FINAL

RESTORATION PLAN
for the
Vesuvius USA Corporation

Kickapoo Creek Stream Restoration

Coles County, Illinois

Prepared by:
Illinois Natural Resources Trustees:
Illinois Department of Natural Resources and
Illinois Environmental Protection Agency

November, 2009

FACT SHEET

FINAL RESTORATION PLAN for the Vesuvius USA Corporation release of furfural in Coles County, Illinois.

LEAD AGENCY FOR THE FINAL RESTORATION PLAN:
Illinois Department of Natural Resources

COOPERATING AGENCIES:
Illinois Environmental Protection Agency

ABSTRACT:
This final Restoration Plan has been prepared by the state Natural Resource Trustees to address restoration of natural resources and resource services injured as a result of the Vesuvius' Charleston facility release of furfural into Cassel Creek through Riley Creek and into Kickapoo Creek. The draft Restoration Plan sought to inform the public and receive public comment. Two comments were received and considered by the Trustees in preparing this final Restoration Plan.

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COPIES:

Copies of the final RP are available at the address listed above or available for download at http://dnr.state.il.us/orep/contaminant_assessment/

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List of Acronyms and Abbreviations

AGO	Office of the Attorney General
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
CERP	Comprehensive Environmental Review Process
CWA	Clean Water Act
EIU	Eastern Illinois University
GIS	Geographic Information Systems
IAGO	Illinois Attorney General's Office
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
NOAA	National Oceanic & Atmospheric Administration
NRDA	Natural Resource Damage Assessment
OPA	Oil Pollution Act
RP	Restoration Plan
Trustees	Illinois Natural Resource Trustees
USGS	United States Geological Survey
Vesuvius	Vesuvius USA Corporation
WIRT	Wetland Impact Review Tool

I. Introduction

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 a 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. Due to NRDA action taken by the Illinois Natural Resource Trustees and the Illinois Attorney General's Office (IAGO), Vesuvius USA Corporation (Vesuvius) agreed to compensate the public based on determination that natural resources were injured resulting from the release of furfural to stream habitat. The settlement, entered in the Coles County Circuit Court on December 7, 2006, provided approximately $130,000 for Natural Resource Restoration.

This final Trustee Restoration Plan (RP) describes for the general public and interested parties the incident including the release, and injuries to natural resources, description of the legal process and the proposal to restore natural resources. Primary restoration was assisted by the immediate action taken by Vesuvius to investigate and clean up the released material, thus accelerating the streams and surrounding floodplain ability to naturally recover (discussed further in Section VII). Thus the projects described herein address the goals and objectives in compensating for interim losses.

II. Incident Description

On June 22, 2001, there was an unpermitted release of approximately 8,000 gallons of furfural into the environment as a result of a factory malfunction. A short circuit in Vesuvius's electrical system caused a pump to malfunction and a tank containing furfural overflowed into a drainage ditch on the Vesuvius property. As a result of the discharge, a furfural plume traveled approximately 9 miles down Cassel Creek through Riley Creek and into Kickapoo Creek, flowing to the confluence with the Embarras River causing injury to the aquatic flora and fauna inhabiting this 9-mile stretch of waterway (Fig 1). The natural resource injuries that occurred, or likely occurred, as a result of the discharge of furfural were:

1. An estimated 259,220 fish (8.5% game fish and 91.50% non-game fish); species identified included: bass, sunfish, darters, minnows, shiners, suckers, redhorse, carp, buffalo, bullhead, drum, and pickerel.
2. An unknown number of dead mussels, frogs, crayfish, benthos, and worms.
3. A dead raccoon.

Natural resources impacted, or potentially impacted, under the trusteeship of the IDNR and IEPA were, but not limited to, streambed, shoreline, and riparian corridor habitat; fish, aquatic vegetation (emergent and submergent), macroinvertebrates, mammals, resident birds, amphibians, and reptiles.

III. Overview of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Requirements and related guidance

Federal laws establish liability for natural resource damages in order to compensate the public for the injury, destruction, and loss of natural resources and their services due to the un-permitted release of oil or hazardous substances. These authorities are found generally in Section 107(f) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9607(f), Section 311(f) of the Clean Water Act (CWA), 33 U.S.C. § 1321(f), and Section 1002(b) of the Oil Pollution Act of 1990 (OPA), 33 U.S.C. §2702(b), the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300, the OPA NRDA regulations, 15 C.F.R. Part 990, and the CERCLA and CWA NRDA regulations, 43 C.F.R. Part 11.

The Directors of IEPA and IDNR have been designated as the natural resource Trustees for the State of Illinois, pursuant to Section 107(f)(2)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). CERCLA, as amended, 42 U.S.C. 9601 et seq., and the Clean Water Act, 33 U.S.C. 1251-1376, provide that natural resource Trustees may assess damages to natural resources[1] resulting from a discharge of oil or a release of a hazardous substance covered under CERCLA or the CWA and may seek to recover those damages.

The release constituted a "release" pursuant to CERCLA (42 USC Section 9601 (22)). Because the discharge of such concentrations was not authorized by a permit issued under federal, state, or local law and was not a release which met the exclusions listed under CERCLA (42 USC Section 9601 (22))

Per CERCLA, 42 U.S.C. 9651 (c), the United States Department of Interior promulgated regulations for natural resource damage assessments resulting from a discharge of oil or release of a hazardous substance at 43 CFR Part 11. These regulations provide a procedure by which a natural resource Trustee can determine compensation for injuries[2] to natural resources that have not been nor are expected to be addressed by response actions conducted pursuant to the National Contingency Plan. The National Oceanic and Atmospheric Administration (NOAA) published a final rule to guide Trustees in assessing damages to natural resources from a discharge of oil. The rule provides a blueprint that enables natural resource Trustees to focus on significant environmental injuries, to plan and implement efficient and effective restoration of the injured natural resources and services, and to encourage public and responsible party involvement in the restoration process. Although the subject release was not a discharge of oil, some aspects of the NOAA rule apply (see Section VIII).

[1] The term “natural resources” means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any State or local government, any foreign government, any Indian tribe.

[2] Injury means a measurable adverse change in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance.

The processes established by 43 CFR Part 11 and the NOAA rule use planned and phased approaches to the assessment of natural resource damages. These approaches are designed to ensure that all procedures used in an assessment are appropriate, necessary, and sufficient to assess damages for injuries to natural resources. For the purposes of this plan, 43 CFR Part 11 was the primary guidance document.

The preassessment phase of 43 CFR Part 11 provides for notification, coordination, and emergency activities, if necessary, and includes the preassessment screen. The preassessment screen is meant to be a rapid review of readily available information that allows the Trustee to decide whether a natural resource damage assessment is or is not warranted. Per 43 CFR Part 11.23, the preassessment screen demonstrated that:

- A discharge or release of hazardous substance or oil occurred
- Natural resources for which the Trustees may assert Trusteeship under CERCLA have been or are likely to have been adversely affected
- The quantity of the release was sufficient to potentially cause injury
- Data to perform an assessment were available or obtainable at a reasonable cost
- Response actions did not or will not sufficiently remedy the injury to natural resources without further action [43 CFR 11.23]

In this case, the Trustees concluded that they should proceed with an assessment to develop a damage claim under CERCLA, 42 USC Section 9607.

The assessment phase (43 CFR Section 11.31) is when the evaluation of injuries and damages is conducted. The assessment phase can be summarized in three steps:

1) Injury determination involves establishing that one or more natural resources have been injured as a result of the discharge of oil or release of a hazardous substance. The Injury Determination phase may include definitions of injury, guidance on determining pathways, and testing and sampling methods. These methods are to be used to determine both the pathways through which resources have been exposed to oil or a hazardous substance and the nature of the injury (43 CFR Section 11.61).

2) The injury quantification phase establishes the extent of the injury to the resource in terms of the loss of services[3] that the injured resource would have provided had the discharge or release not occurred (43 CFR Section 11.70).

3) The damage determination phase establishes the appropriate compensation for the injuries. Damages are measured as the cost of "restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the natural resources and the services those resources provide" and may also include the value of the services lost to the public from the time of the release to the reestablishment of the services to baseline conditions [43 CFR 11.80].

[3] Services provided by the resources are the services provided by the injured natural resources that have been lost, and the period of time over which these services would continue to be lost.

During or as a result of an assessment, a restoration plan is developed (43 CFR Section 11.93). Such a plan should include a reasonable number of possible alternatives for the restoration[4], rehabilitation, replacement[5], and/or acquisition of the equivalent of the injured natural resources and the services those resources provide. The restoration planning strategy for the subject assessment is detailed in Sections VI, VII, and VIII of this plan.

IV. Natural Resource Trustees and Authorities

The IDNR and IEPA prepared this final RP with the consideration of the comments received on the draft RP. The Illinois Natural Resource Trustees believe the final RP demonstrates that the settlement is adequate to restore, replace, rehabilitate, or acquire the equivalent of the injured natural resources and services. Sums recovered in settlement for the restoration of natural resources will be expended in accordance with this final restoration plan.

V. Public Participation

Public review of the draft RP is an integral component of the restoration planning process. Through the public review process, the Trustees seek public comment on the approaches used to define and assess natural resource injuries and the projects being proposed to restore injured natural resources or replace services provided by those resources.

Public review of the draft RP is consistent with all federal and state laws and regulations that apply to the NRDA process. Following public notice, the draft RP becomes available to the public for a 30-day comment period. Written comments received during the public comment were considered by the Trustees in preparing the final RP.

Public comments and suggestions on the proposed restoration alternative(s) is an important part of the public participation process. Anyone who reviewed the draft RP was encouraged to evaluate and comment on any part of the draft RP, including descriptions of the affected areas, the proposed restoration projects, and/or the restoration selection process. The public was further encouraged to evaluate and comment on the feasibility of the proposed restoration projects themselves. If additional restoration alternatives were proposed by the public, the public was asked to describe how the additional restoration alternatives meet the evaluation criteria contained in Section VIII below.

An additional opportunity for public review would have been provided in the event that significant changes were made to the draft RP. However, no significant changes were made when finalizing this Restoration Plan as a result of the comments received. Comments on the

[4] Restoration or rehabilitation actions are actions that return injured resources to the state the resources would have been in or the services that would have been provided by those resources had the discharge of oil or release of the hazardous substance not occurred. Such actions would be in addition to response actions completed or anticipated pursuant to the National Contingency Plan (NCP).

[5] Replacement or acquisition of the equivalent means the substitution for injured resources with resources that provide the same or similar services, when such substitutions are in addition to any substitutions made or anticipated as part of response actions and when such substitutions exceed the level of response actions determined appropriate to the site pursuant to the NCP.

draft RP were received by:

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Two comments were received and considered by the Trustees in preparing the final RP. The comments and the Trustees' responses are included in Appendix II.

An additional opportunity for public review will be provided in the event significant changes are made to the final RP.

VI. Restoration Planning

The following information describes the process of identifying and selecting restoration alternatives. For each possible restoration alternative developed, Trustees identify an action to be taken singly or in combination by the Trustee agency to achieve the restoration, rehabilitation, replacement, and/or acquisition of equivalent natural resources and the services those resources provide. The Trustee shall then select the preferred alternative(s). Possible alternatives are limited to those actions that restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources and services to no more than their baseline, that is, the condition without a discharge or release. The possible alternatives considered by the Trustee that return the injured resources and their lost services to baseline level could range from: intensive action on the part of the Trustee to return the various resources and services provided by those resources to baseline conditions as quickly as possible; to natural recovery with minimal management actions.

The Trustees solicited restoration project alternatives from multiple entities (Tables 1 and 3) (Fig 2). Such solicitation involved entities such as the Natural Resource Conservation Service, United States Geological Survey (USGS), local universities, local soil and water conservation districts, private landowners and not-for-profit organizations. To be eligible for the Natural Resource Restoration Trust funds, the Trustees request that the projects be in the general vicinity of where the incident occurred, preferably in the same watershed where the incident occurred. Specifically for this plan, Trustees obtained eligible project proposals from the USGS, IDNR's Division of Realty and IDNR's Division of Education.

The Trustees have evaluated all project alternatives that were identified and submitted, which are expected to restore the affected natural resources to pre-incident or baseline levels, and compensate for interim losses. The Trustees utilized evaluation criteria (See Section VIII) and restoration expert opinions to evaluate all potential restoration project alternatives.
The CERCLA regulations require that the Trustees state their preferred alternative(s) and explain the basis for their selection or rejection of other alternatives (Tables 1 and 3). These Trustee determinations may be modified based on public input and comment.

VII. Restoration Strategy

The goal of the NRDA process is restoration of the injured natural resources and compensation for the interim lost uses of those resources. Restoration actions can be summarized by defining two terms: primary and compensatory[6]. Primary restoration is action taken to return the injured natural resources and services to baseline on an accelerated time frame by directly restoring or replacing the resource or service. As one form of primary restoration, the CERCLA regulations require that Trustees consider natural recovery of the resource. Trustees may select natural recovery under three conditions: 1) if feasible; 2) if cost-effective primary restoration is not available; or 3) if injured resources will recover quickly to baseline without human intervention. Primary restoration alternatives can range from natural recovery, to actions that prevent interference with natural recovery, to more intensive actions expected to return injured natural resources and services to baseline faster or with greater certainty than natural recovery alone.

Compensatory restoration includes actions taken to compensate for the interim losses of natural resources and/or services pending recovery. The type and scale of compensatory restoration depends on the nature of the primary restoration action and the level and rate of recovery of the injured natural resources and/or services. When identifying compensatory restoration alternatives, Illinois Trustees first consider actions that provide services of the same type and quality and that are of comparable value as those lost. If a reasonable range of compensatory actions of the same type and quality and comparable value cannot be found, Trustees then consider other compensatory restoration actions that will provide services of at least comparable type and quality as those lost.

VIII. Evaluation Criteria

When selecting the alternative to pursue, the Trustees considered the following factors listed under 43 CFR Subpart E 11.82 Damage Determination phase — alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources:

(1) Technical feasibility.

(2) The relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources.

(3) Cost-effectiveness.

(4) The results of any actual or planned response actions.

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[6] These two types of restoration actions are OPA regulation terminology however they are conceptually similar to the two components of damages under the CERCLA regulations. Primary restoration has the same objective as the CERCLA concept of "restoration, rehabilitation, replacement and/or acquisition of the equivalent" of injured resources. In both instances, the objective is to return injured resources or services to baseline. The OPA regulations' "compensatory restoration" has the same objective as "compensable value" under the CERCLA regulations. In both cases, the objective is to compensate for interim losses.

(5) Potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources.

(6) The natural recovery period determined in 43 CFR sect. 11.73(a)(1).

(7) Ability of the resources to recover with or without alternative actions.

(8) Potential effects of the action on human health and safety.

(9) Consistency with relevant Federal, State, and tribal policies.

(10) Compliance with applicable Federal, State, and tribal laws.

The OPA regulations also discuss six evaluation criteria for Trustees to consider when developing a range of restoration alternatives. Some of the following factors are similar to the ten listed above:

(1) cost to carry out the alternative;

(2) extent to which each alternative is expected to meet the Trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses;

(3) likelihood of success of each alternative;

(4) extent to which each alternative will prevent future injury as a result of the incident and avoid collateral injury as a result of implementing the alternative;

(5) extent to which each alternative benefits more than one natural resource and/or service; and

(6) effect of each alternative on public health and safety.

These factors as well as others have been used by the Illinois Trustees when evaluating NRDA-related restoration alternatives. The attached table (Table 2) lists and further describes the factors listed above as well as other factors utilized by the Illinois Trustees. The factors listed in the table are in no order of priority.

The Illinois Trustees screened those project alternatives identified and submitted against the above criteria (Tables 1 and 3) and a preferred alternative was selected.

IX. Proposed Compensatory Restoration Alternative

The preferred alternative consists of a restoration project identified by the Trustees involving stream restoration in the nearby Kickapoo creek, to restore/sustain habitat for natural resources

similar to those lost or injured as a result of the furfural release (See Section X.). This project will restore and preserve or sustain stream and floodplain habitat and the flora and fauna that utilize such habitat. The Trustees also selected an education component to include as part of the project. The education component involves coordination with a local university to monitor the completed restoration project. The Contaminant Assessment Section has sought and received additional funds thru the IEPA, Section 319 Grant Program to expand and enhance the instream restoration project and associated educational (monitoring) effort.

All appropriate permits, including, but not necessarily limited to relevant Army Corps of Engineer permits, IDNR Office of Water Resources permits, and IEPA permits, will be sought. Restoration work will not begin until all appropriate permits have been obtained.

Restoration Component:

In an effort to identify an effective and sustainable restoration project in this area, the IDNR coordinated an assessment of the Kickapoo Creek for detailed in-stream habitat enhancement measures. The preliminary assessment identified the location of a successful rock riffle project in nearby Hurricane Creek near Charleston. The existing project along Hurricane Creek may be used as a reference point for evaluating the currently proposed project. Also, the existing project's success improves the likelihood that a similar instream restoration project, such as the proposed project, will perform as expected.

The IDNR with assistance from the United States Geological Survey identified the overall problem areas in the Kickapoo Creek. The predominant problem was documented as being: massive bank erosion and severe channel deposition of large amounts of sand and gravel resulting in loss of deep pools in Kickapoo Creek near Charleston, Illinois. Such impacts have been induced by a number of factors including agricultural practices and urbanization (increased stormwater run-off). The limited deep pool habitat is critical over-wintering habitat for several fish species distributed in mid-size streams, although such habitat is also utilized year-round by many species. The assessment concluded a top priority is stabilizing the bank and the channel in order to decrease sand and gravel deposition particularly in deeper water habitats creating pools deep enough to support habitat as described above. Common stabilization measures also create riffles which in turn, provide additional habitat for a variety of other fish species and aquatic organisms (D. Roseboom and T. Straub pers. communication).

Based on the IDNR/USGS assessment a proposed restoration site was identified at Section 19 and 20, Township 12 N, Range 9 E of Coles County. The Trustees contacted landowners and the township to ensure their interest in the concept of stream restoration project. Once their agreement was secured, a more detailed stream-channel assessment was conducted for the stream reach. This assessment provided information that summarizes existing conditions and restoration practices. As a necessary component to the restoration project, described below, the township has agreed to further stabilize the bridge downstream, which ensures a stable endpoint.

The proposed plan includes two rock riffles to simulate the scour pool hydraulics. The riffles are within approximately 1500 ft of stream bank stabilization. The 1500 ft of streambank will be stabilized with riprap in a 2000 ft reach of stream. The end product of this restoration effort

would ultimately stabilize 1500 ft of streambank, reducing bank erosion and channel deposition and create 2000 ft of favorable habitat for much of the aquatic life of Kickapoo Creek including the stream fishery (D. Roseboom and T. Straub pers. communication).

Rock riffles are designed to mimic a natural pool upstream of the installed riffle. The riffle also serves to reduce upstream slope and velocity. At the point where velocity increases within the channel the riffle provides stabilization. Rock riffles also improve fish habitat by increasing downstream oxygen levels (Fig 3) (LCSMC, 2002).

Educational Component:

This proposal involves coordination with a local university to monitor the completed restoration project (Monitoring Effort). This monitoring effort will engage the community. Involving Eastern Illinois University (EIU) and the community in the restoration effort will serve to not only provide an evaluation of the success of the project but also educate the public about the benefits of instream restoration.

X. Rationale for Preferred Restoration Alternative

The total amount of the Vesuvius USA Corporation settlement for restoration projects was $137,500. The preferred restoration project is projected to cost $137,500, with matching funds of $206,250 received thru the IEPA, Section 319 Grant Program to implement a larger scale project. In which case the benefits to natural resources this project provides is significantly greater than the Trustees costs.

The preferred restoration project is expected to benefit various natural resources and services associated with natural communities through conservation and restoration (see CERCLA criteria 2 and OPA criteria 5, Section VIII). The project is expected to satisfactorily compensate for losses sustained by the incidents and benefit public health and safety (see CERCLA criteria 1, 8 and OPA criteria 2, 6, Section VIII). The Trustees considered that the cost to carry out the projects was clearly feasible given the settlement claim (see CERCLA 2, 3 and OPA criteria 1, Section VIII). Further primary restoration was achieved through natural recovery of the streams and surrounding floodplain, thus the project address the goals and objectives in compensating for interim losses (see CERCLA criteria 4-7, 9–10 and OPA criteria 2, 4, Section VIII). For these reasons and others identified in the attached restoration matrix (Table 3), the Trustees believe this project will be suitable to use for compensatory restoration. Post monitoring of the projects will be done to increase the likelihood of a successful restoration effort (see CERCLA criteria 1 and OPA criteria 3, Section VIII).

XI. Proposed Action

The IDNR, IEPA and IAGO propose that the subject settlement monies be allocated to fund the proposed restoration project. The Contaminant Assessment Section staff (IDNR) will work in close coordination with various other governmental programs and divisions: USGS, IEPA, and

IDNR Division of Fisheries to follow the proper procurement process to ensure the successful operation of the instream project.

XII. Surveillance and Monitoring

See above section (IX. Proposed Compensatory Restoration Alternative), Educational Component. To compliment the proposed restoration project and promote community outreach, the University coordinated monitoring effort will be implemented. IDNR staff with assistance from USGS will oversee both the restoration project implementation and the monitoring effort.

XIII. Fiscal Procedures

Restoration funds for the Vesuvius USA Corporation settlement total $130,000.00. It is the intention of IDNR to release funds in Fiscal Year 2010 to begin restoration activities. After the restoration plan goes through the public process and the necessary permits are received the funds can be released and restoration activities can begin. IDNR will oversee all restoration activities. The IDNR Springfield headquarters will handle all fiscal transactions. All billings with supporting documentation shall be submitted to the IDNR Springfield Office for review and payment. IDNR fiscal agents will be responsible for the approval and payment of all expenses, obligations and contracts in accordance with the State of Illinois fiscal and procurement procedures.

XIV. Coordination with other Programs, Plans, and Regulatory Authorities

The laws and authorities associated with this restoration plan can be found in Appendix I.

XV. References

LCSMC. 2002. Streambank and Shoreline Protection Manual. Lake County (Illinois) Stormwater Management Commission and USDA-NRCS. http://www.co.lake.il.us/ http://www.foxriverecosystem.org/PDFs/Streambank%20Shoreline.pdf

XVI. Tables and Figures

Table 1. Summary of the Restoration Alternatives.

Alternative	General Location	Project Description	Preferred or Not-Preferred
Instream Restoration Site #1	Cassel Creek West of Charleston, IL (North/Upstream of Sites #2,3,4)	Was not evaluated for a specific project because the site was adjacent to a horse farm where flooding the floodplain was viewed as being harmful; therefore making an instream restoration project at this location not technically feasible.	Not-preferred. Based on expert opinion and evaluation criteria this project was not chosen for funding.
Instream Restoration Site #2	Kickapoo Creek South West of Charleston, IL (East/Downstream of Site #3)	The evaluation yielded recommendations related to removing land from ag production due to frequent flooding, not instream restoration activity; therefore this site did not exhibit the most applicable restoration alternative in terms of restoring and/or replacing similar resources to those injured by the release.	Not-preferred. Based on expert opinion and evaluation criteria this project was not chosen for funding.
Instream Restoration Site #3	Kickapoo Creek South West of Charleston, IL (West/Upstream of Site #2)	Newbury riffles are recommended to simulate the scour pool hydraulics. It is also recommended to riprap a reach of the stream. The end product of this restoration effort would ultimately stabilize the streambank, reducing bank erosion and channel deposition and create favorable habitat for much of the aquatic life including the stream fishery.	Preferred.
Instream Restoration Site #4	Kickapoo Creek South of Charleston, IL (South/Downstream of Sites #1,2,3)	Was not evaluated for a specific project because the site was in an area of major bank erosion with a house existing on the bend of the stream. This site would require substantial funding beyond the funding available through the NRDA settlement; therefore making an instream restoration project at this location not cost effective.	Not-preferred. Based on expert opinion and evaluation criteria this project was not chosen for funding.

Table 1. Summary of the Restoration Alternatives Cont'd.

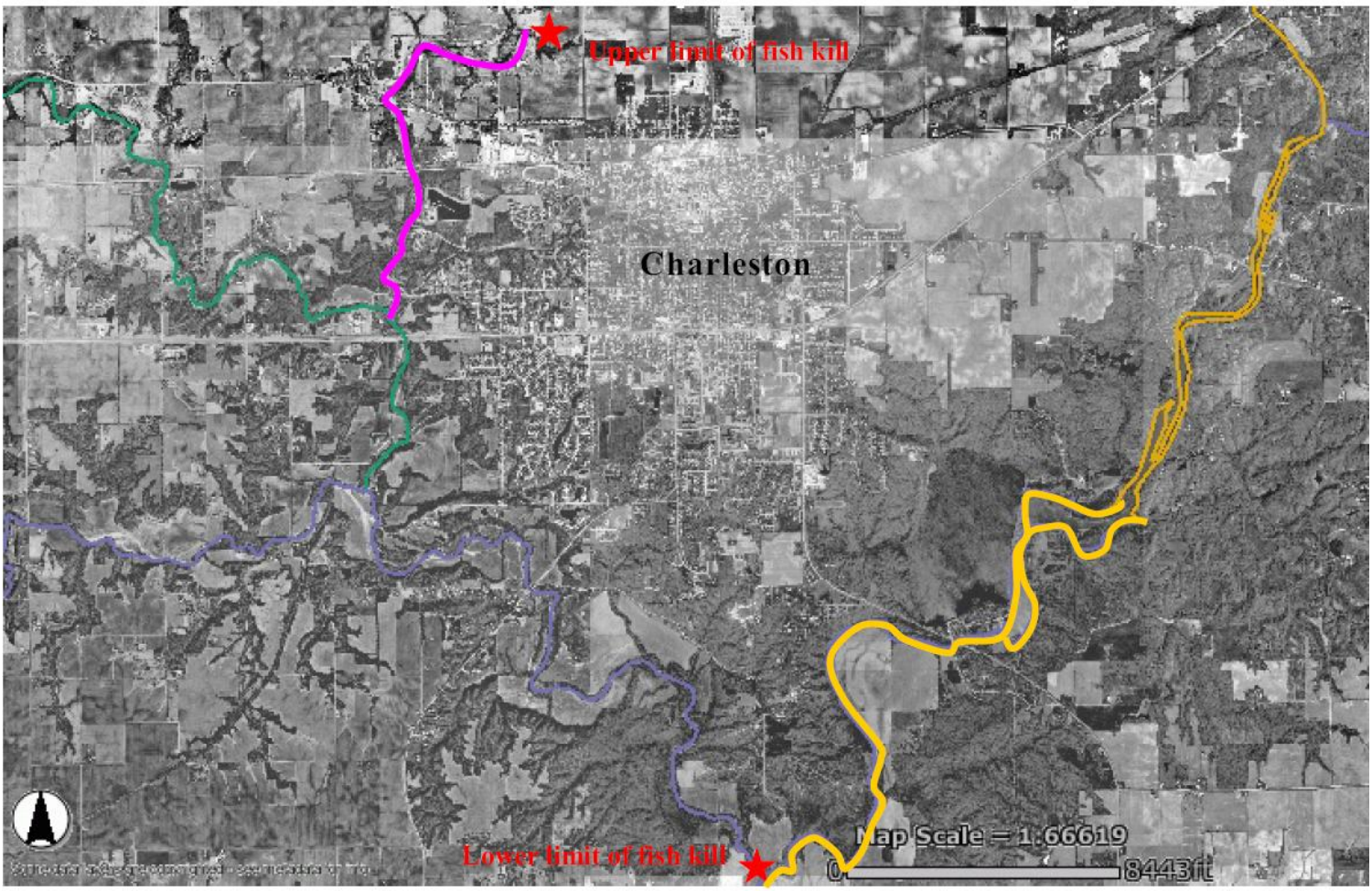
Alternative	General Location	Project Description	Preferred or Not-Preferred
Land Acquisition	Located along Rt. 16 just west of Charleston, IL	A 67 acre-parcel of land is for sale which includes approximately 0.25 mile of Riley Creek. The Trustees primary interest would be preserving the riparian corridor of Riley Creek, approximately 22 acres. The landowner was unwilling to divide the property; thereby prohibiting IDNR from solely preserving the riparian corridor of Riley Creek. The landowner was unwilling to lower the asking price, making the parcel in its entirety, too costly for the IDNR to purchase.	Not-preferred. Based on expert opinion and evaluation criteria this project was not chosen for funding.
IDNR Division of Education (Education proposal #1)	Not Applicable	To promote the Natural Resource Damage Assessment and Restoration process thru a website, billboard, newspaper and TV ads/interviews, and local school mailings. While this effort has the potential to promote Illinois' NRDA program and restoration efforts, the proposal provides products that are somewhat duplicative of what already exists at http://dnr.state.il.us/orep/contaminant_assessment/nrda/index.htm.	Not-preferred. Based on expert opinion and evaluation criteria this project was not chosen for funding.
University coordinated monitoring (Education proposal #2)	Not Applicable	This proposal involves coordination with a local university (EIU) to monitor the completed restoration project. This monitoring effort would compliment the monitoring component of the preferred instream restoration effort.	Preferred.

Table 2. Restoration "factors to consider".

Factor	Interpretation
▸ complies with applicable/relevant federal, state, local, and tribal laws, regulations, and policies (DOI 9 & 10)	▸ Project must be legal.
▸ protects public health and/or safety (DOI 8)	▸ Project does not jeopardize public health and/or safety.
▸ is coordinated with planned response actions (DOI 4)	▸ Project does not conflict with planned response actions and will not be undone or harmed by response actions.
▸ minimizes collateral injury (DOI 5)	▸ Project does not cause additional natural resource injury, service loss, or environmental degradation; or collateral injuries that may be caused by the project are minimal compared to the benefits achieved. Projects that avoid collateral injury will be given priority. ▸ Primary restoration projects will be evaluated in terms of whether they reduce exposure to hazardous substances and reduce the volume, mobility, and/or toxicity of hazardous substances. Projects may be ranked by degree of expected reductions of one or both of these factors.
▸ is acceptable to the public	▸ Project meets a minimum level of public acceptance; project is not a public nuisance. Degree of public acceptance/support can also be used as a criterion following initial screen of projects.
▸ is technically feasible (DOI 1)	▸ Project has a high likelihood of success. This factor will be evaluated in more depth for projects that are initially believed to be feasible. ▸ reliable methods/technologies known to have a high probability of success will be considered ▸ Projects incorporating experimental methods, research, or unproven technologies may be evaluated
▸ restore, rehabilitate, and/or replace habitats of injured resources (including groundwater) and the services that the habitats provide. Acquiring the equivalent may also be a viable option.	▸ Projects may be evaluated based on the degree to which they restore, rehabilitate, and/or replace habitat for injured resources. Habitat protection/restoration may be a preferred means of restoring injured resources. ▸ May also include consideration of on-site resources and habitats.
▸ Addressess in-kind habitat in the same watershed	▸ Trustees preference is to restore, rehabilitate, and/or replace in-kind habitat in the same watershed. Acquiring the equivalent may also be a viable option.
▸ provides benefits not being provided by other restoration projects being or having the potential of being planned/implemented/funded under other programs	▸ Preference is given to projects that are not already being implemented or have planned funding under other programs. Although the Trustees will make use of restoration planning efforts by other programs, preference is given to projects that would not otherwise be implemented without NRDA restoration funds.
▸ addresses/incorporates restoration of "preferred" trust resources or services	▸ Trustees will develop a list of priorities based on the resource types injured and degree of injury. Preference may be given to: specific habitats, species of special concern, living resources, native species, groundwater; etc.
▸ generates collateral benefits	▸ Secondary or cascading benefits to ecological resources and economic benefits, including enhancing the public's ability to use, enjoy, or benefit from the environment. ▸ Projects that benefit more than one injured resource or service will be given priority. ▸ Projects that benefit a single group or individual may be ranked lower.
▸ provides long-term benefits	▸ Projects that will persist will be favored over short-term projects.
▸ may be scaled to appropriate level of resource injury or loss	▸ Project can be scaled to provide restoration of appropriate magnitude. Small projects that provide only minimal benefit relative to lost injuries/services, or overly large projects that cannot be appropriately reduced in scope are less favored.
▸ is consistent with regional planning	▸ Project is not inconsistent with regional planning (e.g., supportive of species recovery plans, etc.); project is administratively feasible.
▸ is cost effective (DOI 2 & 3)	▸ Project has a high ratio of expected benefits to expected costs. This may be assessed as relative to other projects that benefit the same resource. ▸ Also applies to costs of long-term operation, maintenance, and monitoring
▸ provides benefits sooner (DOI 6 & 7)	▸ Project will achieve full expected results sooner than resource would achieve the result through natural recovery (and remediation); sooner than other projects that benefit the same resource. The sooner restoration is achieved, the better.
▸ targets a resource or service that is unable to recover to baseline without restoration action, or that will require a long time to recover naturally (e.g., >25 years) (DOI 6 & 7)	▸ Projects that target resources/services that will be slow to recover will be favored over projects that target resources/services that will soon recover naturally.

Table 3. Restoration Factors to Consider for the NRDA restoration planning of Cassel, Riley, Kickapoo Creeks as a result of furfural release by Vesuvius USA.

Factor	Instream Restoration Site #1	Instream Restoration Site #2	Instream Restoration Site #3	Instream Restoration Site #4	Land Acquisition	Education Proposal #1	Education Proposal #2
technically feasible	No	not enough information	Yes	No	No	Yes	Yes
expected costs:expected benefits	No	not enough information	Yes	not enough information	No	Yes	Yes
cost-effective	not enough information	not enough information	Yes	No	not enough information	No	Yes
results of any actual or planned response actions	No	No	No	No	No	No	No
potential for additional injury resulting from the proposed actions, including long term and indirect impacts, to the injured resources of other resources	minimal	none	minimal	minimal	none	none	minimal
natural recovery period	1 year (July 2002)	1 year (July 2002)	1 year (July 2002)	1 year (July 2002)	1 year (July 2002)	1 year (July 2002)	1 year (July 2002)
ability of the resources to recover with or without alternative actions	may be necessary	may be necessary	very likely without	may be necessary	may be necessary	necessary	necessary
Potential effect of the action on human health and safety	minimal	minimal	minimal	minimal	minimal	minimal	minimal
consistency with relevant Federal, State, and tribal policies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Compliance with applicable Federal, State, and tribal laws	Yes	Yes	Yes	Yes	Yes	Yes	Yes
addresses in-kind habitat in the same watershed	Yes	indirect	Yes	Yes	indirect	indirect	Yes
provides benefits not being provided by other restoration projects being or having the potential of being planned/implemented/funded under other programs	Yes	Yes	Yes	Yes	Yes	No	Yes
addresses /incorporates restoration of "preferred" trust resources or services	Yes	Yes	Yes	Yes	Yes	indirect	Yes
Generates collateral benefits	Yes	Yes	Yes	Yes	Yes	Yes	Yes
provides long-term benefits	Yes	Yes	Yes	Yes	Yes	Yes	Yes
may be scaled to appropriate level of resource injury or loss	NA	NA	NA	NA	NA	NA	NA
is consistent with regional planning	Yes	Yes	Yes	Yes	Yes	Yes	Yes
provides benefits sooner	No	Yes	No	No	Yes	No	No
targets a resource or service that is unable to recover to baseline without restoration action, or that will require a long time to recover naturally	No	No	No	No	No	No	No
restore, rehabilitate, and/or replace habitats of injured resources (including groundwater) and the services that the habitats provide. Acquiring the equivalent may also be a viable option.	Yes	Yes	Yes	Yes	Yes	indirect	indirect
is acceptable to the public	pending public comment	pending public comment	pending public comment	pending public comment	pending public comment	pending public comment	pending public comment



Legend:

- Cassel Creek
- Riley Creek
- Kickapoo Creek
- Embarras River

Figure 1. Cassel/Riley/Kickapoo Creeks Natural Resource Damage Assessment area along Cassel, Riley, and Kickapoo Creeks, Coles County, Illinois. This map was obtained through IDNR's WIRT (Wetland Impact Review Tool).

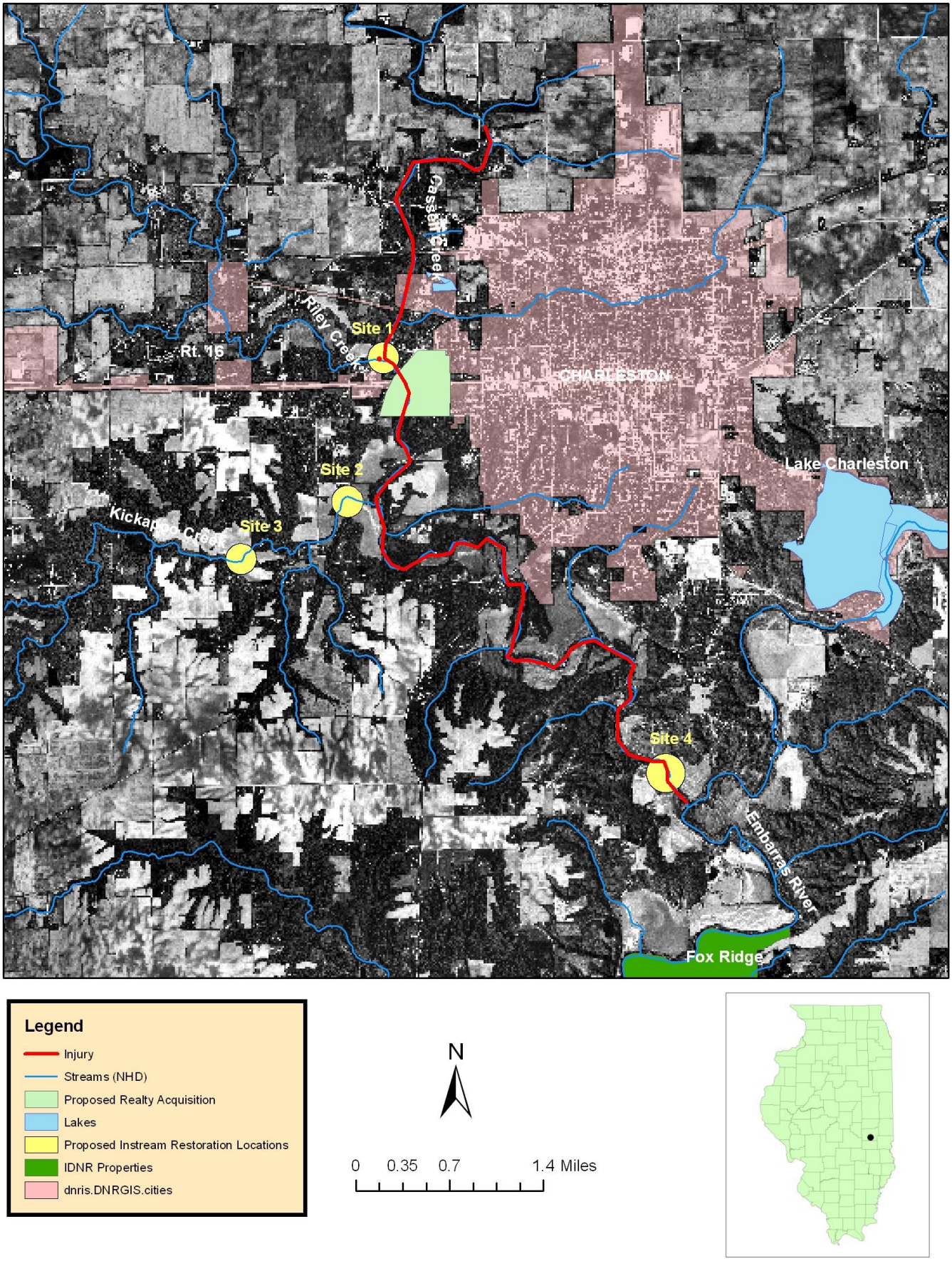


Figure 2. Map of the Vesuvius injury and the proposed restoration alternatives. This map was obtained using IDNR's Geographic Information Systems (GIS) software.

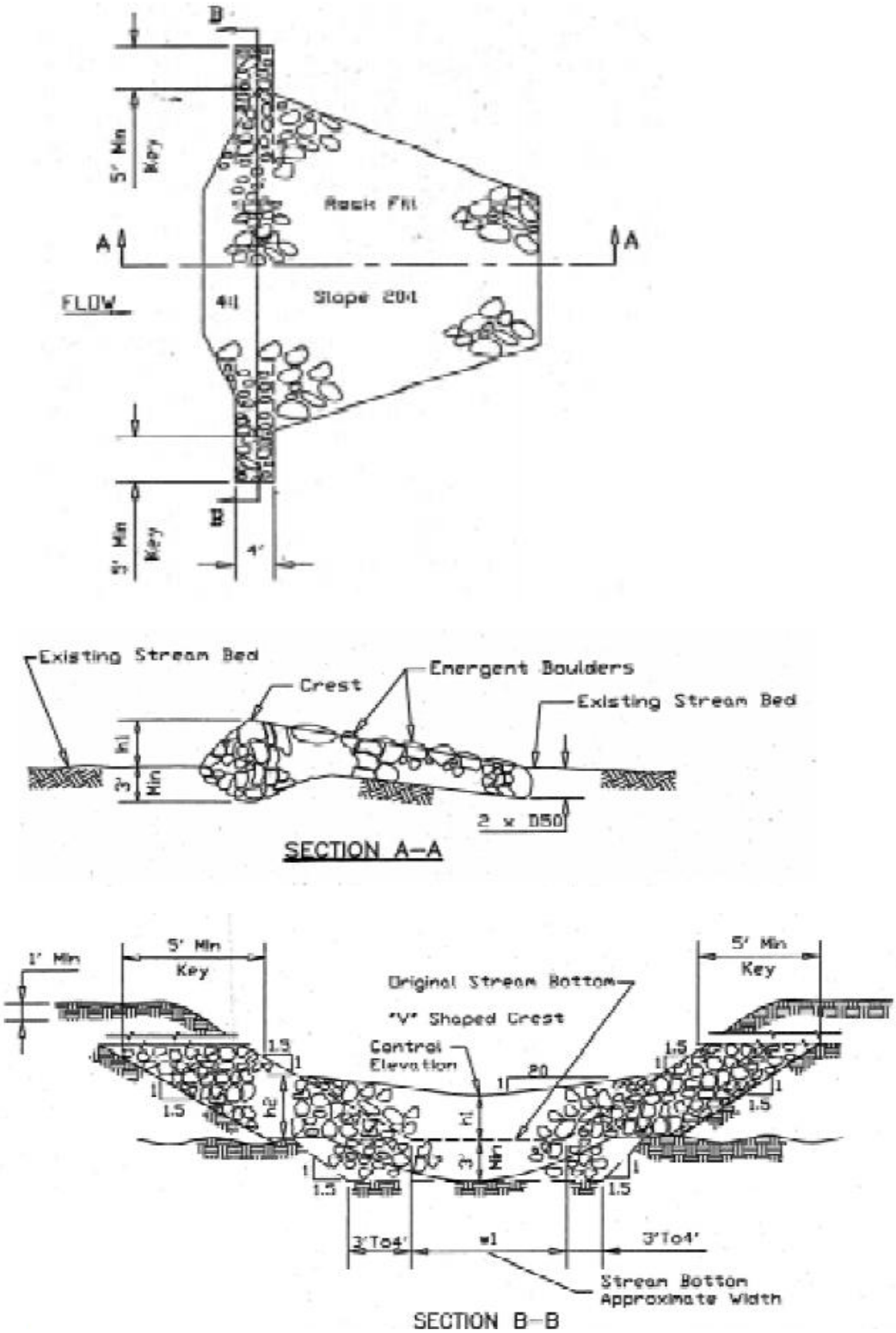


Figure 3. Layout of rock riffle structures (LCSMC, 2002).

Appendix I. Laws and authorities associated with NRDA restoration planning.

Overview

The major federal laws guiding the restoration of the injured resources and services are the Oil Pollution Act, the Comprehensive Environmental Response, Compensation, and Liability Act, and the Clean Water Act. Overall these statutes provide the basic framework for natural resource damage assessment and restoration. In addition, the State laws relevant for guiding the restoration of injured resources are the Illinois Environmental Protection Act (415 ILCS 5/1, et seq.), the Illinois Natural Areas Preservation Act (525 ILCS 30/1, et seq.), the Illinois Endangered Species Protection Act (520 ILCS 10/1, et seq.), the Interagency Wetland Policy Act of 1989 (20 ILCS 830/1-1, et seq.), and the Comprehensive Environmental Review Process (CERP). The Trustees must comply with other applicable laws, regulations and policies at the federal and state levels.

Key Statutes, Regulations, and Policies

There are a number of federal and state statutes, regulations, and policies that govern or are relevant to damage assessment and restoration. The potentially relevant laws, regulations, and policies are set forth below.

Oil Pollution Act of 1990, 33 U.S.C. §§ 2701, *et seq.*
The Oil Pollution Act establishes a liability regime for oil spills that injure or are likely to injure natural resources and/or the services that those resources provide to the ecosystem or humans. Federal and state agencies and Indian tribes act as Trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries, and implement restoration. The National Oceanic and Atmospheric Administration promulgated regulations for the conduct of natural resource damage assessments at 15 C.F.R. Part 990. Natural resource damage assessments are intended to provide the basis for restoring, replacing, rehabilitating, and acquiring the equivalent of injured natural resources and services. The Trustees actions are substantially consistent with the regulations found at 15 C.F.R. Part 990.

Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. §§ 1251, *et seq*.
The Clean Water Act is the principal law governing pollution control for water quality of the nation's waterways. Section 404 of the law authorizes a permit program for the disposal of dredged or fill material into navigable waters. The U.S. Army Corps of Engineers administers the program. In general, restoration projects that move significant amounts of material into or out of water or wetlands (e.g., hydrologic restoration of marshes) require Section 404 permits. – Under Section 401 of the CWA, restoration projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with state water quality standards (section 401).

Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601, *et seq.* This Act provides the basic legal framework for cleanup and restoration of the nation's hazardous-substances sites. Generally, parties responsible for contamination of sites and the current owners or operators of contaminated sites are liable for the cost of cleanup and

restoration. CERCLA establishes a hazard ranking system for assessing the nation's contaminated sites with the most contaminated sites being placed on the National Priorities List (NPL).

Illinois Environmental Protection Act, 415 ILCS 5/1, *et seq.* The Environmental Protection Act is the state law that prohibits most forms of pollution occurring on land, in water, or in the air. It also establishes a liability regime, including enforcement and penalties, for entities that violate the provisions of the Act. The Environmental Protection Act was developed for the purpose of establishing a unified state-wide program for environmental protection and cooperating with other states and with the United States in protecting the environment. It was also developed to restore, protect and enhance the quality of the environment and to assure that adverse effects upon the environment are fully considered and borne by those who cause them.

Illinois Natural Areas Preservation Act, 525 ILCS 30/1 *et seq.* The Act serves to protect any area in Illinois that has been designated as a nature preserve, including the species of plants and animals in each habitat. Any endangered plant and animal species found in designated nature preserves are also protected under this Act. Dedicating and holding an area for natural preserves is also encouraged in this Act.

Illinois Endangered Species Protection Act, 520 ILCS 10/1 *et seq.* This Act gives protection to any plant and animal species on the endangered or threatened list from being moved or destroyed. Any species that the Secretary of the Interior of the United States lists as endangered or threatened is also included on Illinois's endangered and threatened species list. The Act also provides rules of law for searching any premises suspected of illegally keeping goods, merchandise, or animals, plants, or animal or plant products subject to the Act and seizing such products.

Interagency Wetland Policy Act of 1989, 20 ILCS 830/1 *et seq.* This Act states that state agencies are responsible for preserving, enhancing, and creating wetland areas for the purpose of increasing quality and quantity of the State's wetland resource base. The goal behind the Act is that there shall be no overall net loss of the State's existing wetland acres or their functional value due to State supported activities.

Comprehensive Environmental Review Process. All internal Department (IDNR) projects, permits, and plans related to construction development, or other activities that will result in a change to existing environmental conditions shall be reviewed by the CERP staff to ensure compliance with relevant state and federal environmental statutes and to ensure the greatest protection of all natural and cultural resources to the extent possible.

Appendix II. Received public comments on the draft RP and the Trustees' responses.

Public Commenter A:

From:
Sent: Wednesday, October 28, 2009 11:14 AM
To: Whetsell, Beth
Subject: Vesuvius RP

Beth,

Growing up in Charleston along Kickapoo Creek a few miles downstream of the proposed restoration project site, doing stream surveys on the watershed with IDNR and EIU (pre- and post- vesuvius) on fish and freshwater mussels, and having a broad understanding of the watershed in general I would like to offer a few comments in regards to the RP which I hope will be utilized in refining this document and scope.

The Vesuvius spill obviously negatively affected the three streams in question to a great extent. We seem to have a pretty good handle on the effect upon the fishery, but have a very limited handle on the effects to other biota. Riley Creek is a Class A stream, and in a region dominated by degraded stream systems this stream I believe warrants additional attention. The biodiversity present in the Riley Creek drainage far exceeds that of Castle or Kickapoo Creeks as a whole. Riley Creek boasts an exceptional molluscan fauna for it's size, a group which hopefully I don't need to tell you is one of the most imperiled in the world. Castle Creek and Kickapoo Creek on the other hand, have a very depauperate molluscan fauna and I have a firm belief that these streams suffered very little in regards to impacts upon freshwater mussels. To this end, due to the biological diversity present in the Riley Creek drainage I would compell you to shift your efforts to a stream where biodiversity can be preserved in order to augment populations within the Cassel Creek and Kickapoo Creek drainages.

Secondly, the outlined stream project on Kickapoo Creek I believe does not offer the environmental benefits that preservation of biodiversity on Riley Creek provides. Kickapoo Creek as a whole is a very flashy system that sees high flows throughout the year. I think that this project is focused at preservation of crop land and/or riparian areas which seems like a moot point as stream systems are dynamic. Streams move naturally through their floodplains over time, and attempts such as these provide little benefit at the end of the day. I believe that in leiu of an appropriate project on Riley Creek, monies would be better directed toward landowner education within the watershed.

I believe that when given a sum of money such as this with the end product to be an enhancement to positively affect biota and habitat, the object should not be to find the first highly receptive landowner and do some interesting hydrological manipulation that may or may not have any significant **positive** impact on the biota or habitat but moreover to design a project that yields the highest benefit for the biological integrity of the system. To this end, I would highly discourage pursuing this "restoration" project if you would even call it that, which I would not, and focus on preservation of the biological integrity of Riley Creek as this intuitively seems to provide the greatest ecological benefit to the region.

Thank you in advance for consideration of the comments I have provided in review of the draft RP. Often times the biology seems to be left out of these decisions, but in this case I feel compelled to voice my irreverent belief that this project will not wisely utilize these funds which could be more appropriately spent elsewhere to derive the greatest benefit to the resource.

Trustees Response to Public Commenter A:

From: Thomas, Trent
Sent: Friday, November 13, 2009 2:29 PM
Subject: RE: Vesuvius RP

Hello and how are things going for you? I hope all is well. And thank you for keeping tabs on what the government is doing, or trying to do, in your backyard. Someone must have taught you a thing or two about nine years ago. Anyway, knowing you grew up in the Charleston area, I respect your concerns for the proposed project. We have been working on this NRDA settlement for some time now, and hopefully, I can fill in some of the gaps and set your mind at ease a bit.

You are right, we do have our best handle on the impact to the stream fisheries, as compared to the other biota. In fact, I have monitored the heck out of the fish population in Riley and Kickapoo Creek (and Hurricane Creek as a control) since this fish kill occurred. But I should let you know that we did survey the Riley Creek mussel population with Bob Szafoni after the pollution event. Bob was unable to find any evidence that the event impacted the mussel population in that stream. It was his impression that the mussels were able to shut down and ride out the event and re-emerge in better conditions with no noticeable ill effects. Following this initial survey, monitoring of the mussel population was dropped, seeing no reason to continue an intense effort. We do have a statewide mussel sampling effort that started this past summer, so it will be interesting to see how their results compare to Bob's 2001 results. With all that said, even though the fisheries is what we have concentrated our monitoring efforts on, it is also my opinion that the fisheries took the biggest hit from this pollution event.

I am also in full agreement with your statement that Riley Creek is a very high quality stream that warrants special attention. The fact that Riley Creek holds more mussel species than Kickapoo Creek was shown in Bob's 2001 surveys: Riley Creek 3, 6, and 5 extant species compared to Kickapoo Creek's 1 and 2 (Cassel Creek was not surveyed in 2001). And individual mussels collected in Riley Creek 4, 56, and 30 far exceeded Kickapoo Creek's 0 and 4. The fish populations, however, are quite similar with three sites on Riley Creek in 2006 producing 24, 27, and 34 species compared to 31 species found at our only Kickapoo Creek site. The Riley Creek site with 27 species and the Kickapoo Creek site were both directly impacted by the pollution event five years prior to the 2006 sampling event.

Apparently though, great minds do think alike. We also felt the highest priority for this area was to protect Riley Creek and its extraordinary resources. So, we proceeded on this premise and our NRDA settlement was based on a proposal to purchase a significant amount of riparian land along Riley Creek. This would serve to help protect the stream from ongoing agricultural landuse and the perpetual trend of development for residential lots moving toward and encompassing the Riley Creek watershed. Unfortunately, our hands were tied as we were bound by requirements to land purchases not to exceed fair market value. The owner of the only land offered for sale to us was asking no less than $10,000 per acre, far higher than fair market value. The landowner stuck to this asking price for several years until we were forced to abandon this option.

Our next step was to contact the local NRCS office, as well as ERMA, to solicit additional options and comments. With NRCS and our Nature Preserves Commission, we identified at least six problem locations along Kickapoo and Riley Creek. These sites and several stream reaches were visited and evaluated with USGS staff. The sites were eliminated for various reasons, leaving us with the current project location on the Coles property. Although landowner cooperation plays a big role in project location, it was not the driving force behind this site location. In fact, this site was chosen by USGS before any of us had even met the Coles. Their receptive attitude was merely the icing on the cake for us.

Kickapoo Creek is a very flashy system with high flows. Our project does not intend to address flooding issues in any way, nor does the project focus on the preservation of crop land. The project's intention is to address bedload within the stream. Kickapoo Creek is moving an accelerated amount of sand and fines,

and massive bank failure is contributing significantly to this high bedload. These problems are clear at the sites I have surveyed multiple times over the last several years. Until recently, these Kickapoo Creek sampling sites contained pools that were often too deep to wade into and sample. Earlier this year, I sampled these sites and those pools had completely filled in. I, too, did not think much about the bedload in Kickapoo Creek until these observations. I have not yet worked up the fish from these samples, but I fear the population has taken another hit resulting in species loss at these sites.

My hope is that this project can intercept some of the bedload moving downstream (and there is more coming from further upstream) and prevent additional inputs from bank sources at this site, enough to allow natural recovery of downstream habitat. If bedload of fines can be reduced significantly, downstream areas can move accumulated fines and redevelop habitat diversity once again. This may also have positive implications for mussel establishment by providing a more stable substrate that is not continuously buried by incoming bedload.

Onsite at the project location, in-stream structures will create and maintain scour holes providing necessary deeper water habitat as well as create and protect existing riffle habitat. Walking the stream, you can find locations where natural habitat features are demonstrating this very process. Usually it is a tree or other outcrop into the channel that pinches the flow and creates and maintains this deeper water scour. These "holes" are also holding loads of fish, supporting this premise of the project design.

The land purchase option along Riley Creek is lost. I still think it was a good idea. I do have some concerns about dumping money into attempts at landowner education. There are already agencies whose purpose it is to educate landowners, U of I Extension and others, not to mention NRCS, SWCD, and ERMA. The Department of Agriculture already provides money to cooperative landowners to implement best management practices, which can be considered as payment to do the right thing. If we funnel more money into additional implementation of BMP's, we are in essence rewarding those non-cooperative landowners that choose to hold out for more government money to do the right thing.

Receptive landowners do play a role in what we do. We cannot work where the landowners will not let us. But like I said above, this site was chosen before any of us met the Coles. I do hold out hope for positive effects from this project. Much of these projects is a learning experience, and we are sure to learn something from this project.

I will gladly discuss this project further with you, but hopefully, I have provided some additional information to help you swallow the premises of this project. Do not hesitate to comment further. We are always looking for expert advice and constructive criticism.

Thanks,

Trent

Public Commenter A Response to Trustee Feedback:

Sent: Fri 11/13/2009 3:17 PM
To: Thomas, Trent
Cc: Whetsell, Beth
Subject: RE: Vesuvius RP

Trent,

Thank you for your very well thought out and informative comments regarding the proposed project on Kickapoo Creek. I certainly gained some insight into how you have arrived at where you are today.
I understand very well the lack of time IDNR folks have this time of year, so I am needless to say very

appreciative of the time you took to respond. Although I do live up here in Chicagoland I certainly try to keep tabs on downstate happenings, and as my parents are landowners along Kickapoo Crk. downstream of your proposed project I have an even more vested interest as a voice for them.

I am in full agreement in regards to your statements about sediment loads, bank failure, and the subsequent amount of fines being pushed downstream in Kickapoo, which truly make this system a unique monster to deal with. I do think these are long term issues that need to be addressed in order to promote an improvement in available habitat for not only the fishery, but other taxanomic groups such as freshwater mussels as well. Being that the system is so flashy however, I don't forsee at least for the lower portions of Kickapoo much of a chance to bolster recruitment by freshwater mussels or for this project to stimulate any sort of positive benefit outside of the 2,000 foot proposed corridor. I guess my take home point from my previous commentary was moreover that the footprint of the project is too small to in the grand scheme of things provide much overall benefit, we'll be merely throwing a toothpick into a volcano. I do however understand that you have a pot of money that requires spending and a finite set of options.

Can you tell me additionally, if you have done any fish surveys in the vicinity of the Coles property and whether or not the eastern sand darter was found that far up in the watershed? This would be an additional concern I would have for doing work at this location. I know we had talked previously regarding a bridge project downstream of there in regards to that species...but I cannot recall how far up you had found it, or if any surveys had been conducted there.

Thanks again for your time.

Trustees Second Response to Public Commenter A:

From: Thomas, Trent
Sent: Friday, November 13, 2009 10:40 PM

Cc: Whetsell, Beth
Subject: RE: Vesuvius RP

One component of this project is an intensive monitoring effort of the project area that we have contracted EIU to conduct. They (and probably me, at least most of the time) will be conducting surveys of fish, macroinvertebrates, and habitat at four reaches twice per year. One site is our long-term sampling reach immediately downstream of that bridge at the Coles' property, two reaches fall within the project reach, and a reference reach is west of the next bridge upstream. We conducted the first round of samples this year already. Those fish have not been processed yet, but I did not see any eastern sand darters at the time of sampling. Nor have I seen any that far upstream in past samples.

Earlier this year, EIU also helped me sample a site on Riley Creek and further downstream on Kickapoo Creek. I have collected eastern sand darters at both these sites in previous years, but I did not see any when sampling this time around. I was generally disappointed with the overall collection at the Kickapoo site in particular.

Stream restoration or enhancement is a costly venture. We were fortunate to be able to match this settlement money with EPA 319 funds to double our effort here. But you are right, we are not going to "cure" Kickapoo Creek with this one project.

Thank you, and I am glad I could help address your concerns.

Trent

Follow Up Trustees Response to Public Commenter A:

From: Forrest, Jessica
Sent: Wednesday, December 16, 2009 5:08 PM
To:
Cc: Whetsell, Beth; Thomas, Trent
Subject: RE: Vesuvius RP

Hi ,

After reviewing your comments and Trent's responses, I wanted to provide you with a little more information about our monitoring program to evaluate the proposed restoration project's success or need for corrective action. As Trent said, our hope is that the instream restoration project can intercept some of the bedload moving downstream and prevent additional inputs from bank sources at this site, enough to allow natural recovery of downstream habitat. This will hopefully have positive implications for aquatic insects, fish, and mussel establishment in the area. To determine whether or not the project is in fact positively affecting the streams biota we are conducting biological monitoring of the stream system. As Trent also alluded to, one component of this project is an intensive monitoring effort of the project area. Eastern Illinois University will be conducting surveys of fish, aquatic insects, and habitat at four reaches twice per year for a couple of years, then IDNR will continue the monitoring for as many years into the future as we can (hopefully for a 10 to 20 year period). Another component of the monitoring plan is mussel surveys pre- and post- restoration in order to assess the diversity and abundance of mussels in this reach of Kickapoo Creek and monitor the projects affect on the mussel community. We will take the results of the pre restoration survey into consideration when implementing the restoration project to make sure we do not negatively impact the mussel community already present. Then we will also periodically survey the mussel community post restoration implementation to see if they in fact also have a positive response to the project.

As Trent mentioned, many restoration projects are learning experiences. We are making are best efforts to evaluate the projects so we can make appropriate adjustments to the projects as necessary and take the information we learn into consideration when selecting other restoration projects to implement in the future. Again, we appreciate your feedback regarding our proposed project along Kickapoo Creek to compensate for the injuries as a result of the Vesuvius incident. If you have any further questions or concerns, please do not hesitate to contact us. We are doing our best to try and enhance the system impacted by a toxic release that resulted in injury to natural resources. Interested stakeholders, such as yourself, help us make sure we are taking all perspectives into consideration to derive the greatest benefit to the resources.

Thank you,

Jessica Forrest
Illinois Department of Natural Resources
One Natural Resources Way Springfield, IL 62702-1271
ph (217) 524-0125 fax (217) 524-4177

Public Commenter B:

From:
Sent: Thu 11/19/2009 12:50 PM
To: Whetsell, Beth
Subject: Hey there!

You've been on my mind after I read this article...a friend of mine owns property along this creek and we camp there a ton!

http://www.jg-tc.com/articles/2009/10/27/news/doc4ae7b73097fc9293028737.txt

Bravo!

Article from the Journal Gazette - Times Courier: Serving Charleston and Mattoon Illinois

Tuesday, October 27, 2009 10:22 PM CDT

Kickapoo fish habitat to be restored in Vesuvius chemical spill settlement

By ROB STROUD, Staff Writer
rstroud@jg-tc.com

CHARLESTON — Kickapoo Creek fish habitat is slated to be restored with the help of a settlement reached over Vesuvius USA's 2001 chemical spill in Charleston.

The Illinois Department of Natural Resources' intentions for the $137,500 settlement are detailed in a recently released draft restoration plan for a section of the creek southwest of Charleston. DNR is seeking input on this document through Nov. 13 in preparation for creating the plan's final draft.

"We are definitely interested in their feedback. This is a restoration program for their community," said Beth Whetsell, a natural resources advance specialist with DNR. "We look through all the comments and we address those."

The plan includes partnering with Charleston Township for bridge protection measures at County Road 1320E over Kickapoo Creek and partnering with the Eastern Illinois University biological sciences department for monitoring the completed restoration project.
DNR and the Illinois Environmental Protection Agency prepared the plan to address restoration of natural resources injured as a result of furfural, an industrial chemical, being accidentally released on June 22, 2001, from Vesuvius' Charleston facility on North Fifth Street.

The plan reports a short circuit in Vesuvius' electrical system caused a pump to malfunction and a tank containing furfural to overflow into a drainage ditch next to the plant. A plume of approximately 8,000 gallons of furfural traveled nine miles down Cassel, Riley and Kickapoo creeks, flowing to the confluence with the Embarras River.

An estimated 259,000 fish were injured or killed by the spill, according to the restoration plan. These consisted of 91.5 percent smaller, nongame fish and 8.5 percent larger, game fish. The plan states an unknown number of of mussels, frogs, crayfish, and other aquatic life and vegetation also were killed or injured.

The Dec. 7, 2006, settlement, supplemented by $206,250 in IEPA matching funds, has been earmarked for reducing stream bank erosion and sand/gravel deposits in a 2,000 foot section of Kickapoo Creek, as well as creating habitat for fish and other aquatic life. These funds will also cover the monitoring of the completed project.

Large rocks would be installed to stabilize the bank and to create deep pools of water, where many species of fish would find year-round habitat and some would spend the winter.

Whetsell said DNR has been working closely with Charleston Township and property owners along the 2,000-foot section of the creek. She said planned erosion prevention measures at the township bridge will make the restoration project even stronger.

Charleston Township Road Commissioner Mike Cox said the state is slated to pay for large rocks that will be installed like "armor" to protect the base of the bridge from being scoured by debris in Kickapoo Creek. He said the township is grateful for the help protecting the bridge.

"It's a win-win situation," Cox said.

Whetsell said the installation of the restoration measures will likely occur sometime in summer or early fall 2010, but the exact timing will depend on the public input that the draft restoration plan receives and any revisions that are made as a result.

The draft restoration plans states that restoration was assisted by the immediate action taken by Vesuvius to investigate and clean up the released chemical, thus accelerating the ability of the streams and surrounding flood plain to naturally recover.

"We were saddened by the damage that occurred at the time of the accident and are now excited and pleased by the environmental recovery there due to the cooperation between Vesuvius and the Illinois Department of Natural Resources," said Steven DelCotto, an attorney with Vesuvius.

Contact Rob Stroud at rstroud@jg-tc.com or 238-6861.