submitted suggests the species would qualify under this criterion and as noted above, there is little evidence that the species was ever more than quite rare in Illinois. It is appreciated that the nomination presents occurrence information from multiple locations and spanning 15 years, with 5 reports from 2004-2013 and explains the potential significance of observations relative to the low detectability of the species – even evaluating and discounting their potential as waifs. However, recent observations that may at least partially be due to improvements in sampling methodology (e.g., Missouri Trawl, Herzog et al. 2005 *in* USFWS 2011) may also demonstrate the species may be more common than previously thought (USFWS 2011).

With regard to restricted habitats, descriptions in the USFWS partial 90-day finding note habitat specificity (*large creeks and rivers with extensive clean sand and gravel raceways; individuals generally inhabiting waters deeper than 60 cm (23.6 in) and with strong currents; the species is rarely collected when current velocities are lower than 32 cm/second*) (USFWS 2011). The current recommendation does not review threats.

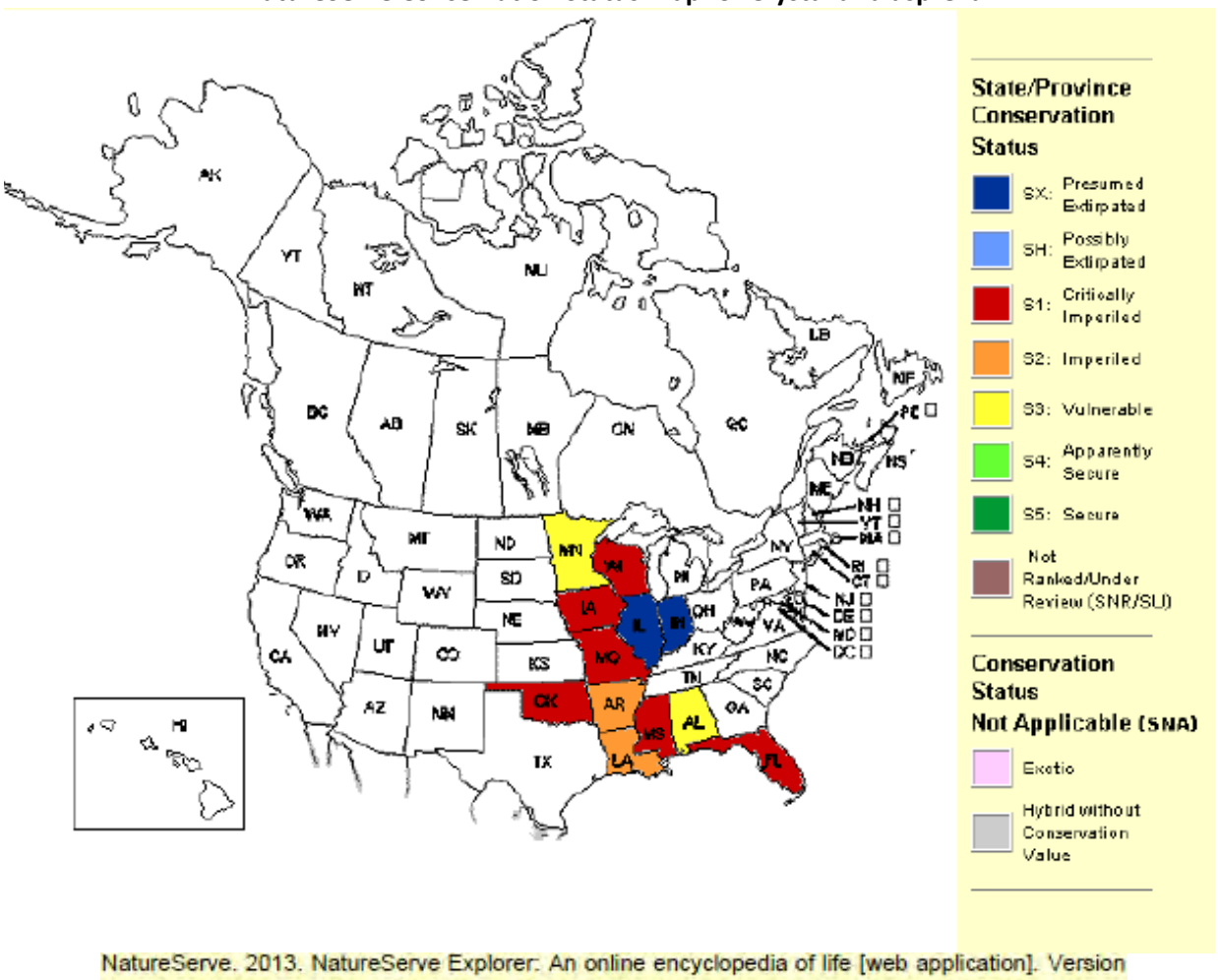
Staff recommendation

As has been discussed over the course of the current List review, staff struggles with how best to address edge of range and border-waters species. Board staff recommendation is that the evidence provided may warrant listing the species as Illinois endangered or threatened due to restricted habitats and low population numbers. Taking into consideration recent improvements in sampling methodology, updated surveys would improve a species' status and distribution assessment.



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: December 20, 2013).

NatureServe Conservation Status Map for Crystallaria asprella



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: December 20, 2013).

References:

50 CFR Part 17, Volume 76, Number 194, Part 4 - October 6, 2011. Endangered and Threatened Wildlife and Plants; Partial 90-Day Finding on a Petition To List 404 Species in the Southeastern United States as Threatened or Endangered With Critical Habitat

NatureServe. 2013. NatureServe Explorer. An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, VA. Available at http://www.natureserve.org/explorer. (Accessed: December 20, 2013.

Page, L.M., and M.R. Jeffords, eds. 1991. Our living heritage: the biological resources of Illinois. Illinois Natural History Survey Bulletin 34(4): 357-477.

Stewart, J. G., V. A. Barko, D. B. Henry, D. P. Herzog, J. W. Ridings, A. F. Kelley, and J. E. Wallace. 2005. New records of the Crystal Darter (*Crystallaria asprella*) in the Middle Mississippi River. American Midland Naturalist 154: 471-473.

Attachment F

Item 161-10: Recommendation to delist Golden Mouse (*Ochrotomys nuttalli*) from Illinois threatened and ESPB staff review

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Director

TO: Anne Mankowski

FROM: Joe Kath

DATE: 16 January 2014

SUBJECT: IDNR's Official Proposal for Status Change in 2014 for the Golden Mouse & if deemed necessary by the Board, IDNR's formal request to be added as an agenda item at the next appropriate Board meeting.

Hello: Please consider this entire document and all e-mail attachments as IDNR's official proposal for status change in 2014 for the: Golden Mouse. If this information needs to be added as an Agenda Item in order to be considered by the Board for de-listing of the Golden Mouse, then please consider this document and all attachments as my/IDNR's request to be added as an agenda item. Thank you.

SUMMARY STATEMENT: I believe that all pertinent information pointing to the need for formal delisting of the golden mouse has been provided to the Board numerous times over the past year in the form of technical reports and published papers (attached/included in this document & e-mail attachments). From an IDNR Program perspective, a decision to delist this animal based upon solid data is clear. I assume that this entire document and all e-mail attachments will be provided to all Board members so that a sound decision can be made. Please let me know if you have any questions and thank you kindly for your time.

Please pay special attention to the "underlined" sections throughout this document.

DELISTING ANALYSIS:
These status review criteria (Status Review Triggers) represent measures of distribution and abundance to prompt the Endangered Species Protection Board to

Comment [a1]: Mankowski comment to ESPB – as compared to information available to the Board when it reviewed this species at the 155 meeting on 08/10/12, this current proposal presents some new comments addressing whether the species' still meets ESPB "Criteria for listing". It does not, however, present any new survey data or evidence relative to ESPB-approved status review triggers nor does it reconcile differences between survey results cited in the main reference here (W-135-R-9-12) and the Database. The discrepancy in survey results is explained in Board staff updated species review that will be presented at the 161 meeting as part of the outstanding issues discussion.

What Nielsen et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and it is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species. Additionally, the wording of Board-approved status review triggers is different that the criteria evaluated by Nielsen et al (2011) – although it appears the intended outcome of comparisons to core-of-range occupancy and catch per unit effort was satisfied. While it appears that criteria for the ESPB to consider delisting are at least partially satisfied, these discrepancies between Database data and survey results reported in Nielsen et al (2011) as well as differences in wording between ESPB-approved status review triggers and what was evaluated in Nielsen et al (2011) makes evaluation with respect to overall status and distribution and the Board's intent difficult

Board staff recommendation at this time is that the information provided here is helpful, but may not fully statisfy a determination that the species' status and distribution exceeds the definition of "threatened".

review the status of golden mice and consider de-listing. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

*1) Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different (P<0.05) from sites sampled in the core of the distribution that contain golden mouse.
*2) Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different (P<0.05) from that within the core of the range of golden mice.

Status Review Triggers for the Golden Mouse (for de-listing) are also in the attached PowerPoint presentation *and have all been met.* All questions that remained for the Golden Mouse were answered in Federal Aid in Wildlife Restoration Grant W-135-R-9-12 (attached), and ultimately published in the *Journal of Mammalogy - attached*. A copy of this study was provided to the Database.

The Journal of Mammalogy paper makes the following conclusion:

(Gaston and Kunin 1997). Nonetheless, although our data do not support the abundant-center hypothesis, from a management standpoint, they support delisting the golden mouse as a state-threatened species in Illinois. As noted, an abundant-

Comment [a2]: Mankowski comment to ESPB – as presented, it is not clear what this excerpt is or how it is relevant.

#1. With regards to *genetic questions* that potentially needed to be answered for the species, the Department provides the following:

Dr. Feldhamer's summary of triggers v. findings for the golden mouse are presented below. He mentions a genetic study at the end, however this study was not part of the research we/IDNR contracted at SIU (because neither the IDNR nor the Board had expressed concerns about possible genetic differences between populations in IL and other parts of the range). According to the IDNR, genetic analyses were a "voluntary", unfunded objective made possible by collection of specimens during the overall Federal Aid Project (W-135-R-9-12). Clearly the species' range is continuous and the "Ohio River barrier hypothesis" also seems frail, as several major rivers occur in the species' range and this is the first time

Comment [a3]: Mankowski comment to ESPB – explanation here noted. The information available to the Board when it evaluated the species at the 155 meeting on 08/10/12, was from the cited W-135-R-9-12 and indicated that … "Based on the delisting criteria for the state of Illinois, as well as criteria #7 and #8, it appears that golden mice can be delisted with no harm to the species in the state. The only caveat to this conclusion is if genetic studies currently underway at SIUC indicate unique alleles occur in the Illinois population compared to the core of the geographic range."

anyone has suggested they might act as barriers to dispersal that cause genetic isolation. Dr. Feldhamer retired shortly after he finished the golden mouse project, and the IDNR has not heard from him (or anyone else) about analysis of genetic material at SIU.

#2. *FROM: Nielsen, C., E. Hellgren, E. Schauber, G. Feldhamer, J. Devine, C. Gillen, D. Lesmeister, D. Stetson. 2011. *Cooperative fur-bearing and nongame mammal investigations, Final Report, Federal Aid Project W-135-R-9-12. Submitted by – Cooperative Wildlife Research Laboratory and Department of Zoology, Southern Illinois University Carbondale. Presented to – Division of Wildlife Resources, Illinois Department of Natural Resources, Springfield, Illinois. 138 pp.*

Comment [a4]: Mankowski comment to ESPB - information from this publication and as presented here was alreadyi ncluded in the Board staff's species review and considered by the Board when it made preliminary decision to not change the status of the species at the 155th meeting held 08/10/12.

Six (6) delisting criteria discussed in W-135-R-9-12 for the State suggest the golden mouse could be delisted in Illinois. These are:

1. Species included in the Federal list of Endangered or Threatened Species: Golden mice are not federally listed as endangered or threatened. Likewise, the current IUCN Red Data List of Threatened Species (2011) lists the population trend of golden mice as "stable" and the status as "least concern."

2. Species proposed for Federal Endangered or Threatened status that occur in Illinois: Golden mice are not being proposed for federal threatened or endangered status. As noted, they are generally considered secure throughout most of their range. The only exceptions are states on the periphery of the range. In Oklahoma, only "a few" specimens have been reported (Caire et al. 1989). Likewise, in West Virginia they are quite rare. NatureServe (2011) considers them "critically endangered" in Oklahoma and "imperiled" in West Virginia. Given how little work has been done and how little is known of golden mice in either state, a more appropriate listing by NatureServe would be "status uncertain."

3. 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: There is no historical evidence that golden mice were ever widespread in Illinois. Given forest management practices the past 50 years on Shawnee National Forest—specifically small patch cutting and prescribed burning, both of which lead to creation of dense understory—density and distribution of the species may be greater than ever, although recent management trends toward reduced cutting and burning of forested sites may negatively impact golden mice and eventually reverse the trend.

4. Species which exhibit very restricted geographic ranges of which Illinois is a part: The geographic range of most species of North American mammals is fairly limited. The median geographic range of close to 700 mammalian species is only about 1% of the total area of North America; only about 14 species have ranges >50% of the area of North America. Thus, 1 in 6 species of North American mammals has a range smaller than the state of Connecticut. Most have ranges smaller than the states of California, Oregon, and Washington combined (Pagel et al. 1991, Pimm and Jenkins 2005). Also, as a general rule small species such as rodents have smaller ranges than large species. The golden mouse is a prime example of a small species with a relatively extensive geographic range. The extent of the geographic range of golden mice is well above the average for most North American mammals, especially for a small rodent.

5. Species which exhibit restricted habitats or low populations in Illinois: As noted above, golden mice are often found in deciduous hardwood and coniferous forests, but they also occupy a variety of habitats including the borders of old fields, swampy lowlands, canebrakes, and xeric uplands. Recent work suggests that golden mice adapt well to additional habitat types that they are not generally associated with, including areas with reduced understory (A. Cross, SIUC graduate student, unpublished data).

6. Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range: This is not the case for golden mice. Their range in Illinois is contiguous with the core distribution, although the Ohio River could function as a barrier to gene flow.

The following two (2) criteria were also discussed in W-135-R-9-12 . These are:

7. The percentage of sites sampled in Illinois (within appropriate habitat) that contain golden mice is not different (or more) than the percentage sampled in the core of the distribution that contain golden mice.

As discussed in Job 4.3, we found golden mice on 21 of the 24 sites (87.5%) sampled in Illinois (Table 7)—although they were often in low numbers. Also, 3 sites had golden mice during the first round of capture, but none the second round, including any recaptures. Thus, populations may be fairly ephemeral.

Comment [a5]: Mankowski comment to ESPB – this is different than the ESPB-approved status review criteria of *(Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different (P<0.05) from sites sampled in the core of the distribution that contain golden mouse.*)

Comment [a6]: Mankowski comment to ESPB – as explained in Board staff updated species review that will be presented at the 161 meeting as part of the outstanding issues discussion, the number of "sites" cited in this reference does not agree with the number of EOs in the Database. The difference in occurrence numbers was part of the reason that the Board elected to not change the status of the species at the 155 meeting (and is explained in those meeting minutes)– because as presented, it appears that cited survey information had not been verified and entered into the Database. Board staff updated species review provides more information about the discrepancy.

Conversely, in the core of the range, only 13 of the 24 (54.2%) sites had golden mouse captures (Table 8). Numbers were lower in the core than in Illinois, and populations were also ephemeral, with 4 sites having golden mice during the first round of capture, but none the second round, including any recaptures. There was no significant difference in the number of occupied sites in Illinois vs. those in the core of the range ($c^2 = 1.88$; df = 1; P > 0.5). Occupancy model estimates—which give the probability a site is occupied by golden mice whether or not we caught anything—were also much greater for sites in Illinois (0.93) than in the core of the range (0.49), again suggesting golden mice are more common in Illinois.

8. The average number of individual golden mice trapped per unit effort on all occupied sites within Illinois is no different (or more) than that within the core of the range of golden mice.

Contrary to our expectations, abundance of golden mice at the periphery of their range in southern Illinois was much greater than in the core of the range. As noted in Tables 7 and 8, we captured 3.3 time more golden mice in Illinois (99 individuals) than in the core of the range (30 individuals). This was a statistically significant difference ($c^2 = 36.91$; df = 1; $P < 0.00001$). In Illinois, 57.1% of the golden mice taken during the initial round of trapping had persisted on the sites and were recaptured during the second round (Table 7) compared to only 33.3% in the core of the range, again a significant difference ($t = 3.36$, df = 46, $P = 0.0015$).

This is perhaps indicative of increased survivorship/persistence on Illinois sites.

Comment [a7]: Mankowski comment to ESPB – as stated in Comment (a2), this information was already considered by the Board.

As noted in Comment (a6), the wording of the criteria reviewed here is different than the status review trigger that was presented to and approved by the ESPB (*Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different (P<0.05) from sites sampled in the core of the distribution that contain golden mouse.*). While the intent may have been the same, it is not what is identified in the ESPB-approved trigger and as presented here, the highlighted statement appears to indicate that the first trigger has not been met.

Comment [a8]: Mankowski comment to ESPB – noted, however, occupancy model estimates were not part of ESPB-approved status review triggers.

Comment [a9]: Mankowski comment to ESPB – this is different than the ESPB-approved status review criteria of (*Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different (P<0.05) from that within the core of the range of golden mice.)*

Comment [a10]: Mankowski comment to ESPB – despite the difference in wording of the "criteria" and ESPB-approved status review trigger of (*Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different (P<0.05) from that within the core of the range of golden mice.)*, the highlighted text appears to indicate that this ESPB-approved trigger has been met.

Occupancy models also were consistent with these results, as expected. The probability estimate of occupancy at Illinois sites was 0.93 (SE=0.08) whereas the estimate of occupancy in the core was only 0.49 (SE=0.16).

Based on the six (6) delisting criteria for the state of Illinois, as well as criteria #7 and #8 ***[FROM: Cooperative fur-bearing and nongame mammal investigations, Final Report, Federal Aid Project W-135-R-9-12],*** **it appears that golden mice can be delisted with no harm to the species in the state.**

The only caveat to this conclusion is if genetic studies currently underway at SIUC indicate unique alleles occur in the Illinois population compared to the core of the geographic range [SEE EXPLANATION as to why this should be discounted in Item #1 above].

#3. All attached documents were clearly obtained from within the IDNR – i.e. Database Program, Division of Natural Heritage, Division of Wildlife Resources, and/or Division of Federal Aid. Authors and dates are provided in the documents themselves. Updated database information has been provided as requested. I believe the important thing is regardless of what format the data is presented, all data for the golden mouse included in this document and all e-mail attachments state that de-listing of the golden mouse should occur.

#4. Golden Mouse EOR information from the Natural Heritage Database:

*Golden Mouse data provided in the minutes of the 155th Board Meeting – approved at the 156th meeting: PROTECTED OCCURRENCES = ONLY NATURE PRESERVES

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
2008-10	34	16	8	4	30

*EOR data as of: January, 2014 - PROTECTED OCCURRENCES = NATURE PRESERVES and LWRS

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
2013-02	34	17	8	4	30

*EOR data as of: January, 2014 - PROTECTED OCCURRENCES = NATURE PRESERVES, LWRS, AND all RESEARCH NATURAL AREAS (i.e. areas within SHAWNEE NF)

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
2013-08	38	21	8	8	30

Comment [a11]: Mankowski comment to ESPB – there is no explanation for why the presented total number of EOs and total seen since Jan 2002 is different between the table above and the table below. Both tables cite Jan 2014 Database data and the data in the excel sheet of Database data submitted as supporting evidence to this current proposal does not support the numbers presented in the table below.

According to Database data provided me on 01/06/2014 and with last observed date of 02/07/2013 and last surveyed of 08/21/2013 – there are a total of 34 EOs for the species and the total seen since Jan 2002 is 17. These numbers are also consistent with the data in the excel sheet of Database data submitted as supporting evidence to this current proposal. I confirmed with Database staff on 02/07/2014 that the total number of EOs for this species is still 34.

Comment [a12]: Mankowski comment to ESPB – see Comment (a10)

	1982-86	1987-91	1992-96	1997-2001	2002-06	2007-11	2012-2013
Last Obs EORs	3	5	5	3	2	14	4
Counties	3	5	4	3	1	8	8

#5. Additional Expert Opinion on the status of the GM in Illinois:
Drs. Ed Heske (INHS) and Tim Carter (Ball State University) provided comments that they felt the species was probably no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.

The Department questions why the Board would dismiss the professional opinions of Dr. Tim Carter and Dr. Ed Heske. These mammalogists are considered technical experts by the Board and their role is to provide professional advice to the Board when considering the listing or delisting of a species in Illinois. It does appear as though these experts are inadvertently being ignored. This is an observation not only being made by the Department, but one that could potentially be made by private citizens as well.

CONCLUSION: Given all of the above, I believe that all pertinent information pointing to the need for formal delisting of the golden mouse has been provided to the Board. From an IDNR Program perspective, a decision to delist this animal based upon solid data is clear. I assume that this entire document and all e-mail attachments will be provided to all Board members so that a sound decision can be made. Please let me know if you have any questions and thank you kindly for your time.

END

Comment [a13]: Mankowski comment to ESPB - According to Database data provided me on 01/06/2014 and with last observed date of 02/07/2013 and last surveyed of 08/21/2013 – there was 1 EO with last obs in 2012-2013. This number is also consistent with the data in the excel sheet of Database data submitted as supporting evidence to this current proposal.

Comment [a14]: Mankowski comment to ESPB - According to Database data provided me on 01/06/2014 and with last observed date of 02/07/2013 and last surveyed of 08/21/2013 – there was 1 county with last obs in 2012-2013. This number is also consistent with the data in the excel sheet of Database data submitted as supporting evidence to this current proposal.

Comment [a15]: Mankowski comment to ESPB - This comment is cut from Board 155 meeting minutes, Attachment E species review , so Drs. Heske's and Carter's comments were already provided to the Board as ESPB TECs, Board staff provided response to Drs. Heske and Carter, and their comments were taken into consideration during meeting discussion and by the Board at the 155 meeting on 08/10/12.

What is not reflected here, but included in the species review which is included as Attachment E of the 155 minutes is Board staff response to Drs. Heske's and Carter's comments - *Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database, genetic questions are answered, and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.*

Comment [a16]: Mankowski comment to ESPB - the Board did consider the opinions of these and other experts - noting that expert opinion is one level of evidence the Board may use in making listing decisions, but the Board requires scientific evidence, so experts were asked to provide documentation to support recommendations. Expert opinion and supporting documentation as well as additional species information compiled by Board staff, were included in the Board's preliminary decision to not change the status of the species – and if additional evidence were brought forward, the Board would reconsider its decision - at the 155th meeting held 08/10/12.

Attachment G

Item 161-11: Recommendation to delist Rice Rat (*Oryzomys palustris*) from Illinois threatened and ESPB staff review

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Director

TO: Anne Mankowski

FROM: Joe Kath

DATE: 16 January 2014

SUBJECT: IDNR's Official Proposal for Status Change in 2014 for the Rice Rat & if deemed necessary by the Board, IDNR's formal request to be added as an agenda item at the next appropriate Board meeting.

Hello: Please consider this entire document and all e-mail attachments as IDNR's official proposal for status change in 2014 for the: Rice Rat. If this information needs to be added as an Agenda Item in order to be considered by the Board for de-listing of the Rice Rat, then please consider this document and all attachments as my/IDNR's request to be added as an agenda item. Thank you.

SUMMARY STATEMENT: I believe that all pertinent information pointing to the need for formal delisting of the rice rat has been provided to the Board numerous times over the past year in the form of technical reports and published papers (attached/included in this document and e-mail attachments). From an IDNR Program perspective, a decision to delist this animal based upon solid data is clear. I assume that this entire document and all e-mail attachments will be provided to all Board members so that a sound decision can be made. Please let me know if you have any questions and thank you kindly for your time.

Please pay special attention to the "underlined" sections throughout this document.

DELISTING ANALYSIS:
Status Review Triggers for the Rice Rat (for de-listing) are in the attached PowerPoint presentation *and have all been met.* All questions that remained for the Rice Rat were answered in: *COOPERATIVE WILDLIFE RESEARCH LABORATORY, SIUC - ANNUAL FEDERAL AID PERFORMANCE REPORT: 1*

Comment [a1]: Mankowski comment to ESPB – the current proposal include one new report (W-135-R-13) that was not available when the Board conducted a review of the species at the 155 meeting 08/10/12. Additionally, several new observation reports have been submitted to the Database since the 155th meeting.

It appears that what Eubanks et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and it is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species. The discrepancy in survey results is explained in Board staff updated species review that will be presented at the 161 meeting as part of the outstanding issues discussion.

While it appears that criteria for the ESPB to consider delisting may be at least least partially satisfied, these discrepancies between Database data and survey results reported in Eubanks et al (2011) makes evaluation with respect to overall status and distribution and the Board's intent difficult.

Board staff recommendation at this time is that the information provided here is helpful, but may not fully statisfy a determination that the species' status and distribution exceeds the definition of "threatened".

July 2011 - 30 June 2012 (submitted 08/12) - Cooperative Fur-bearing and Nongame Mammal Investigations; Project: W-135-R-13; Principal Investigators: Clay Nielsen, Eric Hellgren, Eric Schauber, and George Feldhamer (attached).

Evaluate Change in Status to Not Listed as Threatened or Endangered (Triggers) – Rice rats will be considered recovered and eligible for a change in status to "not listed" when it is demonstrated that:

*1). Two distinct, reproductively viable populations (composing a watershed metapopulation) persist in each of at least 3 major watersheds (i.e., Big Muddy, Saline, Ohio, Cache, Mississippi, Kaskaskia, Little Wabash, Wabash) in southern Illinois for 5 years.

*2). Habitats used by rice rats show a stable or increasing trend in area over the most recent 5 years.

Comment [a2]: Mankowski comment to ESPB – nowhere in this current proposal is there presented a summary of survey results demonstrating this criterion has been met.

As explained in Board staff updated species review that will be presented at the 161 meeting as part of the outstanding issues discussion, the number of "sites" cited by Eubanks et al (2011) in this this current proposal does not agree with the number of EOs in the Database. The difference in occurrence numbers was part of the reason that the Board elected to not change the status of the species at the 155 meeting (and is explained in those meeting minutes)– because as presented, it appears that cited survey information had not been verified and entered into the Database. Additionally, no EO has reported observations for any 5 years from 2007-2013.

The Board staff updated species review provides more information about the discrepancy – in summary, current Database data does not demonstrate observations for 5 years at any EO from 2007-2013. Additionally, for the 3 EOS with several years of reported observations from 2007-2013, it is unclear whether reported population numbers and/or numbers of individuals are sufficient to demonstrate reproductively viable populations.

Section A:
155-15: 2014 Illinois List Review: Recommendation for Changes to the List of Illinois Endangered and Threatened Mammals

Ms. Mankowski led the presentation of recommendations for changes to the list of Illinois endangered and threatened mammals. She began with an overview of 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 were engaging advice of the ESPB technical expert consultants (ESPB TECs). She reviewed the list of proposed listing status recommendations for mammals and engaged the ESPB TECs and Board members in reviewing the data and information compiled for species

A1. IDNR recommendations
From: Herkert, James
Sent: Saturday, June 02, 2012 12:49 PM
To: Mankowski, Anne
Subject: Mammal List Review
*Rice Rat: **remove from list**; vast majority of supporting documentation exists, but we are short on a couple of criteria for triggers. Ongoing work should satisfy these criteria by 2014.

A2. Text and map below from: Habitat associations of the marsh rice rat (*Oryzomys palustris*) in freshwater wetlands of southern Illinois - [Journal of Mammalogy, 92(3):552–560, 2011]

BRYAN W. EUBANKS, ERIC C. HELLGREN,* JACK R. NAWROT, AND ROBERT D. BLUETT
Cooperative Wildlife Research Laboratory, Department of Zoology, Mailcode 6504, Southern Illinois University, Carbondale, IL 62901-6504, USA (BWE, ECH, JRN)
Illinois Department of Natural Resources, 1 Natural Resources Way, Springfield, IL 62702, USA (RDB)

The marsh rice rat (*Oryzomys palustris*) is a semiaquatic rodent occurring in wetland habitats throughout the southeastern United States and along the Atlantic Coast. A lack of understanding of its ecology and distribution in inland parts of its range limits our ability to assess the species' status and needs. *We trapped rice rats at random and previously occupied, wetland-dominated sites in 5 southern Illinois watersheds during 2007–2009 to determine key variables affecting habitat occupancy by the species. We detected rice rats within 3 of 5 watersheds*, 16 of 48 sites, and at 5 new locations. Most rice rats were captured in permanent or semi-permanent emergent wetlands (n 5 89; 46.3% of total captures) or roadside ditches in wetland patches (n 5 73; 38.0%). *Animals captured in the following watersheds: Big Muddy, Saline, and Cache.*

Comment [a3]: Mankowski comment to ESPB – see Comment (a2)

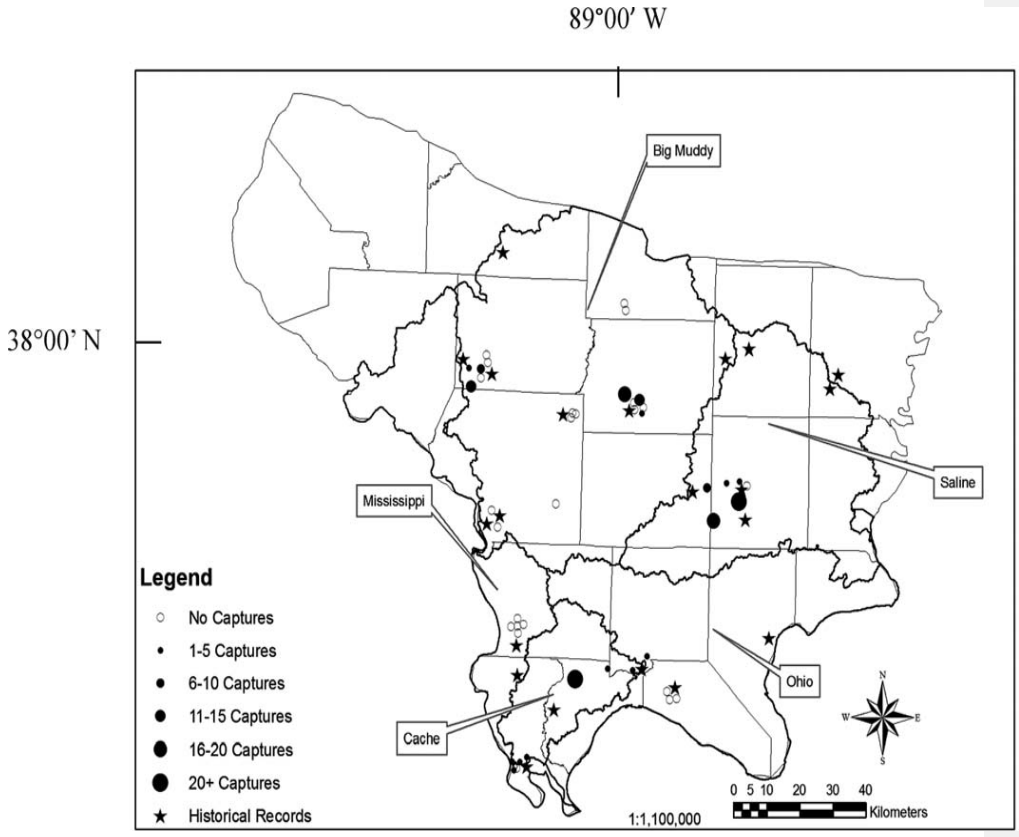


FIG. 1.—Trapping locations and number of marsh rice rat (*Oryzomys palustris*) captures (circles) during survey for marsh rice rats in southern Illinois, *2007–2009*. Stars represent historical records. Gray lines represent county borders, and black lines represent watershed boundaries. Sampled watersheds are labeled in boxes.

A3. Text and map below from: COOPERATIVE WILDLIFE RESEARCH LABORATORY, SIUC - ANNUAL FEDERAL AID PERFORMANCE REPORT: 1 July 2011 - 30 June 2012 (submitted 08/12)
Title: Cooperative Fur-bearing and Nongame Mammal Investigations
Project: W-135-R-13
Principal Investigators: Clay Nielsen, Eric Hellgren, Eric Schauber, and George Feldhamer
Graduate Assistants/Staff: Scott Cooney, Jorista Van der Merwe, Angela Jackson, and Aaron Gooley

SUMMARY OF W-135-R-13

Segment 13 of W-135-R represents the fifth year of a 7-year project. Significant progress was made on all 3 ongoing project studies (Study 5: Relationship between wetland dynamics and metapopulation biology of marsh rice rats in Illinois; Study 6: Site occupancy and co-occurrence of aquatic furbearers in southern Illinois; Study 7: Demographics and status of the eastern woodrat in southern Illinois).

-Metapopulation ecology of marsh rice rats

The objectives of this job are (1) to determine colonization and extinction rates of patches within 2-3 rice rat metapopulations in southern Illinois over a 3-year period, and (2) to examine relationships between wetland landscape parameters and the population and metapopulation dynamics of rice rats. *We sampled 4 wetland complexes in 3 watersheds in southern Illinois. At each wetland complex, we trapped for rice rats at 2-15 patches. Capture rates in >17,000 trapnights were consistently low (0.4-1.8%), but consistent with previous studies. Rice rats were present in all wetland complexes, with patch occupancy varying among seasons.* In addition, we found that capture rate dropped significantly with distance from wetland patch and that agriculture had the highest permeability to rice rat movements.

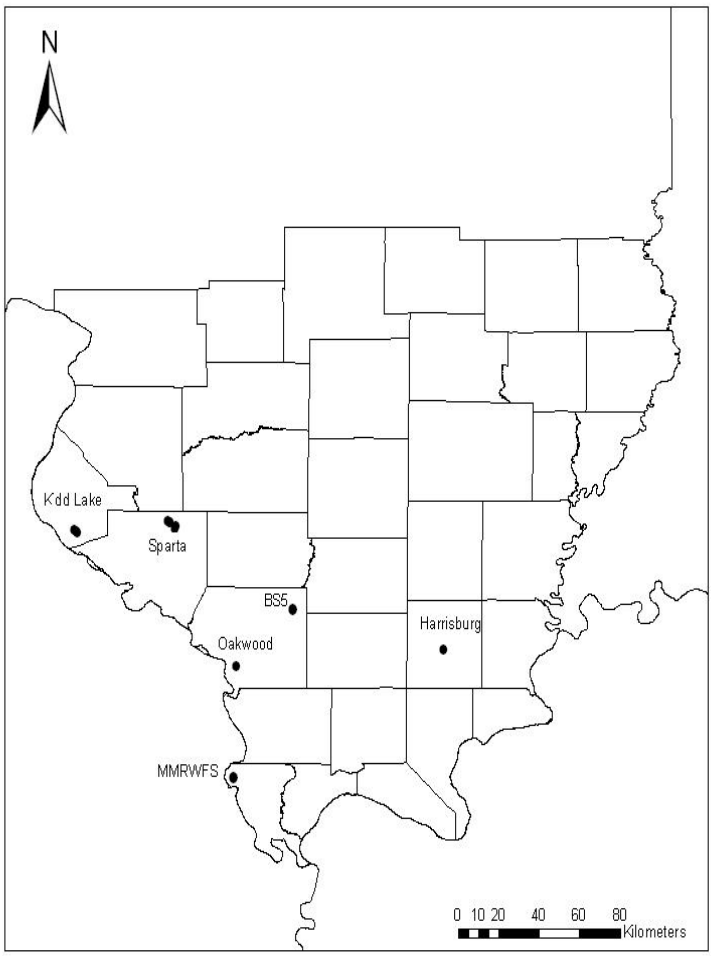
-Northern limit of marsh rice rat range in Illinois

The objective for this job is to determine the northern limit of the rice rat in Illinois. *After trapping at 7 sites in southern Illinois, the northern limit for the rice rat has been extended to Sparta and Kidd Lake. So, as of August, 2012 we now have woodrats in the following 5 watersheds: Big Muddy, Saline, Cache, Kaskaskia, and Cahokia-Joachim. These are 2 additional watersheds (Kaskaskia and Cahokia-Joachim) from those recorded in the 2007-2009 Eubanks study referenced above. It is also encouraging that the northern limit for the RR has been extended to Sparta and Kidd Lake.*

Comment [a4]: Mankowski comment to ESPB – see Comment (a2)

Comment [a5]: Mankowski comment to ESPB – see Comment (a2)

PLEASE SEE MAP BELOW FROM: W-135-R-13


N
Kdd Lake
Sparta
BS5
Oakwood
Harrisburg
MMRWFS
0 10 20 40 60 80
Kilometers

With the results of these 2 studies (Eubanks & Nielsen), Criteria #1 below for the change in status to not listed as threatened or endangered *has been met*
Rice rats will be considered recovered and eligible for a change in status to "not listed" when it is demonstrated that:

> Criteria #1: Two distinct, reproductively viable populations (composing a watershed metapopulation) persist in each of at least 3 major watersheds (i.e., Big Muddy, Saline, Ohio, Cache, Mississippi, Kaskaskia, Little Wabash, Wabash) in southern Illinois for 5 years. [All data presented above covers the 2007-2012 time period.]

A4. **Habitats used by rice rats.** Analysis/Text from: Habitat associations of the marsh rice rat (*Oryzomys palustris*) in freshwater wetlands of southern Illinois - [Journal of Mammalogy, 92(3):552–560, 2011]

We trapped rice rats at random and previously occupied, wetland-dominated sites in 5 southern Illinois watersheds during 2007–2009 to determine key variables affecting habitat occupancy by the species. We detected rice rats within 3 of 5 watersheds, 16 of 48 sites, and at 5 new locations. Most rice rats were captured in permanent or semipermanent emergent wetlands (n 5 89; 46.3% of total captures) or roadside ditches in wetland patches (n 5 73; 38.0%).

Percent herbaceous cover and percent visual obstruction (0.0–0.5 m) were the most important microhabitat variables positively influencing rice rat occurrence. In areas surrounding wetlands, the proportion composed of upland grass was the best predictive variable of rice rat occurrence among landcover models. Estimates of daily detection probability were high (0.44–0.87). The likelihood of occupancy increased with the proportion of upland grass cover adjacent to wetland complex and percent herbaceous cover at the microhabitat scale. Inland metapopulations of rice rats are clustered throughout the southeastern United States in appropriate wetland complexes. Construction, restoration, and protection of emergent wetlands, and consideration of connectivity and adjacent grasslands, should benefit rice rat populations.

Records ranging from 1975 (Urbanek and Klimstra 1986) to more recent (approximately 2006) unpublished notes (G. A. Feldhamer and T. Carter, Southern Illinois University Carbondale, pers. comm.; C. K. Nielsen, Southern Illinois University Carbondale, pers. comm.) suggest that the species is colonizing moist-soil and emergent wetlands dominated by common reed, including wetlands

Comment [a6]: Mankowski comment to ESPB – see Comment (a2)

Comment [a7]: Mankowski comment to ESPB – see Comment (a2)

associated with reclaimed surface mines and within subsidence basins above underground coal mines. Wetland restorations by state, federal, and nongovernmental organizations and an increase in mine-associated wetlands might have provided rice rats with opportunities for dispersal and population expansion in the last 3 decades, as rice rats are effective dispersers over both land and water (Loxterman et al. 1998).

Comment [a8]: Mankowski comment to ESPB – the Feldhamer et al personal communication is informative, but the Loxterman et al (1998) citation that speaks to 3 previous decades of increases in mine-ssociated wetland is 15 years old and it is not clear that it refers to southern Illinois.

Rice rats were captured in 23 separate transects in the 16 occupied sites. These transects were located in palustrine emergent (PEM; n 5 12), palustrine unconsolidated bottom–intermittently exposed (PUBG; n 5 9), palustrine forested (PFO; n 5 1), and riverine unconsolidated bottom (R2UB; n 5 1) wetlands. Relative abundance ranged from 1.74 to 91.41 individuals/1,000 trap nights.

We trapped within 15 mine-associated wetland complexes throughout this study. Nine (60.0%) of these 15 sites were occupied by marsh rice rats, whereas rice rats were captured at 7 (20.0%) of 33 sites in wetland complexes not associated with coal-mining practices. The presence of rice rats was associated strongly with mining practices (x2 1 5 6.98, P 5 0.008) and the presence of common reed within 50 m of the trapping grid (x2 1 5 7.61, P , 0.01). Only 2 key wetland species, common reed and sedges, occurred at higher rates at occupied sites. Common reed occurred in 31.4% of quadrats at occupied sites versus 12.1% of quadrats at unoccupied sites, whereas sedges occurred in 22.6% of quadrats at occupied sites versus 8.5% of unoccupied sites.

Hofmann et al. (1990) reported that many occupied sites were dominated by emergent vegetation such as sedges, rushes, cattails, and common reed.

Although nearly all captures of rice rats were made in early successional wetlands, no models based solely on wetland-type parameters were among the top candidates in the landcover candidate set.

Other landcover models were given less support but provided some insight into habitat selection by rice rats. Other competing models were consistent with previous work demonstrating that early successional wetlands (e.g., palustrine emergent types) are important for marsh rice rats (Hofmann et al. 1990; Svihla 1931), with the presence of emergent plants such as common reed and sedges being highly associated with rice rat occurrence. The positive relationship of developed areas with occurrence likely was due to roads being classified as developed. Rice rats were captured within roadside ditches in our study and by Hofmann et al. (1990).

Roadside ditches that occur within larger wetland complexes often contain vegetation and hydrologic conditions suitable for rice rats. For example, emergent vegetation in ditches where rice rats were captured included sedges, rushes, bulrushes (Scirpus spp.), spike rushes (Eleocharis spp.), and cattails (Hofmann et al. 1990). Therefore, developed areas are not necessarily good habitat, but roadside ditches might provide sufficient cover.

Historical wetland loss has negatively affected rice rat populations in Illinois and other parts of its range. However, since the listing of the species as state-threatened in Illinois in 1978, wetland area in southern Illinois has increased because of the Wetland Reserve Program, which is designed to create, enhance, or restore wetlands. From 1992 to 2007 the Natural Resources Conservation Service spent more than $10,000,000 on 270 contracts to enroll 25,286 ha in Illinois into this program (Natural Resources Conservation Service 2009). **This increase in wetlands might have benefited rice rat populations enough that they are no longer at risk for extirpation in Illinois.**

Many coal-mining practices, such as subsidence, surface-mine sediment ponds, and slurry ponds provide seasonal and permanent wetlands (Nawrot and Klimstra 1989) that are often surrounded by emergent vegetation such as common reed. We noted a strong positive link among rice rat occurrence, reclaimed mines, and emergent vegetation. Many reclaimed mine locations have more wetland area than before the initiation of active mining, and it is likely that rice rats recently (within the last 30 years) have colonized these areas (Urbanek and Klimstra 1986).

A5. **Habitats used by rice rats**. Analysis/Text from: Cooperative Fur-bearing and Nongame Mammal Investigations; Project: W-135-R-13

Marsh rice rats (*Oryzomys palustris*) occupy both fresh and saltwater wetlands and marshes (Hamilton 1946, Wolfe 1982, Hofmann et al. 1990), and adjacent upland areas, in the southeastern U.S. (Kruchek 2004). The north-central part of their range occurs in southern Illinois, where they have been classified as state-threatened (Herkert 1992). They rarely occur in areas dominated by woody vegetation and throughout their distribution, occupied habitat is dominated by emergent herbaceous vegetation such as reed grass (Phragmites australis; Eubanks et al. 2011), cattails (Typha spp; Hofmann et al. 1990), and salt marsh grass (Spartina alterniflora; Hamilton 1946). In Illinois, principal wetland types associated with previous rice rat captures (Hofmann et al. 1990, Eubanks et al. 2011) included palustrine emergent wetlands, palustrine scrub-shrub wetlands,

Comment [a9]: Mankowski comment to ESPB – I may have missed something else in this part of the proposal, which I understood to mostly be characterization of habitats used and assessment of likelihood for rice rat to use different habitats and/or patches, but it appears to me that this is the only information provided that speaks to a relatively recent demonstrative increase in habitat – relative to ESPB-approved status review trigger (Habitats used by rice rats show a stable or increasing trend in area over the most recent 5 years).

palustrine unconsolidated bottom wetlands, palustrine aquatic beds, and riverine aquatic beds (Cowardin et al. 1979).

Rice rat occupancy of areas with fluctuating hydrology should vary dramatically between seasons and over years to mimic flood pulses of the river, whereas occupancy at wetlands associated with mine reclamation should remain more stable. Therefore, we expect a higher turnover of occupied and unoccupied areas at river-associated wetlands than at more stable, mining-related, wetlands. A second potential difference between mineland and floodplain wetlands is the composition of the landscape matrix.

Occupancy

We trapped 9 wetland patches at MMRWFS and 2 patches at Oakwood Bottoms. After 10,834 trap nights (July 2011–June 2012) at MMRWFS, we captured 48 rice rats (0.4% success) at 11 patches. Rice rats occupied 3 of 9 patches in summer 2011, 4 of 11 patches in fall 2011, and 6 of 11 patches in spring 2012 (Table 1). Only 2 patches were trapped at Oakwood bottoms, and one of these was occupied in summer of 2011. No rice rats were captured during fall, but one patch was occupied in spring 2012.

At Burning Star, we trapped 15 wetland patches during July 2011–June 2012, and captured 130 rice rats over 7107 trap nights (1.8% success). Rice rats occupied all 4 patches that were trapped in summer 2011. In fall 2011, 6 of 15 patches were occupied; and during spring 2012, rice rats occupied 9 out of 13 patches.

The last location that we sampled was Harrisburg, with rice rats occupying 5 of 7 trapped patches in summer 2011. During fall we only trapped at one patch, which was occupied. No trapping was conducted at Harrisburg in spring 2012 (Table

Habitat permeability

In December 2011, we concluded a 10-month study of rice rat edge and matrix permeability at Burning Star 5. For matrix capture rates of Rhodamine-marked rats between February-October 2011, agriculture produced the highest rate of capture (4.37 per 1000 available trap nights), followed by forest cover (2.42 per 1000 available trap nights) and grassland (2.30 per 1000 available trap nights; Table 2). After analysis using the general linear mixed model, we found a significant negative effect of distance (from wetland habitat) on capture rate ($F_{1, 1238}$=13.55; P<0.001), a significant positive effect of abundance on capture rate ($F_{1, 1238}$=11.52; P<0.001) and a nearly significant positive effect of vegetative cover at the 0-0.5 m height on capture rate ($F_{1, 1130}$=3.84; P = 0.051). Based on the interaction of distance and land-cover type, we found that agriculture had the highest overall permeability (slope= -0.022, t= -2.23, P = 0.021), forest was the second highest (slope= -0.046, t = -2.53, P = 0.011) and grassland had the overall lowest (slope= -0.079, t= -2.39, P = 0.017; Figure 5). Increasing slope (Figure 5) indicates decreasing permeability, as the capture rate decreases rapidly with distance from the wetland habitat patch.

With the results of the above studies (Eubanks & Nielsen), Criteria 2 below for the change in status to not listed as threatened or endangered *has been met*
Rice rats will be considered recovered and eligible for a change in status to "not listed" when it is demonstrated that:

2. Habitats used by rice rats show a stable or increasing trend in area over the most recent 5 years.

Section B:

Additional Expert Opinion on the status of the RR in Illinois: Drs. Heske and Carter provided comments that they felt the species was probably no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched and regulations continue to provide protection for wetlands (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.

The Department questions why the Board would dismiss the professional opinions of Dr. Tim Carter and Dr. Ed Heske. These mammalogists are considered technical experts by the Board and their role is to provide professional advice to the Board when considering the listing or delisting of a species in Illinois. It does appear as though these experts are inadvertently being ignored. This is an observation not only being made by the Department, but one that could potentially be made by private citizens as well.

B1. All attached documents were clearly obtained from within the IDNR – i.e. Database Program, Division of Natural Heritage, Division of Wildlife Resources, and/or Division of Federal Aid. Authors and dates are provided in the documents themselves. Updated database information has been provided as requested. I believe the important thing is regardless of what format the data is presented, all data for the golden mouse included in this document and all e-mail attachments state that de-listing of the golden mouse should occur.

Section C:

Rice Rat EOR information from the Natural Heritage Database:

*Rice Rat data provided in the minutes of the 155th Board Meeting – approved at the 156th meeting: PROTECTED OCCURRENCES = ONLY NATURE PRESERVES

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
3/5/12	37	22	10	3	34

Comment [a10]: Mankowski comment to ESPB - This comment is cut from Board 155 meeting minutes, Attachment E species review , so Drs. Heske's and Carter's comments were already provided to the Board as ESPB TECs, Board staff provided response to Drs. Heske and Carter, and their comments were taken into consideration during meeting discussion and by the Board at the 155 meeting on 08/10/12.

What is not reflected here, but included in the species review which is included as Attachment E of the 155 minutes is Board staff response to Drs. Heske's and Carter's comments - *Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database, genetic questions are answered, and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.*

Comment [a11]: Mankowski comment to ESPB - the Board did consider the opinions of these and other experts - noting that expert opinion is one level of evidence the Board may use in making listing decisions, but the Board requires scientific evidence, so experts were asked to provide documentation to support recommendations. Expert opinion and supporting documentation as well as additional species information compiled by Board staff, were included in the Board's preliminary decision to not change the status of the species – and if additional evidence were brought forward, the Board would reconsider its decision - at the 155th meeting held 08/10/12

*EOR data as of: January, 2014 - PROTECTED OCCURRENCES = NATURE PRESERVES and LWRS

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
2013-08	39	28	11	7	37

*EOR data as of: January, 2014 - PROTECTED OCCURRENCES = NATURE PRESERVES, LWRS, AND all RESEARCH NATURAL AREAS (i.e. areas within SHAWNEE NF)

Last Observed	Total # EORs	Total seen since Jan. 2002	# Counties	# Protected Occurrences	# Topo Quads
2013-08	40	29	11	8	37

	1982-86	1987-91	1992-96	1997-2001	2002-06	2007-11	2012-2013
Last Obs EORs	1	6	0	8	2	20	9
Counties	1	5	0	5	2	7	7

Comment [a12]: Mankowski comment to ESPB – there is no explanation for why the presented total number of EOs and total seen since Jan 2002 is different between the table above and the table below. Both tables cite Jan 2014 Database data and the data in the excel sheet of Database data submitted as supporting evidence to this current proposal does not support the numbers presented in the table below.

According to Database data provided me on 01/06/2014 and with last observed date of 02/07/2013 and last surveyed of 08/21/2013 – there are a total of 39 EOs for the species and the total seen since Jan 2002 is 28. These numbers are also consistent with the data in the excel sheet of Database data submitted as supporting evidence to this current proposal. I confirmed with Database staff on 02/07/2014 that the total number of EOs for this species is still 39 and total seen since Jan 2002 is still 28.

Comment [a13]: Mankowski comment to ESPB - These number do not agree with the excel sheet of Database data submitted as supporting documentation to this proposal nor do they agree with Database data provided me 01/06/2014, or Database data confirmed 02/07/14.

Comment [a14]: Mankowski comment to ESPB - These number do not agree with the excel sheet of Database data submitted as supporting documentation to this proposal nor do they agree with Database data provided me 01/06/2014, or Database data confirmed 02/07/14.

CONCLUSION: Given all of the above, I therefore believe that all pertinent information pointing to the need for formal delisting of the rice rat has been provided to the Board. From an IDNR Program perspective, a decision to delist this animal based upon solid data is abundantly clear. I assume that this entire document and all e-mail attachments will be provided to all Board members so that a sound decision can be made. Please let me know if you have any questions and thank you kindly for your time.

END

Attachment H

Item 161-12: 2014 Illinois List Review: a review of, and Board preliminary decisions for, outstanding species listing issues to date

ESPB 2014 List review outstanding issues and items a/o 02/09/2014 (Mankowski)					
		ESPB Initial Preliminary Approval	**Outstanding Issue/Action Item**	**Who**	**Page # or attachment note**
Birds					
Peregrine falcon	Falco peregrinus	Delist	Confirm 2011, 2012, and (if available) 2013, data continue to meet or exceed ESPB reclassification guidelines.	ESPB staff	begins page 6
Chuck-will's-widow	Caprimulgus carolinensis	Add as threatened	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
Red Knot	*Calidris canutus rufa*	Add as IL E or T?	Fed proposal, and 60-day comment period, to list as threatened published in CFR September 27, 2013. Proposed for listing throughout range; includes Illinois in range, but Illinois is not noted for breeding pop or habitat.		none
Common Moorhen	Gallinula chloropus	Name change	(Brad Semel email of 06/27/13) - Name Change to Common Gallinule (*Gallinula galeata*). The name was formally changed in 2011 to Common Gallinule (formerly Florida Gallinule). Know that you like to be very precise in all that you do, so thought I would bring it to your attention. This species had been treated as a conspecific with G. chloropus [Common Moorhen] of Eurasia, but birds in North America were separated by differences in vocalizations, bill and shield morphology, and mitochondrial DNA. http://www.aou.org/auk/content/128/3/0600-0613.pdf	ESPB staff	none
Mammals					
Woodrat	Neotoma floridana	maintain as E	IDNR recommends E to T. Data from reports/publications needs to be confirmed by and entered into the Database for the Board to consider it in listing status decisions. 1) Submit reports to Database. 2) Database confirm and enter data. 3) Prepare proposal for the Board for status change when data is reconciled. 4) If IDNR ORC does not do #3, ESPB staff will produce another species review if time and resources allow, prior to the Board's confirming approval.	IDNR ORC - 1-3; ESPB staff - 4	none
Golden Mouse	Ochrotomys nutalli	maintain as T	IDNR recommends delisting. Data from reports/publications needs to be confirmed by and entered into the Database for the Board to consider it in listing status decisions. 1) Submit reports to Database. 2) Database confirm and enter data. 3) Prepare proposal for the Board for status change when data is reconciled. 4) If IDNR ORC does not do #3, ESPB staff will produce another species review if time and resources allow, prior to the Board's confirming approval.	IDNR ORC - 1-3; ESPB staff - 4	ESPB staff re-review begins page 9; DNR proposal separate attachment
Rice Rat	Oryzomys palustris	maintain as T	IDNR recommends delisting - with necessary data available by 2014. Data from reports/publications needs to be confirmed by and entered into the Database for the Board to consider it in listing status decisions. 1) Submit reports to Database. 2) Database confirm and enter data. 3) Prepare proposal for the Board for status change when data is reconciled. 4) If IDNR ORC does not do #3,	IDNR ORC - 1-3; ESPB staff - 4	ESPB staff re-review begins page 16; DNR proposal separate attachment

			ESPB staff will produce another species review if time and resources allow, prior to the Board's confirming approval.		
Eastern Small-footed Bat	Myotis leibii	Board preliminarily approved as IL T; IDNR submitted recommendation for IL E in Jan 2014	Confirm data necessary to enter EOs into the Database have been submitted to the Database. Fed decision not to list published in CFR October 2, 2103.	ESPB staff; IDNR	ESPB staff re-review begins page 25; DNR proposal separate attachment
Northern Long-eared Bat.	Myotis septentrionalis	Add as E or T?	Fed proposal, and 60-day comment period, to list as endangered published in CFR October 2, 2013. From CFR - Proposed for listing as Fed E throughout range; Illinois is included in range and Illinois is noted for 36 reported hibernacula. Northern long-eared bats are regularly caught in mist-net surveys in the Shawnee National Forest in southern Illinois (Kath 2013, pers. comm.). Further, the average number of northern long-eared bats caught during surveys between 1999 and 2011 at Oakwood Bottoms in the Shawnee National Forest has been fairly consistent (Carter 2012, pers. comm.). Multiple factors involved in Fed proposal, with estimated rangewide impacts from White Nose Syndrome predominant. CFR notes post WNS reduction of 98% for 6 cave species (including northern long-eared bat) across 30 hibernaculas in 5 states. White Nose Syndrome confirmed in IL a/o 2012 - not received any report summarizing impacts to any species. ESPB made data request to TECs 11/04/13 and will develop a species review for Board consideration at the Feb 2013 mtg.	ESPB staff	begins page 32
Franklin's Ground Squirrel	Spermophilus franklinii	Name change	1) Generic revision to *Poliocitellus franklinii* Sabine, 1822 - per citation in Heske report to IDNR - via Kieth Shank email of 09/20/2012. 2) **From NatureServe 08/27/2013** - Concept Reference: Wilson, D. E., and D. M. Reeder (editors). 1993. Mammal Species of the World: a Taxonomic and Geographic Reference. Second Edition. Smithsonian Institution Press, Washington, DC. xviii + 1206 pp. Available online at: http://www.nmnh.si.edu/msw/. Concept Reference Code: B93WIL01NAUS Name Used in Concept Reference: Spermophilus franklinii Taxonomic Comments: Poliocitellus is monotypic, comprising only P. franklinii.	ESPB staff	none
Eastern Wolf	Canis lupus	No ESPB review or preliminary action - if federal delisting, then ESPB will need to make decision re: IL status	Fed proposal to delist - CFR published notice of a 90 day comment period June 7, 2013 that indicates the USFWS anticipates it will make final determination in 2014.	ESPB staff	begins page 35
Amphibians					
none					none

Reptiles					
Copper-bellied Watersnake	Nerodia erythrogaster neglecta	Add as IL threatened?	Fed listed as threatened for Northern Population Segment (2008). The NPS does not include IL, but the taxon occurs in IL. Should automatically be added to the IL Llist. ESPB staff recommends IL T.	ESPB staff	begins page 38
Fish					
American Brook Lamprey	Lethenteron appendix	Add as threatened	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
American Eel	Anguilla rostrata	Add as threatened	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
Brassy Minnow	Hybognathus hankinsoni	Add as threatened	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
Mussels					
Scaleshell	Leptodea leptodon	Add as IL endangered? Note Fed E	Fed E that was considered extirpated from IL prior to Fed listing, so was not added to IL List; based on new discovery, now needs to be added to IL List. Lewis, Kath emails of 06/18/13 - one live specimen found and vouchered 14 May 2013 (Cummings, Widlow, Wyffels, Kirk), IL River, Marsailles Pool, Grundy Co. Data submitted to database June 18, 2013. Pending confirmation of recently submitted EO report.	ESPB staff	none
Rabbitsfoot	Quadrula cylindrica	Note Fed T	Fed threatened listing publised in CFR September 16, 2013. Already IL E.	ESPB staff	none
Other Invertebrates					
Onyx Rocksnail	Leptoxis praerosa	Add as endangered	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
Dakota Skipper	Hesperia dacotae	Add as IL E or T?	Proposed for listing as Fed T - published in CFR October 24, 2013. Proposed may include IL in range, but notes that the species is considered extirpated in IL - last recorded near Chicago in 1888.		none
Poweshiek Skipperling	Oarisma poweshiek	Add as IL E or T?	Proposed for listing as Fed E - published in CFR October 24, 2013. Proposed may include IL in range, but notes that the species is considered extirpated in IL - last recorded in the 1870s and questionable occurrence info dated from 1950, but noted as a Butterflies and Moths of NA website default entry date for occurrences reported before specific dates were tracked.		none
Plants					
Agalinus skinneriana	Pale False Foxglove	Spelling correction	to Agalinis skinneriana (after Mohlenbrock 2002)	ESPB staff	none
Alnus incana subsp. rugosa	Speckled Alder	Name change	to Alnus incana	ESPB staff	none
Berberis canadensis	Allegheny Barberry	Remove from endangered	Pending confirmation of recently submitted EO reports.	ESPB staff	none
Carex canescens var. disjuncta	Silvery Sedge	Name change	to Carex canescens	ESPB staff	none
Carex inops subsp heliophila	Plains Sedge	Name change	to Carex heliophila (after Mohlenbrock 2002)	ESPB staff	none
Cyperus grayioides	Umbrella Sedge	Spelling correction	to Cyperus grayoides (after Mohlenbrock 2002)	ESPB staff	none

Cypripedium parviflorum var makasin	Small Yellow Lady's Slipper	Name change	to Cypripedium parviflorum (after Mohlenbrock 2002)	ESPB staff	none
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	No change in status	Pending confirmation of recently submitted EO reports.	ESPB staff	none
Euphorbia spathulata	Spurge	No change in status	Pending confirmation of recently submitted EO reports.	ESPB staff	none
Isotria medeoloides	Small Whorled Pogonia	Add as endangered	Fed T, still identified by USFWS as extant in IL, automatically added to IL List. Board removed in error in 2009 revision.	ESPB staff	none
Juncus alpinus	Richardson's Rush	name change	to Juncus alpinoarticulatus	ESPB staff	none
Mentzelia oligosperma	Stickleaf	Add as endangered	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
Penstemon brevisepalus	Short-sepaled Beard Tongue	Remove from endangered	Listed in error – P. brevisepalus specimen vouchers now known to have been misidentified.	ESPB staff	none
Polygonum arifolium	Tear Thumb	Name change	to Tracaulon arifolium (per Mohlenbrock 2002)	ESPB staff	none
Platanthera flava var. flava	Tubercled Orchid	Remove from endangered	Due to combining of P flava v. flava and P flava v. herbiola as P flava.	ESPB staff	none
Platanthera flava var. herbiola	Tubercled Orchid	Name change	to Platanthera flava	ESPB staff	none
Salvia azurea subsp pitcher	Blue Sage	Name change	to Salvia azurea	ESPB staff	none
Utricularia subulata	Hair Bladderwort	Add as endangered	Confirm data necessary to enter EOs into the Database have been submitted to the Database.	ESPB staff	none
All Species					
All species		thumbnail review of #s of consultations, ITAs, and relocations (Board agreed at the November 2013 meeting to not try to review relative to a threshold of 20% of EOs potentially impacted or various occupancy rates for triggering/scaling ITA mitigation)	Species review doc Table 1 with #s of consultations (2000-2006), ITAs (2001-03/2013), and prescribed or performed translocations w/out subsequent observation or outcome reporting (1997-2012)	ESPB staff	begins page 40

Blue = outstanding item resolved without need for additional Board discussion and review.

Yellow = outstanding item that requires additional Board discussion and decision.

Purple = recommended/nominated action for new presentation to Board at the 161st

Green = automatic change due to Fed proposed/listing action, may require Board IL status decision.

Red = unresolved items pending Fed decision - ESPB staff recommendation is to wait and see what is the final Fed decision.

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Updated species review, Mankowski 01/2014

Peregrine falcon, Falco peregrinus (Illinois threatened)

(EO = element occurrence and is roughly equivalent to a breeding record for one or more local pairs)

Illinois – Natural Heritage (Biotics 4) Database

Data a/o 03/2012

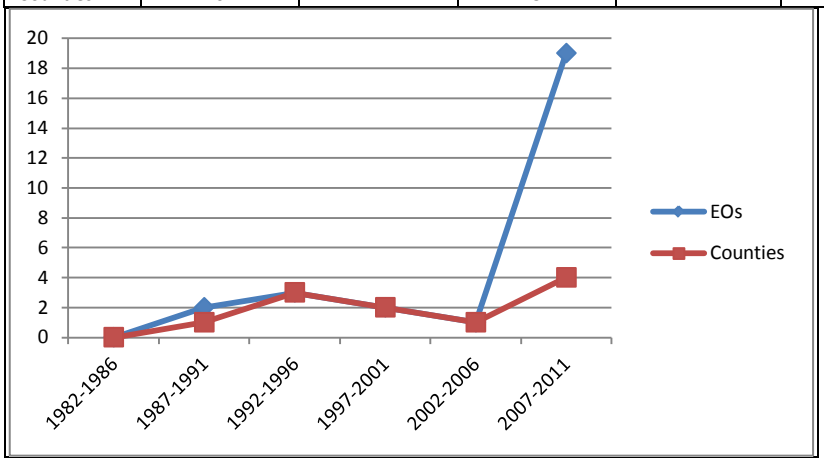
Last observed	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads
7/8/2010	29	21	2	13

Data a/o 01/2014

Last observed	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since Jan 2002
6/7/2013	43	34	3	17	10	8

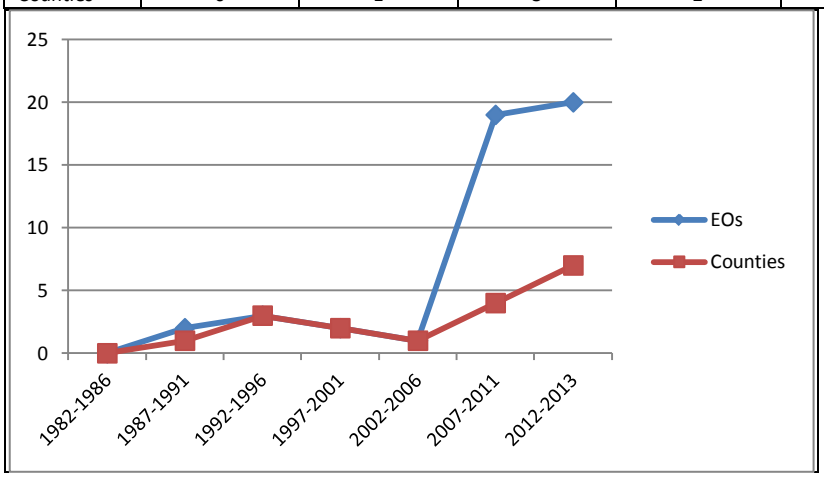
Data a/o 03/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
EOs	0	2	3	2	1	19
Counties	0	1	3	2	1	4



Data a/o 03/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
EOs	0	2	3	2	1	19	20
Counties	0	1	3	2	1	4	7



Status review triggers (reclassification goals) approved by the Illinois Endangered Species Protection Board in (Herkert) 2000, with amendment in 2009.

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of the species and consider a change in status. Status review criteria do not prompt an 'automatic' change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Reclassification Goals (2000)

Threatened -- The overall goal for reclassification from endangered to threatened status in Illinois is to maintain a healthy, productive population that is at low risk of statewide extirpation within the foreseeable future. Low risk is hereby defined as a less than 5% chance of statewide population extirpation (as estimated by the population viability models) within the specified planning period; and foreseeable future is defined as the next 50 years. Once this population level is achieved, it should be sustained for a period of at least three years before reclassification is proposed. Peregrine falcon productivity within the state also should equal or exceed productivity averages for the region. Average productivity for the eastern U.S. peregrine falcon population averaged 1.5 young/pair between 1992-1998 (USFWS 1999). Therefore the productivity goal for reclassifying peregrine falcons in Illinois to threatened status is an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year). Fledglings that require human intervention to ensure their survival should not count in this total, since the population must be self-sufficient in order to be considered recovered. Under current conditions this goal would require a stable population of at least 6 pairs of birds naturally producing an average of at least 9 young for a period of at least three years.

Delisted -- The overall goal for delisting the peregrine falcon in Illinois is to maintain a healthy, productive population that is at very low risk of statewide extirpation within the foreseeable future. Very low risk is hereby defined as a less than 1% chance of statewide population extinction (as estimated by the population viability models) within the specified planning period; and foreseeable future is defined as the next 50 years. Once this population level is achieved, it should be sustained for a period of at least three years before delisting is proposed. Peregrine falcon productivity within the state also should equal or exceed productivity averages for the region. Average productivity for the eastern U.S. peregrine falcon population averaged 1.5 young/pair between 1992-1998 (USFWS 1999). Therefore the productivity goal for delisting peregrine falcons in Illinois is an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year pair). Fledglings that require human intervention to ensure their survival should not count in this total, since the population must be self-sufficient in order to be considered fully recovered. Under current conditions this goal would require a stable population of at least 12 pairs of birds naturally producing an average of at least 18 young for a period of at least three years.

Amendment (2009)

That the Board would delay listing status review until after a time when the IDNR had in place a post-listing management and monitoring plan.

Nesting peregrine falcon population data in Illinois, 1988-2013 (Updated with 2012 and 2013 data a/o 01/06/14)

Year	# Breeding Pairs	Total # of Young Produced	Total # Young Produced/Nest	Total # of Naturally Produced Young	Total # of Naturally Produced Young/Nest
1988	1	2	2.0	N/A	N/A
1989	2	3	1.5	N/A	N/A
1990	1	0	0.0	N/A	N/A
1991	1	0	0.0	N/A	N/A
1992	1	3	3.0	N/A	N/A
1993	1	3	3.0	N/A	N/A
1994	4	6	1.5	N/A	N/A

1995	4	8	2.0	N/A	N/A
1996	5	4?	0.8	2	0.8
1997	5	7	1.4	4	1.4
1998	4	11	2.7	6	1.5
1999	5	11	2.2	9	1.8
2000	8	19	2.4	7	0.9
2001	10	21	2.1	18	1.8
2002	10	21	2.1	16	1.6
2003	10	23	2.3	17	1.7
2004	10	29	2.9	21	2.1
2005	10	26	2.6	18	1.8
2006	12	30	2.5	19	1.6
2007	12	25	2.1	20	1.7
2008	12	24	2.0	19	1.6
2009	13	33	2.5	27	2.1
2010	13	26	2.0	19	1.5
2011	20	43	2.2	35	1.8
2012	24	47	2	33	1.4
2013	13	31	2.4	30	2.3

ESPB staff review, recommendation: Data warrant review for consideration of a change in listing status. Recommend delisting the species. (Updated with 2011 data, 06/13/12). (Updated with 2012 and 2013 data, a/o 01/06/14).

The reclassification goals -

Productivity goal for delisting peregrine falcons in Illinois of an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year pair). *This goal has been met - 3-year average ending in 2010 was 1.7. The 3-year average ending in 2011 was 1.8. The 3-year average ending in 2013 was 1.8.*

Stable population of at least 12 pairs of birds naturally producing an average of at least 18 young for a period of at least three years. *This goal has been met – 3-year average ending in 2010 was 12.6 pairs naturally producing an average of 21.6 young. The 3-year average ending in 2011 was 15.3 pairs naturally producing an average of 27.0 young. The 3-year average ending in 2013 was 19 pairs naturally producing an average of 32.6 young.*

Amendment for IDNR to have in place a post-listing management and monitoring plan. *This has been met. The IDNR completed a post-listing management and monitoring plan, with Board review and comment, in the spring of 2012. The plan calls for using the Board's previously approved reclassification thresholds for re- listing, should monitoring data warrant such action in the future.*

Mankowski recommendation: Reclassification goals have been met or exceeded since the 2009 review and revision of the List and an IDNR post-listing management and monitoring plan is in place – delist from threatened.

Updated element occurrence distribution dot maps were not produced for this current review.
Updated NatureServe conservation status ranking map was not queried for this current review.
Updated USGS North American Breeding Bird Survey Trend Results was not queried for this current review.

Updated species review, Mankowski 02/2014

Golden mouse, Ochrotomys nuttallii (Illinois threatened)

Listed as IL T, 12/31/1977

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

Ochrotomys nuttalli (Harlan)

GOLDEN MOUSE **MURIDAE** **Status**: Threatened in Illinois

Present Distribution: The golden mouse occurs throughout the southeastern quadrant of the United States from eastern Texas and Oklahoma east to the Atlantic coastal states from Virginia to Florida. Southern Illinois is at the northernmost edge of its range (Feldhammer and Paine 1987, Hoffmeister 1989). There are recent (since 1990) records of the golden mouse from Alexander, Gallatin, Hardin, Johnson, Pope, Saline, and Union counties, but this species also may be present in Jackson and Williamson counties.

Former Illinois Distribution : The present distribution of the golden mouse is probably similar to its former range in the state. There is one old report from Marion County near Salem (Cory 1912), but this record has been questioned by Hoffmeister (1989).

Habitat: In Illinois, the golden mouse inhabits dense thickets in a variety of wooded habitats including bottomland hardwood forests, pines, drainage-ways, abandoned upland fields, roadside rights-of-way and successional sites dominated by cedar (Andrews 1963, Blus 1966). This species appears to be dependent on the presence of a dense understory including honeysuckle, catbrier, and grape (Klimstra and Roseberry 1969, Feldhamer and Paine 1987, Hoffmeister 1989). Populations of golden mice are usually small and isolated with densities that range from 1-12 mice per ha (Andrews 1963).

Reason For Status: Golden mice occur primarily in the Shawnee Hills Natural Division within Illinois. Although recent surveys have documented a number of locations within the state, populations at these sites are generally small. The discontinuous distribution and specific habitat requirements qualify this species as a potentially threatened member of the Illinois fauna.

Management Recommendations: The current distribution and numbers of this species in Illinois should be closely monitored. Consideration should be given to appropriate habitat management where golden mice occur on public lands.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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 updated, May 2012 Updated review, Mankowski 02/2014
(EO = element occurrence and is roughly equivalent to one or more local individuals; last observed data = most recently observed for each occurrence and observations from previous years for respective occurrences are not illustrated.)

Data a/o 05/2012

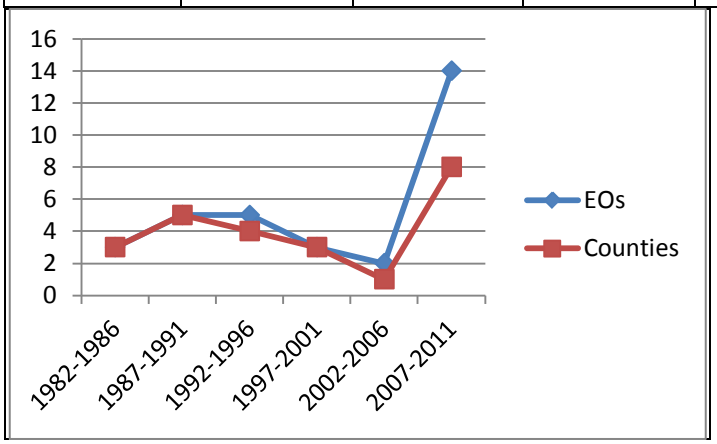
Last observed	Total # EOs	Total seen since Jan 2002	# Counties	# protected occurrences	# topo quads
2008-10	34	16	8	4	30

Data a/o 01/2014

Last observed	Total # EOs	last observed through 01/01/02 12/31/11	last obs 1/1/12 - 12/31/13	Total Eos w/last obs 1/1/02 - 12/31/11	Total Eos w/last obs 1/1/12 - 12/31/13	# protected Eos	# topo quads	total counties	counties 1/1/02 - 12/31/11	counties 1/1/12 - 12/31/13
2/7/2013	34	33	1	16	1	4	30	9	8	1

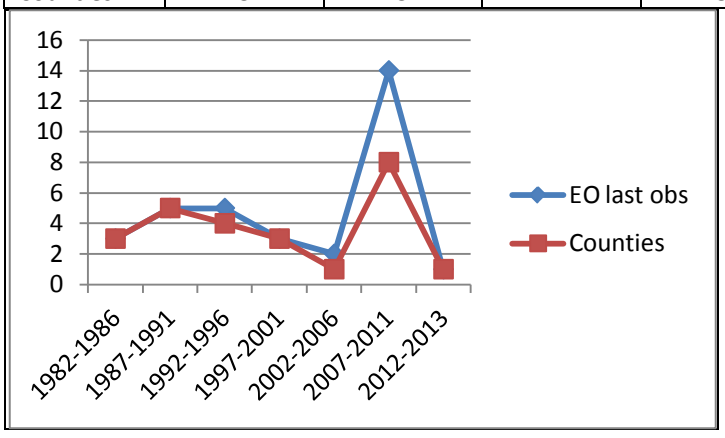
Data a/o 05/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Last obs EOs	3	5	5	3	2	14
Counties	3	5	4	3	1	8



Data a/o 01/2014

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
EO last obs	3	5	5	3	2	14	1
Counties	3	5	4	3	1	8	1



Golden mouse re-review, Mankowski 01/2014, Database info last updated 01/2014

EO #	Counties	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surv w/ no obs and no subseq obs	Protected	Population Notes	Separation Notes (NatureServe separation dist. between EOs = 2 km in unsuitable hab, 5 km in suitable hab)
1	Williamson (IL)	1985-04-25	2008-10	2008-10			2008-04 through 10: 22 individuals; 2008-04 through 10: 4 captures, 2 recaptures in 2 locations	maximum distance between "locations" within EO about 2,100 m
2	Gallatin (IL)	1985-06-24	2008-10	2008-10			2008-04 through 10: 1 capture, 0 recaptures	
3	Alexander (IL)	1906-11-20	2008-10	2008-10			2008-04 through 10: 9 captures, 7 recaptures in 2 locations	maximum distance between "locations" within EO about 6,300 m
4	Johnson (IL); Pope (IL)	1985-06-16	2008-10	2008-10			2008-04 through 10: 3 captures, 1 recapture	
5	Union (IL)	1957-10-27	1985-05-26	2012-11-13	2012	x		
6	Pope (IL)	1985-06-07	2008-10	2008-10			2008-04 through 10: 1 captures, 0 recaptures	
7	Jackson (IL)	1985-04-12	1985-04-20	2013-08-02	2013			
8	Pope (IL)	1963-01-02	1971-10-17	1971-10-17				
9	Union (IL)	1955-10-21	2013-02-07	2013-02-07			2013-02-04 to 02-07: 3 adult females	
15	Jackson (IL)	1987-05-27	1988	2013-08-21	2013	x		
16	Alexander (IL)	1984-Fall	1984-Fall	1984-Fall				
17	Alexander (IL)	1987-04-01	1987-04-01	1987-04-01				
19	Pope (IL)	1988-06-21	1988-06-21	1988-06-21				
20	Union (IL)	1988-06-20	1988-06-20	2013-08-21	2013			
21	Johnson (IL)	1989	1989	1989				
23	Pope (IL)	1988-11-29	1992-01-03	1992-01-03		x		
24	Johnson (IL)	1949-09-20	1992-11-17	2013-07-25	2013	x		
25	Alexander (IL)	1993-12	1993-12	1993-12				
26	Alexander (IL); Union (IL)	1994-05-10	2008-10	2008-10			2008-04 through 10: 6 captures, 4 recaptures	
27	Pope (IL)	1997-02-15	1997-02-15	1997-02-15				
28	Hardin (IL)	1997-02-04	1997-02-04	1997-02-04				
29	Pope (IL)	1995-02-14	1995-03-31	1995-03-31				
31	Gallatin (IL)	1995-02-13	1995-02-28	2013-07-17	2013			
36	Saline (IL)	1998-08-19	1998-08-19	1998-08-19				
37	Pope (IL)	2005-11-13	2005-11-13	2005-11-13			2005-11-13: 1 captured	
38	Pope (IL)	2005-10-08	2008-10	2008-10			2008-04 through 10: 8 captures, 1 recapture in 2 locations	maximum distance between "locations" within EO about 2,100 m
39	Pope (IL)	2005-10-10	2005-12-04	2005-12-04			2005-10 through 12: 2 captures, 3 recaptures	
40	Williamson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 48 individuals; 2008-04 through 10: 6 captures, 2 re-captures	
41	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 10 captures, 3 recaptures	
42	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 18 captures, 12 recaptures	
43	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 6 captures, 1 recaptures	
44	Johnson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 7 captures, 5 recaptures	
45	Johnson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 18 captures, 5 recaptures	
46	Saline (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 2 captures, 1 recapture	

Survey data cited in Nielsen et al (2011) versus Database data and updated Database EO data discussion
As presented in the tables above, according to the Database, there were 16 EOs with observation from 2002-2011 (2 EOs from 2005 and 14 EOs from 2008). One additional EO with observation was added in 2013, bringing to 17 the current total number of EOs with observation since 2002. Some data presented in the IDNR's 2014 official proposal to delist the species presents different numbers, but evidence to support those numbers was not provided and a 02/07/2014 check with Database staff did not confirm those numbers to be correct.

Nielsen et al (2011) reported observations at 21 sites and "surveyed with no observation" reports at 3 sites in 2008. These numbers are not reflected in the Database – only 14 EOs had reported observations and no EOs had reports of "surveyed with no observation" in 2008. Because these numbers did not agree, when the species was evaluated in August 2012, it was taken to mean that all Nielsen et al (2011) data had not been submitted, accepted, and entered into the Database. Subsequent to the August 2012 review, both Board and IDNR staff submitted relevant reports to the Database. In preparation for the February 2014 Board review of outstanding issues for the List review and upon receipt of IDNR 2014 official proposal to delist the species, Board staff gained updated Database information (dated 01/06/2014) and again reviewed the Database data against the information presented in Nielsen et al (2011) and in the IDNR's 2014 official proposal to delist the species.

The Database element occurrences (EOs) are the standard used by the Board, IDNR, and INPC for respective program functions. The Database uses EO separation distances established by NatureServe (based on species biology and ecology). The NatureServe EO separation distance for Golden Mouse is 2 km in unsuitable habitat and 5 km in suitable habitat. It appears that what Nielsen et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and some individual sites identified by Nielsen et al (2011) are actually "nested" locations within an individual EO. Three EOs with 2008 observation reports from Nielsen et al (2011) reported individual animals observed at more than one location in an EO (see EOs #1, #3, and #38 in the table immediately above). Board staff used Database Field Biotics to look at the mapping of "nested" locations within these EOs and estimated the distances (identified in the rightmost column of the table immediately above). Not knowing the suitability of habitat for these EOs, it appears that EO #38 may exceed the separation distance and constitute two EOs; EOs #1 and #3 are less clear. Even if all three of these separate locations were mistakenly attributed to existing EO polygons (which it doesn't appear they were), it would bring the total to only 17 EOs (and not 21 EOs) with observation in 2008 – representing 50% of the total number of EOs.

Despite uncertainty of how to reconcile the differences in reporting between Nielsen et al (2011) and the Database, the Nielsen et al (2011) report added 7 new EOs for the species (21% of current total). This, coupled with the comparisons to core-of-range occupancy and catch per unit effort, suggest some security in status and distribution. However, the species is described as ephemeral, so reported population numbers are not large (see table immediately above) and the addition of new EOs or EOs with no observation or without observation, may not reflect net gains or losses, but simply redistribution. Only 17 EOs (50% of total) have had observations since 2002. The three locations noted as "surveyed with no observation" in 2008 by Nielsen et al (2011) are not reflected in the Database – if we take those to be EOs and add the "surveyed with not observation" Database reports from 2012 and 2013, a total of 9 EOs (26% of total) were surveyed without observation and no subsequent observation since 2002. Additionally, 11 EOs (32% of total) have not been surveyed since at least 1998.

Status review triggers approved by the ESPB at its 144th meeting, November 13, 2009.
These proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of golden mice and consider de-listing. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different ($P<0.05$) from sites sampled in the core of the distribution that contain golden mouse.

Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different ($P<0.05$) from that within the core of the range of golden mice.

ESPB staff review, recommendation (updated 02/2014): Information presented in Nielen et al (2011) (partial pasted below) suggest that criteria for the ESPB to consider delisting are partially satisfied. However, data have not been submitted to and confirmed by the IDNR Natural Heritage Database and questions about genetics remain unanswered.

Current data are insufficient to warrant a status change. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.

As reviewed above, what Nielsen et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and it is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species. Additionally, the wording of Board-approved status review triggers is different that the criteria evaluated by Nielsen et al (2011) – although it appears the intended outcome of comparisons to core-of-range occupancy and catch per unit effort was satisfied. While it appears that criteria for the ESPB to consider delisting are at least partially satisfied, these discrepancies between Database data and survey results reported in Nielsen et al (2011) as well as differences in wording between ESPB-approved status review triggers and what was evaluated in Nielsen et al (2011) makes evaluation with respect to overall status and distribution and the Board's intent difficult.

> *<u>Updated information for 08/10/12 ESPB mtg iteration</u>:*
> *Drs. Heske and Carter provided comments that they felt the species was probably no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.*
>
> *Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database, genetic questions are answered, and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.*

From: Nielsen, C., E. Hellgren, E. Schauber, G. Feldhamer, J. Devine, C. Gillen, D. Lesmeister, D. Stetson. 2011. *Cooperative fur-bearing and nongame mammal investigations, Final Report, Federal Aid Project W-135-R-9-12. Submitted by – Cooperative Wildlife Research Laboratory and Department of Zoology, Southern Illinois University Carbondale. Presented to – Division of Wildlife Resources, Illinois Department of Natural Resources, Springfield, Illinois. 138 pp.*

> The 6 delisting criteria for the state (Appendix F) suggest the golden mouse could be delisted in Illinois.
>
> 1. <u>Species included in the Federal list of Endangered or Threatened Species</u>
> Golden mice are not federally listed as endangered or threatened. Likewise, the current IUCN Red Data List of Threatened Species (2011) lists the population trend of golden mice as "stable" and the status as "least concern."
>
> 2. <u>Species proposed for Federal Endangered or Threatened status that occur in Illinois</u>
> Golden mice are not being proposed for federal threatened or endangered status. As noted, they are generally considered secure throughout most of their range. The only exceptions are states on the periphery of the

range. In Oklahoma, only "a few" specimens have been reported (Caire et al. 1989). Likewise, in West Virginia they are quite rare. NatureServe (2011) considers them "critically endangered" in Oklahoma and "imperiled" in West Virginia. Given how little work has been done and how little is known of golden mice in either state, a more appropriate listing by NatureServe would be "status uncertain."

3. 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

There is no historical evidence that golden mice were ever widespread in Illinois. Given forest management practices the past 50 years on Shawnee National Forest—specifically small patch cutting and prescribed burning, both of which lead to creation of dense understory—density and distribution of the species may be greater than ever, although recent management trends toward reduced cutting and burning of forested sites may negatively impact golden mice and eventually reverse the trend.

4. Species which exhibit very restricted geographic ranges of which Illinois is a part

The geographic range of most species of North American mammals is fairly limited. The median geographic range of close to 700 mammalian species is only about 1% of the total area of North America; only about 14 species have ranges >50% of the area of North America. Thus, 1 in 6 species of North American mammals has a range smaller than the state of Connecticut. Most have ranges smaller than the states of California, Oregon, and Washington combined (Pagel et al. 1991, Pimm and Jenkins 2005). Also, as a general rule small species such as rodents have smaller ranges than large species. The golden mouse is a prime example of a small species with a relatively extensive geographic range. The extent of the geographic range of golden mice is well above the average for most North American mammals, especially for a small rodent.

5. Species which exhibit restricted habitats or low populations in Illinois

As noted above, golden mice are often found in deciduous hardwood and coniferous forests, but they also occupy a variety of habitats including the borders of old fields, swampy lowlands, canebrakes, and xeric uplands. Recent work suggests that golden mice adapt well to additional habitat types that they are not generally associated with, including areas with reduced understory (A. Cross, SIUC graduate student, unpublished data).

6. Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range

This is not the case for golden mice. Their range in Illinois is contiguous with the core distribution (see Figure 3), although the Ohio River could function as a barrier to gene flow.
The following 2 criteria also were addressed in this study:

7. The percentage of sites sampled in Illinois (within appropriate habitat) that contain golden mice is not different (or more) than the percentage sampled in the core of the distribution that contain golden mice. (This is not the same wording as the status review trigger approved by the Board - *Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different (P<0.05) from sites sampled in the core of the distribution that contain golden mouse*.)

As discussed in Job 4.3, we found golden mice on 21 of the 24 sites (87.5%) sampled in Illinois (Table 7)—although they were often in low numbers. Also, 3 sites had golden mice during the first round of capture, but none the second round, including any recaptures. Thus, populations may be fairly ephemeral. Conversely, in the core of the range, only 13 of the 24 (54.2%) sites had golden mouse captures (Table 8). Numbers were lower in the core than in Illinois, and populations were also ephemeral, with 4 sites having golden mice during the first round of capture, but none the second round, including any recaptures. There was no significant difference in the number of occupied sites in Illinois vs. those in the core of the range ($\chi^2 = 1.88$; df = 1; $P > 0.5$). Occupancy model estimates—which give the probability a site is occupied by golden mice whether or not we caught anything—were also much greater for sites in Illinois (0.93) than in the core of the range (0.49), again suggesting golden mice are more common in Illinois.

8. The average number of individual golden mice trapped per unit effort on all occupied sites within Illinois is no different (or more) than that within the core of the range of golden mice. (This is not the same wording as the status review trigger approved by the Board - *Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different (P<0.05) from that within the core of the range of golden mice.*)

Contrary to our expectations, abundance of golden mice at the periphery of their range in southern Illinois was much greater than in the core of the range. As noted in Tables 7 and 8, we captured 3.3 time more golden mice in Illinois (99 individuals) than in the core of the range (30 individuals). This was a statistically significant difference (χ^2 = 36.91; df = 1; $P < 0.00001$). In Illinois, 57.1% of the golden mice taken during the initial round of trapping had persisted on the sites and were recaptured during the second round (Table 7) compared to only 33.3% in the core of the range, again a significant difference (t = 3.36, df = 46, P = 0.0015). This is perhaps indicative of increased survivorship/persistence on Illinois sites.

Occupancy models also were consistent with these results, as expected. The probability estimate of occupancy at Illinois sites was 0.93 (SE=0.08) whereas the estimate of occupancy in the core was only 0.49 (SE=0.16).

Based on the delisting criteria for the state of Illinois, as well as criteria #7 and #8, it appears that golden mice can be delisted with no harm to the species in the state. The only caveat to this conclusion is if genetic studies currently underway at SIUC indicate unique alleles occur in the Illinois population compared to the core of the geographic range.

Updated element occurrence distribution dot maps were not produced for this current review.
Updated NatureServe conservation status ranking map was not queried for this current review.

Updated species review, Mankowski 02/2014

Rice rat, Oryzomys palustris (Illinois threatened)

Listed as IL T, 12/31/1977

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

Ochrotomys nuttalli (Harlan)

GOLDEN MOUSE **MURIDAE** **Status**: Threatened in Illinois

Present Distribution: The golden mouse occurs throughout the southeastern quadrant of the United States from eastern Texas and Oklahoma east to the Atlantic coastal states from Virginia to Florida. Southern Illinois is at the northernmost edge of its range (Feldhammer and Paine 1987, Hoffmeister 1989). There are recent (since 1990) records of the golden mouse from Alexander, Gallatin, Hardin, Johnson, Pope, Saline, and Union counties, but this species also may be present in Jackson and Williamson counties.

Former Illinois Distribution : The present distribution of the golden mouse is probably similar to its former range in the state. There is one old report from Marion County near Salem (Cory 1912), but this record has been questioned by Hoffmeister (1989).

Habitat: In Illinois, the golden mouse inhabits dense thickets in a variety of wooded habitats including bottomland hardwood forests, pines, drainage-ways, abandoned upland fields, roadside rights-of-way and successional sites dominated by cedar (Andrews 1963, Blus 1966). This species appears to be dependent on the presence of a dense understory including honeysuckle, catbrier, and grape (Klimstra and Roseberry 1969, Feldhamer and Paine 1987, Hoffmeister 1989). Populations of golden mice are usually small and isolated with densities that range from 1-12 mice per ha (Andrews 1963).

Reason For Status: Golden mice occur primarily in the Shawnee Hills Natural Division within Illinois. Although recent surveys have documented a number of locations within the state, populations at these sites are generally small. The discontinuous distribution and specific habitat requirements qualify this species as a potentially threatened member of the Illinois fauna.

Management Recommendations: The current distribution and numbers of this species in Illinois should be closely monitored. Consideration should be given to appropriate habitat management where golden mice occur on public lands.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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 updated, May 2012 Updated review, Mankowski 02/2014
(EO = element occurrence and is roughly equivalent to one or more local individuals; last observed data = most recently observed for each occurrence and observations from previous years for respective occurrences are not illustrated.)

Data a/o 05/2012

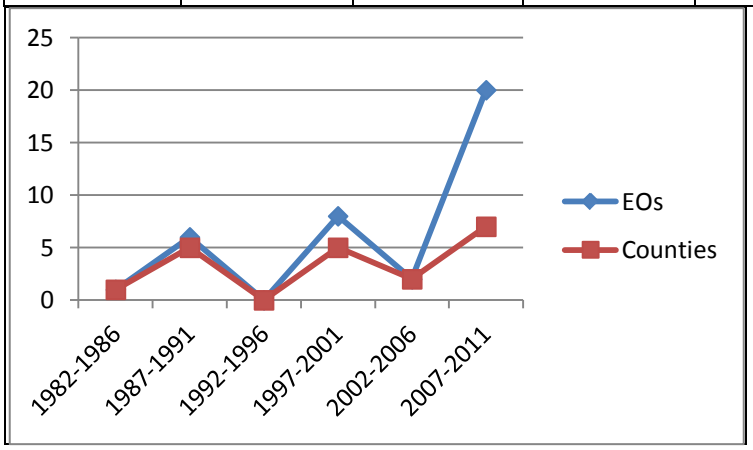
Last observed	Total # EOs	Total seen since Jan 2002	# Counties	# protected occurrences	# topo quads
3/5/2011	37	22	10	3	34

Data a/o 01/2014

Last obs	Total # EOs	last observed through 12/31/11	last obs 1/1/12 - 12/31/13	Total Eos w/last obs 1/1/02 - 12/31/11	Total Eos w/last obs 1/1/12 - 12/31/13	# protected Eos	# topo quads	total counties	counties 1/1/02 - 12/31/11	counties 1/1/12 - 12/31/13
8/9/2013	39	28	11	19	9	3	37	13	10	7

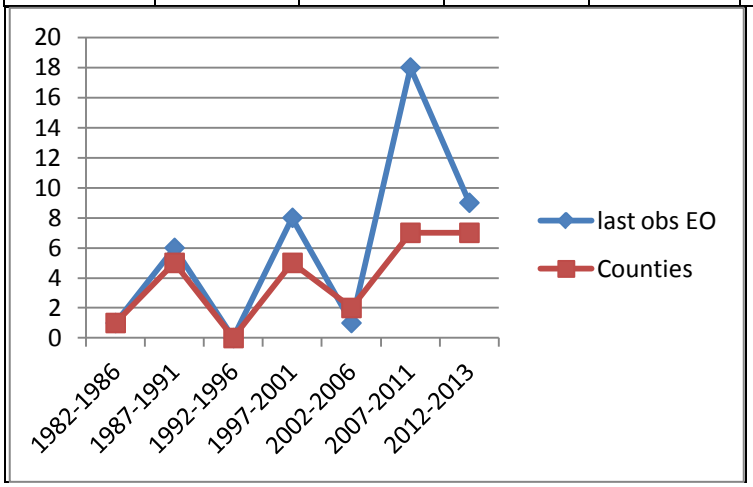
Data a/o 05/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Last obs EOs	1	6	0	8	2	20
Counties	1	5	0	5	2	7



Data a/o 01/2014

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
last obs EOs	1	6	0	8	1	18	9
Counties	1	5	0	5	2	7	7



Rice rat re-review, Mankowski 01/2014, Database info last updated 01/2014

EO #	Counties	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surv w/ no obs and no subseq obs	Protected	Pop #s 2007	Pop #s 2008	Pop #s 2009	Pop #s 2010	Pop #s 2011	Pop #s 2012	Pop #s 2013	Separation Notes (NatureServe separation dist. between EOs = 2 km in unsuitable hab, 5 km in suitable hab)
1	Pulaski (IL)	1987-01-02	1987-01-02	1987-01-02										
2	Massac (IL)	1968	2005-05-26	2005-05-26										
3	Saline (IL)	1987-04-27	2010-12-08	2010-12-08				3 captures	60 captures in 2 locations	36 individuals				maximum distance between "locations" within EO about 1,380 m
4	Johnson (IL)	1987-04-01	2009-03-15	2009-03-15					4 captures					
5	Williamson (IL)	1987-04-07	2013-05-31	2013-05-31									1 adult	
6	Franklin (IL)	1987-05-12	2008-07-19	2008-07-19				14 captures in 2 locations						maximum distance between "locations' within EO about 300 m
7	Alexander (IL)	1987-03-31	2008-06-19	2008-06-19		NP		4 captures in 2 locations						maximum distance between "locations' within EO about 1,700 m
8	White (IL)	1987-05-26	2013-05-23	2013-05-23									1 adult male	
9	Hamilton (IL)	1987-06-03	1987-06-04	2013-06-30	2013								sno	
10	Hamilton (IL)	1987-06-03	1987-06-04	2013-06-30	2013								sno	
12	Jackson (IL)	1986-10-29	2009-07-24	2009-07-24					1 capture					
13	Jackson (IL)	1987-09-23	2012-12-03	2012-12-03								1 adult		
14	Pope (IL)	1986-06-02	1986-06-03	1986-06-03										
16	Williamson (IL); Saline (IL)	1990-03-06	2009-01-14	2009-01-14					16 captures in 2 locations					maximum distance between "locations' within EO about 1,300 m
17	Union (IL)	1993-07-30	2013-02-07	2013-02-07									2 AF, 3 AM, 1 JM, 1 JF, 1 ?	
18	Massac (IL)	1998-08-21	1998-08-23	2013-06-15	2013								sno	
20	Johnson (IL)	1998-07-16	1998-07-18	2013-04-27	2013								sno	

EO #	Counties	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surv w/ no obs and no subseq obs	Protected	Pop #s 2007	Pop #s 2008	Pop #s 2009	Pop #s 2010	Pop #s 2011	Pop #s 2012	Pop #s 2013	Separation Notes (NatureServe separation dist. between EOs = 2 km in unsuitable hab, 5 km in suitable hab)
22	Union (IL); Alexander (IL)	1998-08-28	2007-04-19	2007-04-19		7-11 M, 6-8 F, some reproductive at 3 locations								maximum distance between "locations' within EO about 3,200 m
25	Alexander (IL)	1998-06-25	1999-10-22	1999-10-22										
26	Massac (IL)	1998-08-22	1998-08-22	2013-07-28	2013	NP							sno	
27	Union (IL)	1999-09-24	1999-09-24	2013-06	2013	NP							sno	
28	Alexander (IL)	1999-10-20	1999-10-20	1999-10-20	2013								sno	
29	Alexander (IL); Pulaski (IL)	1999-09-23	1999-09-23	1999-09-23										
30	Williamson (IL)	2002-09-10	2013-02-12	2013-02-12									1 adult male	
33	Perry (IL)	2003-09-20	2008-11-11	2008-11-11				17 captures at 5 locations						maximum distance between "locations' within EO about 3,750
34	Union (IL)	1994-11	2009-07-14	2009-07-14					1 capture					
35	Union (IL)	1994-11	2009-06-09	2009-06-09		NP	3 M, 6 FM		1 capture					
36	Franklin (IL)	2005-10-18	2011-03-05	2011-03-05							up to 2 AF, 3 JF, and 1 AM			
37	Alexander (IL)	2008-05-13	2013-04-26	2013-04-26				1 M & 2 FM			14 AF, 19 AM, 1 Juv, 1 ?	63 AF, 56 subAF, 102 AM, 112 subAM, 21 Juv	9 AM. 8 AF, 5 JF	maximum distance between "locations' within EO about 1,700 m
38	Pulaski (IL)	2009-02-25	2009-03-03	2009-03-03					44 captures at 3 locations					maximum distance between "locations' within EO about 1,400 m
39	Johnson (IL)	2009-03-11	2009-03-15	2009-03-15					1 capture					

EO #	Counties	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surv w/ no obs and no subseq obs	Protected	Pop #s 2007	Pop #s 2008	Pop #s 2009	Pop #s 2010	Pop #s 2011	Pop #s 2012	Pop #s 2013	Separation Notes (NatureServe separation dist. between EOs = 2 km in unsuitable hab, 5 km in suitable hab)
40	Johnson (IL); Pulaski (IL)	2009-03-11	2009-03-15	2009-03-15					4 captures					
41	Williamson (IL)	2009-01-12	2009-01-15	2009-01-15					7 captures					
42	Franklin (IL)	2008-08-13	2008-08-17	2008-08-17				up to 15 captures						
43	Jackson (IL); Williamson (IL)	2009-08-01	2012-10-20	2012-10-20					up to 5 captures at 3 locations		45 AF, 23 subAF, 71 AM, 46 subAM, 6 ?	44 AF, 4 subAF, 65 AM, 3 subAM, 21 Juv		maximum distance between "locations' within EO about 2,600 m
45	Williamson (IL)	2010-02-25	2010-03-03	2010-03-03						10 captures				
46	Williamson (IL)	2011-03-03	2011-03-03	2011-03-03							1 adult male			
47	Perry (IL)	2012-05-30	2012-05-30	2012-05-30								1 adult male		
48	Saline (IL)	2013-08-07	2013-08-09	2013-08-09									1 AF, 2 AM	

Survey data cited in Eubanks et al (2011) and Nielsen et al (2012) versus Database data and updated Database EO data discussion

As presented in the tables above, according to the Database, there were 19 EOs with last observation from 2002-2011). Nine additional EO with last observation were added in 2012-2013, bringing to 28 the current total number of EOs with last observation since 2002. Some data presented in the IDNR's 2014 official proposal to delist the species presents different numbers, but evidence to support those numbers was not provided and a 02/07/2014 check with Database staff did not confirm those numbers to be correct.

Eubanks et al (2011) reported observations at 16 of 48 sites from 2007-2009 and Nielsen et al (2011) reported observations at 4 sites in 2011-2012 (the number of sites that were surveyed without observation is not clear). These numbers are not reflected in the Database – only 11 EOs had reported observations from Eubanks et al and no EOs had reports of "surveyed with no observation" from Eubanks from 2007-2009; there are currently 4 EOS with reported observation by Nielsen et al from 2011-2012. Because these numbers did not agree and because no EOs had 5 years of reporting for the period of 2007-2012 when the species was evaluated in August 2012, it was taken to mean that data had not been submitted, accepted, and entered into the Database. Subsequent to the August 2012 review, both Board and IDNR staff submitted relevant reports to the Database. In preparation for the February 2014 Board review of outstanding issues for the List review and upon receipt of IDNR 2014 official proposal to delist the species, Board staff gained updated Database information (dated 01/06/2014) and again reviewed the Database data against the information presented in Eubanks et al (2011) and Nielsen et al (2012) and in the IDNR's 2014 official proposal to delist the species.

The Database element occurrences (EOs) are the standard used by the Board, IDNR, and INPC for respective program functions. The Database uses EO separation distances established by NatureServe (based on species biology and ecology). The NatureServe EO separation distance for Rice Rat is 2 km in unsuitable habitat and 5 km in suitable habitat. It appears that what Eubanks et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and some individual sites identified by Eubanks et al (2011) are actually "nested" locations within an individual EO. Three EOs with observation reports from Eubanks et al (2011) reported individual animals observed at more than one location in an EO (see EOs #6, #7, and #33 in the table immediately above). Board staff used Database Field Biotics to look at the mapping of "nested" locations within these EOs and estimated the distances (identified in the rightmost column of the table immediately above). Not knowing the suitability of habitat for these EOs, it appears that EO #38 may exceed the separation distance and constitute two EOs; EOs #1 and #3 are less clear. Even if all three of these separate locations were mistakenly attributed to existing EO polygons (which it doesn't appear they were), it is not clear that the observations at any would satisfy the ESPB-approved status review trigger for 2 distinct reproductively viable populations (or EOs) in each of 3 major watersheds for 5 years.

Despite uncertainty of how to reconcile the differences in reporting between Eubanks et al (2011) and the Database and that it appears the ESPB-approve status review triggers have not been met, the Eubanks et al (2011) report added 5 new EOs for the species (13% of current total) and a total of 28 EOs (72% of total) have had observations since 2002. At the same time, seven EOs (18% of total) had "surveyed with no observation" reports in 2013.

Status review triggers approved by the ESPB at its 144th meeting, November 13, 2009.

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of rice rats and consider status changes. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Evaluate Change in Status to Not Listed as Threatened or Endangered –
Rice rats will be considered recovered and eligible for a change in status to —not listed when it is demonstrated that:

1. Two distinct, reproductively viable populations (composing a watershed metapopulation) persist in each of at least 3 major watersheds (i.e., Big Muddy, Saline, Ohio, Cache, Mississippi, Kaskaskia, Little Wabash, Wabash) in southern Illinois for 5 years.
2. Habitats used by rice rats show a stable or increasing trend in area over the most recent 5 years.

ESPB staff review, recommendation (updated 02/2014): Data do not warrant review for consideration of a change in listing status. Information in a recent publication (Eubanks et al, 2011 – partial pasted below) suggest populations may be nearing thresholds, although detections fell short of expectations and capture rates were below previous studies in Southern Illinois and those conducted elsewhere in the species range. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.

As explained above, the number of "sites" cited in Eubanks et al (2011) does not agree with the number of EOs in the Database. The difference in occurrence numbers was part of the reason that the Board elected to not change the status of the species at the 155 meeting (and is explained in those meeting minutes) – because as presented, it appears that cited survey information had not been verified and entered into the Database. It is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species

Current Database data does not demonstrate observations for 5 years at any EO from 2007-2013. Additionally, for the 3 EOS with several years of reported observations from 2007-2013, it is unclear whether reported population numbers and/or numbers of individuals are sufficient to demonstrate reproductively viable populations. Some new information that speaks to increases in habitat was provided in the IDNR 2014 official proposal to delist the species. While it appears that criteria for the ESPB to consider delisting may be at least partially satisfied, these discrepancies between Database data and survey results reported in Eubanks et al (2011) makes evaluation with respect to overall status and distribution and the Board's intent difficult. Board staff recommendation at this time is that the information provided here is helpful, but may not fully statisfy a determination that the species' status and distribution exceeds the definition of "threatened".

> *<u>Updated information for 08/10/12 ESPB mtg iteration</u>:*
> *Drs. Heske and Carter provided comments that they felt the species was probably*
>
> *no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched and regulations continue to provide protection for wetlands (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.*
>
> *Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.*

From: *Eubanks, B.W., E.C. Hellgren, J.R. Nawrot, and B.D. Bluett. 2011. Habitat associations of the marsh rice rat (Oryzomys palustris) in freshwater wetlands of southern Illinois. Journal of Mammalogy, 92(3):552-560, 2011.*

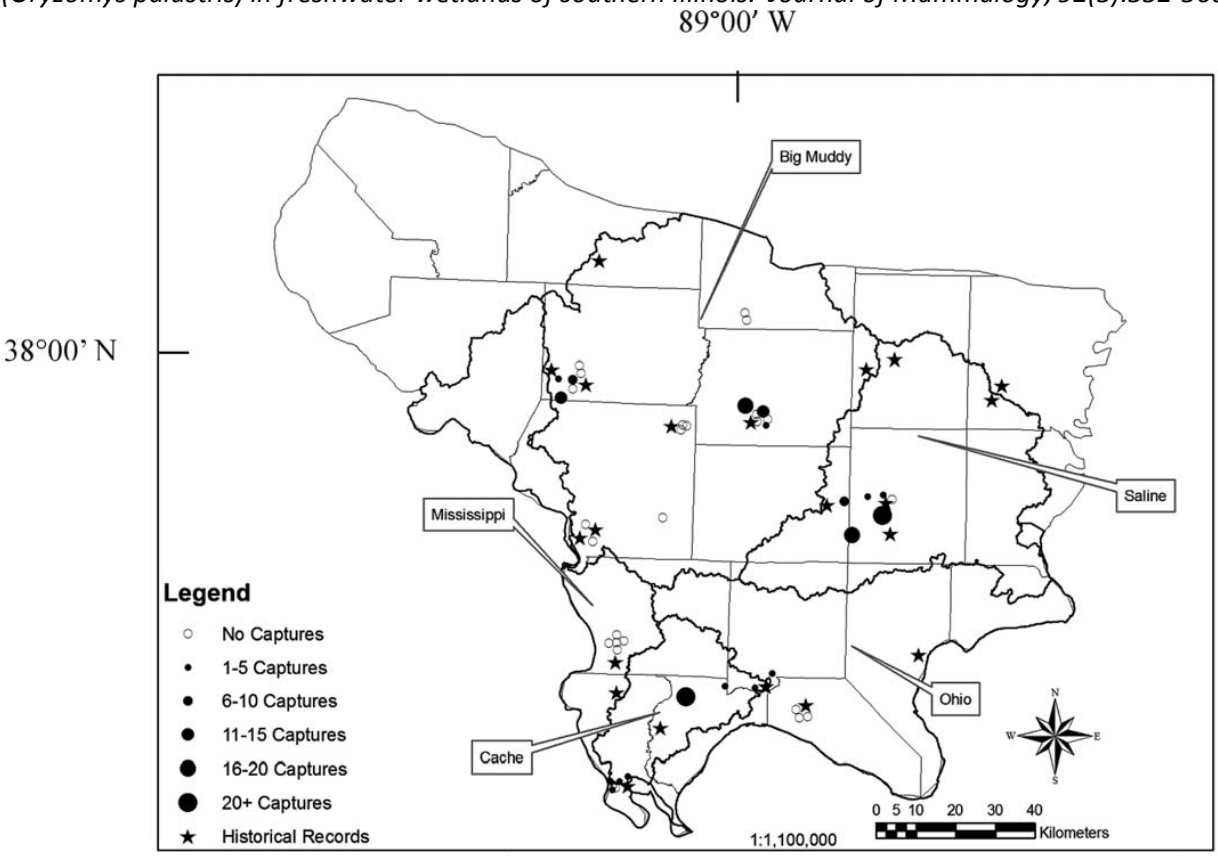


FIG. 1.—Trapping locations and number of marsh rice rat (Oryzomys palustris) captures (circles) during survey for marsh rice rats in southern Illinois, 2007–2009. Stars represent historical records. Gray lines represent county borders, and black lines represent watershed boundaries. Sampled watersheds are labeled in boxes.

From Discussion Section:

Our site-selection process incorporated previous ecological knowledge about rice rats and was designed to determine which types and features of local wetlands were associated with rice rat occurrence. Therefore, it included random wetland-dominated sites that were not optimal habitat. Also, optimal habitat can change temporally due to yearly or seasonal changes in vegetation structure. In comparison, Hofmann et al. (1990) trapped opportunistically in areas where rice rat occupancy was probable based on direct field observation. These sites, if unmanaged, had undergone >20 years of succession by the time we trapped at these locations. For example, sites once dominated by grasses, sedges, and rushes (Hofmann et al. 1990) often had undergone succession to shrub-dominated communities including species such as black willow (Salix nigra), red maple (Acer rubrum), buttonbush, and sycamore (Platanus occidentalis). This change in vegetation composition could have led to local extirpation of rice rats, because the species rarely was found in wetlands dominated by woody species.

The site-selection process and successional changes in habitat on historical sites could have contributed to lower capture rates and rice rat occupancy in this study than in the last extensive survey of southern Illinois (Hofmann et al. 1990). Hofmann et al. (1990) captured 28.2 rice rats/1,000 trap nights at 13 of 31 (naı¨ve occupancy = 0.419) sites. Broader comparisons showed that the capture rate (10.0 individual rice rats/1,000 trap nights) during our entire study (2007–2009) was lower than capture rates reported in coastal areas across the range, which varied from 21.7 rice rats/1,000 trap nights (Kruchek 2004) to 68.4 rice rats/1,000 trap nights (Bloch and Rose 2005; Table 5). Capture rates in early-successional habitats in a bottomland hardwood forest in the Mississippi River Delta region were 67 rice rats/1,000 trap nights (total effort=539 trap nights) prior to a flood event (Chamberlain and Leopold 2003). Similarly, density estimates in the present study, which represent minimum estimates, were much lower than densities reported from other studies (Table 5). Our occupancy modeling indicated that because daily detection probabilities (p range = 0.44–0.87) were high, rice rats most likely would be detected if they occurred

within a sampling site. Studies of overwinter survival, density, and habitat use are needed to better understand differences that might exist between core and peripheral populations within the species' range.

Updated element occurrence distribution dot maps were not produced for this current review.
Updated NatureServe conservation status ranking map was not queried for this current review.

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
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:** 06/11/12; updated 07/19/12; updated 02/02/14

B. **Proposer Information**

Name: Anne Mankowski
Address: ESPB; One Natural Resources Way; Springfield, IL 62702-1271
Phone number: 217-785-8687
Email address: anne.mankowski@illinois.gov
Title: Executive Director
Institution/Organization affiliation: IL Endangered Species Protection Board

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: *Myotis leibii*
Common Name: Eastern Small-footed Myotis
Nomenclature Citation: Audubon and Bachman, 1842

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 ____

Recommend listing as threatened __?? _X

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

1. Species or subspecies designated as federally endangered or threatened.

2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
3. 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:
    a. are experiencing reproductive impairment;
    b. have experienced a range reduction;
    c. occur in reduced numbers even though range or number of populations remains steady.
4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:
    a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
    b. species which exhibit restricted habitats or low populations in Illinois;????
    c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

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**.

Not addressed at this time.

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.**

I am requesting review and comments from ESPB TECs and Board members regarding listing consideration. My recommendation at this time is that the species not be listed because 1) known occurrence data is not sufficient to demonstrate the species is a persistent resident/breeder or otherwise significantly uses the area that is Illinois and I would like to see another year or two of occurrence data to better confirm and 2) wait to see what is the outcome of the USFWS review. See also ESPB discussion re: IL cave bat status from the 149th mtg, begins page 43.

<u>Updated information for 08/10/12 ESPB mtg iteration</u>:
Dr. Tim Carter provided comments that he supports listing the species and believes the species is not transient because the 2011 animals were found in the same location as the incidental occurrence observed by Steffen in 2005 and that based on his observations, once bats are found in a location, they are typically residents and not transient. He also commented that he believes there is evidence of breeding because both genders and juveniles were observed in 2011 (Tim Carter, personal communication 06/18/12 and 06/29/12). No new evidence was provided.

Mankowski comment: I appreciate the evidence of breeding from the 2011 observations. However, regarding persistence – the 2005 observations were described as uncertain as to whether they were migrants , and I would like to see at least another year of survey data to demonstrate that what we are seeing is not a 5/6-year cycle pulse where the species expands into IL every few years, but is not actually a persistent resident. I would like to hear from other ESPB TECs regarding the issue.

Dr. Ed Heske provided comments that he supports listing the species, noting that while the status of this bat in southern Illinois is not clear, with so few records, it seems to fall into a similar category as Corynorhynus and M. austroriparius at the least, and is listed in all other states where it occurs so may be even more vulnerable (Ed Heske, personal communication 06/18/12). No new evidence was provided.
Mankowski comment: I reiterate my desire for additional years of data for this species. With respect to the C. rafinesquii (Rafinesque's Big-eared Bat) and M. austroriparius (Southeastern Myotis), while the

reason for listing would be the same, the listing decisions for those species did consider multiple years of records and survey data.

Currently known Illinois records:

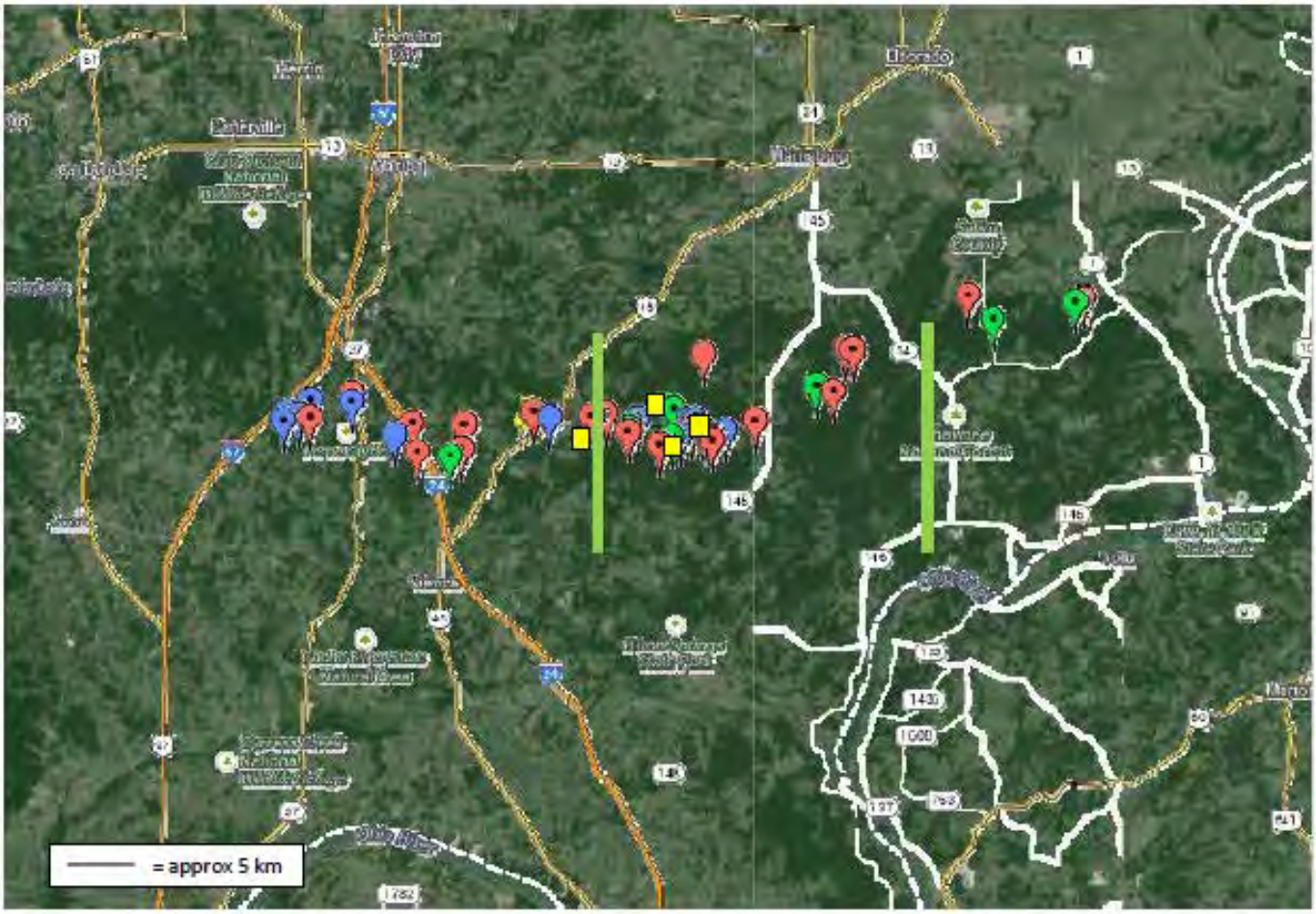
1993. Two animals (males), Pope County (exact location unknown), No specific date 1993. Field Museum collections (Cat # 150639 and 150632). (Tara Kieninger, IDNR Natural Heritage Database, personal communication 03/21/12; and, Dr. Tim Carter, Ball State University, personal communication via Tara Kieninger, 03/21/12).

2005. Two animals (one male, one female) documented in Pope County, November 4, 2005 (Steffen, B.J, T.L. York Osborne, T.C. Carter, G.A. Feldhamer. 2006. The first record of Eastern small-footed Myotis (Myotis leibii) in Illinois. Transactions of the Illinois State Academy of Science. 99(1&2):87-89.

2011. July 25 – August 16, 2011. No M. leibii were captured during two nights of mist-netting. Fifteen rock outcrops were searched by hand. Twenty-nine M. leibii, were observed on 8 rock outcrops in an ~ 9 km2 area of Johnson and Pope Counties (Table 1). Two females were discovered using the same roost as a juvenile, including one post-lactating female. Other bats were observed roosting singly or in small groups up to 5. Myotis leibii, were unable to be located on 7 rock outcrops. One voucher specimen was taken and stored in the mammalogy collection of Ball State University. (Tara Kieninger, IDNR Natural Heritage Database, personal communication 08/16/11 and 03/21/12; and, Whitby, M.D., S.M. Bergeson, S.A. Rutan, T.C. Carter. 2011. Annual Report to the US Forest Service, Project USDA-FS-PA-11090800-23, Monitoring Indiana Bat Maternity Colonies in Southern Illinois, Appendix I. 36 pp.)

2012. August. Several locations at what would be approximately five database (NatureServe) element occurrences across three counties (Tim Carter, pers comm. 08/09/2012). From one to ten individuals were reported across the locations. This information was reviewed during the ESPB 155 meeting, held 08/10/2012 and evaluated as part of the Board's preliminary approval for listing the species as threatened. The Board also requested another year of survey data before confirming its preliminary decision. (Separate figure displayed during 02/21/2014 ESPB meeting to facilitate discussion, but not included in this current review so as not to disclose specific location information.)

Map of approximate observations from 2011 and 2013 after Carter 2011 and 2012 (Mankowski 2014)



Eastern Small-footed Bat (Myotis leibii), Mankowski 02/2014 (after Images and information submitted by Dr. Tim Carter in 2011 and 2012. Observations indicated here equal approximately 5-6 EOs across 3 counties.
Notes: yellow box = approximate locations of 2011 observations; green icons = locations of 2012 observations; red icons = surveyed, no observation; blue icons = not surveyed; green lines = approximate county lines. NatureServe EO separation distance for bats = 5km in suitable habitat and 2km in unsuitable habitat.

G. **Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat**.

Species is currently under review by USFW: a not-warranted 12-month finding or proposed listing/critical habitat rule determination scheduled by end of FFY2013. The federal decision not to list the eastern small-footed bat published in the Federal Register, October 2, 2013 (USFWS 2013).

H. **Information regarding the status of the species over all or a significant portion of its range**.

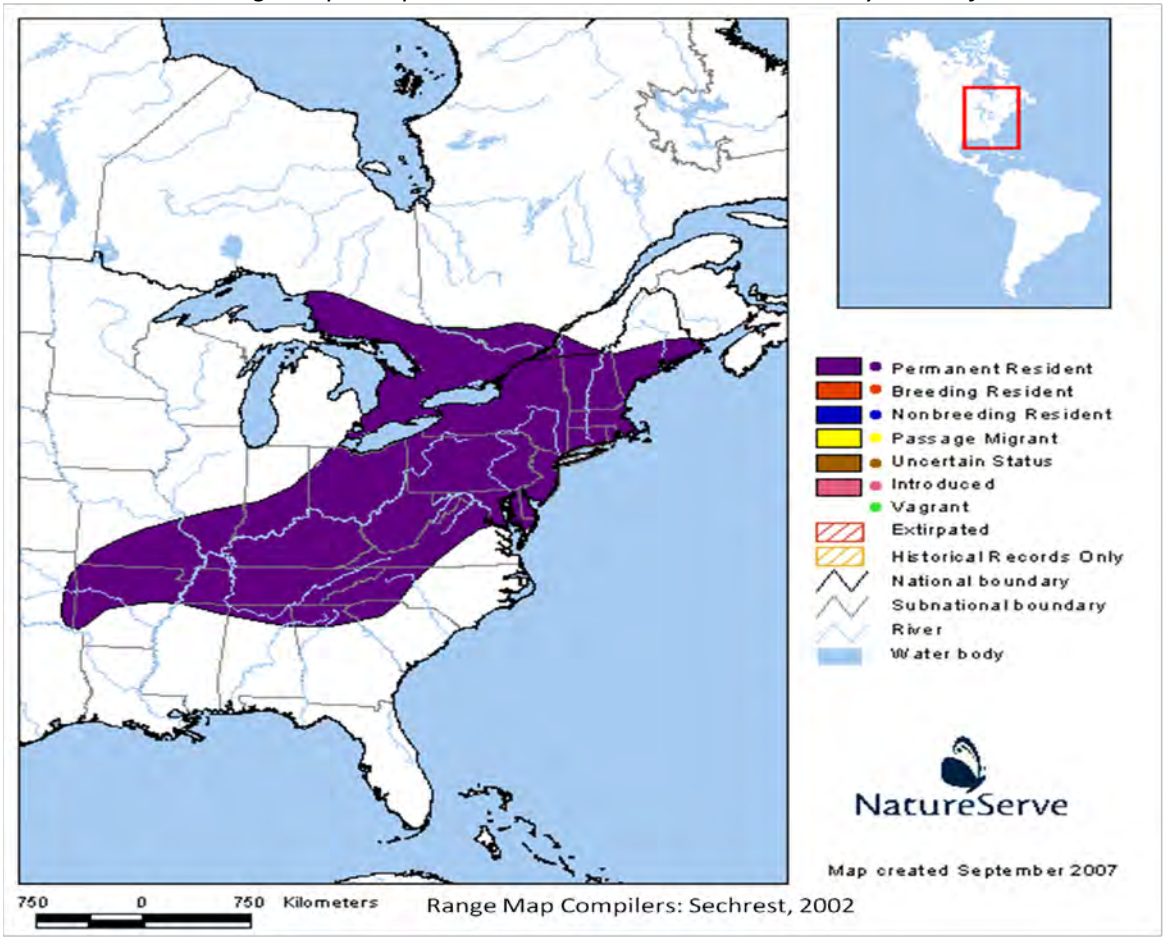
From USFWS 90-day finding on the Center for Biological Diversity's petition to list the eastern small-footed and the northern long-eared bats as threatened or endangered under the authority of the Endangered Species Act (ESA).

The deaths of individuals of both species have been linked to WNS across portions of their ranges. The confirmation of WNS across large portions of the eastern small-footed bat's range and eastern sections of the northern long-eared bat's range, along with the historical and anticipated future rate of WNS spread, indicate that WNS may negatively impact large portions of the petitioned species' ranges in the near future.

The USFWS recently evaluated the species in a 12-month finding on a petition for listing as endangered or threatened. The 12-month finding published notice that listing was not warranted. Multiple factors were included

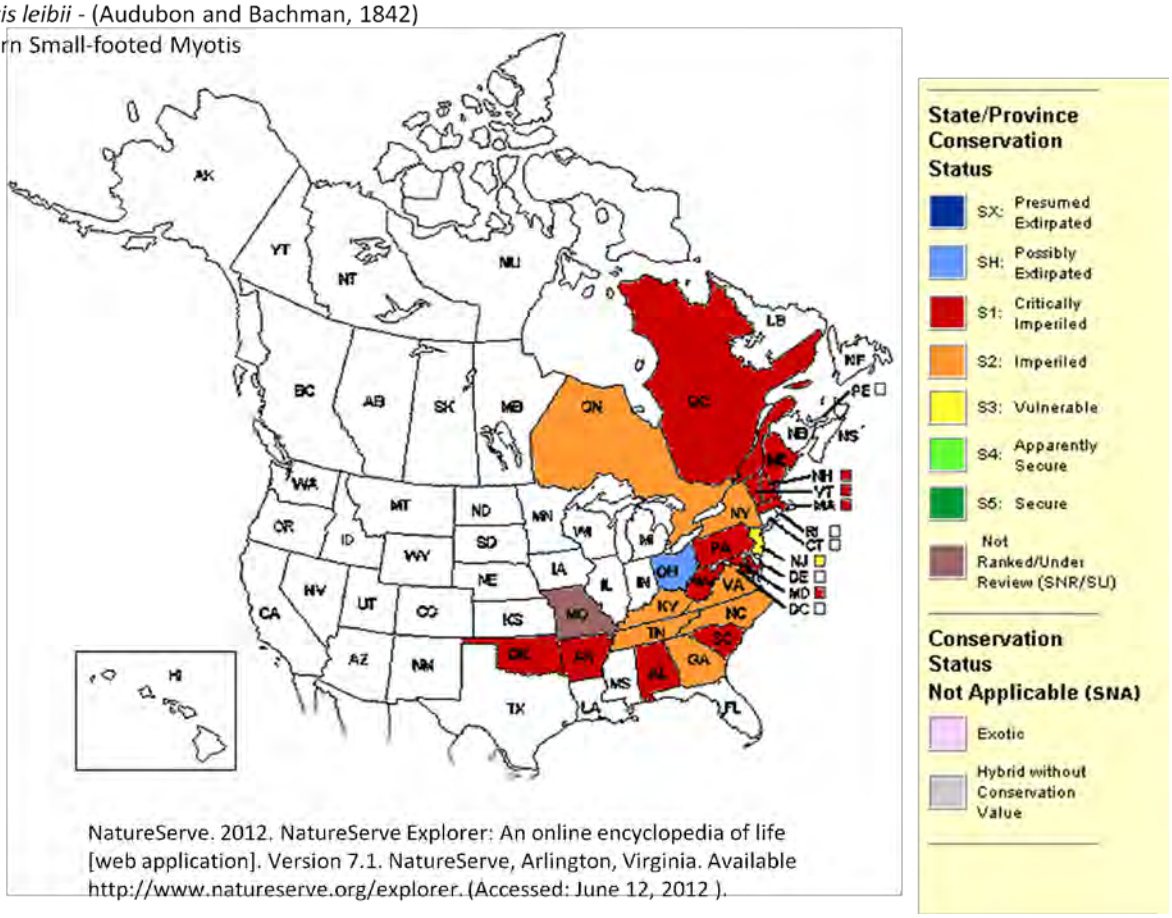
in the federal review, with demonstrated and estimated range-wide impacts from White Nose Syndrome (WNS) predominant. Determinations reported in the 12-month finding were that WNS does not appear to have caused a significant population decline in hibernating eastern small-footed bats – noting that a comparison of the most recent pre-WNS count to the most recent post-WNS count, Turner et al.(2011, p. 22) reported a 12-percent decline in the number of hibernating eastern small-footed bats at 25 hibernacula in New York, Pennsylvania, Vermont, Virginia, and West Virginia (USFWS 2013).

NatureServe range map - map notes indicate that no records actually known from Illinois.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: June 12, 2012).

Myotis leibii - (Audubon and Bachman, 1842)
Eastern Small-footed Myotis



I. **Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps**.

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:

50 CFR Part 17, Volume 78, Number 191, Part 3 - October 2, 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule.

Dr. Tim Carter, Ball State University, personal communication, 08/16/11. (Occurrence information)

Dr. Tim Carter, Ball State University, personal communication, 08/09/12. (Occurrence information)

Tara Kieninger, IDNR Natural Heritage Database, personal communication 08/16/11 (Occurrence information)

Tara Kieninger, IDNR Natural Heritage Database, personal communication 03/21/12 (Occurrence information)

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe. Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: June 11, 2012).

Steffen, B.J, T.L. York Osborne, T.C. Carter, G.A. Feldhamer. 2006. The first record of Eastern small-footed Myotis (Myotis leibii) in Illinois. Transactions of the Illinois State Academy of Science. 99(1&2):87-89. (Occurrence information).

Whitby, M.D., S.M. Bergeson, S.A. Rutan, T.C. Carter. 2011. Annual Report to the US Forest Service, Project USDA-FS-PA-11090800-23, Monitoring Indiana Bat Maternity Colonies in Southern Illinois, Appendix I. 36 pp. (Occurrence information).

Provide a list of attachments here:

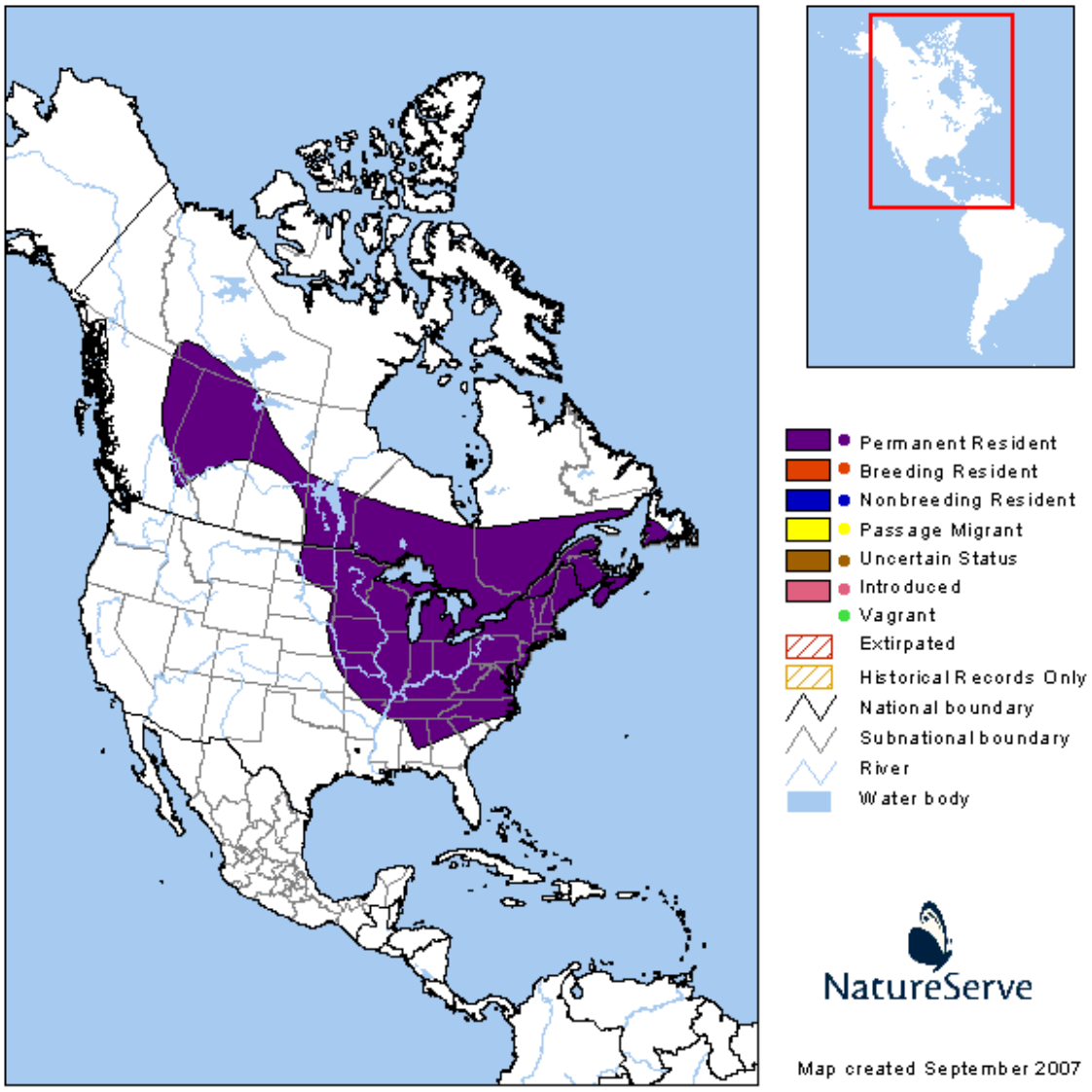
N/A

Northern Long-Eared Bat (Myotis septentrionalis) Species Review, Mankowski, 02/2014

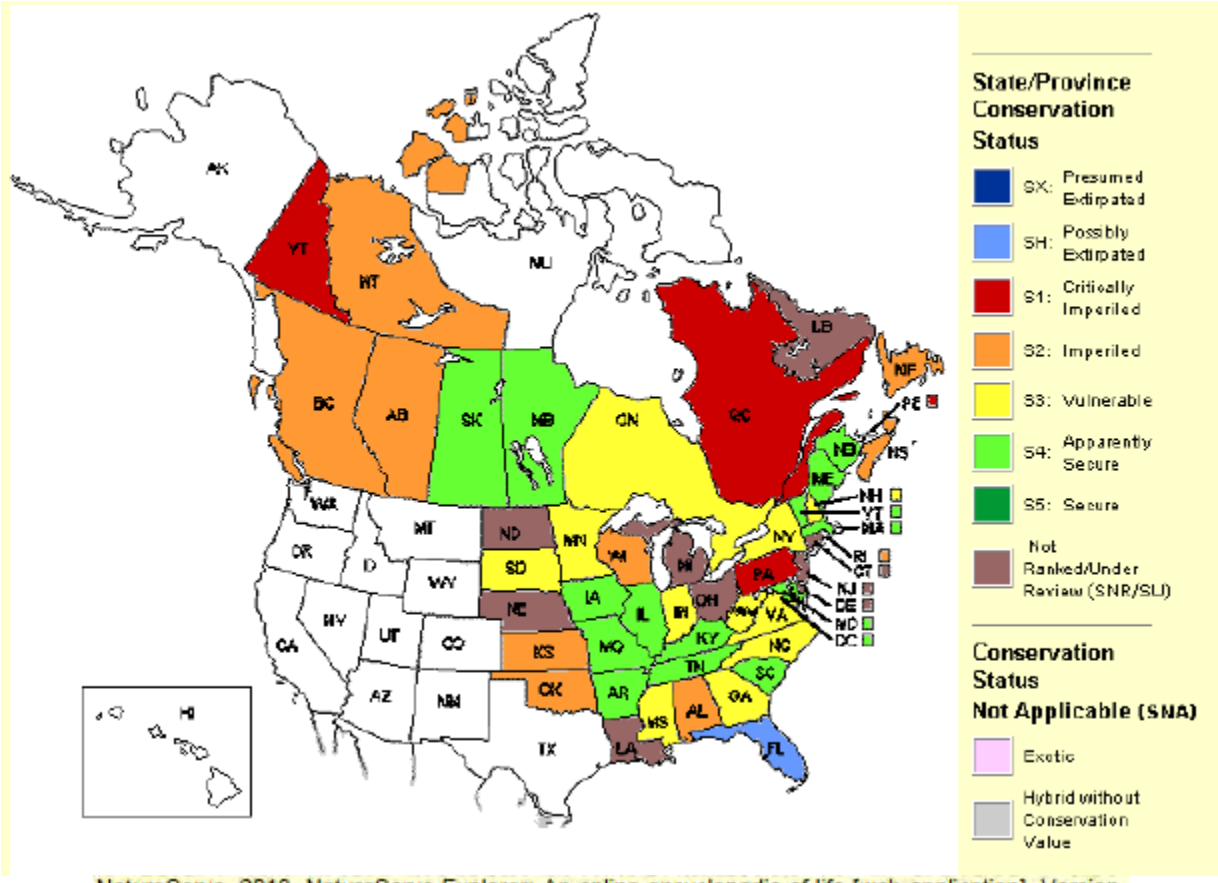
Federal Listing Status

The USFWS recently evaluated the species in a 12-month finding on a petition for listing as endangered or threatened. The 12-month finding published notice that listing was warranted, the species was proposed for listing as endangered, and announced a 60-day comment period (USFWS 2013).

Multiple factors were involved in the federal proposal for listing, with demonstrated and estimated range-wide impacts from White Nose Syndrome (WNS) predominant. Among other findings, the USFWS 12-month finding evaluation notes post WNS reduction of 98% for 6 cave species (including Northern long-eared bat) across 30 hibernacula in 5 states (USFWS 2013).



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 3, 2014).



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 3, 2014).

Implications to Illinois Listing Status

Under Title 17 ILL ADM CODE, CH. 1, SEC. 1010, Illinois List of Endangered and Threatened Fauna, one criterion for Illinois listing is for species proposed for federal endangered or threatened status which occur in Illinois. This Ad Rule criterion should prompt Illinois listing of the Northern Long-Eared Bat during the current Illinois List revision.

Under the IL Endangered Species Protection Act, any federally designated endangered or threatened species is automatically listed on the IL List. This Act provision will automatically add the species to the Illinois List at the time when the USFWS finalizes federal listing.

Illinois Status and Distribution

The USFWS 12-month finding evaluation reports the species is proposed for listing as federally endangered throughout its range. Illinois is included in its range and is noted for both winter hibernacula (Illinois has 36 hibernacula; there are more than 780 hibernacula known for the species across its range) and summer roost habitat and occurrences. The evaluation summarizes some information for Illinois populations - Northern long-eared bats are regularly caught in mist-net surveys in the Shawnee National Forest in southern Illinois (Kath 2013, pers. comm.). Further, the average number of northern long-eared bats caught during surveys between 1999 and 2011 at Oakwood Bottoms in the Shawnee National Forest has been fairly consistent (Carter 2012, pers. comm.) (USFWS 2013).

Board requests to ESPB TECs and IDNR for survey information for several species in 2011 and specifically for Northern long-eared bat in November 2013 resulted in reports that are summarized below by county, hibernacula observations, summer/fall observations, and year. Note - at this time, it is the Board's understanding that there

are many more observation reports for both hibernacula and summer/fall that have not yet been reported to the IDNR Database.

Summary of observation information from Board 2011 and 2013 requests for information
(As noted above, Illinois is also known for 36 hibernacula (USFWS 2013) that are not included below)**.**

County	Hibernacula observations	Summer/Fall observations
Alexander	nearly annual 2003-2009	2010
Hardin	2009	2010
JoDaviess		2012
Pike		2010
Saline		annual 2006-2010
Union	annual 2004-2007, 2010	2009, 2010
Vermilion		1988, 1996, 2002, 2003
Will		2006, 2010, 2012
Across 30 counties*		1985-1995
Across 19 counties*		1996-2011

* - these numbers are from the following Illinois Natural History Survey summer mist-netting information reported by Dr. Joyce Hofmann (personal communication)

1985-1996 141 capture records (might include some recaptures, so not the same as number of bats)

Caught at 46 of 165 netting sites
Capture % = 27.9
Caught in 30 counties

1996-present (2011) 97 capture records

Caught at 34 of 145 sites
Capture % = 23.4
Caught in 19 counties (probably netted fewer counties during this period because time was concentrated in northeastern Illinois)

The presence of White Nose Syndrome was confirmed in Illinois in 2012 (Joe Kath, personal communication); the Board has not received any report summarizing extent of occurrence or evidence of impacts upon any species.

Board Staff Recommendation
Add to the Illinois List as Illinois Threatened during the current List revision. Add notation of federal status when USFWS finalizes listing.

References:
50 CFR Part 17, Volume 78, Number 191, Part 3 - October 2, 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule.

Jeannie Barnes, IDNR Natural Heritage Database, personal communication 02/03/12 (Occurrence information compiled from Board requests for survey information).

NatureServe. 2014. NatureServe Explorer. An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, VA. Available at http://www.natureserve.org/explorer. (Accessed: February 3, 2014).

Gray Wolf, Canis lupus (Illinois threatened, Federally-endangered) (original 06/06/12) (updated 02/05/14)

Listed as IL T, 04/01/2003; Listed as Fed E, 1977
(should have been IL listed in 1977, was added in 2004 following 4/1/2003 Fed action)
Reason for IL listing: designated or proposed as federally endangered or threatened.

Canis lupus Linnaeus

GRAY/TIMBER WOLF **CANIDAE** **Status:** Threatened in Illinois
Federally Endangered

Present Distribution: Throughout the 20th Century, wolves have not been documented in Illinois. Currently, more than 2,000 wolves live in the wild in Minnesota, with several hundred animals in Michigan, Wisconsin, and the Rocky Mountains of Montana, Idaho, and Wyoming. In Alaska, wolf populations number around 7,000 and are not considered endangered or threatened. In December, 2002 a wolf originating from the Great Lakes pack (either in Minnesota, Wisconsin, or Michigan) was shot and killed in Marshall County, Illinois. In July, 2003 a wolf originating from northern Wisconsin was found dead in an eastern Indiana soybean field (Randolph County, Indiana). This animal traveled through Illinois (greater metropolitan Chicago) before being recovered in Indiana.

Former Illinois Distribution: The gray wolf was once abundant and widespread throughout Illinois. Shortly after their arrival in Illinois, pioneers set about the task of "taming the wilderness". Destroying wolves was considered a moral duty necessary to make the wilderness fit for civilization. The last known record of self-sustaining wolf population(s) in Illinois is from Jackson County in 1889 (McClain *et al.* 2002).

Habitat: Substantial populations of the gray wolf still exist throughout most of Canada and Alaska. In the Midwest, pack numbers continue to grow throughout northern Minnesota, Wisconsin, and Michigan. Throughout its range, wolves occupy diverse habitats, including forests, prairies, tundra, and mountains. The two habitat factors for wolves appear to be an abundance of large game and minimal interference from humans (Kurta 1995).

Reason for Status: The final federal reclassification of the gray/timber wolf was published in the Federal Register on April 1, 2003. This reclassification established three (3) distinct population segments, whereby USFWS Region 3 (which includes Illinois) is entirely within the Eastern Gray Wolf Distinct Population Segment, where all wolves are threatened. Under Illinois' Endangered Species Protection Act states that all species classified as threatened or endangered by the USFWS are automatically placed on the State list.

Management Recommendations: Most biologists believe any wolves wandering into Illinois now, or in the future, will be young adults dispersing from packs, looking to establish their own territory. Chances for a self-sustaining, breeding wolf population in Illinois are highly unlikely given our abundance of roads and our highly fragmented, agriculturally dominant landscape. There is no record of an attack and death of a person caused by healthy wolves on the entire North American continent. The small number of cases involving injuries from wolves are those involving animals accustomed to being fed by humans.

KEY

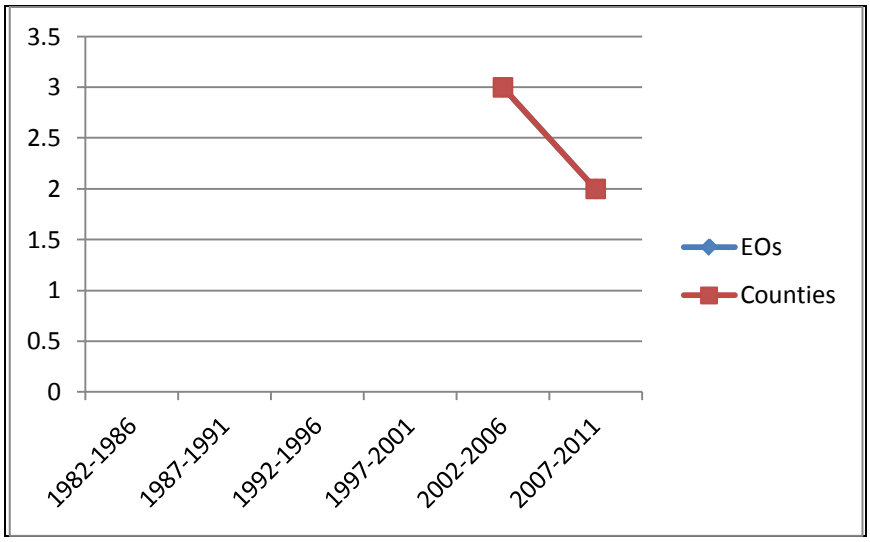
The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Citation: Nÿboer, 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.

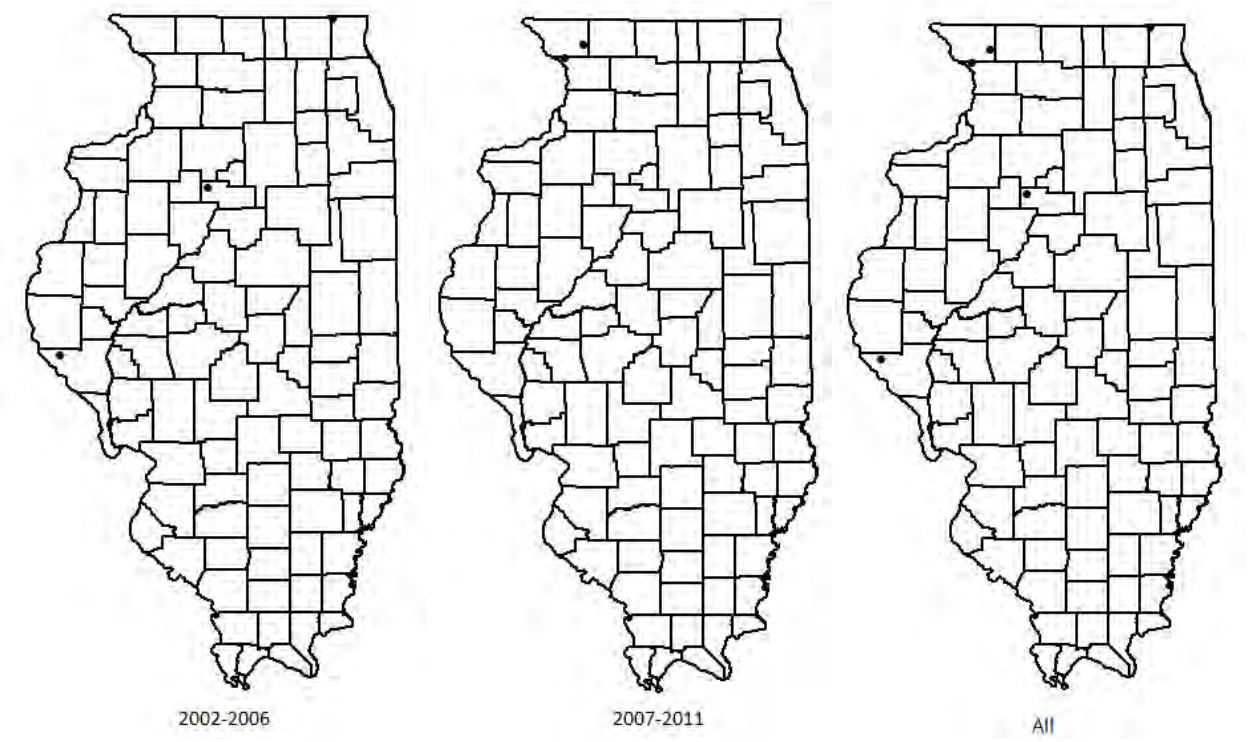
Illinois – Natural Heritage (Biotics 4) Database – last updated, May 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last observed	Total # EOs	Total seen since Jan 2002	# Counties	# protected occurrences	# topo quads
11/19/2011	5	5	5	0	7

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
EOs					3	2
Counties					3	2



Element occurrences locations for respective time periods and all.
No data until 2002-2006 period.

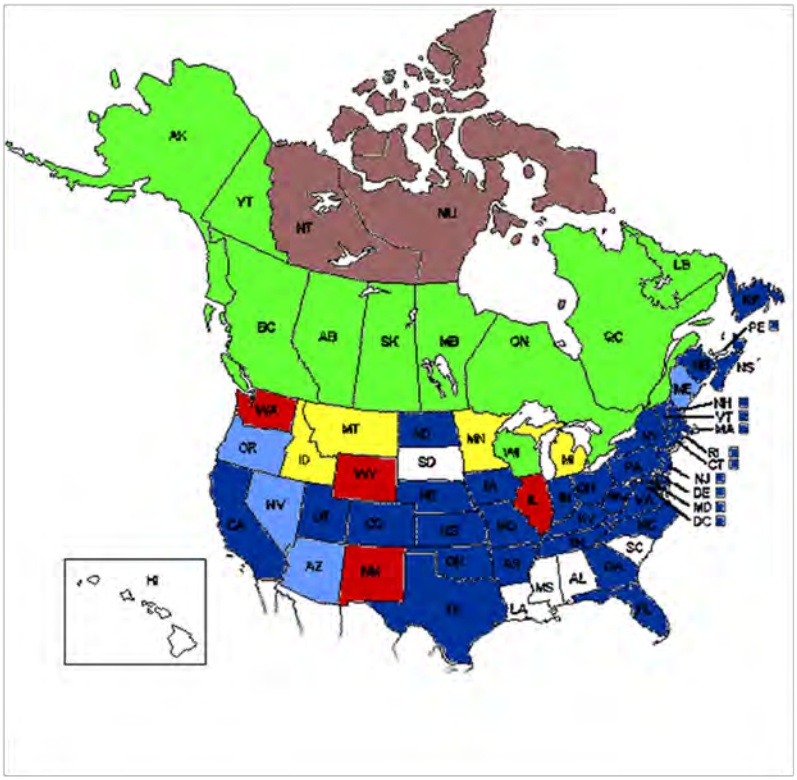


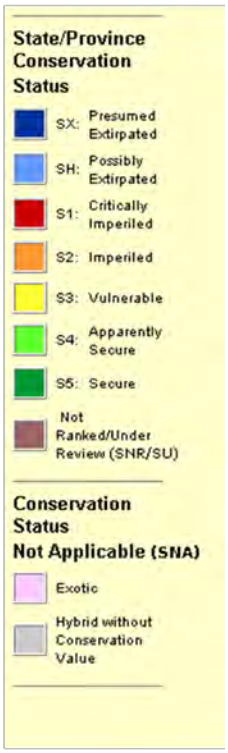
The USFWS published in the Federal Register June 7, 2013 a proposal to delist the species with a 90 day comment period. The notice indicated the USFWS anticipated it would make final determination in 2014. Board staff is not aware that a final determination has been published. If federally delisted, the Board will need to make a decision about whether or not to maintain an Illinois listing status for the species.

Illinois Canis lupus element occurrence information (Natural Heritage (Biotics 4) Database, 2014)

	County	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EO 1	Lake				male, origin unknown							
EO 2	Pike				male, Great Lakes DPS							
EO 4	Marshall	male, origin unknown										
EO 5	Jodaviess							male, Western Great Lakes				
EO 6	Jodaviess, Carroll										male and female, origin unknown	

Canis lupus





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 2, 2012).

Copperbelly Watersnake (Nerodia erythrogaster neglecta) Species Review, Mankowski, 02/2014

Federal Listing Status

This taxon was listed as federally threatened in the Northern Population Segment in 1997 and a recovery plan was completed in 2008 (USFWS 2008). The Northern Population Segment includes the shaded areas on the borders of Michigan, Indiana, and Ohio.

The figure below illustrates the different population segments for the taxon and is taken from the USFWS 2010 5-year review.

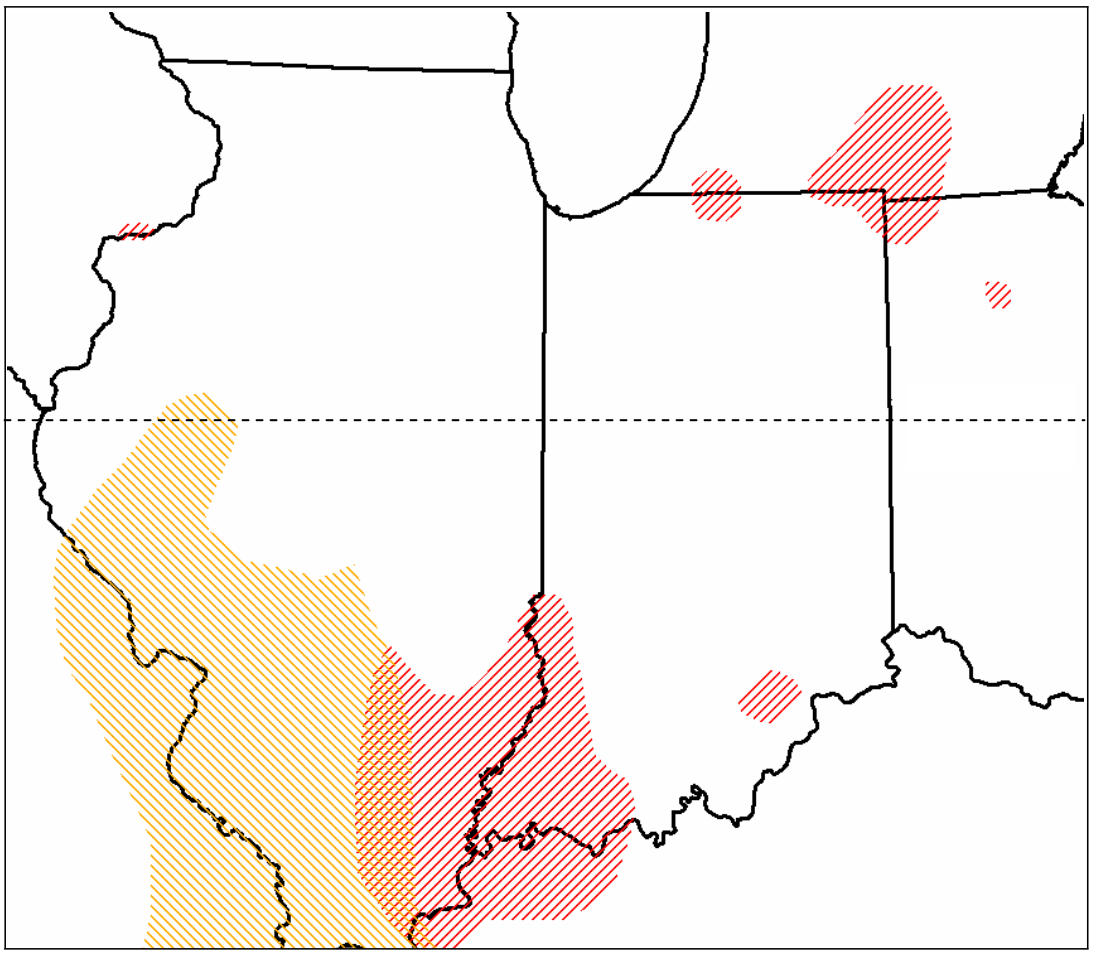


Figure 1. Historic distribution of the copperbelly water snake in the Midwest (six polygons with red hatching). To the northeast, north of the 40th North Parallel, are the isolated remaining copperbelly populations of the listed DPS. All known remaining populations of the DPS are within 15 miles of the intersection of Indiana, Michigan, and Ohio. Neither the southern populations nor the southeastern disjunct population near Seymour, Indiana, are federally listed, nor is the northwestern population along the Mississippi River in northwestern Illinois and eastern Iowa. Also shown (yellow hatching) is the Midwestern extension of the distribution of the yellowbelly water snake, the closest relative of the copperbelly, whose distribution continues south, and for which there is no Federal protection.

Implications to Illinois Listing Status

Under the IL Endangered Species Protection Act, any federally designated endangered or threatened species is automatically listed on the IL List. The Board has discussed adding some type of clarifying language to the IL List Ad Rules and the Board's IL E&T Checklist to indicate that all federally listed species are protected under the IL ESPA, but only those occurring in Illinois are included on the IL List.

While the distinct population segment does not include Illinois, the taxon does occur in Illinois. For various reasons, including questions about IL status and distribution, questions about differentiation between subspecies present in Illinois, that the taxon was provided some protections under the IL Wildlife Code pursuant to terms in an interagency conservation agreement that expired in 2001, and that the Board did not have staff during the last two revisions to review the matter more carefully, the taxon has never been "added" to the IL List. However, as a federally-listed taxon that occurs in Illinois, it seems that is should be included on the IL List. Ms. Mankowski submitted in January 2014, a request to IDNR Legal Counsel for legal opinion on the matter of how to indicate on the IL List a federally listed species under a DPS when the DPS does not include Illinois, but the taxon occurs in Illinois.

Illinois Status and Distribution

The IDNR and USFWS recently contracted surveys of historically known locations and new areas to assess the status and distribution of *N. erythrogaster neglecta* in Illinois. There appears to be a robust Illinois status and distribution.

Illinois 2013 surveys (after Karsen – report to IDNR and USFWS)

At least 83 locations with observations in 12 counties (total of 241 individuals)

County	*Approximate number of sites with observations*
Clay	*2*
Edwards	*3*
Gallatin	*5*
Johnson	*24*
Lawrence	*2*
Massac	*11*
Pope	*17*
Pulaski	*3*
Richland	*3*
Saline	*8*
Wabash	*2*
Wayne	*3*

Board Staff Recommendation

If added to the IL List, ESPB staff recommends Illinois threatened status.

References:

Karsen, S. 2013. Resurveying Known Historical Localities and Searching New Sites for the Copper-bellied Water Snake in Southeastern Illinois. Illinois Department of Natural Resources. 34 pp. + figures.

U.S. Fish and Wildlife Service (USFWS). 2008. Northern Population Segment of the Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) Recovery Plan. Fort Snelling, Minnesota. ix + 79 pp.

USFWS. 2010. Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) Northern Population Segment: Five year review summary and evaluation. East Lansing, Michigan. Ii + 13 pp.

Fish – thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Acipenser fulvescens	Lake Sturgeon	E	E	2010-04-22	17	8	1	25	17	11			
Ammocrypta clarum	Western Sand Darter	E	E	2010-08-10	35	8	1	30	14	6			
Ammocrypta pellucidum	Eastern Sand Darter	T	T	2012-08-27	35	26	0	23	12	8	2		
Catostomus catostomus	Longnose Sucker	T	T	2005-07-07	10	4	0	9	7	4			
Coregonus artedi	Cisco	T	T	1988-10-20	3	0	0	3	2	0			
Erimystax x-punctatus	Gravel Chub	T	T	2012-06-06	33	13	0	30	13	9			
Etheostoma camurum	Bluebreast Darter	E	E	2012-08-13	16	14	1	7	2	2		1	
Etheostoma exile	Iowa Darter	T	T	2012-06-07	63	33	7	31	13	7	21	3	1
Etheostoma histrio	Harlequin Darter	E	E	2011-06-22	19	10	0	11	7	3			
Fundulus diaphanus	Banded Killifish	T	T	2012-09-10	22	15	6	15	6	5	6	2	2
Fundulus dispar	Starhead Topminnow	T	T	2012-09-10	53	33	4	39	22	13	2	1	7
Hybognathus hayi	Cypress Minnow	E	E	2004-09-16	6	1	1	5	6	1			
Hybopsis amblops	Bigeye Chub	E	E	2012-08-13	22	14	1	18	8	5		1	
Hybopsis amnis	Pallid Shiner	E	E	2010-06-28	16	7	2	12	8	4		1	
Ichthyomyzon fossor	Northern Brook Lamprey	E	E	1998-04-12	4	0	0	4	2	1			
Lampetra aepyptera	Least Brook Lamprey	T	T	2010-10-08	13	12	0	9	4	4	1	2	
Lepomis miniatus	Redspotted Sunfish	E	E	2010-10-20	27	11	1	23	13	7			
Lepomis symmetricus	Bantam Sunfish	T	T	2009-07-08	12	2	0	8	5	3			
Macrhybopsis gelida	Sturgeon Chub	E	E	2003-03-22	1	1	0	2	1	1			
Moxostoma carinatum	River Redhorse	T	T	2011-09-26	44	25	1	36	16	14	2	4	1
Moxostoma valenciennesi	Greater Redhorse	E	E	2011-06-06	23	14	0	16	6	6	3	2	
Nocomis micropogon	River Chub	E	E	2007-10-16	8	2	0	8	8	4			
Notropis anogenus	Pugnose Shiner	E	E	2011-08-10	17	5	1	14	11	4	5	1	2

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Notropis boops	Bigeye Shiner	E	E	2009-07-30	48	12	2	35	20	6		2	
Notropis chalybaeus	Ironcolor Shiner	T	T	2012-08-15	31	18	0	19	6	3	1	1	
Notropis heterodon	Blackchin Shiner	T	T	2012-09-10	23	15	4	11	4	3	12	1	2
Notropis heterolepis	Blacknose Shiner	E	E	2012-09-10	31	13	2	25	12	7	8	2	3
Notropis maculatus	Taillight Shiner	E	E	1988-07-19	1	0	0	1	1	0			
Notropis texanus	Weed Shiner	E	E	2010-08-03	35	24	1	30	12	9		1	1
Noturus stigmosus	Northern Madtom	E	E	2009-07	4	2	1	7	4	2			
Scaphirhynchus albus	Pallid Sturgeon	IL E, Fed E	IL E, Fed E	2000-01-27	2	0	0	2	2	1			

Amphibians - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Ambystoma jeffersonianum	Jefferson Salamander	T	T	2010-03-17	12	12	0	6	2	2			
Ambystoma platineum	Silvery Salamander	E	E	2011-02-28	4	4	4	3	2	2			
Cryptobranchus alleganiensis	Eastern Hellbender	E	E	1990-08-08	3	0	0	3	2	0			
Desmognathus conanti	Spotted Dusky Salamander	E	E	2011-09-15	16	15	1	5	2	2		1	
Gastrophryne carolinensis	Eastern Narrowmouth Toad	T	T	2011-06-13	17	8	3	13	6	2		2	
Hemidactylium scutatum	Four-toed Salamander	T	T	2012-05-23	10	7	3	11	9	8			
Hyla avivoca	Bird-voiced Treefrog	T	T	2010-07-28	12	10	4	12	7	6			
Nectrurus maculosus	Mudpuppy	T	T	2012-07-30	26	11	3	4	16	1		1	
Pseudacris illinoensis	Illinois Chorus Frog	T	T	2011-03-03	29	19	3	32	10	9		15	

Reptiles - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Apalone mutica	Smooth Softshell	E	E	2012-07-20	20	18	1	26	17	14			
Clemmys guttata	Spotted Turtle	E	E	2010-09-17	2	2	2	2	1	1			
Clonophis kirtlandi	Kirtland's Snake	T	T	2012-05-11	37	12	6	32	17	10	8	4	
Crotalus horridus	Timber Rattlesnake	T	T	2012-07-30	54	21	12	56	25	14	1	1	
Emydoidea blandingii	Blanding's Turtle	E	E	2012-08-07	144	82	44	107	28	22	48	13	
Heterodon nasicus	Plains Hog-Nosed Snake	T	T	2011-09-17	25	11	6	27	14	12		4	
Kinosternon flavescens	Yellow Mud Turtle	E	E	2009-07-14	16	7	1	15	8	4		4	
Macrochelys temminckii	Alligator Snapping Turtle	E	E	1984-11-15	1	0	0	1	1	0			
Masticophis flagellum	Coachwhip	E	E	2006-05-26	2	1	3	4	2	1			
Nerodia cyclopion	Mississippi Green Watersnake	T	T	2010-10-14	1	1	0	1	1	1			
Nerodia fasciata	Broad-banded Watersnake	E	E	2004-03-28	1	1	0	1	1	1			
Pantherophis emoryi	Great Plains Rat Snake	E	E	2011-05-13	3	2	2	6	3	3	1	1	
Pseudemys concinna	River Cooter	E	E	2006-08-16	6	1	0	11	6	3			

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Sistrurus catenatus	Eastern Massasauga	E	E	2011-10-05	13	4	4	17	11	7	2	6	
Tantilla gracilis	Flathead Snake	T	T	2011-05-13	5	3	4	5	3	1			
Terrapene ornata	Ornate Box Turtle	T	T	2012-06-18	48	38	13	50	31	28		2	
Thamnophis sauritus	Eastern Ribbonsnake	T	T	2012-05-16	10	7	1	11	8	7			
Tropidoclonion lineatum	Lined Snake	T	T	2009-06-04	9	1	0	6	6	4			

Birds - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Botaurus lentiginosus	American Bittern	E	E	5/23/2011	14	7	4	15					
Tyto alba	Barn Owl	E	T	9/27/2011	73	58	2	57		2		2	
Thryomanes bewickii	Bewick's Wren	E	E	2011	8	1	2	10					
Laterallus jamaicensis	Black Rail	E	E	7/19/2009	3	1	0	4					
Chlidonias niger	Black Tern	E	E	7/25/2008	25	11	6	22	13		13		
Coccyzus erythropthalmus	Black-billed Cuckoo	T	T	2011	14	12	4	14					
Nycticorax nycticorax	Black-crowned Night-Heron	E	E	6/16/2011	71	34	10	44	2	2	2	2	
Dendroica cerulea	Cerulean Warbler	T	T	6/30/2011	21	20	4	23					
Gallinula chloropus	Common Moorhen	E	E	7/21/2011	57	27	10	51					
Sterna hirundo	Common Tern	E	E	7/2/1905	3	2	0	3					
Sterna forsteri	Forster's Tern	E	E	7/31/2008	3	3	2	3	1		1		
Tympanuchus cupido	Greater Prairie-Chicken	E	E	7/3/1905	8	5	4	8					
Rallus elegans	King Rail	E	E	6/28/2008	17	7	5	26	4		4		
Ixobrychus exilis	Least Bittern	T	T	5/7/2011	58	33	18	71	17		17		
Sternula antillarum	Least Tern	E**	E**	7/24/2010	16	13	0	16					

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Egretta caerulea	Little Blue Heron	E	E	7/30/2006	10	4	0	7		2		2	
Lanius ludovicianus	Loggerhead Shrike	E	E	8/16/2011	119	32	4	137	4	4	4	4	
Ictinia mississippiensis	Mississippi Kite	T	T	7/29/2011	18	7	1	28					
Circus cyaneus	Northern Harrier	E	E	12/17/2009	24	9	5	26	1	4	1	4	
Pandion haliaetus	Osprey	E	E	5/9/2011	11	8	0	12					
Falco peregrinus	Peregrine Falcon	T	delist	7/8/2010	29	21	2	13					
Charadrius melodus	Piping Plover	E**	E**	6/30/2009	1	1	1	1					
Asio flammeus	Short-eared Owl	E	E	7/15/2010	14	7	4	15		4		4	
Egretta thula	Snowy Egret	E	E	6/16/2001	2	1	0	2		2		2	
Buteo swainsoni	Swainson's Hawk	E	E	2007	15	8	1	6	9		9		
Limnothlypis swainsonii	Swainson's Warbler	E	E	7/1/1905	7	2	2	6					
Bartramia longicauda	Upland Sandpiper	E	E	7/8/2011	49	17	8	60	4	4	4	4	
Phalaropus tricolor	Wilson's Phalarope	E	E	6/30/1905	7	6	2	11					
Nyctanassa violacea	Yellow-crowned Night-Heron	E	E	8/21/2010	23	12	7	19	1	2	1	2	
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	E	E	5/12/2011	46	24	7	44	22		22		

Mammals - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

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Canis lupus	Gray/timber Wolf	T**	T**	2011-11-19	5	5	5		7	3	3		
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	E	E	2010-09-03	9	5	4	1	8				
Myotis austroriparius	Southeastern Myotis	E	E	2012-02-29	19	14	7	2	14				
Myotis grisescens	Gray Bat	E**	E**	2012-02-29	13	6	5	5	14			4	
Myotis sodalis	Indiana Bat	E**	E**	2012-02-29	67	35	22	5	70			4	
Neotoma floridana	Eastern Wood Rat	E	E	2011	3	1	2	1	3				
Ochrotomys nuttalli	Golden Mouse	T	T (delist?)	2008-10	34	16	8	4	30				
Oryzomys palustris	Rice Rat	T	T (delist?)	2011-03-05	37	22	10	3	34			3	
Spermophilus franklinii	Franklin's Ground Squirrel	T	T	2010-06-22	25	19	12	3	26			7	

Invertebrates other than Mussels - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
SNAILS													
Discus macclintocki	Iowa Pleistocene Snail	IL E, Fed E	IL E, Fed E	1994-08-31	1	0	0	1	1	0			
Fontigens antroecetes	Hydrobiid Cave Snail	E	E	2011-08-26	1	1	4	1	2	2			
Lithasia obovata	Shawnee Rocksnail	E	E	2012-07-11	12	4	0	12	5	3			
CRUSTACEANS													
Caecidotea lesliei	Isopod	E	delist	2000-05-01	1	0	0	1	1	0			
Caecidotea spatulata	Isopod	E	E	1937-04-18	1	0	0	1	1	0			
Crangonyx anomalus	Anomalous Spring Amphipod	E	E	1992-04-15	2	0	0	2	1	0			
Crangonyx packardi	Packard's Cave Amphipod	E	E	2012-08-07	8	1	0	8	5	2			
Gammarus acherondytes	Illinois Cave Amphipod	IL E, Fed E	IL E, Fed E	2011-03-26	8	7	8	5	1	1		1	
Orconectes indianensis	Indiana Crayfish	E	E	2011-08-18	24	12	0	13	7	6	1	4	
Orconectes kentuckiensis	Kentucky Crayfish	E	E	2011-06-01	6	4	0	2	1	1		1	
Orconectes lancifer	Shrimp Crayfish	E	E	1999-10-01	2	0	0	2	1	0			
Orconectes placidus	Bigclaw Crayfish	E	E	2006-09-08	6	3	0	7	4	4			

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Stygobromus iowae	Iowa Amphipod	E	E	1997-04-05	3	0	1	2	2	0			
SCORPIONS													
Centruroides vittatus	Common Striped Scorpion	E	E	2012-05-12	2	1	2	3	2	1			
DRAGONFLIES													
Nannothemis bella	Elfin Skimmer	T	T	2004	2	1	2	2	3	3	3		
Somatochlora hineana	Hine's Emerald Dragonfly	IL E, Fed E	IL E, Fed E	2011-10-18	6	5	6	4	3	3			
SPRINGTAILS													
Pygmarrhopalites madonnensis	Madonna Cave Springtail	E	E	1998-11-12	1	0	0	1	1	0			
STONEFLIES													
Diploperla robusta	Robust Springfly	E	E	2009-04	1	1	1	1	1	1			
Prostoia completa	Central Forestfly	E	E	2002-03-23	2	2	0	1	1	1			
LEAFHOPPERS													
Aflexia rubranura	Redveined Prairie Leafhopper	T	T	2004-08-31	6	4	4	5	4	4	1		
Athysanella incongrua	Leafhopper	E	E	2005-06-22	1	1	1	1	1	1			
Paraphlepsius lupalus	Leafhopper	E	delist	1991-08-21	1	0	1	1	1	0			

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
BUTTERFLIES AND MOTHS													
Atrytone arogos	Arogos Skipper	E	delist	1989-07-16	1	0	1	1	1	0			
Calephelis mutica	Swamp Metalmark	E	E	2003-08-09	2	1	1	2	3	1			?
Hesperia metea	Cobweb Skipper	T	E	2000-04-13	5	0	0	5	4	0		1	
Hesperia ottoe	Ottoe Skipper	E	E	2004-06-19	10	2	5	10	6	3		1	
Incisalia polios	Hoary Eflin	E	E	2004	1	1	1	1	1	1			
Lycaeides melissa samuelis	Karner Blue Butterfly	IL E, Fed E	IL E, Fed E	2001-08-12	1	0	0	1	1	0			
Papaipema eryngii	Eryngium Stem Borer	E	T	2012-06-11	10	8	5	14	7	7		1	
Speyeria idalia	Regal Fritillary	T	T	2012-07-12	26	18	12	33	18	17		4	

Mussels - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Alasmidonta viridis	Slippershell	T	T	2012-08-28	74	53	4	57	22	22	4	16	19
Cumberlandia monodonta	Spectaclecase	IL E, Fed E	IL E, Fed E	2011-10-27	16	4	1	17	9	5		1	1
Cyclonaias tuberculata	Purple Wartyback	T	T	2012-08-28	38	29	2	27	14	9		6	6
Cyprogenia stegaria	Fanshell	IL E, Fed E	IL E, Fed E	1984-08-22	1	0	0	1	1	0			
Ellipsaria lineolata	Butterfly	T	T	2012-09-29	47	33	1	46	14	14		4	6
Elliptio crassidens	Elephant-ear	T	E	2012-08-23	12	5	1	11	8	4			
Elliptio dilatata	Spike	T	T	2012-08-22	53	37	1	41	24	19	4	7	4
Epioblasma rangiana	Northern Riffleshell	IL E, Fed E	IL E, Fed E	2012-08-08	2 (reintro)	2	1	2	2	2			
Epioblasma triquetra	Snuffbox	IL E, Fed E	IL E, Fed E	2012-07-09	4	2	1	3	2	2			
Fusconaia ebena	Ebonyshell	T	E	2012-08-15	33	13	1	33	18	12		3	2
Lampsilis abrupta	Pink Mucket	IL E, Fed E	IL E, Fed E	no records									
Lampsilis fasciola	Wavy-rayed Lampmussel	E	E	2012-08-08	20	17	1	13	3	3	1	3	3
Lampsilis higginsii	Higgins Eye	IL E, Fed E	IL E, Fed E	2009-09-22	18	9	0	14	5	3		2	2
Ligumia recta	Black Sandshell	T	T	2012-09-29	101	86	4	86	28	27		11	15

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Plethobasus cooperianus	Orangefoot Pimpleback	IL E, Fed E	IL E, Fed E	1999-09-07	2	0	0	2	1	0			
Plethobasus cyphyus	Sheepnose	IL E, Fed E	IL E, Fed E	2010-08-18	21	7	2	21	11	5		3	3
Pleurobema clava	Clubshell	IL E, Fed E	IL E, Fed E	2002-09-19	2	1	0	3	2	2	1		
Pleurobema cordatum	Ohio Pigtoe	E	E	2006-06-28	3	1	0	3	2	1			
Potamilus capax	Fat Pocketbook	IL E, Fed E	IL E, Fed E	2012-08-18	30	24	1	22	7	6		4	2
Ptychobranchus fasciolaris	Kidneyshell	E	E	2012-07-19	9	6	0	7	3	3	1		
Quadrula cylindrica	Rabbitsfoot	IL E, Fed E	IL E, Fed E	2011-09-20	7	4	1	5	3	3	1	1	1
Simpsonaias ambigua	Salamander Mussel	E	E	2007-06-30	9	2	0	8	4	2			
Toxolasma lividus	Purple Lilliput	E	E	2012-09-10	12	11	1	8	4	4	2	1	1
Villosa iris	Rainbow	E	E	2011-10-04	9	6	1	7	2	2	5	1	1
Villosa lienosa	Little Spectaclecase	T	T	2012-08-15	50	44	3	33	12	10	1	5	5

Plants - thumbnail review of #s of consultations, ITAs, and relocations for currently listed species – ESPB 2014 List review (Mankowski 02/2014)

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Adoxa moschatellina	Moschatel	E	E	5/23/1986	1	0	0	1	1	0			
Agalinus skinneriana	Pale False Foxglove	T	T	08/14/2010	21	16	12	21	14	12			
Alnus incana subsp. rugosa	Speckled Alder	E	E	10/01/2011	5	4	2	5	4	3			
Amelanchier interior	Shadbush	T	T	2010	14	10	5	13	6	4			
Amelanchier sanguinea	Shadbush	E	E	06/26/2009	8	3	2	7	5	2			
Ammophila breviligulata	Marram Grass	E	T	11/23/2009	9	9	2	6	2	2	1		
Amorpha nitens	Smooth False Indigo	E	E	8/1/2007	2	1	0	2	1	1			
Arctostaphylos uva-ursi	Bearberry	E	E	11/28/2011	3	1	4	2	3	1			
Artemisia dracunculus	Dragon Wormwood	E	E	8/19/2004	2	1	0	2	1	1			
Asclepias lanuginosa	Wooly Milkweed	E	E	2009	15	5	7	15	8	4	1		
Asclepias meadii	Mead's Milkweed	IL E; Fed E	IL E; Fed E	06/21/2012	9	8	5	8	7	5			
Asclepias ovalifolia	Oval Milkweed	E	E	6/7/2011	1	1	1	1	1	1			
Asclepias stenophylla	Narrow-leaved Green Milkweed	E	E	7/27/2011	7	7	1	7	2	2			

SCIENTIFIC NAME	COMMON NAME	Current Status	ESPB 2014 prelim approved status	Last Observation	Total # EOs	Total seen since Jan 2002	# protected EOs	# topo quads	# Counties	# Counties since 2002	# of likely impacts to species from projects that underwent IDNR E&T consultation from 2000-2006 (after IDNR 2007)	# of potential ITA impacts to species from 2001-03/2013 (after ESPB records)	# of prescribed and/or performed relocations w/out subsequent observations from 1997-2012 (Database; ESPB records)
Asplenium bradleyi	Bradley's Spleenwort	E	E	10/17/2011	6	3	1	5	6	4			
Asplenium resiliens	Black Spleenwort	E	E	6/18/2005	2	2	0	1	1	1			
Aster furcatus	Forked Aster	T	T	08/30/2012	30	12	12	26	15	7	1		
Astragalus crassicarpus var. trichocalyx	Large Ground Plum	E	E	8/14/2008	4	3	1	4	2	1			
Astragalus distortus	Bent Milk Vetch	E	E	04/10/2012	7	6	2	7	5	4			
Astragalus tennesseensis	Tennessee Milk Vetch	E	E	5/10/2002	2	1	1	2	2	1			
Baptisia tinctoria	Yellow Wild Indigo	E	E	8/27/2012	1	1	1	1	2	2			
Bartonia paniculata	Screwstem	E	E	10/4/2006	2	2	1	2	1	1			
Beckmannia syzigachne	American Slough Grass	E	E	07/31/2009	6	4	0	5	3	2	3		
Berberis canadensis	Allegheny Barberry	E	delist	1987	2	0	0	3	2	0			
Berchemia scandens	Supple-Jack	T	E	11/13/1992	1	0	0	1	1	0			
Bessya bullii	Kitten Tails	T	T	09/23/2011	29	19	9	22	11	11			
Betula alleghaniensis	Yellow Birch	E	E	5/15/2009	4	3	3	2	3	2	2		
Boltonia decurrens	Decurrent False Aster	IL T; Fed T	IL T; Fed T	10/10/2012	31	22	2	30	20	17	1		
Botrychium biternatum	Southern Grape Fern	T	E	6/26/1997	7	0	0	7	3	0			

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Botrychium campestre	Prairie Moonwort	E	E	6/1/2009	2	2	0	1	1	1			
Botrychium matricariifolium	Daisyleaf Grape Fern	E	E	5/31/2000	3	0	1	3	2	0			
Botrychium multifidum	Northern Grape Fern	E	E	4/29/1998	4	0	2	5	3	0			
Botrychium simplex	Dwarf Grape Fern	E	E	6/12/1993	4	0	2	4	3	0			
Bouteloua gracilis	Blue Grama	E	E	9/30/2011	1	1	0	1	1	1			
Buchnera americana	Bluehearts	T	T	7/26/2011	7	4	2	7	7	4			
Bumelia lanuginosa	Wooly Buckthorn	E	E	6/6/2012	3	3	2	2	1	1			
Cakile edentula	Sea Rocket	T	T	08/18/2009	14	13	2	6	2	2	1		
Calamograstis insperata	Bluejoint Grass	E	E	6/30/2008	3	2	0	3	1	1			
Calla palustris	Water Arum	E	E	6/23/2009	1	1	1	1	1	1	2		
Calopogon oklahomensis	Oklahoma Grass Pink Orchid	E	E	2010	2	2	2	2	1	1			
Calopogon tuberosus	Grass Pink Orchid	E	E	07/03/2011	19	9	17	17	9	5	5		
Camassia angusta	Wild Hyacinth	E	E	6/8/2011	1	1	0	1	1	1			
Cardamime pratensis var. palustris	Cuckoo Flower	E	E	8/30/2002	3	1	2	3	2	2	1		

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Carex alata	Winged Sedge	E	E	6/13/2001	1	0	0	2	1	0			
Carex arkansana	Arkansas Sedge	E	E	9/25/2012	5	4	0	7	3	3			
Carex atlantica	Sedge	T	T	8/3/2009	2	2	1	2	1	1			
Carex aurea	Golden Sedge	T	T	07/01/2011	16	13	4	12	4	3	4		
Carex bromoides	Sedge	T	T	05/21/2012	16	12	7	16	9	6			
Carex brunnescens	Brownish Sedge	E	E	6/6/2009	2	2	2	2	1	1			
Carex canescens var. disjuncta	Silvery Sedge	E	E	7/16/2007	1	1	2	1	2	2			
Carex chordorrhiza	Cordroot Sedge	E	E	5/24/2004	2	1	1	2	1	1	2		
Carex communis	Fibrous-rooted Sedge	T	T	05/31/2012	18	8	6	15	11	5			
Carex crawfordii	Crawford's Sedge	E	E	7/17/1994	2	0	1	2	1	0			
Carex crytolepis	Yellow Sedge	E	T	07/01/2011	8	6	0	9	5	4			
Carex cumulata	Sedge	E	E	2012	3	3	2	2	2	2			
Carex decomposita	Cypress-knee Sedge	E	E	10/15/2008	5	3	1	5	4	3			
Carex diandra	Sedge	E	E	6/13/1978	2	0	1	2	1	0			
Carex disperma	Shortleaf Sedge	E	E	6/17/2008	4	3	4	4	2	2	2		
Carex echinata	Sedge	E	E	06/17/2002	5	1	1	5	4	3			

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Carex formosa	Sedge	E	E	07/03/2009	5	3	0	4	2	1			
Carex garberi	Elk Sedge	E	E	7/20/2011	3	2	1	3	2	1			
Carex gigantea	Large Sedge	E	E	9/28/2010	4	3	0	4	4	3			
Carex inops subsp. heliophila	Plains Sedge	E	E	5/26/1985	4	0	1	5	2	0			
Carex intumescens	Swollen Sedge	T	E	09/26/2011	13	5	3	12	7	3			
Carex nigromarginata	Black-edged Sedge	E	E	6/28/2011	3	3	0	3	3	3			
Carex oligosperma	Few-seeded Sedge	E	E	6/23/2009	4	1	2	3	3	1	2		
Carex oxylepis	Sharp-scaled Sedge	T	T	6/24/2010	16	5	1	13	7	4			
Carex physorhyncha	Bellow's Beak Sedge	E	E	6/17/1998	3	0	1	3	3	0			
Carex plantaginea	Plaintain-leaved Sedge	E	E	5/25/2006	2	1	1	2	2	1			
Carex prasina	Drooping Sedge	T	T	05/22/2012	9	4	2	9	9	4			
Carex reniformis	Reniform Sedge	E	E	6/4/2004	2	1	0	2	1	1			
Carex trisperma	Three-seeded Sedge	E	E	6/7/2009	2	2	3	2	2	2	2		
Carex tuckermanii	Tuckerman's Sedge	E	E	2010	6	2	3	6	3	1	1		
Carex viridula	Little Green Sedge	T	T	07/07/2011	21	11	5	17	6	4	6		
Carex willdenowii	Willdenow's Sedge	T	T	5/20/2011	14	6	0	10	7	4			

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Carex woodii	Pretty Sedge	T	delist	2010	22	17	10	15	8	7			
Carya aquatica	Water Hickory	T	T	6/2/2009	5	3	1	6	5	3			
Carya pallida	Pale Hickory	E	E	1987-02	2	0	1	3	2	0			
Castilleja sessiliflora	Downy Yellow Painted Cup	E	E	2009	7	6	7	8	7	6			
Ceanothus herbaceus	Redroot	E	E	09/28/2009	6	4	2	6	5	3			
Chamaedaphne calyculata	Leatherleaf	T	T	06/23/2009	7	3	5	7	4	2	2		
Chamaelirium luteum	Fairy Wand	E	E	8/3/2009	7	3	1	8	3	3			
Chamaesyce polygonifolia	Seaside Spurge	E	E	07/20/2010	6	6	2	6	2	2			
Chimaphila maculata	Spotted Wintergreen	E	E	7/28/1997	4	0	1	3	3	0			
Chimaphila umbellata	Pipsissewa	E	E	6/12/1993	3	0	1	2	1	0			
Cimicifuga americana	American Bugbane	E	E	10/9/2008	1	1	1	1	1	1			
Cimicifuga racemosa	False Bugbane	E	E	06/20/2007	4	1	1	4	4	1			
Cimicifuga rubifolia	Black Cohosh	T	E	9/17/2010	18	5	1	14	7	3			
Circaea alpina	Small Enchanter's Nightshade	E	E	1987	2	0	0	2	1	0			

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Cirsium pitcheri	Pitcher's (Dune) Thistle	IL T; Fed T	IL T; Fed T	2011	2	2	1	2	2	2			
Cladrastis lutea	Yellowwood	E	E	11/10/2007	1	1	0	1	1	1			
Clematis crispa	Blue Jasmine	E	E	5/21/2009	5	2	0	5	4	2			
Clematis occidentalis	Mountain Clematis	E	E	8/20/2003	1	1	0	1	1	1			
Clematis viorna	Leatherflower	E	E	5/25/2011	2	1	1	2	3	1			
Collinsia violacea	Violet Collinsia	E	E	5/21/2012	1	1	0	1	1	1			
Comptonia peregrina	Sweetfern	E	E	2012	2	2	2	2	3	2			
Conioselinum chinense	Hemlock Parsley	E	E	9/19/1996	1	0	1	1	1	0			
Corallorhiza maculata	Spotted Coral-root Orchid	T	E	05/15/2009	13	2	5	12	9	2			
Cornus canadensis	Bunchberry	E	E	6/14/2001	5	0	3	5	3	0			
Corydalis aurea	Golden Corydalis	E	E	5/3/1998	1	0	0	1	1	0			
Corydalis halei	Hale's Corydalis	E	E	4/26/2003	1	1	0	1	1	1			
Corydalis sempervirens	Pink Corydalis	E	E	5/3/1998	2	0	0	2	2	0			
Corylus cornuta	Beaked Hazelnut	E	E	7/16/1992	1	0	0	1	1	0			
Cynosciadium digitatum	Cynosciadium	E	E	8/18/1993	3	0	0	1	1	0			

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Cyperus grayioides	Umbrella Sedge	T	T	08/2007	12	7	5	13	6	4			
Cyperus lancastriensis	Galingale	T	T	10/4/2005	3	2	1	3	3	2			
Cypripedium acaule	Moccasin Flower	E	E	5/19/1999	2	0	1	2	2	0			
Cypripedium candidum	White Lady's Slipper	T	delist	04/19/2012	49	37	30	36	9	8	6		
Cypripedium parviflorum var. makasin	Small Yellow Lady's Slipper	E	E	05/13/2009	10	7	7	7	3	3	2		
Cypripedium reginae	Showy Lady's Slipper	E	E	9/15/2009	5	2	5	4	4	2	1		
Cystopteris laurentiana	Laurentian Fragile Fern	E	E	1989-PRE	1	0	1	1	1	0			
Dalea foliosa	Leafy Prairie Clover	IL E; Fed E	IL E; Fed E	10/07/2010	9	8	3	6	3	3			
Delphinium carolinianum	Wild Blue Larkspur	T	T	2010	10	8	1	11	4	3			
Dennstaedtia punctilobula	Hay-scented Fern	E	E	6/22/2011	8	7	1	5	2	2			
Deschampsia flexuosa	Hairgraass	E	E	2003	1	1	0	1	1	1			
Dichanthelium boreale	Northern Panic Grass	E	E	6/14/2008	3	1	2	2	2	1			
Dichanthelium joori	Panic Grass	E	E	2008	3	1	1	3	2	1			
Dichanthelium portoricense	Hemlock Panic Grass	E	E	8/20/1998	1	0	0	1	1	0			

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Dichanthelium ravenelii	Ravenel's Panic Grass	E	E	6/24/2008	3	2	0	3	1	1			
Dichanthelium yadkinense	Panic Grass	E	E	8/3/2009	8	7	0	7	2	2			
Dodecatheon frenchii	French's Shootingstar	T	T	06/22/2011	20	12	0	14	6	5			
Draba cuneifolia	Whitlow Grass	E	E	7/23/2008	5	5	4	5	3	3			
Drosera intermedia	Narrow-leaved Sundew	T	T	07/13/2012	13	5	7	8	7	3			
Drosera rotundifolia	Round-leaved Sundew	E	E	08/11/2009	7	3	6	6	3	2	3		
Dryopteris celsa	Log Fern	E	E	5/8/2005	1	1	1	1	1	1			
Echinodorus tenellus	Small Burhead	E	E	8/25/2010	3	1	1	3	2	1			
Eleocharis olivacea	Capitate Spikerush	E	E	9/9/2002	3	1	1	3	2	1			
Eleocharis pauciflora	Few-flowered Spikerush	E	E	10/26/2004	4	2	2	3	3	2	2		
Eleocharis rostellata	Beaked Spike Rush	T	T	10/7/2009	13	5	12	8	5	3	5		
Elymus trachycaulus	Bearded Wheat Grass	T	E	08/12/2009	11	3	6	9	6	2	1		
Epilobium strictum	Downy Willow Herb	T	T	09/15/2009	10	4	9	5	2	2	4		
Equisetum pratense	Meadow Horsetail	T	T	6/28/2011	10	6	2	8	3	3			
Equisetum scirpoides	Dwarf Scouring Rush	E	E	1978	1	0	0	1	1	0			

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Equisetum sylvaticum	Woodland Horsetail	E	E	6/29/2010	3	2	1	3	2	1			
Eriophorum virginicum	Rusty Cotton Grass	E	E	10/20/2009	4	2	4	3	2	1	2		
Eryngium prostratum	Eryngo	E	E	8/8/2002	6	1	0	7	5	1			
Euonymus americanus	American Strawberry Bush	E	T	6/16/2011	5	4	2	7	4	3			
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	E	E	none	0	0	0	0	0	0			
Euphorbia spathulata	Spurge	E	E	5/12/1987	1	0	1	1	1	0			
Filipendula rubra	Queen-of-the-Prairie	E	T	07/20/2012	23	15	11	22	13	13			
Fimbristylis vahlii	Vahl's Fimbristylis	E	E	8/23/2006	3	1	0	3	1	1			
Galactia mohlenbrockii	Boykin's Dioclea	E	E	8/7/1996	2	0	2	2	1	0			
Galium lanceolatum	Wild Licorice	E	delist	none	0	0	0	0	0	0			
Galium virgatum	Dwarf Bedstraw	E	E	5/12/2012	3	2	1	2	1	1			
Geranium bicknellii	Northern Cranesbill	E	E	07/31/2011	8	6	3	5	3	3	2		
Glyceria arkansana	Arkansas Mannagrass	E	E	5/24/2007	5	2	0	5	3	2			
Gratiola quartermaniae	Hedge Hyssop	E	E	6/9/2009	1	1	0	1	1	1			

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Gymnocarpium dryopteris	Oak Fern	E	E	6/29/2010	2	1	1	2	2	1			
Gymnocarpium robertianum	Scented Oak Fern	E	E	1986	1	0	0	1	1	0			
Hackelia deflexa var. americana	Stickseed	E	E	6/27/1995	4	0	2	5	2	0			
Halesia carolina	Silverbell Tree	E	E	6/28/2010	3	2	2	3	2	2			
Helianthus angustifolius	Narrow-leaved Sunflower	T	T	2011	4	4	2	4	2	2			
Helianthus giganteus	Tall Sunflower	E	E	10/5/2010	10	4	4	9	6	4			
Heliotropium tenellum	Slender Heliotrope	E	E	5/13/2011	3	2	2	4	1	1			
Heteranthera reniformis	Mud Plantian	E	E	10/29/2004	4	1	0	4	3	1			
Hexalectris spicata	Crested Coralroot Orchid	E	E	07/10/2012	7	5	2	7	4	3			
Hudsonia tomentosa	False Heather	E	E	9/30/2011	4	3	1	6	4	3			
Huperzia porophila	Cliff Clubmoss	T	T	6/22/2011	5	1	1	3	2	1			
Hydrolea uniflora	One-flowered Hydrolea	E	E	8/19/2010	4	1	0	4	3	1			
Hymenopappus scabiosaeus	Old Plainsman	T	T	05/21/2012	5	3	2	6	3	3			
Hypericum adpressum	Shore St. John's Wort	E	E	07/13/2012	5	4	5	4	4	3			

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Hypericum kalmianum	Kalm's St. John's Wort	E	E	07/20/2012	4	4	6	4	2	2	2		
Iliamna remota	Kankakee Mallow	E	E	7/16/2009	2	1	2	2	2	1			
Iresine rhizomatosa	Bloodleaf	E	E	9/22/2010	6	2	2	6	4	2			
Isoetes butleri	Butler's Quillwort	E	E	2010	7	6	1	5	2	2			
Isotria verticillata	Whorled Pogonia	E	E	8/3/2009	1	1	0	1	1	1			
Juncus alpinus	Richardson's Rush	T	T	07/01/2011	11	8	2	9	4	3	1		
Juncus vaseyi	Vasey's Rush	E	E	1994	1	0	1	1	1	0			
Juniperus communis	Ground Juniper	T	T	10/21/2009	8	3	1	7	4	2			
Juniperus horizontalis	Trailing Juniper	E	E	10/11/2011	2	2	1	2	2	2			
Justicia ovata	Water Willow	E	E	8/20/1991	1	0	0	1	2	1			
Larix laricina	Tamarack	T	T	06/23/2009	5	4	4	4	2	2	2		
Lathyrus ochroleucus	Pale Vetchling	T	T	2010	25	13	9	20	6	4	6		
Lechea intermedia	Pinweed	T	E	09/18/2005	9	2	5	8	6	2			
Lespdeza leptostachya	Prairie Bush Clover	IL E; Fed E	IL E; Fed E	07/26/2010	11	7	5	11	6	4	1		
Lesquerella ludoviciana	Silvery Bladderpod	E	E	3/29/2012	1	1	1	1	1	1			

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Liatris scariosa var. nieuwlandii	Blazing Star	T	delist	08/22/2012	45	33	6	44	21	17	2		
Lonicera dioica var. glaucescens	Red Honeysuckle	E	E	6/16/2011	3	2	0	3	2	1			
Lonicera flava	Yellow Honeysuckle	E	E	5/18/2006	5	2	1	4	3	2			
Luzula acuminata	Hairy Woodrush	E	E	6/24/2010	6	3	1	4	3	3			
Lycopodiella inundata	Bog Clubmoss	E	E	7/6/2001	2	0	0	1	1	0			
Lycopodium clavatum	Running Pine	E	E	10/5/2006	5	1	2	5	5	1			
Lycopodium dendroideum	Ground Pine	E	E	02/23/2012	5	1	1	5	5	1			
Lysimachia radicans	Creeping Loosestrife	E	E	9/26/2011	4	4	1	2	2	2			
Malus angustifolia	Narrow-leaved Crabapple	E	E	7/2/2008	2	1	1	2	1	1			
Malvastrum hispidum	False Mallow	E	E	08/26/2009	4	2	1	3	2	1			
Matelea decipiens	Climbing Milkweed	E	E	06/02/2012	5	3	2	5	4	2			
Matelea obliqua	Climbing Milkweed	T	delist	05/30/2012	20	15	1	10	4	4			
Medeola virginiana	Indian Cucumber Root	E	E	5/31/2009	1	1	1	1	1	1			
Megalodonta beckii	Water Marigold	E	E	10/15/2003	2	2	1	1	1	1			
Melanthera nivea	White Melanthera	E	E	10/3/2005	2	2	1	2	2	2			

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Melanthium virginicum	Bunchflower	T	T	05/24/2012	18	9	3	20	12	5			
Melica mutica	Two-Flowered Melic Grass	E	E	5/10/2010	3	2	1	2	1	1			
Melothria pendula	Squirting Cucumber	T	T	7/1/2007	13	2	0	13	6	2			
Menyanthes trifoliata	Buckbean	T	T	09/29/2009	9	6	8	7	2	3			
Mimulus glabratus	Yellow Monkey Flower	E	E	03/2012	5	3	3	5	5	3			
Minuartia patula	Slender Sandwort	T	T	2010	8	6	4	7	5	4			
Mirabilis hirsuta	Hairy Umbrella-wort	E	E	2003-08	2	1	1	3	1	1			
Nemophila triloba	Baby Blue-eyes	E	E	1998-04	1	0	0	1	1	0			
Nothocalais cuspidata	Prairie Dandelion	E	E	04/27/2012	9	3	5	8	5	3			
Oenothera perennis	Small Sundrops	T	delist	2010	20	17	8	16	5	4	2		
Opuntia fragilis	Fragile Prickly Pear	E	E	9/23/2011	1	1	0	1	1	1			
Orobanche fasciculata	Clustered Broomrape	E	E	6/20/2003	4	1	2	2	2	1			
Orobanche ludoviciana	Broomrape	T	T	11/28/2012	17	7	4	14	9	6			
Oxalis illinoensis	Illinois Wood Sorrel	E	T	5/16/2003	6	6	0	7	3	3			
Paspalum dissectum	Bead Grass	E	delist	09/11/1987	1	0	0	1	1	0			

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Penstemon brevisepalus	Short-sepaled Beard Tongue	E	delist	5/7/1981	1	0	0	1	1	0			
Penstemon grandiflorus	Large-flowered Beard Tongue	E	E	6/4/2009	5	4	2	5	4	3			
Penstemon tubaeflorus	Tube Beard Tongue	E	E	05/21/2012	10	6	3	10	7	4			
Phacelia gilioides	Ozark Phacelia	E	E	1997	1	0	0	1	1	0			
Phaeophyscia leana	Lea's Bog Lichen	T	T	2/24/2002	23	14	0	13	5	3			
Phegopteris connectilis	Long Beech Fern	E	E	12/11/1998	2	0	1	3	2	0			
Phlox pilosa subsp. sangamonensis	Sangamon Phlox	E	E	07/05/2012	7	5	0	4	2	2			
Pinus banksiana	Jack Pine	E	E	2008	4	4	3	5	5	5			
Pinus echinata	Shortleaf Pine	E	E	2012	4	4	1	4	4	4			
Pinus resinosa	Red Pine	E	E	2001-10	1	0	0	1	1	0			
Planera aquatica	Water Elm	T	T	9/30/2010	6	3	3	6	5	3			
Plantago cordata	Heart-leaved Plantain	E	E	06/09/2011	15	13	2	11	11	9			
Platanthera ciliaris	Orange Fringed Orchid	E	E	7/6/2012	2	2	3	2	2	2			
Platanthera clavellata	Wood Orchid	E	E	8/11/2009	8	3	4	7	5	2			
Platanthera flava var. flava	Tubercled Orchid	E	delist	7/27/1997	3	0	1	3	2	0	2		

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Platanthera flava var. herbiola	Tubercled Orchid	T	T	07/01/2011	20	11	12	12	8	5			
Platanthera leucophaea	Eastern Prairie Fringed Orchid	IL E; Fed T	IL E; Fed T	2012	43	34	23	25	11	10	6		
Platanthera psycodes	Purple Fringed Orchid	E	E	08/08/2009	5	4	5	3	2	2	1		
Poa alsodes	Grove Bluegrass	E	E	6/4/2008	6	2	2	6	4	2			
Poa languida	Weak Bluegrass	E	E	5/14/2012	4	2	1	4	4	2			
Poa wolfii	Wolf's Bluegrass	E	E	05/14/2012	10	5	1	10	5	5			
Pogonia ophioglossoides	Snake-mouth	E	E	06/23/2009	7	2	6	7	3	2	5		
Polanisia jamesii	James' Clammyweed	E	E	8/31/2012	2	2	0	5	3	3			
Polygala incarnata	Pink Milkwort	E	E	6/30/2006	8	1	2	8	7	1			
Polygonatum pubescens	Downy Solomon's Seal	E	T	06/06/2009	9	6	1	5	2	2			
Polygonum arifolium	Halberd-leaved Tearthumb	E	E	6/26/2007	3	2	0	3	2	1			
Polygonum careyi	Carey's Heartsease	E	E	2010	6	5	3	4	3	2			
Populus balsamifera	Balsam Poplar	E	E	6/29/2011	5	4	3	4	3	3			
Potamogeton gramineus	Grass-leaved Pondweed	T	T	05/05/2012	15	5	3	7	3	2	7		
Potamogeton praelongus	White-stemmed Pondweed	E	E	9/25/2003	7	3	2	3	1	1	4		

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Potamogeton pulcher	Spotted Pondweed	E	E	1992	1	0	0	2	1	0			
Potamogeton robbinsii	Fern Pondweed	E	E	09/25/2003	6	3	1	4	3	1	6		
Potamogeton strictifolius	Stiff Pondweed	E	E	7/31/1991	1	0	1	1	1	0			
Primula mistassinica	Bird's-eye Primrose	E	E	10/21/2004	1	1	0	1	1	1			
Ptilimnium nuttallii	Mock's Bishop Weed	E	E	8/25/2000	2	0	0	3	2	0		2	
Quercus montana	Rock Chestnut Oak	T	T	10/21/2008	8	4	0	8	6	4			
Quercus phellos	Willow Oak	T	T	9/28/2010	10	7	3	9	5	4			
Quercus texana	Nuttall's Oak	E	E	7/1/2006	4	3	3	3	2	2			
Ranunculus rhomboideus	Prairie Buttercup	T	T	04/28/2010	9	5	6	6	4	2	1		
Rhamnus alnifolia	Alder Buckthorn	E	E	7/20/1999	2	0	2	2	2	0	2		
Rhexia mariana	Dull Meadow Beauty	E	E	8/3/2009	8	2	1	6	4	3			
Rhynchospora alba	Beaked Rush	T	E	1999	7	0	6	7	3	0	2		
Rhynchospora glomerata	Clustered Beak Rush	E	E	6/30/2008	3	1	0	2	2	1			
Ribes hirtellum	Northern Gooseberry	E	E	2002-07	5	2	2	4	1	1			
Rosa acicularis	Bristly Rose	E	E	8/20/2003	2	1	0	2	1	1			

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Rubus odoratus	Purple-flowering Raspberry	E	T	06/27/2012	10	6	3	7	5	5			
Rubus pubescens	Dwarf Raspberry	T	T	05/31/2009	12	8	6	9	4	2	2		
Rubus schneideri	Bristly Blackberry	T	T	2009	9	4	3	6	5	2			
Rudbeckia missouriensis	Missouri Orange Coneflower	T	T	09/30/2011	5	5	3	5	2	2			
Sabatia campestris	Prairie Rose Gentian	E	E	2009	8	5	1	6	5	4			
Sagittaria australis	Arrowhead	E	E	8/3/2009	1	1	1	1	1	1			
Salix serissima	Autumn Willow	E	E	9/3/2009	4	1	4	3	2	1	3		
Salix syrticola	Dune Willow	E	E	9/17/2001	1	0	2	1	1	0			
Salvia azurea subsp. pitcheri	Blue Sage	T	T	6/10/2011	8	3	1	7	6	3			
Sambucus racemosa subsp. pubens	Red-berried Elder	E	E	7/8/2011	8	3	4	5	5	2			
Sanguisorba canadensis	American Burnet	E	E	9/1/2011	3	1	0	2	2	1			
Sanicula smallii	Southern Sanicula	E	E	7/13/2002	1	1	0	1	1	1			
Sarracenia purpurea	Pitcher Plant	E	E	08/15/2011	7	6	6	6	2	2	3		
Saxifraga virginiensis	Early Saxifrage	E	E	10/17/2008	4	2	0	2	1	1			
Schizachne purpurascens	False Melic Grass	E	E	5/6/2009	1	1	0	1	1	1			

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Schoenoplectus hallii	Hall's Bulrush	T	T	10/22/2010	17	7	2	13	5	1		1	
Schoenoplectus purshianus	Weak Bulrush	E	E	2002	3	1	0	3	3	0			
Schoenoplectus smithii	Smith's Bulrush	E	E	8/28/2003	1	1	1	1	1	1	2		
Scirpus hattorianus	Bulrush	E	E	2010	6	4	4	6	4	3			
Scirpus microcarpus	Bulrush	E	E	7/6/2009	2	2	1	1	1	1			
Scirpus polyphyllus	Bulrush	T	T	8/3/2009	6	2	2	6	5	1			
Scleria muhlenbergii	Muhlenberg's Nut Rush	E	E	8/9/2002	2	1	0	2	2	1			
Scleria pauciflora	Carolina Whipgrass	E	E	2012	11	6	0	11	7	4			
Sedum telephioides	American Orpine	T	T	8/19/2011	13	5	1	11	8	4			
Shepherdia canadensis	Buffaloberry	E	E	6/14/2011	3	1	0	2	1	1			
Silene ovata	Ovate Catchfly	E	E	10/17/2008	4	4	0	4	1	1			
Silene regia	Royal Catchfly	E	E	10/15/2012	18	15	4	15	13	11			
Sisyrinchium atlanticum	Eastern Blue-eyed Grass	T	E	5/16/2012	6	3	1	6	4	3			
Sisyrinchium montanum	Mountain Blue-eyed Grass	E	E	2010	11	6	2	8	3	2	1		3
Solidago sciaphila	Cliff Goldenrod	T	T	9/7/2011	13	8	6	15	3	3			

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Sorbus americana	American Mountain Ash	E	E	6/14/2001	1	0	0	1	1	0			
Sparganium americanum	American Burreed	E	E	10/5/2004	3	1	1	4	4	1			
Sparganium emersum	Green-fruited Burreed	E	E	2011	7	1	2	8	6	3	2		
Spiranthes lucida	Yellow-lipped Ladies' Tresses	E	E	9/10/2011	5	5	2	12	9	8			
Spiranthes vernalis	Spring Ladies' Tresses	E	E	06/29/2012	12	10	1	12	9	8			
Stellaria pubera	Great Chickweed	E	E	05/29/2009	4	1	1	4	3	1			
Stenanthium gramineum	Grass-leaved Lily	E	T	05/21/2012	12	10	2	11	9	9			
Stylisma pickeringii	Patterson's Bindweed	E	E	6/4/2009	4	2	0	3	3	2			
Styrax americana	Storax	T	T	9/26/2011	23	11	5	19	11	6			
Styrax grandifolius	Bigleaf Snowbell Bush	E	E	11/10/2007	1	1	0	1	1	1			
Sullivantia sullivantii	Sullivantia	T	T	6/14/2011	7	3	2	8	4	2			
Symphoricarpos ablus var. albus	Snowberry	E	E	5/1/2007	3	1	2	3	3	1			
Synandra hispidula	Hairy Synandra	E	T	5/12/2011	5	5	1	3	1	1			
Talinum calycinum	Fameflower	E	E	7/24/2009	2	2	0	2	2	2			

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Talinum parviflorum	Small Flower-of-an-hour	T	T	7/27/2010	8	3	2	9	4	2			
Tetraneuris herbacea	Lakeside Daisy	IL E; Fed E	IL E; Fed E	05/02/2010	6	6	3	5	4	4			
Thelypteris noveboracensis	New York Fern	E	E	5/31/2007	1	1	0	1	1	1			
Tilia heterophylla	White Basswood	E	E	10/2/2005	3	1	2	4	3	1			
Tofieldia glutinosa	False Asphodel	T	T	09/28/2009	9	4	7	8	4	3	4		
Tomanthera auriculata	Ear-leafed Foxglove	T	delist	10/01/2012	47	23	12	37	23	13			
Torreyochloa pallida	Pole Manna-Grass	E	E	6/18/2005	2	1	1	2	2	1			
Tradescantia bracteata	Prairie Spiderwort	T	E	11/13/2002	5	2	0	6	3	2			
Trichomanes boschianum	Filmy fern	E	E	9/29/2011	9	3	0	6	3	2			
Trichophorum cespitosum	Tufted Bulrush	E	E	1991	3	0	3	3	2	0	2		
Trientalis borealis	Star-flower	E	E	06/23/2009	6	3	4	7	4	3	2		
Trifolium reflexum	Buffalo Clover	T	T	2012	21	12	2	21	13	8			
Triglochin maritima	Common Bog Arrowgrass	T	T	06/29/2011	18	9	7	13	3	2	6		
Triglochin palustris	Slender Bog Arrowgrass	T	T	09/11/2009	16	7	12	14	6	5	5		

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Trillium cernuum	Nodding Trillium	E	E	06/12/2009	4	4	2	4	2	2	1		
Trillium erectum	Ill-scented Trillium	E	E	6/15/2011	4	3	3	4	3	3	1		
Trillium viride	Green Trillium	E	E	5/15/2008	6	2	1	7	6	2		2	
Ulmus thomasii	Rock Elm	E	E	5/3/2011	3	1	0	3	3	1			
Urtica chamaedryoides	Nettle	T	T	5/24/2007	5	1	0	3	2	1			
Utricularia cornuta	Horned Bladderwort	E	E	9/18/2009	2	1	2	2	2	1	2		
Utricularia intermedia	Flat-leaved Bladderwort	T	T	09/18/2009	12	9	7	9	4	3	1		
Utricularia minor	Small Bladderwort	E	E	09/09/2009	5	3	3	5	3	2	1		
Vaccinium corymbosum	Highbush Blueberry	E	E	2012	4	3	3	4	4	3	2		
Vaccinium macrocarpon	Large Cranberry	E	E	11/13/2005	9	4	8	8	4	2	2		
Vaccinium oxycoccos	Small Cranberry	E	E	6/23/2011	4	3	3	5	2	1			
Vaccinium stamineum	Deerberry	E	E	7/10/2002	1	1	0	1	1	0			
Valeriana uliginosa	Marsh Valerian	E	E	6/6/2007	2	2	2	3	1	1	2		
Valerianella chenopodifolia	Corn Salad	E	E	5/2/1987	1	0	0	1	1	0			
Valerianella umbilicata	Corn Salad	E	E	5/31/2011	3	2	1	3	3	2			

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Veronica americana	American Brooklime	E	E	6/23/2005	5	1	1	5	3	1			
Veronica scutellata	Marsh Speedwell	T	T	08/25/2009	25	14	14	18	7	5	1		
Viburnum molle	Arrowwood	T	T	11/6/2004	10	5	2	10	6	4			
Viola blanda	White Hairy Violet	E	E	2000	5	0	2	5	4	0			
Viola canadensis	Canada Violet	E	E	10/9/2008	7	4	2	6	5	3			
Viola conspersa	Dog Violet	T	delist	05/05/2010	19	16	6	10	6	5	2		
Viola primulifolia	Primrose Violet	E	E	09/18/2012	5	5	2	3	2	2			
Woodsia ilvensis	Rusty Woodsia	E	E	6/24/2010	3	1	2	3	2	1			
Zigadenus elegans	White Camass	E	E	6/14/2011	3	1	2	3	2	1			