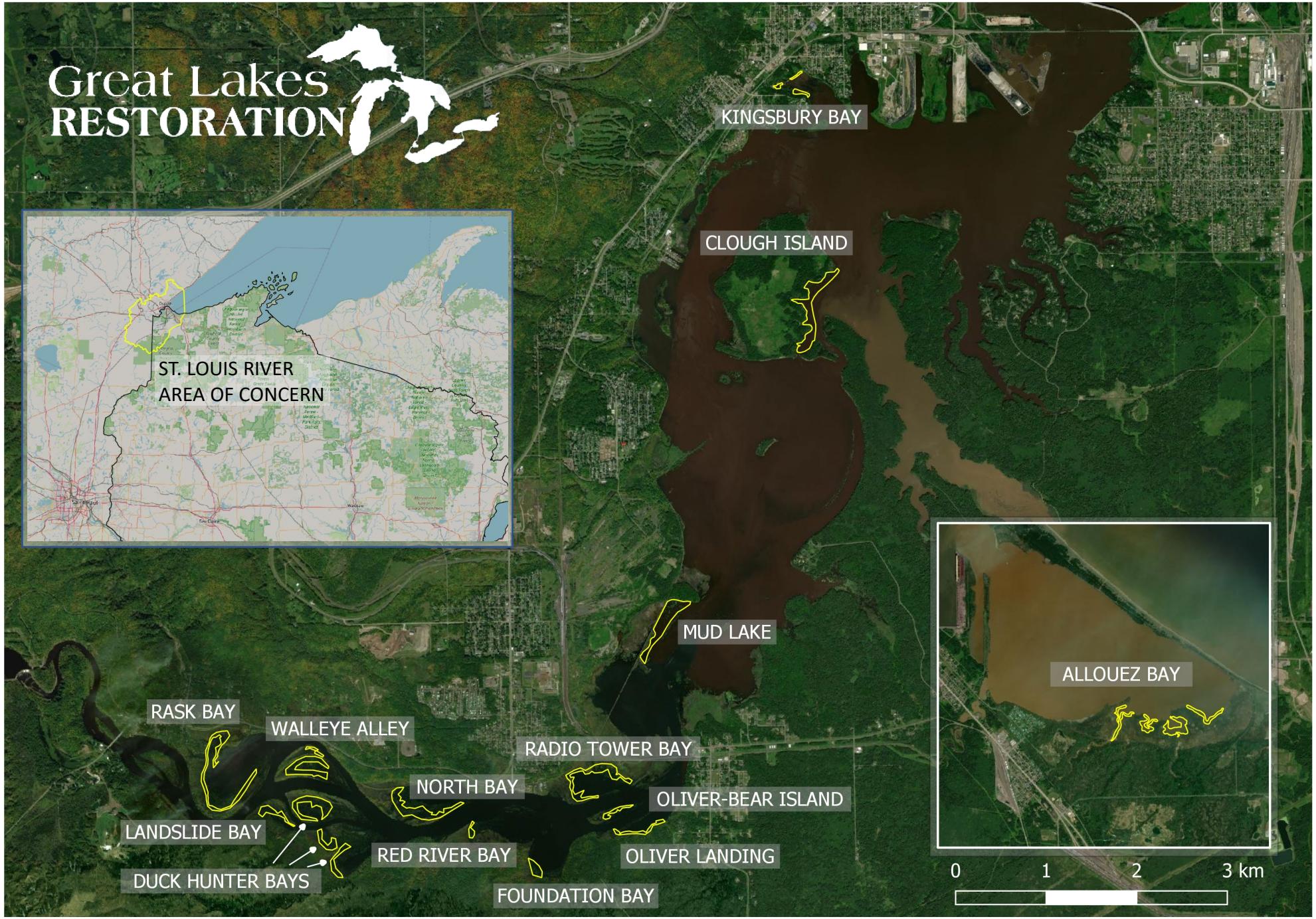


Manoomin Restoration Sites – St. Louis River Estuary AOC

NAH-GAH-CHI-WA-NONG
FOND DU LAC
RESERVATION

1854 TREATY AUTHORITY
BOIS FORTE
GRAND PORTAGE

WISCONSIN
DEPT. OF NATURAL RESOURCES

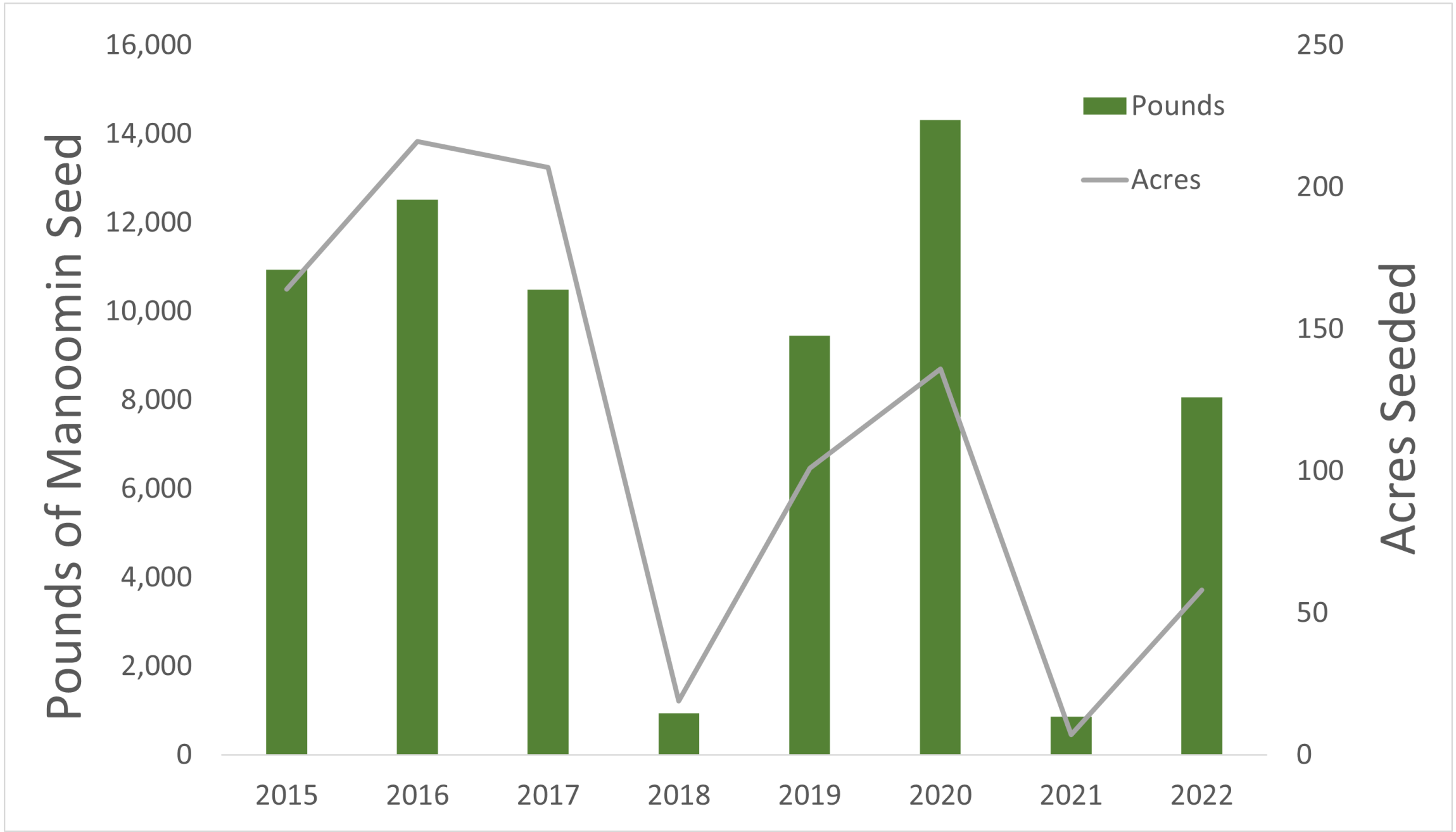
PROTECT, RESTORE AND ENHANCE
ST. LOUIS RIVER ALLIANCE

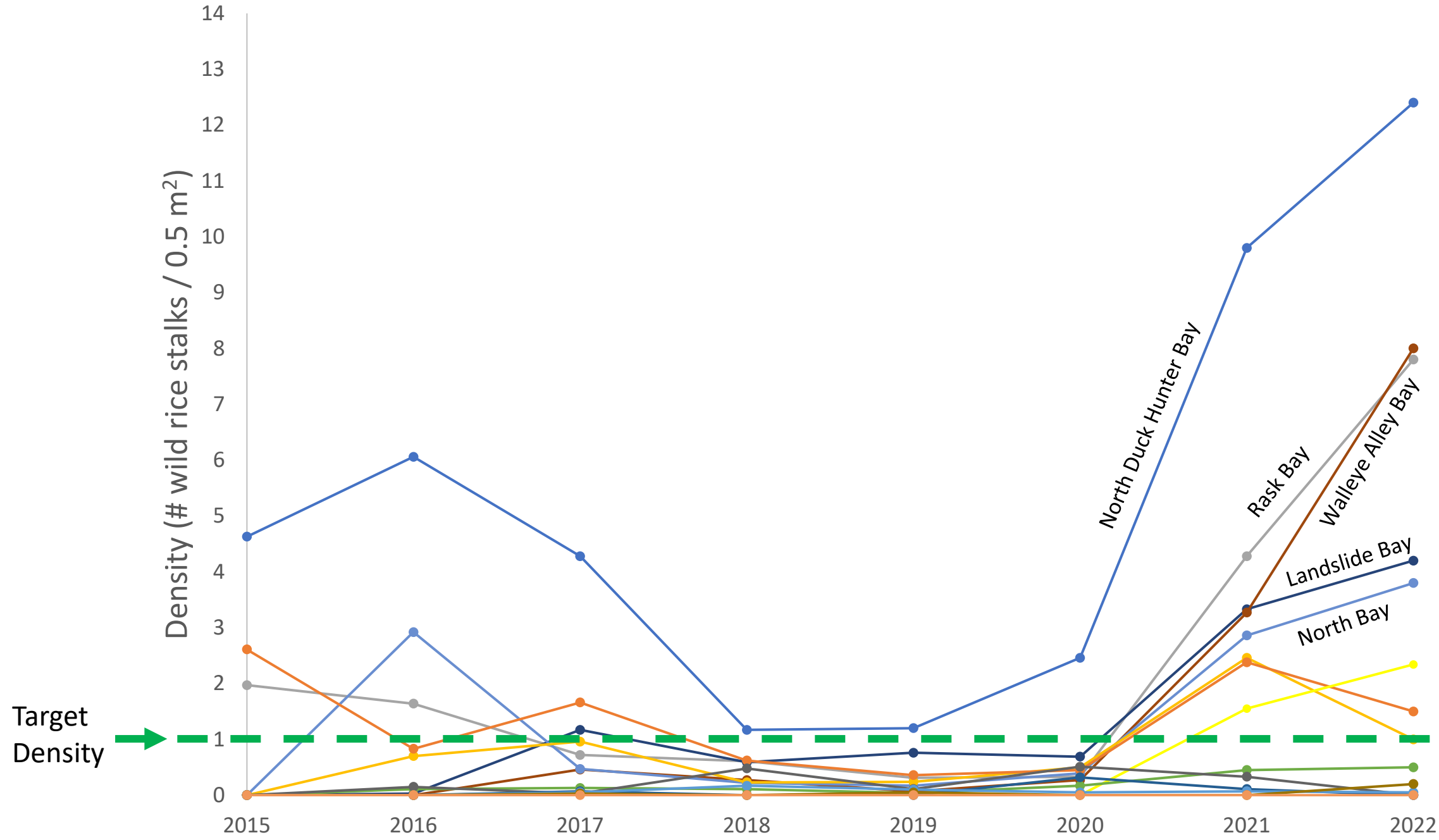
DEPARTMENT OF NATURAL RESOURCES

ST. CROIX CHIPPEWA INDIANS OF WISCONSIN

Manoomin Restoration & Stewardship

- Manoomin is a cultural keystone species for the Anishinaabe people.
- Manoomin is a fundamental entity that provides spirit and cultural connection to the land and strengthens relationships within the community.
- Manoomin serves as both food and habitat to a variety of fish and wildlife species throughout its growth cycle.
- Manoomin was nearly extirpated from the estuary as a result of industrialization and changes to water levels.
- The return of Manoomin to the St. Louis River Estuary is a story of environmental justice for the communities that depend on this important entity for food and medicine.

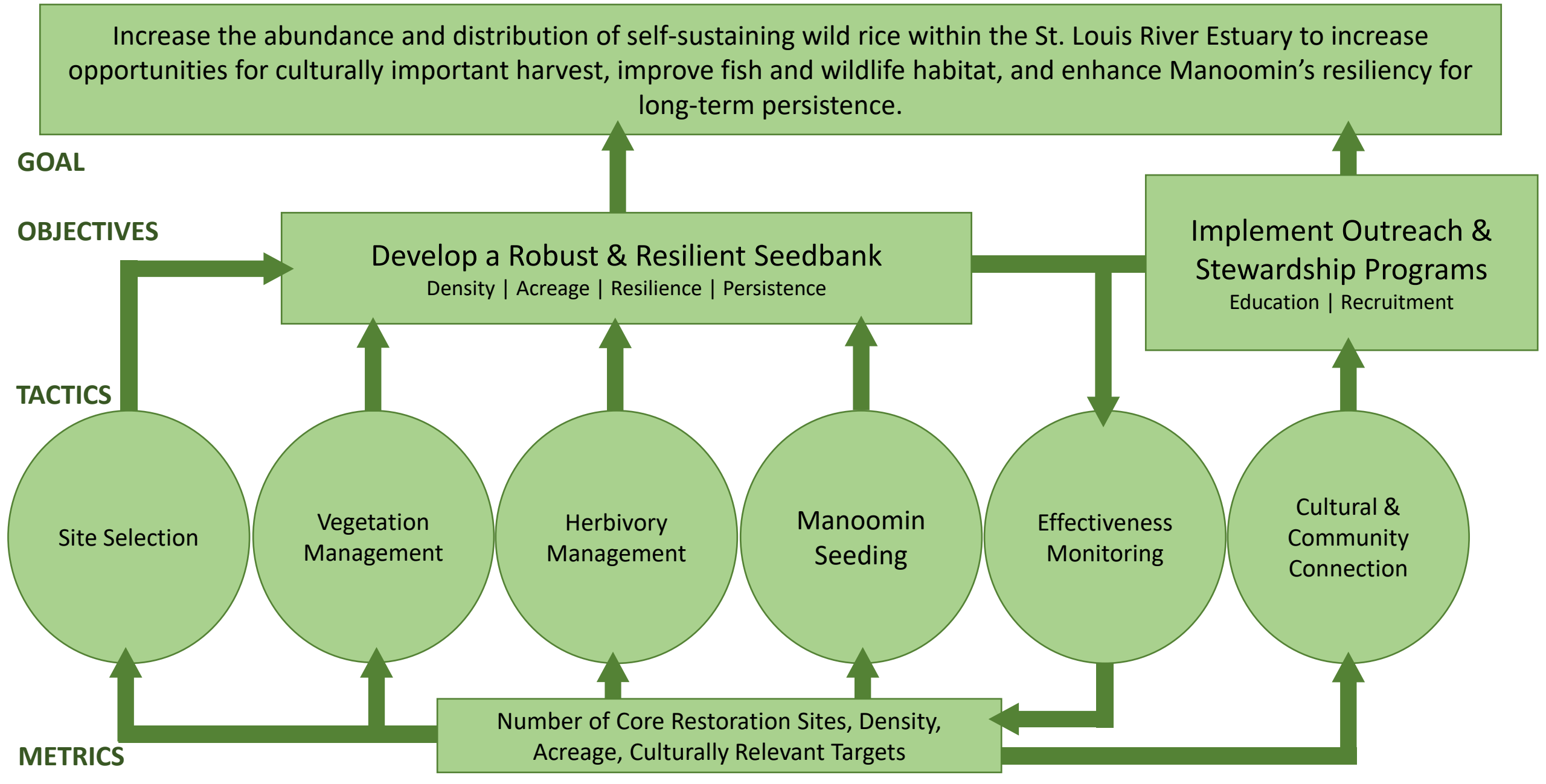

16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Pounds of Manoomin Seed
250
200
150
100
50
0
Acres Seeded
Pounds
Acres
2015
2016
2017
2018
2019
2020
2021
2022


Density (# wild rice stalks / 0.5 m²)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
2015
2016
2017
2018
2019
2020
2021
2022
Target Density
North Duck Hunter Bay
Rask Bay
Walleye Alley Bay
Landslide Bay
North Bay

Revised Draft Restoration Goal

"Increase the abundance and distribution of self-sustaining wild rice within the St. Louis River Estuary to increase opportunities for culturally important harvest, improve fish and wildlife habitat, and enhance Manoomin's resiliency for long-term persistence."

Manoomin Restoration Model for the SLRE



Manoomin Restoration Indicators

Short-Term Indicators

(present – 2026)

Indicators of Progress:

1. Three **core restoration sites**[1] that meet wild rice density targets[2] in three out of the last five years.
2. At least 30 acres of restored or enhanced wild rice across restoration sites.

Actions to Complete:

1. Continue Manoomin Restoration Model implementation.
2. Develop education, outreach, and community engagement metrics & strategies.
3. Develop and implement a protocol for acreage estimation.

Mid-Term Indicators

(2027 – 2032)

Indicators of Progress:

1. Six **core restoration sites**[1] that meet wild rice density targets[2] in three out of the last five years.
2. At least 60 acres of restored or enhanced wild rice across restoration sites.

Actions to Complete:

1. Continue Manoomin Restoration Model implementation.
2. Support annual Manoomin education & outreach events with partners.
3. Complete development of density & herbivory thresholds for triggering management action(s).

[1]Restoration sites where the Manoomin Restoration Model is fully implemented.

[2]1 stem/0.5 m2 in ≥ 50% of suitable sampling plots

Manoomin Restoration Indicators

Long-Term Indicators

(2033 and beyond)

Indicators of Progress:

1. At least 500 acres of self-sustaining wild rice beds in the SLRE[3].
2. Establish at least one healthy, harvestable stand of wild rice greater than 50 acres in size.
3. Successful application of the Manoomin Restoration Model at additional restoration sites in the SLRE.
4. Wild rice in the SLRE contributes to community relationships & offers educational opportunities.

Actions to Complete:

1. Continue Manoomin Restoration Model implementation.
2. Support partner education & outreach events.
3. Implement process to characterize community feedback on restoration progress.

[3]Restoration sites which do not require annual seeding and/or herbivory management unless **density thresholds** (tbd) trigger management action. This implies continued annual monitoring.

Draft Area of Concern Indicator

“Support annual implementation of the SLRE Manoomin Restoration Model through 2026 – including the short-term indicators therein – with the understanding that natural variability in biotic and abiotic conditions may impact progress during that timeframe and that Manoomin stewardship is a long-term commitment that extends beyond the responsibility of the SLRAOC program."

Environmental Justice

Developing a proposal for a community-focused, environmental justice documentary that tells the story of the importance of Manoomin restoration from Tribal storytellers.

- Future AOC funding request ($30-50k).
- Tribal coordination in progress.

Manoomin Information Needs

The Manoomin Restoration Team is exploring the potential for a risk assessment and toxicity study to answer the question:

"Is wild rice harvested from the St. Louis River Estuary safe to eat?"

Manoomin Outreach Needs

The Manoomin Restoration Team is coordinating with Tribal efforts to increase outreach, education and harvester recruitment.

- Wild rice camps and educational events in the estuary.
- Outreach and presentations for local organizations (St. Louis River Summit, Lake Superior Days, etc.).

Section 1: Manoomin Importance

- Describes the cultural and ecological importance of wild rice in the SLRE.
- Highlights aspects of the species' biology that influence restoration outcomes.
- Provides insight into the role that Manoomin plays in community stewardship and education in the Twin Ports.

Section 2: Manoomin Restoration

- Summarizes & quantifies actions implemented under the 2014 restoration plan.
- Describes how methodologies have adapted to improve the likelihood of success.
- Defines a framework for future stewardship, the Manoomin Restoration Model (MRM).

Section 3: Manoomin Stewardship

- Presents the revised restoration metrics.
- Addresses emerging challenges to restoration success.
- Provides a decision framework for continued Manoomin stewardship.
- Identifies a community engagement strategy for long-term stewardship.