

GLOBAL RESTORATION NETWORK MODULE

The Global Restoration Network (GRN) (<http://www.globalrestorationnetwork.org/>) is a database and web-based portal to information about ecological restoration efforts throughout the world. The GRN, developed by the Society for Ecological Restoration (SER) International (<http://www.ser.org/>), employs an advanced search engine that allows the user to obtain ecological restoration information for specific ecosystems, geographical locations, or types of ecological degradation. The user may also refine a query to a simple keyword search. Search results include project case studies and methodologies, case-specific experts and organizations, and a comprehensive bibliography with attached reference documents, maps, and photographs.

The U.S. Department of the Interior (DOI) Office of Restoration and Damage Assessment provides sponsorship to the GRN and encourages its use by practitioners who conduct restoration as part of the natural resource damage assessment and restoration (NRDAR) process. The GRN not only facilitates connection to a vast array of in-depth restoration case studies, effective restoration techniques, and contacts, but also serves as a tool for practitioners to upload and share their own restoration challenges, lessons learned, and success stories.

Access the GRN and View Restoration Case Studies

The Global Restoration Network can be accessed through SER's home page (<http://www.ser.org/>) or directly at <http://www.globalrestorationnetwork.org/>.

To view NRDAR case studies, click on Database (left tab). Under Keyword Search, enter "natural resource damage assessment" and click Submit. This pulls up all of the NRDAR case studies that have been uploaded to the GRN (provided one or all of these terms were used in the case study text). NRDAR case studies currently in the GRN include Common Murre Restoration (CA), Maumee River Riparian Restoration (IN), *North Cape* American Lobster Restoration (RI), *North Cape* Shellfish Restoration (RI), *North Cape* Bird Restoration (RI), and Lavaca Bay Restoration (TX).

GRN users may search for restoration case studies using any combination of the major database categories (e.g., region, ecosystem, etc.) or by using keywords (e.g., "common murre," "Indiana," "natural resource damage assessment," etc.).

Prepare and Upload a NRDAR Case Study

To prepare a case study, gather the available documents and materials pertaining to the restoration. This includes but is not limited to restoration plans, consent decrees, project management plans, monitoring plans, restoration implementation reports, progress reports, fact sheets, news releases, photographs, and maps. The case study should be information-rich with internet address links to reports and resources; lists of contacts (e.g., restoration practitioners, trustee council members, other partners); and attached literature, maps, and pre- and post-restoration photographs.

Prior to uploading a restoration case study, review from start to finish the format and content of the submission form in the GRN Upload Guide (*hotlink to Upload Guide*). To avoid repeating information or editing within the form itself, it is recommended that case study text is prepared in advance in a word processing program, then cut and paste into the appropriate sections of the case study submission form. To ensure the entered case study can be found by a keyword search using the term “natural resource damage assessment,” this term must appear in the case study text (refer to the Upload Guide, Executive Summary section for example language; *hotlink to section*). The GRN does not display underlines, bold, or italics face type. Scientific nomenclature and vessel names will therefore appear in regular face type even if they are loaded in italics font.

To upload a restoration case study, click on Database (tab in left column), then click on Case Studies (subtab in left column). Enter the information as prompted within each section, then click on the section-specific Submit button. Revisions to section text can still be made at this point. Carefully review the entire content of the submission form before clicking the final Submit button at the bottom of the page, as once the case study is uploaded it cannot be revised without assistance from the SER database manager. When the review is complete, click the final Submit button. A “Thanks for Submitting” message will appear to verify the upload was successful.

Upload Guide for GRN Case Studies

Your case study will be uploaded to the GRN database one section at a time using the online submission form at:

<http://www.globalrestorationnetwork.org/database/submit-a-case-study/>.

Text under the section headings below describes the type of information required in each section. Text in italics that follows provides troubleshooting tips based on experience from developing and uploading DOI case studies to the GRN.

Project Name

Provide a descriptive name for the case study including the geographic location.

Consider whether you want to name your case study after the restored resources rather than the hazardous substance release or oil spill incident case name. For example, the “Exxon Valdez Restoration” or “Prince William Sound Restoration.”

Executive Summary

Provide a short narrative to identify the project and a brief "take home message." Please include:

1. name of the case study including geographic location;
2. the ecological and social context;
3. the goals and a brief description of the project;
4. outcome of the work and lessons learned.

If the name of the restoration case study is different than the case name used in the Authorized Official (AO) designation as in the example above, include the AO case name in the Executive Summary narrative to maintain consistency with the NRDAR Case Record System. Program language (i.e. trustee council and NRDAR process) should also be included in this section. Following is example language from one of the DOI Restoration Program case studies:

“Under the natural resource damage assessment provisions of the Oil Pollution Act, a trustee council, made up of representatives of Rhode Island Department of Environmental Management (RIDEM), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA), was established to review, select, and oversee implementation of restoration actions for natural resources injured by the spill. A comprehensive restoration plan was developed and projects were implemented for American lobster, piping plover, common loon, and sea ducks.”

Biome

Choose one: Tundra, Taiga, Temperate Forest, Mediterranean, Tropical Forest, Grassland/Savanna, Desert/Arid Land, Freshwater, Coastal/Marine, Other/Mixed

Ecosystem

Choose one: Coastal, Dune & Upland, Coniferous Temperate Forest, Coniferous Tropical Forest, Coral Reef, Seagrass & Shellfish Beds, Deciduous Temperate Forest, Estuaries, Marshes, & Mangroves, Freshwater Ponds & Lakes, Freshwater Rivers & Steams, Freshwater Wetlands, Mixed Temperate Forest, Moist Broadleaf Tropical Forest, Montane Grassland, Oceanic, Seasonal Broadleaf Tropical Forest, Temperate Grassland, Tropical Grassland, Other/Mixed

Original Ecosystem Description

What was the original ecosystem, before the disturbance that requires or required restoration?

Describe the specific ecosystem(s) within each major group and the geographic location. Provide climatic information, such as total rainfall and its seasonal distribution, average maximum temperature in the warmest month and average minimum temperature in the coldest month.

Geographic Region

Choose one: North America, Caribbean, Latin America, Europe, Asia, Africa, Middle East, Australia & New Zealand, Pacific Ocean, Indian Ocean, Atlantic Ocean, World

Country or Territory

Choose one: Long list provided

Area Covered

Area covered should be a number only, i.e. 120

Area Units

Area units should be the unit, i.e. Hectares/Acres or Kilometers/Miles.

Pre Disturbance Condition of the Ecosystem

Describe the structure, biodiversity, and functions of the ecosystem and any measures that might be used to evaluate restoration success.

If you describe measures that are used to evaluate restoration success, be aware that there is a “Long Term Monitoring” section, below, that will contain similar information.

Primary Cause of Degradation

Choose one: Deforestation, Agriculture & Livestock, Extractive Industries, Fisheries & Aquaculture, Infrastructure Disturbances, Invasive Species, Climate Change, Fragmentation, Other

This section will have “Contaminants” listed as one of your choices in the near future.

Causes and Degree of Degradation

Describe the cause(s) and degree of degradation, damage or destruction and its effect on ecosystem structure, biodiversity and functions. Include a discussion of landscape scale issues such as degree of fragmentation as well as socio-economic or political changes that may have caused or been caused by the degradation.

See examples of DOI restorations for useful text that discusses degradation from hazardous substance releases and oil spills. This section may be used to describe how habitat equivalency analysis (HEA) and resource equivalency analysis (REA) methodologies were used to assess injury and select restoration alternatives.

Stakeholder Involvement

Who has an interest in the project and how significant are these interests? Who has power and who does not? How were decisions made?

Be aware that the next section will ask about the individuals and institutions involved. This “Stakeholder Involvement” section is best for listing the trustees and their roles, and discussing restoration plan development processes and methods for public comment solicitation.

Brief Project Description

Provide a brief description of the project and the individuals or institutions involved (one paragraph).

Use this section to describe participants in the restoration other than trustees. Examples include non-governmental organizations responsible for monitoring, site management, etc.

Project Goals

What was the reason for the intervention and what were the goals? Who decided on the goals and how does this relate to the stakeholders?

For this section, include resource-specific restoration goals, such as, “Re-establish a breeding population” or “Restore a viable fishery” or “Restore structural and functional riparian habitat.”

Description of Project Activities

Describe in detail the project so that it could be replicated elsewhere. Include mistakes made and corrections developed along the way. Also include ecological, socio-economic and political aspects of the project. Project description can be broken down into: (1) research and planning; (2) implementation; (3) education and outreach; (4) results.

Completion of the results portion of this section may best be left until details for sections, below, are completed.

Funding Amount

Funding amount should be a number, i.e. 40,000

Funding Units

Funding units should be the unit, i.e. USD or Euros

Sources and Amounts of Funding

Provide information on project resources when available, including any funding provided as well as in-kind resources, such as volunteer labor, materials, and scientific services. Indicate who provided these resources.

If NRDA damages are matched or combined with other funding sources, describe the sources and agreements that facilitated those interactions.

Project Duration (i.e. 8 months, 12 years)

Project Stage Choose one: In planning, In progress, Completed

Project Start Date

Project End Date

Extent of Recovery To Date

Provide quantitative and qualitative measures of ecological recovery to date and how that compares to the long term goals of the project (e.g. area restored in hectares, number of species reintroduced, wildlife use or other indicators of success).

Describe the progress made in attaining objectives. This section requires access to progress reports, monitoring reports, etc.

Factors Limiting Recovery

Are there biological, physical, socio-economic or other factors limiting ecological recovery? Is there a single primary cause or multiple causes limiting recovery.

Beyond those factors that lead to adaptive management and corrective actions noted in "Project Description" above, describe other hindrances to attaining restoration goals.

Improvements in Human Well Being

How has the restoration project contributed to the improvement in human well-being? Have there been economic benefits, improvements in quality of life, or an accrual of ecosystems goods and services?

For assistance in describing ecosystem services and benefits in terms of human well being, see http://www.esa.org/education_diversity/factsheets.php (Ecological Society of America Fact Sheet on Ecosystem Services).

Strategies for Long-Term Management

What actions are being taken for the long-term management of the ecosystem? Have the causes of degradation been addressed or is it likely that the ecosystem will become degraded again? Is there a long-term monitoring program?

Evaluation and Major Lessons Learned

Has the project been evaluated and what are the major lessons that have been learned? How might these lessons be used in similar projects elsewhere or in other situations? How can other projects avoid making the same or similar mistakes?

References

Provide general references, contact information for primary project managers or principal investigators, and any publications that have resulted from the project including relevant URLs. For any published literature, please fill out our literature submission form.

This section is not limited in length. Include all relative literature, links, and contact information. Try to list a contact office in addition to an individual to avoid the information becoming obsolete. Government sponsored links may be more permanent than some others. Link to the NRDAR document library (<http://restoration.doi.gov/DocumentLibrary.htm>) for consent decrees, restoration plans, monitoring plans, etc. The GRN does not yet support hot links so URLs listed in this section will not be clickable.

Attachments

If available, provide electronic photographs as a communication device. If possible, submit in a jpeg format, with individual files no larger than 100kb and no more than 5 photographs.

You are limited to five attachments. It is possible to include more photos if you combine them into a single page pdf (see File #1 at <http://www.globalrestorationnetwork.org/database/case-study/?id=264> for an example). Use picture editing software to reduce photograph file sizes to minimize attachment file size. When you create the attachments, the first file you upload is automatically renamed "File #1" and your file name is lost in the process. The attached files are not always sequentially displayed as File #1, File #2, and File #3 in the order they were uploaded. To cite the attachment in the case study text, simply refer the reader to the Attachments section for the attached file. Suggestions for attachments include maps and photos as a single page pdf, Google Earth views (kmz files work well), agency fact sheets, and restoration documents not generally available.

***NOTE:** If important restoration documents cited in your case study are not available on the internet, the NRDAR document library (<http://restoration.doi.gov/DocumentLibrary.htm>) can serve these documents online.*

Submitted By

Name, Address, City, State/Province, Zip/Postal Code, Email Phone Fax

Be sure to add your affiliation here. Be aware that the information in this section is used by the SER database manager and does not appear in the case study once it is uploaded to the GRN database. Key practitioner and contact information that you would like to be publicly available should be included in the References section.

For Assistance with Uploading Cases or Further Questions

For assistance with uploading case studies or further questions, please contact Robin Tillitt (rtillitt@usgs.gov) at USGS Columbia Environmental Research Center or Susan Kennedy (susan_kennedy@ios.doi.gov) at the DOI Restoration Support Unit.

GRN Module Last Revised: December 13, 2010