

Restoration Notice
for the
Continuation of a Mussel Reintroduction Effort
Vermilion River Watershed, Illinois
As part of Hegeler Zinc--Lyondell Basell Companies
NRDA Settlement

July, 2013

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Preface

Releases of hazardous substances and oil into our environment can pose a threat to human health and natural resources. Natural resources are plants, animals, land, air, water, groundwater, drinking water supplies, and other similar resources. When the public's natural resources are injured by an unpermitted release of hazardous substances or oil, federal law provides a mechanism, Natural Resource Damage Assessment (NRDA) that authorizes Natural Resource Trustees to seek compensation for the public for injuries to natural resources. Illinois' Natural Resource Trustees include Illinois Environmental Protection Agency (IEPA) and Illinois Department of Natural Resources (IDNR). The Illinois Natural Resources Coordinating Council oversees restoration efforts and includes the Trustees and their legal representative, the Illinois Attorney General's Office (IAGO). This plan was developed by IDNR Contaminant Assessment Section (CAS) Staff who administer the NRDA program for Illinois.

This Restoration Notice describes for the general public and interested parties the terms of the settlement and the State Trustees approach to restoration with focus on the State's support and assistance with a proposed mussel reintroduction effort.

Introduction

In 2009, Millennium Petrochemicals¹ filed bankruptcy. In an effort to seek compensation for the injuries described within, the Illinois Natural Resource Trustees represented by the Illinois Attorney General's Office, filed a bankruptcy claim for natural resource damages. Lyondell Chemical Company, et al., provided compensation to the public based on determination that natural resources were injured resulting from releases into the environment of hazardous substances, including but not limited to, metals, such as zinc, arsenic, cadmium, and lead from a former zinc smelting facility at Hegeler, Illinois, that was originally known as Hegeler Zinc (Figure 1). The settlement, entered in the US District Court on March 12, 2010, provided approximately \$1.5 million to be used for natural resource restoration. A large scale restoration planning effort is ongoing for these funds.

This restoration notice was developed to describe the State's implementation of a time critical restoration activity in coordinated support of a US Fish & Wildlife (USFWS) mussel reintroduction effort. In 2012 the USFWS conducted a mussel reintroduction project as part of a federal NRDA settlement at Hegeler- Lyondell (USFWS 2012)². The endangered mussels are coming from bridge sites in Pennsylvania scheduled for removal in the next couple years (Figure 2). Thousands of mussels need to be relocated prior to the bridges' removal. The 2012 USFWS NRDA Restoration Plan will serve as the basis for Illinois' NRDA assistance with the proposed mussel reintroduction effort.

NRDA Bankruptcy Claim

The Former Hegeler Zinc Facility (the Site) in Hegeler, Illinois, operated from 1906 to 1954. This ~100-acre facility produced zinc slab and rolled zinc products, as well as sulfuric acid, resulting in slag waste. The large amounts of slag containing unburned residues and metals were stored in piles onsite. Based on the work of the United States Environmental Protection Agency (USEPA), the site was listed on the National Priorities List, or Superfund, in 2005. After which time, USEPA took the lead of a remedial investigation which consisted of soil, sediment, and groundwater sampling on and off site. Results showed that contaminates (mostly from various metals) not only affected the smelting site but nearby

¹ Millennium Petrochemicals is the final corporate successor to the historical chain of operations, and is owned by Lyondell Basell Companies.

² USFWS is a Federal Natural Resource Trustee for Natural Resource Damage Assessments.

residences and streams, notably Grape Creek, which is hydraulically connected to the Vermilion River. In 2009 one of the site's responsible parties, Millennium Petrochemicals¹, filed bankruptcy along with other Lyondell entities. In response, IDNR and IEPA with legal representation by IAGO prepared an NRDA bankruptcy claim based on injuries to groundwater, surface water (including an Unnamed Tributary and Grape Creek), aquatic resources, and terrestrial resources (including grassland habitat). As a result of this claim, the State Trustees became parties to a Consent Decree approved by the bankruptcy court between the Lyondell entities, the United States of America, and a number of other states and received a settlement of its claim. To make the public whole for injuries to natural resources as a result of releases of hazardous substance, the State Trustees will identify and fund efforts to preserve and enhance ecological features in the region.

Overall Restoration Planning Vision

The overall goal of the Natural Resource Damage Assessment and Restoration (NRDAR) effort is to restore, enhance, and/or preserve similar resources as to those injured. Target community types include but are not limited to, grassland and stream habitat. At this time funds will likely be spent somewhere off site as USEPA continues to lead the remedial investigation of the Superfund site. Preference will be given to projects in the same general area/watershed of the injury (Hydrologic Unity Code (HUC) 8 Watershed = Vermilion (Wabash Basin); Figure 3).

The State recognizes the need to implement time critical activities to provide the most benefit to regional resources. One such effort is presented in this Restoration Notice, which includes a monitoring component. Monitoring provides scientific knowledge for the area to better understand regional ecological needs, such as the ecological impacts of mussel reintroduction and dam removal. A draft work plan has also been documented that outlines the use of some NRDA (non-restoration) funds for a dam removal monitoring effort, which is being used in cooperation with a federal state wildlife grant (IDNR 2013). In an effort to keep the public informed of the progress of these activities IDNR will issue updates in the form of factsheets and progress reports, which can be found at the following website: <http://www.dnr.illinois.gov/programs/NRDA/Pages/HegelerZincDanville.aspx>.

A large scale restoration planning effort is ongoing for the Vermilion River Watershed settlement. The restoration effort will follow the appropriate guidance found in the federal regulations and as directed by the court order³. A restoration workgroup will be formed consisting of IDNR CAS staff and field biologists within, but not limited to, IDNR's Division of Fisheries, Division of Natural Heritage, Division of Wildlife, Land Management, Nature Preserves Commission, and Watershed Protection Program. This restoration workgroup will be organized to develop a quantitative approach to restoration planning, including monitoring projects pre and post restoration to determine project success or need for adaptive management. This workgroup will also ensure efforts are consistent with regional planning, for example, providing protection for Species in Greatest Need of Conservation. A list of project alternatives will be screened against factors, such as restores habitat of injured state resources, technical feasibility, cost effectiveness etc., which will be documented in a restoration plan subject to public comment. The public, including watershed groups, are encouraged to be a part of this process. Avenues for the public to participate include the following: public meetings or availability sessions, review of the draft restoration plan, and submitting restoration suggestions through the CAS website: <http://www.dnr.illinois.gov/programs/NRDA/Pages/NRDARestorationFactSheet.aspx>.

³ This restoration notice is a supplement to the USFWS' Restoration Plan which followed these Federal regulations.

Northern Riffleshell and Clubshell Translocation and Monitoring Effort

Background

The United States Fish & Wildlife Service published the Augmentation and Reintroduction Plan for the Clubshell and Northern Riffleshell in Illinois (USFWS 2008). The plan discussed the recovery actions to be implemented for these two listed mussel species. These species were once widespread throughout the Ohio and Maumee River drainages. Reasons for declines include siltation from runoff, pollutants such as pesticides and fertilizers, habitat alternation from dams and impoundments, in-stream sand and gravel mining, and invasive species such as zebra and quagga mussels.

Purpose

The Vermilion River watershed (of the Wabash River) has been selected to relocate northern riffleshell and clubshell mussels from the Allegheny River system in Pennsylvania, which is threatened by a construction project. Two past translocation efforts have taken place, in 2010 and 2012 with a total of approximately 1200 northern riffleshells and 200 clubshells relocated to the Vermilion River system. These individuals were translocated⁴ to the Salt Fork Vermilion River and Middle Fork Vermilion River, both of which have multiple areas in conservation ownership and support diverse and highly-valued mussel assemblages and populations of the known fish hosts. Monitoring data for the 2010 and 2012 efforts indicate positive survivability. Therefore, successful conservation efforts can be continued by reintroducing more northern riffleshell and clubshell mussels into other tributaries of the Vermilion River system. This proposal is consistent with recovery plans, restoration plans, and previous National Environmental Policy Act analysis. The goal is to establish self-sustaining northern riffleshell and clubshell populations in Illinois, back to their historical range. The State Trustees are committing approximately \$120,000 to this effort, which is less than 10% of overall restoration funds available per the settlement.

Objectives

Translocate, augment⁵, and monitor northern riffleshells and clubshells from the Allegheny River system in Pennsylvania to the Vermilion River basin (Wabash River drainage) in Illinois.

Expected Benefits and Results

The project will be monitored to assess performance of technical actions, public benefits, and conservation results. The project is expected to provide benefits identified in USFWS' recovery plan (1994) such as, establish viable populations, maintain genetic variability, and potentially reclassify the species from endangered to threatened⁶.

Technical Approach

IDNR, Illinois Natural History Survey (INHS), and USFWS personnel will assist in collecting adult and subadult northern riffleshell and clubshell mussels from Pennsylvania, help quarantine the mussels to prevent the spread of aquatic species diseases, tag mussels for tracking⁷, and conduct monitoring of the translocated populations.

⁴ Translocation means moving a species from one area to another, for example, taking mussel species currently residing in Pennsylvania and moving (translocating) them to Illinois.

⁵ To augment means to make greater. Therefore, the mussel population in IL is being increased (augmented) by moving mussels from PA to IL.

⁶ Listing a species as "endangered" is the most severe conservation status. Endangered means the species is on the brink of extinction. Listing a species as "threatened" is a less severe conservation status.

⁷ Past efforts accepted assistance from members of the public for mussel tagging.

General Tasks

Task 1. Identify and determine the suitability of relocation sites in the Vermilion River system. Document the stream habitat quality, water quality and quantity conditions, and the mussel community.

Task 2. Travel to Pennsylvania to collect northern riffleshell and clubshell mussels. Hold and transport mussels according to permit conditions. Quarantine the mussels under prescribed methods.

Task 3. Tag the mussels with individual numbered tags and/or Passive Integrated Transponder (PIT) tags. Transport mussels to the relocation sites for release into the wild after the quarantine period.

Task 4. Conduct monitoring operations of relocated and stocked mussel survival for the next 10+ years. Monitoring includes e-DNA, PIT tag searches, and mussel surveys. Data will be analyzed after every monitoring event, and yearly reports and presentations will be given. This information will help direct future efforts by determining success of the translocation and local needs for long term sustainability of the northern riffleshell and clubshell populations⁸.

Compliance

IDNR's Comprehensive Environmental Review Process (CERP) will be applied. CERP is a process that ensures the project meets the appropriate compliance outlined under this Restoration Notice. USFWS will ensure all planned activities are also in compliance with the National Environmental Policy Act. All other required permits, such as Endangered Species, Nature Preserves, etc. will be secured prior to the implementation of the project as part of CERP.

References

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<http://www.fws.gov/midwest/rockisland/ec/restoration/records/vermillionriverrpeadraft.pdf>

⁸ Additionally, there is potential to receive propagated juvenile Northern Riffleshell and Clubshell mussels from a USFWS national hatchery or increase instream fish habitat for the mussel fish hosts.



Figure 1. Photos of the Hegeler Zinc Facility in Vermilion County, IL. Left: an aerial photo of the facility in 1940 (USEPA presentation). Right: a zinc slag pile, residual waste of facility operations (picture taken by CAS staff).



Figure 2. Pictures of the Pennsylvania bridge site along the Allegheny River (University of Illinois INHS presentation).

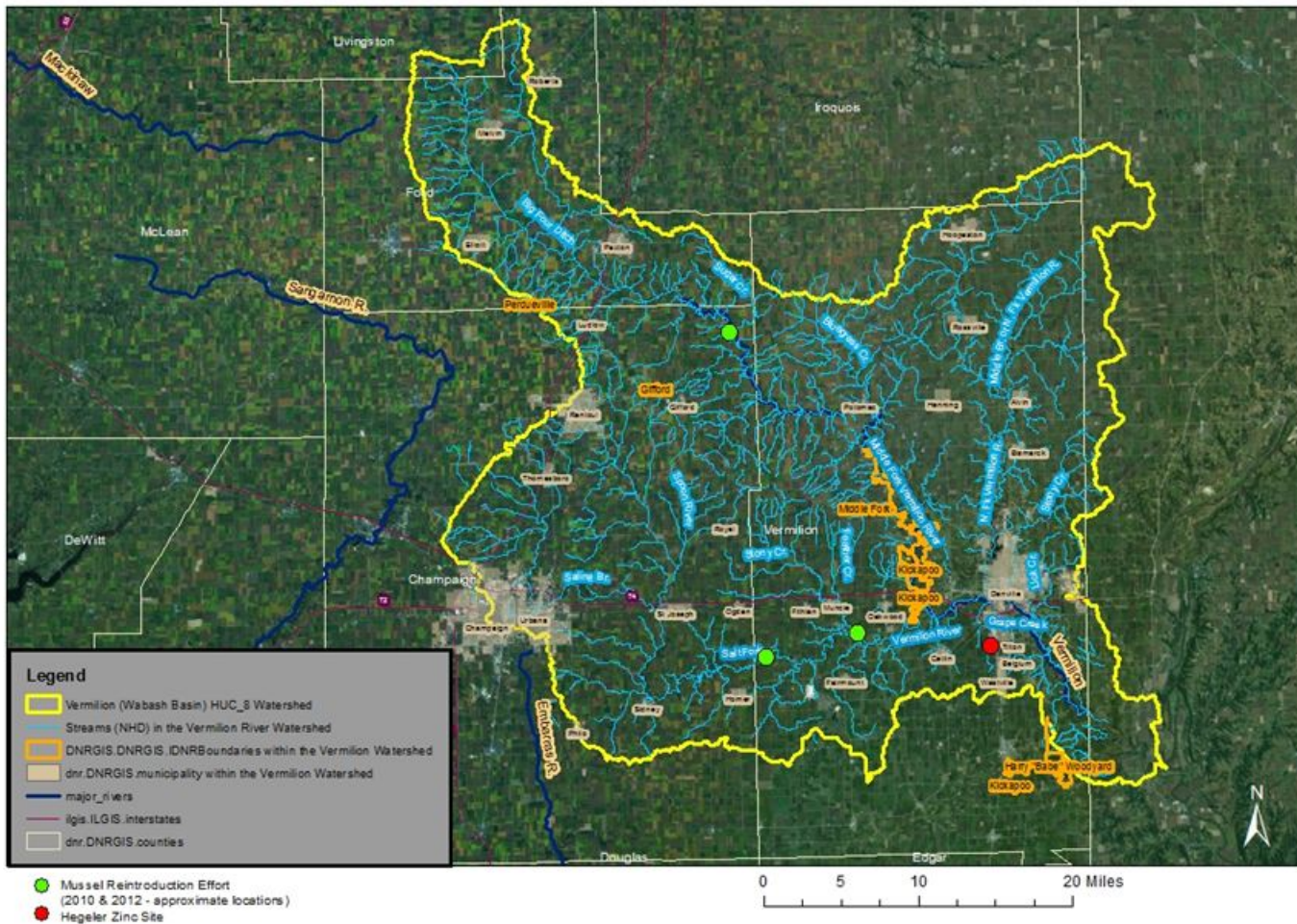


Figure 3. The Hegeler Zinc Facility in Vermilion County, IL and surrounding area, including the mussel reintroduction project area in the Vermilion River system: the Salt Fork, Middle Fork, North Fork, and the tributaries for these rivers. This map was obtained through IDNR Geographic Information System (GIS).