

Coastal Program Grant Report

Minnesota Department of Natural Resources; Minnesota's Lake Superior Coastal Program

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Completed Projects

Grantees completed the following projects between July 1, 2024 and June 30, 2025.

Large Grants (\$10,001 - \$100,000 grants)

Coastal Erosion Hazard Map Update – Phase 3

Project Number: 21-306-09

Final Cost: \$94,457 (Grant: \$47,200)

Federal Award NA21NOS4190083

Grantee: Arrowhead Regional Development Commission

Project Start: 09/23/2021

Project End: 12/31/2024

Arrowhead Regional Development Commission, with the North Shore Management Board, made significant progress in refining the methodology for coastal erosion analysis, providing essential data that will support improved decision-making for coastal resource management. The application of the USGS Digital Shoreline Analysis Software (DSAS) model has demonstrated robust accuracy, which will be invaluable for the counties and landowners who rely on this data for land use planning, shoreline management, and policy decisions, especially in the context of erosion-related variance and setback determinations.

The DSAS model was validated across multiple sites in St. Louis, Lake, and Cook Counties, including a range of control, variable, and mixed erosion sites. This validation process, which incorporated both current and historical (1989) erosion datasets, highlighted the model's ability to accurately reflect erosion patterns. The input gathered from county stakeholders further aligned the model's output with observed erosion trends, ensuring the relevance of the data for local planning efforts.

One of the key outcomes was the creation of an erosion susceptibility layer that can inform land use decisions, especially in terms of setback lines and land ordinances. County workers involved in land-use planning will benefit from this model, as it provides them with a scientifically supported tool to assess erosion risks in real-time. This data will be crucial for managing shoreline development and guiding mitigation efforts, ultimately helping to protect coastal resources from the impacts of erosion.

The next step is to develop an online interactive map that will host the erosion susceptibility data. This tool will either be made publicly accessible or made available for internal use by the counties, depending on the preference of local stakeholders. By providing an easily accessible, real-time tool, landowners, local governments, and other stakeholders will be able to make informed decisions about coastal management, development setbacks, and erosion mitigation strategies.

Minnesota Point Boardwalk and Dune Restoration - Phase 1 Federal Award NA23NOS4190213

Project Number: 22-306A-02 Grantee: City of Duluth
Final Cost: \$188,367.93 (Grant: \$82,397) Project Start: 10/11/2022 Project End: 05/15/2025

The City of Duluth removed the older, failing boardwalk and constructed a safe, effective, accessible, and beautiful dune crossing boardwalk at Lafayette Community Center, a popular public access point to the sandy beaches along Lake Superior. They designed a new path to meet Architectural Barriers Act standards. They purchased a new, custom steel structure for the base and salvaged lpe lumber from the City’s Lakewalk reconstruction project to use the decking. Staff replanted the disturbed beachgrass within existing social tails to prevent future foot-traffic and the associated dune erosion and installed educational and acknowledgment signage.



Figure 1: Boardwalk at Lafavette Square, Duluth 05/2025

The City also contracted for a Phase 1 Archeological Survey at the project site and completed engineering designs for the boardwalk at the Park Point Recreation Area. A Tribal Cultural Monitor from the Fond du Lac Band of Lake Superior Chippewa was present during all ground disturbing activities.

Mycorrhizal Fungi and Tree Seedling Success Federal Award NA22NOS4190054

Project Number: 22-306-08 Grantee: University of Minnesota Duluth
Final Cost: \$137,162 (Grant: \$65,938) Project Start: 10/24/2022 Project End: 12/31/2024

The project known as Minnesota Million is implementing population assisted migration by taking seeds from southern populations of native trees and planting them in northern regions. One challenge posed to reforestation efforts is the long-term survival of planted seedlings due to drought, access to nutrients, getting shaded out by competing early succession plants, and browse. There is evidence to support that inoculating seedlings with mycorrhizal fungi increases both short and long-term survival rates by providing them access to essential nutrients, enhancing access to water in the soil, and increasing shoot growth. This project studied whether commercial mycorrhial fungi products are as effective as a native soil slurry at inoculating seedlings.

The [results](#) from this experiment will inform growing protocols for the Minnesota Million project and the [Farm and Forest Growers Cooperative](#) for restoration efforts along the north shore and arrowhead region of Minnesota. It provided insight to the germination, growth, and survival responses of native tree populations along the north shore of Lake Superior, from which seeds are often left out of large-scale collection efforts due to microclimates along the shore.

Documentary: A Sea Change for Lake Superior

Federal Award Number NA23NOS4190213

Project Number: 23-306-10

Grantee: Trustees of the Hamline University of Minnesota

Final Cost: \$200,111.40 (Grant: \$98,727)

Project Start: 09/04/2023

Project End: 11/30/2024

The Center for Global Environmental Education at Hamline University produced [A Sea Change for Lake Superior](#) documentary, using acclaimed storytelling, engaging imagery, insightful interviews and filming with research scientists, and the documentation of events to make vivid the unequalled legacy, current state, and future prospects of Lake Superior. *A Sea Change for Lake Superior* includes prominent Indigenous voices and perspectives.

On December 4, 2023, PBS North began broadcasts of the documentary during primetime; and Hamline hosted multiple public and private screenings and submitted the documentary to film festivals and for awards.

They segmented the documentary into 14 short videos, integrating them into a special version of the [Lake Superior Multimedia Gallery](#) program that focused on [climate change impacts](#) related to the lake. The segments can be played on 22 kiosks strategically placed on the coast, as well as on the pocket gallery (phone/tablet app).



Figure 2: Poster of documentary: A Sea Change for Superior

Native Plant Restoration along Agate Bay Shoreline

Federal Award NA23NOS4190213

Project Number: 23-306A-02

Grantee: Lake County Soil and Water Conservation District

Final Cost: \$79,555.96 (Grant: \$37,384)

Project Start: 09/08/2023

Project End: 11/30/2024

Lake SWCD, with partners including the Conservation Corps of Minnesota, restored approximately ½ acre of Lake Superior shoreline in Agate Bay (Two Harbors). They first created design and maintenance plans. They then removed invasive species, clipping and disposing of invasive tansy and Canada thistle seedheads, mowing and covering the site with plastic, treating the site with herbicides labeled for aquatic use, and hand-pulling plants. They cut the woody invasive species and treated the stumps. On half the site, they planted by laying down biodegradable weed suppressant mat and planting plugs and shrubs into the mat. The other half of the site was tilled and seeded by hand broadcasting, then covered with a sprayed-on hydromulch. They planted native trees and surrounded the site with wire fencing to keep out herbivores. They installed two concrete sign bases with metal signposts, for future educational signs. In addition to signage on site, SWCD staff spoke on the radio, to the newspapers, and to conferences and workshops about the work being done. This native planting project is part of a suite of projects taking place in Agate Bay.



Figure 3: In process picture of Agate Bay restoration 09/2024



Figure 4: Mats and Fencing at Agate Bay 09/2024

Small Grants: STAR (≤\$10,000 grants)

Launching a Successful Water Trail Phase IV

Project Number: 21-306-08B

Final Cost: \$12,405 (\$10,000 grant)

Federal Award NA21NOS4190083

Grantee: St. Louis River Alliance

Project Start: 07/12/2024

Project End: 12/31/2024

The St. Louis River Alliance created a St. Louis River Estuary National Water Trail promotional video [Gichigami-ziiibi | Homeland of the Anishinaabe](#), about how the public can use and protect the estuary framed around traditional and cultural knowledge. They also created 11 [navigational Water Trail loop](#) videos. SLRA will work with partners to help guide the project, provide volunteer support, and promote the videos,

Coastal Hazard Mitigation Projects

Federal Award NA23NOS4190213

Mitigating Coastal Hazards: Poplar River

Project Number: 23-306-09

Final Cost: \$18,300 (Grant: \$18,300)

Grantee: Cook County Soil and Water Conservation District

Project Start: 10/06/2023

Project End: 09/30/2024

Cook County SWCD, SWCD Technical Service Area #3 (TSA3) and the Poplar River Management Board have identified 18 areas of concern along the lower reach of the Poplar River. The project area is entirely located within Cook County in Lutsen, Minnesota and lies in between The Superior Hiking Trail “Ski Hill Road” bridge crossing and State Highway 61 overpass. The MN DNR, Minnesota Lake Superior Coastal Program, provided funding to evaluate the identified erosion sites for potential solutions providing flood damage mitigation and resiliency, and to assess the overall condition of the lower reach particularly in response to severe flooding in the spring of 2022. This report “LOWER REACH OF THE POPLAR RIVER ASSESSMENT” provides a summary of the overall condition of the watershed, field and office evaluations conducted on the eroding sites, and recommendations for riverbank stabilization measures along the Poplar River.

Mitigating Coastal Hazards: Stoney Point Engineering Designs

Project Number: 23-306-09

Final Cost: \$58,279.55 (Grant: \$18,300)

Grantee: St. Louis County

Project Start: 01/23/2024

Project End: 04/01/2025

St. Louis County completed preliminary engineering services associated with the Stoney Point stabilization project. The project is located on County Road 222 (Stoney Point Drive), along the shoreline of Lake Superior, within Duluth Township. The County is investigating slope stabilization options for approximately 600-feet of shoreline that has experienced excessive erosion, sloughing, and has negatively encroached within County highway infrastructure.

With a subconsultant, the County completed a topographic survey, geotechnical soil investigation, slope stabilization analysis, and preliminary design of the County preferred mitigation method with construction estimate. The County propose construction of the project to occur in 2027. For more information, see the [PROTECT Grant Application](#).

Mitigating Coastal Hazards: Skunk Creek, Two Harbors culvert replacement hydraulic study

Project Number: 23-306-09

Grantee: Lake County

Final Cost: \$18,300 (Grant: \$18,300)

Project Start: 02/02/2024

Project End: 06/30/2025

Lake County, contracted for a report to provide an in-depth analysis of the replacement options for two specific bridge structures: L8089 and 92775 in Two Harbors. The analysis encompassed several key factors, including but not limited to, cost, constructability, durability, life expectancy, and the visual appeal of the proposed replacement structures. This report will help the County evaluate potential solutions for replacing two aging corrugated metal pipe (CMP) culverts situated along Skunk Creek. These culverts are large enough in span that they are classified as bridges by the Minnesota Department of Transportation (MnDOT) and are inventoried within the state's bridge asset management system.

Small Grants: Capacity (~6 months; \$1,000 – 4,500)

Federal Award	Grantee	Grant	Description
NA22NOS4190054	Carlton SWCD	\$4,450	Workshop: The Water Resources Technician completed the 'Applied Fluvial Geomorphology' Level 1 course, put on by Wildland Hydrology. The course was in Duluth in September 2024.
NA22NOS4190054	Carlton SWCD	\$3,077	Workshop: Nine staff participated in a field visit on the St. Louis River to look at erosion, vegetation cover, and areas of nonpoint source pollution, July 2024.
NA22NOS4190054	North St. Louis SWCD	\$4,500	Workshop: The Watershed Conservationist for the St. Louis River Watershed participated in the MPCA Smart Salting: Smart Salting Tool - Level 2 certification training (7/17/24) and attended the Salt Symposium (8/6/24-8/7/24); and completed the Wildland Hydrology Level 1: Applied fluvial geomorphology course (September 2024, in Duluth).
NA22NOS4190054	South St. Louis SWCD	\$2,637	Workshop: The Conservation Specialist completed the 'Applied Fluvial Geomorphology' Level 1 course, put on by Wildland Hydrology. The course, cosponsored by the DNR, was in Duluth in September 2024.
NA23NOS4190213	Wildlife Forever	\$4,348	Conference: Sponsored the 2024 Upper Midwest Invasive Species Conference ; 597 attendees from 22 states, 3 provinces, and 3 countries; held November 12-14, 2024 in Duluth MN.

Federal Award	Grantee	Grant	Description
NA22NOS4190054	Superior Hiking Trail Association	\$4,500	Workshop: Five staff attended the 2025 International Trails Summit April 15-17, 2025 in Madison Wisconsin. (Match \$2,918) See SHTA write up in the Trail Mix E-Newsletter April 2025.
NA21NOS4190083	City of Wrenshall	\$1,237	Technology Upgrade: Purchased an iPad, accessories, and GIS software license to add and document assets in the field, to maintain the municipal sewer system.
NA22NOS4190054	University of Minnesota	\$4,500	Conference: Hosted a two-day conference (February 3-4, 2025), Our Climate Futures: Participatory Science on a Great Lake Conference , at the University of Minnesota Duluth. 183 UMD students, faculty, natural resource professionals, and community members learned about equitable participatory science projects around the theme of climate change.
NA22NOS4190054	Independent School District #93	\$4,500	Youth Education: Created a weather station program for the students at South Terrace Elementary in Carlton; purchased a weather station, curriculum materials, and outdoor classroom supplies. Approximately 80 students in grades 3 to 5 participated in weather related education March-May 2025.
NA22NOS4190054	Two Harbors Area Recreational Trails Alliance	\$4,500	Planning: Completed the initial phase of a state-of-the-art mountain biking trail system in Two Harbors. This first phase created a high-level trail vision plan identifying trail and bike park development zones, recommended amenities, and budget ranges that can be marketed to gain support and funding for future planning and design work.
NA22NOS4190054	Lake County SWCD	\$4,500	Youth Education: Host the Minnesota State Envirothon at the Wolf Ridge Environmental Learning Center, May 2025. A total of 110 students and 22 teams from all over the state competed in “Roots and Resiliency: Fostering Forest Stewardship in a Canopy of Change”. Students considered how climate change impacts northeastern Minnesota forests, and how to incorporate climate change resiliency strategies, Traditional Ecological Knowledge and Tribal fire practices into plans that addresses forest resiliency and adaptation.
NA22NOS4190054	Sea Change Expeditions	\$4,064	Youth Education: Completed 51 “Keep Lake Superior Clean Cold and Clear” classroom and field trip presentations to five schools between Clover Valley and Grand Marais. Educated ~166 5th and 6th grade students about how aquatic invasive species, micro plastics, and climate change are interrelated and what they can do to mitigate their impacts to help keep Lake Superior Clean Cold and Clear.
NA24NOSX419C0020	Lake Superior Center	\$2,462	Youth Education: provided transportation reimbursement to 18 classrooms or schools that participated in field trips at the Great Lakes Aquarium, Spring 2025.
NA24NOSX419C0020	Carlton County	\$4,045	Technology: purchased a Juniper GNS3H submeter GPS to enhance data collection accuracy for stormwater infrastructure inspections in the Midway River sub watershed, Esko, MN. Piloted (collected data) on 10 sites.

Federal Award and Grant Funds Awarded

The table below shows the total federal award and amount of Annual and STAR grants awarded to date for the open NOAA Office of Coastal Management awards.

Federal Fiscal Year and Award	Total NOAA Award	Award Expiration	Annual Grants Awarded	Small Grants Awarded	Total Funds Awarded to Date
2021; NA21NOS4190083	1,122,000	06/30/2025	501,620	82,467	584,087
2022; NA22NOS4190054	1,128,000	06/30/2025	474,560	99,952	574,512
2023; NA23NOS4190213	1,158,000	12/31/2025	526,296	4,348*	530,644
2024; NA24NOSX419C0020	1,158,000	12/31/2026	174,862	104,896	279,758
Total	\$4,566,000		\$1,677,338	\$291,663	\$1,969,001

*We did not award STAR (small) grants in 2023.

Coastal Program Applications – Received and Funded

The table below shows the applications received and funded between July 1, 2021 and June 30, 2025.

Funding	Federal Fiscal Year	2021	2022	2023	2024	2025	Total
Annual	Applications Received	12	9	6	2	3	45
Annual	Applications Funded	6	7	6	2	3	35
STAR	Applications Received	14	10	N/A	11		65
STAR	Applications Funded	8	10	N/A	10		55
Capacity	Applications Received	5	5	19	16		53
Capacity	Applications Funded	5	5	18	16		52

- Annual Applications are funded in federal fiscal year (i.e., 2024 with the NA24 award, begins July 2024).
- STAR and Capacity applications are received during federal fiscal year (i.e., 2024 applications are received between July 1, 2024 and June 30, 2025); and funded with available funds.

Acronyms

NA – National Award (followed by the award year)

IIJA – Infrastructure Investment and Jobs Act

IRA – Inflation Reduction Act

ARDC – Arrowhead Regional Development Commission

SWCD – Soil and Water Conservation District

CGEE – Center for Global Environmental Education

Coastal Program Funded Projects - Active

(as of June 30, 2025)

Federal Award	Project Number	Project Name	Grantee	Start Date	End Date	Grant
NA23NOS4190213	23-306-09	Mitigating Coastal Hazards: Community Wildfire Mitigation Plan	Carlton County SWCD	12/01/2023	11/30/2025	\$18,300
NA23NOS4190213	23-306-11	North Shore Management Plan Update	ARDC	09/12/2023	12/31/2025	\$14,238
NA23NOS4190213	23-306-12	Low-Cost Buoys for Smart Coastal Monitoring	University of Minnesota	09/20/2023	12/31/2025	\$94,747
NA23NOS4190213	23-306A-01	Park Hill Acquisition	City of Duluth	09/22/2023	12/31/2025	\$100,000
NA23NOS4190213	23-306A-03	Minnesota Point Boardwalk and Dune Restoration - Phase 2	City of Duluth	09/22/2023	12/31/2025	\$108,000
NA23NOS4730025	Task 3	IIJA: Coordinate the Lake Superior Headwaters Sustainability Partnership	Minnesota Land Trust	06/05/2023	11/30/2025	\$159,645
NA23NOS4730025	Task 3	IIJA: Land Stewardship Plan	Lake County SWCD	04/23/2024	11/30/2025	\$13,000
NA23NOS4730025	Task 3	IIJA: Staff Training and Education	Cook County SWCD	05/06/2024	11/30/2025	\$11,000
NA23NOS4730025	Task 4	Hydrologic and water quality monitoring of stormwater treatment train in Hartley Park	University of Minnesota	10/06/2025	11/30/2026	\$49,952
NA24NOSX419C0020	24-306-11	Capacity: Level III Wildland Hydrology course	Lake County SWCD	02/18/2025	08/31/2025	\$4,500
NA24NOSX419C0020	24-306-11A	2025 Lake Superior Youth Symposium	University of Minnesota	03/01/2025	08/31/2025	\$10,000
NA24NOSX419C0020	24-306-11	Capacity: Technology and Training	Lake County	03/01/2025	09/30/2025	\$4,500
NA24NOSX419C0020	24-306-11	Capacity: "Lake Superior Speaks: Educator and Researcher Confluence" workshop	University of Minnesota	06/03/2025	09/30/2025	\$4,205
NA24NOSX419C0020	24-306-11B	Conservation outreach to benefit water quality	Cook County SWCD	04/01/2025	09/30/2025	\$10,000
NA24NOSX419C0020	24-306-11	Capacity: Hydrology Workshops	Fond du Lac Band of Lake Superior Chippewa	04/10/2025	10/31/2025	\$9,146
NA24NOSX419C0020	24-306-11	Capacity: 2025 Hydrology Workshops	Cook County SWCD	05/01/2025	10/31/2025	\$4,500
NA24NOSX419C0020	24-306-11D	Students Making Waves: Aquarium's Summer Program for Teens	Lake Superior Center	05/23/2025	10/31/2025	\$10,000
NA24NOSX419C0020	24-306-11F	GIS System and Data Collection	Town of Silver Creek	06/01/2025	11/30/2025	\$10,000
NA24NOSX419C0020	24-306-11G	Rebranding and Conservation Recognition	Carlton County SWCD	06/01/2025	11/30/2025	\$10,000
NA24NOSX419C0020	24-306-09	Park Point Recreation Area Plan	City of Duluth	10/29/2024	12/31/2025	\$75,000
NA24NOSX419C0020	24-306-10	St Louis River and Estuary Outreach	Trustees of the Hamline University of Minnesota	10/01/2024	12/31/2025	\$99,862

Federal Award	Project Number	Project Name	Grantee	Start Date	End Date	Grant
NA24NOSX419C0020	24-306-11C	Educational Materials to Empower Landowners	Sugarloaf: The North Shore Stewardship Association	04/01/2025	12/31/2025	\$10,000
NA24NOSX419C0020	24-306-11E	Launching a Successful Water Trail Phase V	St. Louis River Alliance	07/08/2025	12/31/2025	\$10,000
NA24NOSX473C0018	Task1	Coastal Erosion Hazard Mapping Improvements	ARDC	02/11/2025	03/31/2027	\$73,500
25						\$914,095