Coastal Program Grant Report

Minnesota Department of Natural Resources; Minnesota's Lake Superior Coastal Program
September 24, 2024; Presented by Cynthia Poyhonen, grant coordinator

Current Funding Opportunities

- **2025 Annual Grants**: posted, applications due November 17, 2024
- **2024-25 Small Grants for Coastal Management**: posted, open through June 30, 2025

Recently Completed Projects

Annual Projects

Demonstration of a Mobile Stormwater Lab

Project Number: 21-306-12 Grantee: Regents of the University of Minnesota
Final Cost: $172,870.00 (Grant: $86,435) Project Start: 11/24/2021 Project End: 06/30/2024

The objective of this project was to demonstrate a method of acquiring site-specific filter media performance to inform best management practice implementation, such that they can assist watershed management efforts of local governments across the Lake Superior coastal area. To meet these goals, researchers at the Natural Resources Research Institute (NRRI) at the University of Minnesota Duluth fabricated a mobile stormwater testing laboratory that includes a filter media testing column manifold and automated water delivery system, and then demonstrated application of the laboratory for evaluating the performance of filter media for treatment of urban runoff. They designed the laboratory to include an educational graphic wrap as well as a viewing window, such that it can also serve as a tool for community education on coastal water quality issues.

Didymo Impacts on Coaster Brook Trout

Project Number: 22-306-07 Grantee: Science Museum of Minnesota
Final Cost: $232,537.78 (Grant: $99,349) Project Start: 09/07/2022 Project End: 11/30/2023

To assess the relationship between D. geminata and Coaster Brook Trout, this project characterized: 1) the upstream distribution of water chemistry and D. geminata, 2) the associated diatom community with/without D. geminata, 3) the Coaster Brook Trout populations in streams and reaches with/without D. geminata, and 4) the diets of Coaster Brook Trout in stream reaches with/without D. geminata. Four North Shore streams—the Cross, Onion, Devil Track, and Kimball—were sampled in June, August, and October 2023. In each stream, four reaches were identified and sampled separately; three stations were downstream of the fish barrier, and one station was above the fish barrier (due to its short length, only a downstream and upstream site were sampled in the Cross and Onion Rivers in August and October).

Initial results from this study represent the first comprehensive look at Lake Superior Tributary ecology along the north shore of Lake Superior—from water quality to fish and fish diets in the presence and absence of D. geminata. This study provides a foundation for understanding future change to these streams and native Brook Trout habitat as we consider the potential impact and spread of D. geminata along our North Shore streams and other cold-water sites in Minnesota. The final analysis of this study will be submitted to a peer-reviewed journal for publication.

The data is available from the Science Museum, the report is on file with the Coastal Program.

Nearshore and Devils Track Watershed Water Monitoring

Project Number: 22-306-10 Grantee: Cook County Soil and Water Conservation District
Final Cost: $63,980.29 (Grant: $28,542) Project Start: 09/01/2022 Project End: 05/31/2024

The Cook County Soil and Water Conservation District (SWCD) engages with stakeholders and community scientists to understand land use practices for the benefit of soil and water quality. Hands on experience has been beneficial to spreading conservation impacts and sharing with landowners. For this water monitoring project, the SWCD worked with 11 volunteers, provided education to one school group, met with 50 landowners around Devil Track Lake, submitted data to the Minnesota Pollution Control Agency EqUIS database on water quality, and presented to the Grand Marais City Council.

Within the Devil Track River Watershed, six trained volunteers and staff took samples on a routine schedule at five stream sites and on Devil Track Lake. Staff and volunteers collected data and water samples from six sites in Lake Superior seven times during 2023. Data collected at each site included: total phosphorus, e-coli, chlorophyll-a, transparency, temperature, dissolved oxygen, pH, specific conductance, total suspended solids, total suspended volatile solids, and nitrogen, nitrate + nitrite, chloride.

Landowners asked for site visits and are working with the SWCD on projects to improve lakeshore buffers and forestry practices for forest health. As part of the project, Cook County Land Services provided match through site visits and work within the watershed about water quality and impacts from land use and development.

All data collected through this project is accessible through the MPCA Water Quality database and upon request from the Cook SWCD office.

Identifying Drowning Hotspots in the St. Louis River Estuary

Project Number: 22-306-11 Grantee: Regents of the University of Minnesota
Final Cost: $102,364.98 (Grant: $50,968.98) Project Start: 11/22/2022 Project End: 05/31/2024

The project team, including staff from both the University of Minnesota (NRRI) and the University of Wisconsin-Madison, published a StoryMap of Drowning Incidents in the St. Louis River and Estuary. The team developed an approach for linking drowning incidents to weather and water conditions at the time of the event.

The project team designed and operationalized a sensor network. They incorporated the sensors into the modeling infrastructure, which now spans from the Fond du Lac dam to the Duluth and Superior entrances and includes 31 streams. They validated the model using Lake Superior seiche events (i.e., flow direction, water level) with good agreement between the model and the sensors. They developed freely available, near real-time stage height data for seven locations in the St. Louis River Estuary, an interactive map with 24 hours of hindcast and 18 hours of forecast, detailed current information on map mouseover, and a dangerous current hotspot map highlighting locations where the current has exceeded 3 ft/s in the last 6 hours.

Minnesota Sea Grant updated the PaddleSafeTwinPorts.org website with the new data.

STAR Projects

Superior Hiking Trail Master Plan: Informing the Future of Minnesota's Premier Footpath

Project Number: 21-306-08C Grantee: Superior Hiking Trail Association
Final Cost: $15,831.00 (Grant: $10,000) Project Start: 10/01/2023 Project End: 06/30/2024

The Superior Hiking Trail Association, with staff from the Arrowhead Regional Development Commission, undertook a process to develop a Master Plan. Activities included public engagement, an asset inventory, and feedback from the steering committee, land managers and the public. The Superior Hiking Trail Master Plan will help guide the management and maintenance of the Trail for the next ten years. It will serve as a roadmap in decision-making and serve as a shared vision of where to devote resources to have the highest impacts on meeting the organizational mission. The impacts of the Plan affect all the communities along the North Shore and visitors alike.

North Shore Forest Collaborative Plan Update

Project Number: 21-306-08D Grantee: Sugarloaf: The North Shore Stewardship Association
Final Cost: $19,846.00 (Grant: $8,134) Project Start: 02/02/2024 Project End: 06/30/2024

In the winter of 2024, the North Shore Forest Collaborative (NSFC), led by Sugarloaf: The North Shore Stewardship Association, underwent a series of brainstorming meetings, online surveys, and open discussions led by the NSFC coordinator to update the original guiding document: NSFC Plan 2015. The priority of this undertaking was to build on the success of the last decade, cultivating the perspective and knowledge from the communities and stakeholders and incorporating the background, impact, and possible strategies to address two major emerging issues: climate change and watershed resiliency. They developed a plan, North Shore Forest Restoration: Plan, Projects and Outreach, to provide a tangible framework and assist the coordinator and partners to better track success and plan for future financial assistance opportunities.

Federal Award and Grant Funds Awarded

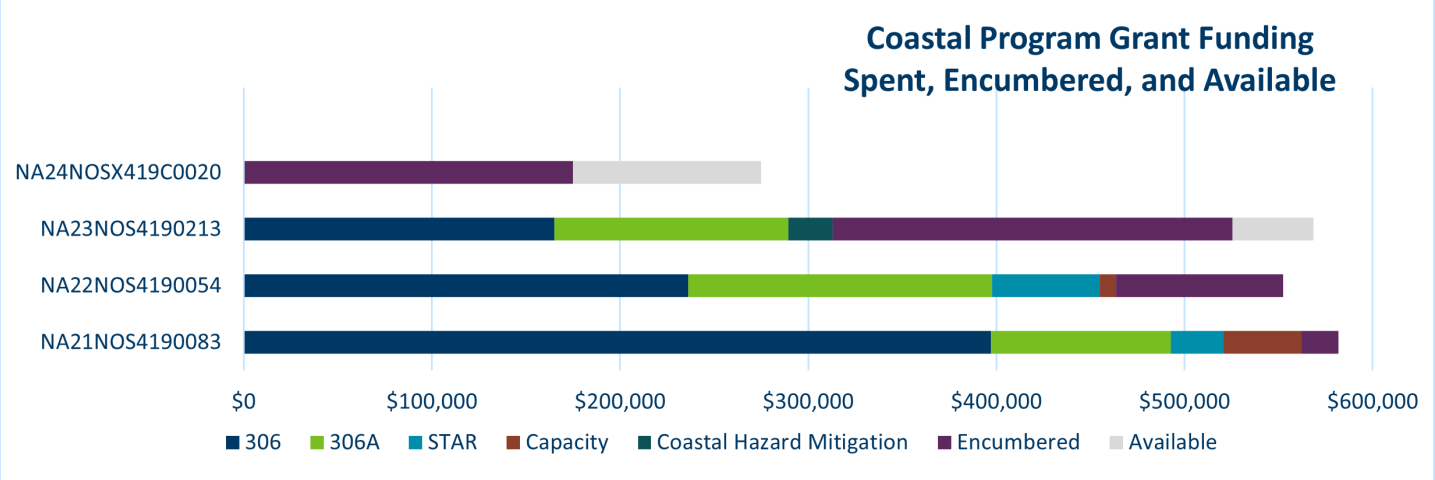
The table below shows the total federal award and amount of Annual and STAR grants awarded to date for the open NOAA Office of Coastal Management awards.

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	06/30/2024	501,620	80,108	581,728
2022; NA22NOS4190054	1,128,000	06/30/2025	474,560	82,485	557,045
2023; NA23NOS4190213	1,158,000	12/31/2024	521,296	4,348	525,644
2024; NA24NOSX419C0020	1,158,000	12/31/2025	174,862		174,862
Total	**$4,566,000**		**$1,672,338**	**$166,941**	**$1,839,279**

Grants Reimbursed

The State has reimbursed grantees for project expenses (projects completed/in process), as shown in the chart below.

- Annual grants (306) are shown in blue, and STAR grants are shown in teal.
- Low-cost construction and land acquisition projects (306A) are in green.
- Coastal Hazard Mitigation funds (dark green) were only awarded in 2023.
- Shown in purple are all the funds under contract (i.e., encumbered), not yet reimbursed.
- Funds available (not yet awarded) is in gray.



Coastal Program Applications – Received and Funded

The table below shows the applications received and funded between July 1, 2019 and September 15, 2024.

Funding	Federal Fiscal Year	2019	2020	2021	2022	2023	2024	Total
Annual	Applications Received	10	3	12	9	6	2	42
Annual	Applications Funded	9	2	6	7	6	2	32
STAR	Applications Received	18	12	14	10	N/A		54
STAR	Applications Funded	17	10	8	10	N/A		45
Capacity	Applications Received	4	4	5	5	19	1	38
Capacity	Applications Funded	4	4	5	5	18	1	37

- Annual Applications are funded in federal fiscal year (i.e., 2023 with the NA23 award, begins July 2023).
- STAR and Capacity applications are received during federal fiscal year (i.e., 2023 applications are received between July 1, 2023 and June 30, 2024); and funded with available funds.

Coastal Program Grant Funded Projects, Updated 9/24/2024

Status	Federal Award	Project Number	Project Name	Grantee	Start Date	Expiration	Grant
Awarded	NA21	21-306-08B	Launching a Successful Water Trail Phase 4	St. Louis River Alliance	7/12/2024	12/31/2024	$10,000
Awarded	NA21	21-306-09	Coastal Erosion Hazard Map Update-Phase 3	ARDC	09/23/2021	12/31/2024	$47,200
Awarded	NA22	22-306-08	Mycorrhizal Fungi and Tree Seedling Success	University of Minnesota	10/24/2022	11/30/2024	$71,224
Awarded	NA22	22-306A-02	Minnesota Point Boardwalk and Dune Restoration	City of Duluth	10/11/2022	12/31/2024	$108,182
Awarded	NA23	23-306-10	Documentary: A Sea Change for Lake Superior	Hamline University	09/04/2023	11/30/2024	$98,727
Awarded	NA23	23-306-11	North Shore Management Plan Update	ARDC	09/12/2023	11/30/2024	$14,238
Awarded	NA23	23-306-12	Low-Cost Buoys for Smart Coastal Monitoring	University of Minnesota	09/20/2023	11/30/2024	$94,747
Awarded	NA23	23-306A-01	Park Hill Acquisition	City of Duluth	09/22/2023	11/30/2024	$100,000
Awarded	NA23	23-306A-02	Native Plant Restoration along Agate Bay Shoreline	Lake County SWCD	09/08/2023	11/30/2024	$37,384
Awarded	NA23	23-306A-03	Minnesota Point Boardwalk and Dune Restoration - Phase 2	City of Duluth	09/22/2023	11/30/2024	$108,000
Awarded	IIJA	Task3	Coordinate the Lake Superior Headwaters Sustainability Partnership	Minnesota Land Trust	06/05/2023	11/30/2025	$111,288
Awarded	IIJA	Task3	Develop a Land Stewardship Plan	Lake SWCD	04/23/2024	11/30/2025	$13,000
Awarded	IIJA	Task3	Staff Training and Education on Forest Management	Cook SWCD	05/06/2024	11/30/2025	$11,000
Awarded	NA23	23-306-09	Mitigating Coastal Hazards: Poplar River Flood Damage Scoping and Mitigation Plan	Cook SWCD	10/06/2023	03/31/2024	$18,300
Awarded	NA23	23-306-09	Mitigating Coastal Hazards: Community Wildfire Protection Plan for Carlton County	Carlton SWCD	12/01/2023	11/30/2024	$18,300
Awarded	NA23	23-306-09	Mitigating Coastal Hazards: Stormwater Modeling, Knife River & Two Harbors	Lake County	02/02/2024	11/30/2024	$18,300
Awarded	NA23	23-306-09	Mitigating Coastal Hazards: Stoney Point Coastal Hazard Mitigation Project	St. Louis County	01/23/2024	11/30/2024	$18,300
		17					**$898,190**

Capacity Grants; active between 05/21/2024 and 09/24/2024

Federal Award	Grantee	Grant	Description
NA22NOS4190054	Carlton SWCD	$4,500	**Workshop**: Attend the 'Applied Fluvial Geomorphology' Level 1 course, put on by Wildland Hydrology. The course, cosponsored by the DNR, will be in Duluth in September.
NA22NOS4190054	North St. Louis SWCD	$4,500	**Workshop**: Attend three trainings: MPCA's Smart Salt Symposium and supporting courses, the Minnesota Water Resources Conference, and the Applied Fluvial Geomorphology Level 1 course. The Watershed Conservationist for the St. Louis River Watershed is a new position and coordinates work with five counties and the Fond du Lac Band of Lake Superior Chippewa.
NA22NOS4190054	South St. Louis SWCD	$2,637	**Workshop**: Attend the 'Applied Fluvial Geomorphology' Level 1 course, put on by Wildland Hydrology. The course, cosponsored by the DNR, will be in Duluth in September.
NA23NOS4190213	Wildlife Forever	$4,348	**Conference:** Host the 2024 Upper Midwest Invasive Species Conference; November 12-14 in Duluth MN.
COMPLETED			
NA21NOS4190083	Cloquet Area Alternative Education Program	$2,500	**Youth Education:** Over 80 High School students at CAAEP participated in a field research Ecology class, using the Rivers2Lake curriculum from the Lake Superior NERR. The students, some of them for the first time, took eight field trips to locations on Lake Superior and its southern watershed. They also spent two days a week outside, looking at the water, making observations, collecting data, and reflecting on past and future impacts throughout the St. Louis River Watershed and how those impacts effect the environment and the people living in it.
NA21NOS4190083	Sea Change Expeditions	$2,454	**Youth Education:** The Sea Change Expeditions team provided "Keep Lake Superior Clean Cold and Clear Challenge", lessons to educate 5th, 6th, and 7th grade students along the North Shore about how aquatic species, micro-plastics, and direct impacts such as warming waters and less ice cover are interrelated and what the students can do to help keep Lake Superior clean, cold, and clear. Between March 5th and May 31, Sea Change Expeditions provided 35 classroom presentations at the North Shore Community School in Clover Valley, Minnehaha Elementary School in Two Harbors and William Kelly Elementary in Silver Bay; and hosted three field trips to their sailboat for these schools, as well as a field trip for 7th graders in Cook County (Grand Marais). In all, approximately 150 students participated in the program, most of them in multiple sessions. From the subrecipient: *"The North Shore Community School teachers provided this presentation to their Board to describe the activities; pictures, videos, and letters say it in a way is hard to describe."*
NA21NOS4190083	Lake County Soil & Water Conservation District	$2,500	**Youth Education:** The SWCD in partnership with Stevens SWCD and North St. Louis SWCD, hosted the Minnesota State Envirothon at the Wolf Ridge Environmental Learning Center (Finland, MN) in May 2024. The 115 students from all over Minnesota, and their 51 teachers, staff, and volunteers, used a study guide with a focus on northeastern Minnesota and coastal issues, and applied that knowledge during tests and oral presentations at the state Envirothon. One of the Coastal Program staff served as a judge during the event.

Federal Award	Grantee	Grant	Description
NA21NOS4190083	Cook County Soil and Water Conservation District	$4,500	**Technology Update:** The SWCD purchased a new ProDss and replacement parts for the current ProDss meters that are used to monitor water quality in Lake Superior and inland lakes, as well Lake Superior streams.
NA21NOS4190083	University of Minnesota	$4,177	**Workshop:** The University of Minnesota hosted AIS Detector training in the Duluth area. Participants (twenty-six) first completed online modules and nineteen attended an in-person workshop at the Great Lakes Aquarium in June. Ten of the 19 participants identified as professionals while nine self-identified as community members. Participants learned aquatic invasive species (AIS) identification, regulations, reporting, and monitoring to become more active in detection, education, outreach, and management. The training also offered a professional development opportunity for resource managers interested in aquatic invasive species issues.
NA22NOS4190054	Carlton County Soil and Water Conservation District	$3,077	**Workshop:** The SWCD staff took an 'on-the-water' tour of the St. Louis River in Carlton County. They saw restoration projects and erosion problem spots that are best seen from the river. They also went to the Thompson Reservoir, where they got an up-close look at contaminated sediment remediation efforts led by the EPA. After the tour, they met with Coastal Program staff to discuss potential collaborative, and grant funded, projects.