

EXHIBIT 1

LOCKPORT NRD RESTORATION OVERVIEW DOCUMENT

by
United States Fish & Wildlife Service
Illinois Department of Natural Resources
Illinois Environmental Protection Agency
Dated March 2021

I. THE NATURAL RESOURCE DAMAGE ASSESSMENT PROCESS UNDER OPA

Pursuant to Section 1006 of the Oil Pollution Act (OPA), 33 U.S.C. § 2706, the U.S. Fish & Wildlife Service (FWS), the Illinois Department of Natural Resources (IDNR), and the Illinois Environmental Protection Agency (IEPA) are designated as Trustees for recovery of damages for injuries to, destruction of, loss of, or loss of use of natural resources resulting from a discharge of oil in Illinois. Natural resources include terrestrial and aquatic habitats, including wetlands, substrate and water column; as well as all biota and wildlife that inhabit or use these habitats. For the Lockport Oil Spill, FWS serves as the lead trustee and works with the State trustees to carry out the natural resource damage assessment and restoration (NRDAR) process. The NRDAR process consists of three steps: (A) assessment of the injury to natural resources; (B) conversion of the injury into monetary damages based on the estimated cost to undertake appropriate restoration projects to restore injured resources; and (C) implementation of one or more projects to restore injured natural resources.

A. Injury Assessment

Injury assessment involves the identification of natural resources exposed to a contaminant release (e.g., oil spill) and quantification of the resources affected; the nature and degree of exposure and injury resulting therefrom; and duration of the injury and the period of time needed for the injured resources to recover to their baseline conditions (preinjury). Injury assessments are completed by trained and experienced biologists, ecologists, environmental scientists, and resource economists following standard protocols developed by FWS and State Trustee agencies. Early in the injury assessment phase, Trustees invite the responsible parties (RPs) to participate in the natural resource damage assessment and endeavor to work cooperatively with technical representatives of the RPs to establish and participate on a Technical Working Group (TWG) to assess injuries to specific natural resources or their uses by the public. The Trustees and/or TWG scientists and economists often work jointly to collect, review, and discuss field and other available data to determine natural resource and use injuries.

Natural resource injuries are determined by collecting and analyzing information to evaluate the nature and extent of injuries resulting from an oil spill. This information is then used to identify restoration actions that will bring injured natural resources and services back to baseline (that is, conditions that would have existed had the spill not occurred) and make the environment and public whole for interim losses. Restoration consists of both (i) "primary restoration" which is an action that returns injured natural resources and services to baseline, and (ii) compensatory restoration which are actions to compensate for interim losses of natural resources and services that occur from the date of the incident until recovery. A Habitat Equivalency Analysis (HEA) is one approach that the Trustees may use to quantify compensation for injuries to habitats. A Resource Equivalency Analysis (REA) is an approach that the Trustees may use to quantify compensation for injuries to individual

species. The principal concept underlying these methods is that the implementation of projects, over time, will replace the total quantity of past, current, and future loss of the habitat services and species injured by the oil spill. During this process, the Trustees rely on their considerable experience and expert judgment to ensure that both the environment and the public are made whole by their collective actions. These approaches are consistent with the Federal NRDAR OPA regulations (15 CFR Part 990), and are explicitly identified in the revised Federal NRDAR CERCLA regulations (43 CFR Part 11).

B. Estimates of Monetary Damage

A claim for natural resource damages typically includes the costs of completing primary restoration; the costs necessary to compensate for the interim loss of resources and services from the time of injury until the resources recover to baseline; and the costs incurred by the Trustee agencies performing the injury assessment and restoration scaling work. Pursuant to OPA, monetary damages recovered by the Trustees can be used only to develop and implement a plan to restore, replace, rehabilitate, or acquire the equivalent of the injured resources, in addition to reimbursing Trustee assessment costs. To fully compensate for calculated losses, the Trustees determine the appropriate “scale” of the proposed compensatory restoration action(s), that is, the size or magnitude of projects that will provide natural resource service gains equivalent to the losses caused by the injury. This process entails evaluating the likelihood that a potential restoration project will restore the injury in question. The Trustees complete this step by either: (1) developing potential projects and evaluating the nature and quantity of restoration gains the projects are likely to achieve together with the cost to implement the projects; or, (2) modeling categories of projects known to be effective at achieving the type of restoration desired and estimating the cost to implement such projects. The Trustees then scale the restoration project according to the type of potential restoration action to ensure that the present (discounted) value of the project gains (i.e., restoration credit) equal the present discounted value of losses (i.e., injury debit). The damage claim is thus the cost of implementing potential restoration actions that will fully restore the injured resource to its pre-injury baseline condition, plus the costs that the Trustees incurred performing the injury assessment and restoration scaling work. As with the injury assessment stage, the type of restoration needed and the estimated cost of that restoration is based on the Trustees' experience and expert judgment.

C. Restoration Process

The Trustees will analyze restoration alternatives and identify the restoration projects that they determine to be the most viable and likely to restore the injured resources and their services to the public. The Trustees will then release a Draft Damage Assessment and Restoration Plan (DARP) that complies with the National Environmental Policy Act (NEPA) for public review and comment, before releasing a Final DARP that details the restoration actions that will be implemented. In doing so, the Trustees will select one or more restoration projects and oversee those projects to return the injured natural resources and natural resource services to their baseline condition, as well as compensating for associated interim losses.

II. OVERVIEW OF THE OIL SPILL AND NATURAL RESOURCES INJURED

On December 13-14, 2010, at least 1,800 barrels of crude oil spilled into a wetland commonly known as Long Run Parcel, and designated as critical habitat unit 7 for the Hine's emerald dragonfly. It is adjacent to the Illinois & Michigan Canal near Lockport, Will County, Illinois. On January 7, 2013, the Trustees signed a Memorandum of Understanding to coordinate natural resource damage assessment and restoration activities associated with injuries to trust natural resources caused by the oil spill. As part of the NRDAR process, the Trustees:

- toured the spill site on various occasions, reviewed a wetland delineation prepared by the RPs' consultant, and reviewed the extensive water samples and other data to assess the nature, extent, and duration of injuries to natural resources at the spill site and adjacent areas;
- engaged and/or consulted various experts—biologists, economists, entomologists, ecotoxicologists—to ensure the assessment was based on appropriate and reliable scientific data and methodologies;
- entered into a Cooperative Agreement with the RPs to facilitate a cooperative process for assessing and resolving natural resource damages (September 2014);
- established a TWG with the RPs that met regularly to share site information, discuss assessment activities, identify restoration opportunities, and evaluate their feasibility; and
- reviewed the ecological services models, including inputs, assumptions, and results.

Based on information collected during the injury assessment process, the Trustees determined that natural resources and services had been injured, and that response actions at the spill site would not fully address these injuries, and in fact caused additional injuries. Throughout the injury assessment and restoration planning process, the Trustees used available information, expert scientific judgment, information generated through response activities, and literature on the fate and effects of oil spills on natural resources and their services to arrive at the best estimate of the injuries. The Trustees concluded that the oil spill resulted in significant and long-lasting injury to a critical habitat for the Hine's Emerald Dragonfly (HED) (*Somatochlora hineana*), and habitat for Blanding's turtle (*Emydoidea blandingii*) and migratory birds.

The Hine's emerald dragonfly, a federally endangered species, survives in six locations that constitute five genetic populations: Des Plaines River Valley, IL; Lower Wisconsin River, WI; Cedarburg Bog, WI; Northern Wisconsin, WI; Upper Peninsula, MI; and several sites in Missouri. Of these, the Des Plaines River Valley population is in the most danger of near-term extirpation. The Illinois population appears to be considerably smaller than the others and is estimated to generate fewer than 350 adults per year. The Buckeye crude oil release has reduced the viability of the Illinois population of the Hine's emerald dragonfly and has appreciably reduced the likelihood of achieving the recovery goals of the species through destruction of critical habitat. The specific and unique habitat requirements of the species and globally rare communities in which the Hine's emerald dragonfly exists, means that opportunities are limited for restoration to mitigate for the destruction of foraging and breeding habitat from the release. Given the rarity of breeding habitat and the likely impacts to a significant portion of the available breeding habitat for the species in the State, adequate restoration actions are necessary to ensure that the impacts from the release do not jeopardize the continued existence of the Hine's emerald dragonfly in Illinois and rangewide.

The Blanding's turtle (*Emydoidea blandingii*) is listed as endangered in the State of Illinois. In Illinois, the species has likely been extirpated from nearly two-thirds of the counties within its historic habitat range. The species is limited to a relatively small number of known sites in Will County, Illinois. The oil release site is believed to be one of the only sites in Will County on the east side of the Des Plaines River Valley. The impacted area includes known foraging habitat and possibly breeding habitat for the Blanding's turtle and it had been ranked as moderate to high habitat for the species. To support Blanding's turtles, a significant amount of wetland habitat is required. The home range of Blanding's turtles is large, averaging tens of hectares and sometimes exceeding 100 hectares (over 247 acres).

Hundreds of bird species protected by the Federal Migratory Bird Treaty Act spend at least some portion of the year in the Lower Des Plaines River Valley, which provides suitable breeding habitat and important migratory stop-over habitat. Birds known to use the Lower Des Plaines River Valley include waterfowl, shorebirds, raptors, waterbirds, and landbirds. Specifically, the bald eagle, which is afforded protection by the Federal Bald and Golden Eagle Protection Act, is known to occur in the valley. A pair of bald eagles has been nesting on an island within the Des Plaines River since at least 2010 and bald eagles use the river corridor during their annual spring and fall migration. Habitat at the spill site has been disturbed since December 2010, impacting breeding, nesting, and foraging for ten years. Migratory birds have been observed in contaminated areas and there have been periods when hazing devices did not function.

III. ASSESSMENT OF INJURIES TO MIGRATORY BIRDS AND BLANDING'S TURTLES

The Trustees focused their estimate of ecological lost services on the Blanding's turtle and migratory birds as representative resources for the injured wetland system. The model accounted for the amount of time over which services were diminished, the amount of service decreases, and the acreage over which the service changes occurred. These service losses began immediately after the oil spill.

The Trustees used Habitat Equivalency Analysis (HEA) to calculate service losses resulting from injured natural resources at the spill site and to estimate the restoration costs needed to address those losses. HEA is an economic tool to estimate damages and is a restoration-based approach to natural resource valuation that can account for changes in the baseline condition while estimating the amount of past and future interim losses. The fundamental concept is that compensation for lost ecological services can be accomplished by restoration projects that provide comparable services. HEA has three steps: (1) assess the present value of lost services from the discharge until the injured resource is restored to its baseline condition, (2) select appropriate compensatory restoration projects, and (3) identify the size of the project that will equate the total discounted quantity of lost services to the total discounted quantity of replacement services.

The crude oil spill had a devastating and long-lasting impact on the habitat for Blanding's turtle and migratory birds. To assess these injuries, the Trustees divided the spill site into five Areas of Potential Injury (API): Excavation (1.6 acres); Containment (1.7 acres); Other Physical Response (3 acres); Channel (8.6 acres); and Flood Dispersion (49.8 acres). In the smaller, most intensely impacted APIs, the Trustees determined that there was significant injury to the habitat resources expected to last over 30 years. In the two largest APIs, the degree to which the habitat resources were injured and the speed with which these could recover were less certain because of limited data and would require extensive field testing over 60 acres of wetlands. The Trustees assigned a lesser service loss for the two APIs, preferring to reach restoration sooner and avoiding the delay necessary to conduct such studies. Accordingly, the Trustees adopted a mid-point of potential injuries, resulting in a total loss of 454.3 Discounted Service Acre Years (DSAYs) as the injury that would require compensation through the HEA.

IV. ASSESSMENT OF INJURIES TO THE HINE'S EMERALD DRAGONFLY

The HEA alone does not adequately address injury to HED and its habitat because it accounts only for changes in habitat services and does not account for the loss of individual organisms. The Trustees used Resource Equivalency Analysis (REA) to calculate restoration costs to address population and service losses resulting from injured larval habitat for the endangered HED. REA is an economic tool designed to quantify injuries to individual species.

HED spend as long as six years as larvae before emerging in the summer as a poor-flying sexually immature “teneral” adults. After approximately one week, they develop into a fully reproductive adult which can then live for 4-5 weeks, foraging, mating, and laying eggs. To survive as larvae, HED require a groundwater-fed fen wetland area that support a population of the devil crayfish (*Cambarus diogenes*). HED larvae survive seasonal dry periods and over-winter in the underground burrows of the devil crayfish. Wetland habitats that provide the right hydroperiod and temperate conditions suitable for survival of HED throughout their long larval life are extremely rare. The few remaining areas of relatively undisturbed wet dolomite prairie are among the best of these wetland habitat areas.

The Lockport spill site was the focus of annual adult HED surveys for seven years prior to the oil spill, documenting an increasing level of HED activity, including finding of recently emerged teneral adults and mature adults exhibiting territorial behavior in the area of the spill site. The presence of tenerals was an indication of larval habitat in the vicinity of the surveys. Several acres of this area had to be excavated to recover the crude oil contamination. Prior to the oil spill, the site was not surveyed for larval habitat, but the site is designated as critical habitat for HED. Critical habitat means those specific geographical areas occupied and unoccupied on which physical and biological features are essential to the conservation of the species, such as breeding and rearing offspring. During the summer after the oil spill, researchers mapped streamlets at the spill site that could potentially support HED larvae and conducted a larval survey over a portion of those streamlets. Larval surveys require special training and licensing because they involve the temporary capture of an endangered species. The larval survey located larvae of several different ages downstream from the excavated area, confirming that the spill site had been larval habitat for at least several years. No larval surveys have been conducted at the spill site since 2011, but given the physical removal of habitat, hydrological impacts, and chemical impacts, the spill site no longer contains larval habitat and it is likely that it will not be capable of providing larval habitat for more than 30 years.

To estimate the HED lost at the spill site, the Trustees gathered data from known nearby larval habitats in seven similar wetland streamlets to calculate a simple average larval density of about one larva older than 1 year per meter of streamlet habitat (1.0 L1+/streamlet-meter).¹ To provide a consistent basis for quantifying this loss and what would be needed to compensate for it, the Trustees adopted the concept of a HED unit population (HUP). The HUP is the total larvae of all age classes required to produce one adult. Adjusting this loss to account for the time since the injury (present value, relative to 2019), and the uncertainty of both actual larval habitat and its recovery at these streamlets, the Trustees estimated a loss of 31 discounted HED unit-populations (DHUPs).

V. RESTORATION PLANNING AND ESTIMATING THE COST OF RESTORATION

Following the assessment of injuries to the HED and the habitat for Blanding’s turtle and migratory birds, the Trustees evaluated potential restoration options. This includes identification of restoration techniques, locations for restoration projects, and evaluating the costs of restoration. In doing so, the Trustees considered the criteria outlined in the regulations (at 15 CFR § 990.54), including but not limited to, the cost to carry out the alternative, the likelihood of success of the alternative, the extent to which the alternative was expected to meet the Trustees’ goals and

¹ Larvae younger than 1-year old are too small to be accurately collected, identified, and counted. Moreover, the estimated natural die-off of larvae is much greater during this first year and would not accurately reflect the viability of HED larvae even if counted.

objectives in returning injured natural resources and services to baseline and/or compensating for interim losses, and the extent to which the restoration alternative was expected to provide benefits to more than one natural resource and/or service. For the Lockport Oil Spill, there are four main types of restoration categories: (1) restoration of Blanding's turtle habitat; (2) restoration of migratory bird habitat; (3) HED captive rearing; and (4) restoration of HED habitat.

Blanding's Turtle and Migratory Birds Habitat

To estimate the value of the 454.3 DSAYs injured at the spill site, the Trustees identified a comparable dolomite prairie wetland along the Des Plaines River. Environmental scientists from each of the Trustee agencies, as well as the U.S. Army Corps of Engineers, toured the representative site to identify its wetland status, quantify its relevant habitat services, and estimate the amount of habitat uplift it could achieve through enhancement work (e.g., removal of invasive plants, seeding, restoring hydrology). Based upon these studies and the Trustees' experience with wetlands, they estimated that approximately 135 acres of this wetland would be needed to compensate for the loss of habitat for Blanding's turtle and migratory birds at the spill site. Based upon the cost of similar wetland enhancement work at nearby locations and the cost of acquiring other wetlands in northern Illinois, the Trustees estimated the total cost of purchasing and enhancing 135 acres of wetlands to be approximately \$3 million. The Trustees plan to use these funds to purchase, protect, and/or restore land suitable for Blanding's turtle and migratory birds.

Hine's Emerald Dragonfly Captive Rearing and Habitat Restoration

The Trustees do not expect habitat improvement efforts alone to adequately compensate for the loss of 31 DHUPs. Instead, the restoration projects are expected to require both a captive rearing project and a project to enhance existing HED larval habitat in which captive-reared HED can be released.

Utilizing cost data from an existing HED captive rearing project, the Trustees estimated the cost to raise a sufficient number of HED for release to the wild necessary to increase species productivity and result in the required restoration for the species. Relying on existing facilities and partners to support this program will likely result in significant cost savings. Extending the program for an entire HED life cycle to provide greater assurance of a resulting population uplift, however, will increase costs.

To estimate the cost of an appropriately-scaled habitat enhancement project, the Trustees relied on a HED habitat restoration project underway at the McMahon Fen Nature Preserve in Cook County, Illinois. Based on prior larval survey data, the Trustees estimated that a project to restore and enhance the larval habitat within 12 streamlets would result in an uplift of 11.14 DHUPs, thereby requiring 2.87 projects of this scale to compensate for the loss of 31 DHUPs.²

Relying on existing cost data and estimating efficiencies of scale and scientific knowledge, the Trustees estimate the cost of the HED captive rearing program and habitat enhancement sufficient to compensate for the loss of 31 DHUPs would cost approximately \$4.2 million. The Trustees plan to use these funds for HED captive rearing and reintroduction, restoration of HED critical habitat, and protection of water resources understood to be important for supporting HED habitat.

² The Trustees base this estimate on a project that would require several years of construction, egg-collection, and releasing captive-reared adults. The project is estimated to provide an uplift of 15.8 HUPs starting in 2031, equivalent to 11 DHUPs in 2019.

Under the terms of the NRDA settlement, the RPs have agreed to pay \$7.2 million to the Trustees. The amount of this payment reflects the Trustees' estimate of the costs of planning, implementation, oversight, and monitoring of the proposed projects necessary to compensate for the injury to natural resources. Based on the Trustees' experience at implementing similar restoration programs, the Trustees believe that the settlement amount in this case will be sufficient for implementing the various restoration options necessary to compensate for the injuries to the natural resources and services at the spill site.

VI. COMPLETION OF THE RESTORATION PROCESS AND IMPLEMENTATION

Following entry of the Consent Decree, the Trustees will prepare a draft Damage Assessment and Restoration Plan/Environmental Assessment (DARP/EA) document that will identify and describe the Trustee's proposed restoration alternatives to compensate for injuries to the habitat and the HED. The document will include descriptions of the potential restoration project types noted above. The DARP/EA will also include information on both potential beneficial and negative environmental and social consequences associated with each project alternative, in compliance with the regulations implementing the NRDA provisions of the OPA and the National Environmental Policy Act (NEPA). Following the development of the Draft DARP/EA, the Trustees will make the document available for a 30-day comment period. After the public comment period has ended, all comments received from the public will be evaluated by the Trustees and summarized in a Final DARP/EA. An additional opportunity for public review may be provided, including one or more public meetings, if the Trustees decide to make significant changes to the Draft DARP/EA based on the initial public comments. At the conclusion of this process, the Trustees will make the Final DARP/EA available to the public. The final phase in the NRDA process is the Restoration Implementation Phase, which includes conducting the restoration projects and monitoring their effectiveness. Each project and the monitoring actions that the Trustees will perform will be detailed in the Final DARP/EA.