

Desired future conditions or Vision:

VISION: A diverse, balanced, healthy Lake Superior fishery and ecosystem, that is an integral part of the socio-ecological system of Lake Superior.

Goals

Goal 1: Protect, restore and rehabilitate diversity and connectivity of tributary, coastal, and main lake habitats to maximize productive capacity of Lake Superior's fish community.

Objective 1: Maintain existing refuges and restricted areas within the bounds of the Lake Superior Fisheries Agreement that provide relief from harvest and protection of spawning and nursery grounds.

Tactic 1: Develop a clearer understanding of the role refuges and restricted areas play in protecting fish populations.

1. Key species are Lake Trout, Lake Whitefish, Cisco, and Walleye.

Objective 2: Identify, evaluate, restore and/or enhance spawning and nursery habitat for game and non-game species including habitat connectivity.

Tactic 1: Inventory instream, riparian and upland habitats of tributaries, evaluate environmental characteristics necessary to support game and non-game species, and use this information to inform systematic restoration that addresses key priorities.

Tactic 2: Work with partners to inventory available wetland and nearshore habitats (reefs, wild rice/marsh areas), evaluate environmental characteristics necessary to support game and non-game species, and use this information to inform systematic restoration that addresses key priorities.

Tactic 3: Work with partners to develop and implement strategies to enhance resilience of shoreline nursery habitats to fluctuations in water levels.

Tactic 4: Work with partners to maximize improvements to key fish habitats and take advantage of existing basin level initiatives (e.g., Areas of Concern, SuperFund, etc.).

Tactic 5: Work with partners to create a geo-referenced system (map) of environmental attributes to systematically prioritize protection, conservation, and management actions.

Objectives 3: Minimize point and non-point sources of pollution and land use change impacts to fish in tributaries, estuaries, and embayments.

Tactic 1: Work with partners to encourage Best Management Practices across the landscape to reduce pollution loads to Lake Superior (e.g., Tribal, Non-governmental organizations, Environmental Protection Agency, US Forest Service, Natural Resources Conservation Service, Wastewater Districts).

Tactic 2: Work with partners to protect key riparian areas through conservation easements.

Tactic 3: Assist in studies and projects that will result in evaluation of impacts, remediation, restoration, and removal of contaminated sediments or reduction of atmospheric deposition in watershed, tributaries and nearshore waters.

Objective 5: Minimize impacts of dams and other waterway alterations on the movement of fish in tributaries and coastal habitats to restore connections between habitats while limiting available habitat to undesirable non-native species.

Tactic 1: Utilize GLFC decision support tool to inform barrier cost benefit analyses and identify key barriers of interest (e.g., remove, maintain or modify).

Tactic 2: Explore partnership opportunities to incorporate project designs that enhance fish passage (e.g., Department of Transportation, Federal Energy Regulatory Commission, WDNR Road Liaisons, WDNR Forestry, USDA Animal and Plant Health Inspection Service, US Forest Service, County Forestry, Land Conservation, local townships, and county road commissions).

Objective 6: Minimize impacts to fish and aquatic habitats from construction and maintenance of in-water structures, lake-bed/stream-bed modifications (e.g., dredging, filling), and filling behind bulkhead lines; and restore habitat previously degraded from these activities.

Tactic 1: Work with WDNR regulatory programs to provide advice on projects that may impact fish habitat.

Goal 2: Identify and implement strategies that protect, support, and enhance the diversity, sustainability, and viability of state and tribal sport, commercial, and subsistence fishing.

Objective 1: Restore and maintain self-sustaining Lean and Siscowet Lake Trout populations to levels that support sport, commercial, and subsistence fisheries and maintain ecosystem function.

Tactic 1: Develop and evaluate thresholds to inform safe harvest limits within the confines of the Lake Superior Fishing Agreement.

Tactic 2: Enhance outreach and communication about how the current Lake Trout model functions, how harvest limits are set, and justification for management actions.

Tactic 3: Improve methods of assessment and modeling by including sensitivity analyses, additional sources of mortality (e.g., hooking mortality), and forecasting population responses to changing environmental conditions.

Objective 2: Maintain self-sustaining Lake Whitefish population to levels that support sport, commercial, and subsistence fisheries.

Tactic 1: Work with partners to develop a stock assessment model for Lake Whitefish.

Tactic 2: Develop and evaluate thresholds to inform safe harvest limits within the confines of the Lake Superior Fishing Agreement.

Tactic 3: Evaluate Lake Whitefish population in Chequamegon Bay.

Tactic 4: Utilize information from our Lake Superior Creel Survey to characterize the Lake Whitefish sport fishery.

Objective 3: Maintain self-sustaining Cisco (Lake Herring) populations to levels that support predator populations and sport, commercial, and subsistence fisheries.

Tactic 1: Work with partners to improve understanding of lake-wide recruitment and population dynamics through data sharing, collaborative efforts to assess population dynamics, and development of a Cisco stock assessment model.

Tactic 2: Work with partners to assess interactions between Cisco and Lake Whitefish.

Tactic 3: Work with partners to assess Lake Trout consumptive demand for Cisco relative to other prey species.

Objective 4: Maintain and restore self-sustaining populations of native species that support fisheries while recognizing that species occur within communities.

Objective 4a: Pike and Musky (Esocids)

Tactic 1: Work with partners to improve understanding of status and trends of Northern Pike and Muskellunge to inform development of regulations that maintain excellent fisheries.

Objective 4b: Walleye and Yellow Perch (Percids)

Tactic 1: Evaluate the potential for self-sustaining populations of Walleye and Yellow Perch in Chequamegon Bay recognizing that Walleye are key predators on Yellow Perch.

Tactic 2: Work with partners to improve understanding of status and trends of Walleye and Yellow Perch to inform development of regulations that maintain excellent fisheries.

Tactic 3: Improve understanding of stock structure of Walleye populations in Wisconsin tributaries of Lake Superior and assess contributions from locations beyond St. Louis Estuary and Chequamegon Bay.

Objective 4c: Smallmouth Bass, Largemouth Bass, and Panfish

Tactic 1: Evaluate effects of existing regulations on Smallmouth Bass populations and potential for Smallmouth Bass to impact recruitment of other species.

Objective 4d: Lake Sturgeon

Tactic 1: Work with partners to develop safe harvest limits for Lake Sturgeon to reduce the potential for negative effects to populations.

Tactic 2: Work with partners to evaluate lake sturgeon habitat use and identify key habitats across life stages.

Tactic 3: Work with partners to evaluate opportunities to enhance sturgeon populations.

Objective 5: Maintain populations of potadromous salmonids that support fisheries.

Tactic 1: According to Objective 4 in Goal 3, continue stocking program with species that provides the best return to sport anglers and maintains sport

fishing opportunities for desirable naturalized salmonids in the main lake and tributaries.

Tactic 2: Pursue habitat restoration projects that enhance natural reproduction and increase fisheries productivity.

Tactic 3: Work with partners to identify high priority Brook Trout populations and habitats and avoid stocking naturalized salmonids in those areas.

Tactic 4: Maintain consistency with other state management plans, including the beaver management plan, forest management plans, property management plans, and trout management plan.

Goal 3: Enhanced research and monitoring to better understand ecology of Lake Superior fish populations and communities.

Objective 1: Develop better understanding of factors driving population dynamics of potadromous salmonids.

Tactic 1: Work with partners to develop linkages across salmonid life stages in streams (e.g., stock-recruitment dynamics, critical spawning areas)

Tactic 2: Work with partners to determine drivers of variability in key life history stages/traits across habitats.

Tactic 3: Apply knowledge generated to enhance management strategies to improve fisheries productivity.

Objective 2: Quantify cool-water fish population characteristics (key species to investigate include Walleye, Smallmouth Bass, Lake Sturgeon, Northern Pike, Yellow Perch, Muskellunge, White perch)

Tactic 1: Work with partners to develop enhanced sampling protocol of cool water species to assess population size, size and age structure, and recruitment dynamics.

Tactic 2: Work with partners to develop a better understanding of variability in key life history stages/traits across habitats.

Tactic 3. Apply knowledge generated to enhance management strategies to improve fisheries productivity.

Objective 3: Pursue research efforts to elucidate food web interactions in tributaries, wetlands, and nearshore embayments.

Tactic 1: Work with partners to assess predator-prey interactions of key species to determine “who eats who”?

Tactic 2: Work with partners to assess species interactions of key species to determine “who competes with who”?

Tactic 3: Work with partners to determine if and how key food web interactions differ across habitats and environment conditions.

Tactic 4: Work with partners to determine how food web interactions of predators and prey differ across multiple life stages.

Tactic 5: Apply knowledge generated to develop multi-species management strategies.

Objective 4: Evaluate stocking as a tool to enhance sport fish populations

Tactic 1: Develop an adaptive stocking strategy to evaluate performance of stocking efforts for Brook Trout, Splake and a combination of both species.

Tactic 2: Evaluate Walleye stocking program in Chequamegon Bay.

Tactic 3: Evaluate Lake Trout population demographics to determine if the population meets criteria to cease stocking outlined in the Lake Trout Restoration Plan for Lake Superior (Great Lake Fishery Commission, 1996).

Tactic 4: Develop stocking strategies to minimize risks of introgression and other negative genetic effects to naturalized populations of potadromous salmonids.

Tactic 5: Evaluate current stocking strategies to maximize stocking efficiency, ensure distribution of stocked fish to all Wisconsin waters of Lake Superior, minimize risks to naturalized and native populations, and produce consistent harvest opportunities.

Tactic 6: Explore alternative strains of stocked fish to enhance survival and increase fish available for harvest by sport fishers.

Goal 4: Develop, evaluate, and implement strategies to maximize the resilience of Lake Superior fisheries through the control, manage, or mitigate of future threats

Objective 1: Develop, evaluate, and implement strategies to control, manage, and cope with invasive species, as well as certain nuisance species.

Tactic 1: Assist partners to monitor populations, investigate impacts to fisheries, and develop management plans for invasive and nuisance native species that are currently present in Lake Superior and causing ecological impacts.

Tactic 2: Work with partners to minimize introduction of new invasive species into Lake Superior.

Tactic 3: Work with partners to minimize introduction of invasive species from the Great Lakes to inland waters.

Tactic 4: Work with partners to assist with implement of early detection program and reporting of status and trends of new and existing invasive and nuisance species.

Tactic 5: Minimize ecosystem effects of new and existing invasive and nuisance species through development of mitigation strategies to reduce increases in numbers, distributions, and role in food web (e.g., development of harvest strategies to reduce populations of invasive and nuisance species).

Objective 2: Develop, evaluate, and implement strategies to improve resilience of Lake Superior fisheries to climate variability, including extreme weather events.

Tactic 1: Work with partners to evaluate impacts of flooding events on nearshore environmental conditions (e.g., temperature, water clarity and quality) and fish populations.

Tactic 2: Work with partners to identify expected environmental changes resulting from climate variability and forecast potential impacts to fish populations.

Tactic 3: Work with internal and external partners on infrastructure development projects to incorporate fisheries management goals.

Objective 3: Develop partnerships to ensure a proactive approach to identify, detect, and communicate risks related to emerging Chemicals of Mutual Concern (CMC).

Tactic 1: Work with Office of Great Waters and other partners to assess progress toward environmental goals outlined in Great Lakes Water Quality Agreement.

Tactic 2: Work with partners to identify sources of CMC in the environment and elucidate movement of CMC through food webs to fish populations.

Tactic 3: Work with partners to standardize communication of CMC levels in fish and safe consumption levels to diverse audiences.

Goal 5: Develop, evaluate, and implement strategies to improve the social value of Lake Superior

Objective 1: Develop, evaluate, and implement strategies to effectively communicate to internal and external partners

Tactic 1: Continually improve methods to communicate information to stakeholders and maintain full and open exchange of information and ideas with public.

Tactic 2: Engage stakeholders to determine their fishery preferences, desires, perceptions, and experiences.

Tactic 3: Actively engage stakeholders throughout the research process, including project development, to convey implications of research findings to management and policy development.

Tactic 4: Communicate survey results and management project results with the public and scientific community.

Tactic 5: Coordinate with stakeholders to develop informational brochure that highlights opportunities to take advantage of the diverse resources Lake Superior offers.

Tactic 6: Coordinate with Lakewide Action Management Plan (LaMP) partners on items that require cooperation to enhance and manage fisheries.

Objective 2: Enhance tributary, shore, and nearshore fishing opportunities.

Tactic 1: Evaluate alternatives to improve both quality and quantity of access to shore, nearshore, and tributary fishing opportunities.

Tactic 2: Discourage fish waste and unethical fishing practices.

Objective 3: Develop, evaluate, and incorporate economic metrics into assessment of management alternatives.

Tactic 1: Coordinate with stakeholders to incorporate economic metrics to evaluate alternative management strategies.

Tactic 2: Work with partners to better understand the economic value of intact habitats to provide incentive for protection.

Objective 4: Identify strategies to coordinate with stakeholders to promote Lake Superior fisheries.

Tactic 1: Develop reporting protocol to communicate recent observations of fishing activities to stakeholders.

Tactic 2: Engage diverse stakeholder groups on strategies to address contentious issues (e.g., sport-commercial, tribal-state), and develop information document clarifying Frequently Asked Questions (FAQs).

Tactic 3: Continue to participate in community events to educate and communicate to the public key information about the Lake Superior Fisheries.

DRAFT