



GREAT LAKES
ST. LAWRENCE
GOVERNORS
& PREMIERS

UNITED FOR GROWTH

100% Great Lakes Fish

Wisconsin Aquaculture Conference

February 21, 2025



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Innovation Award



President's
Transportation Award



Advancing International
Trade Award



Outstanding
Achievement Award

International and National Awards



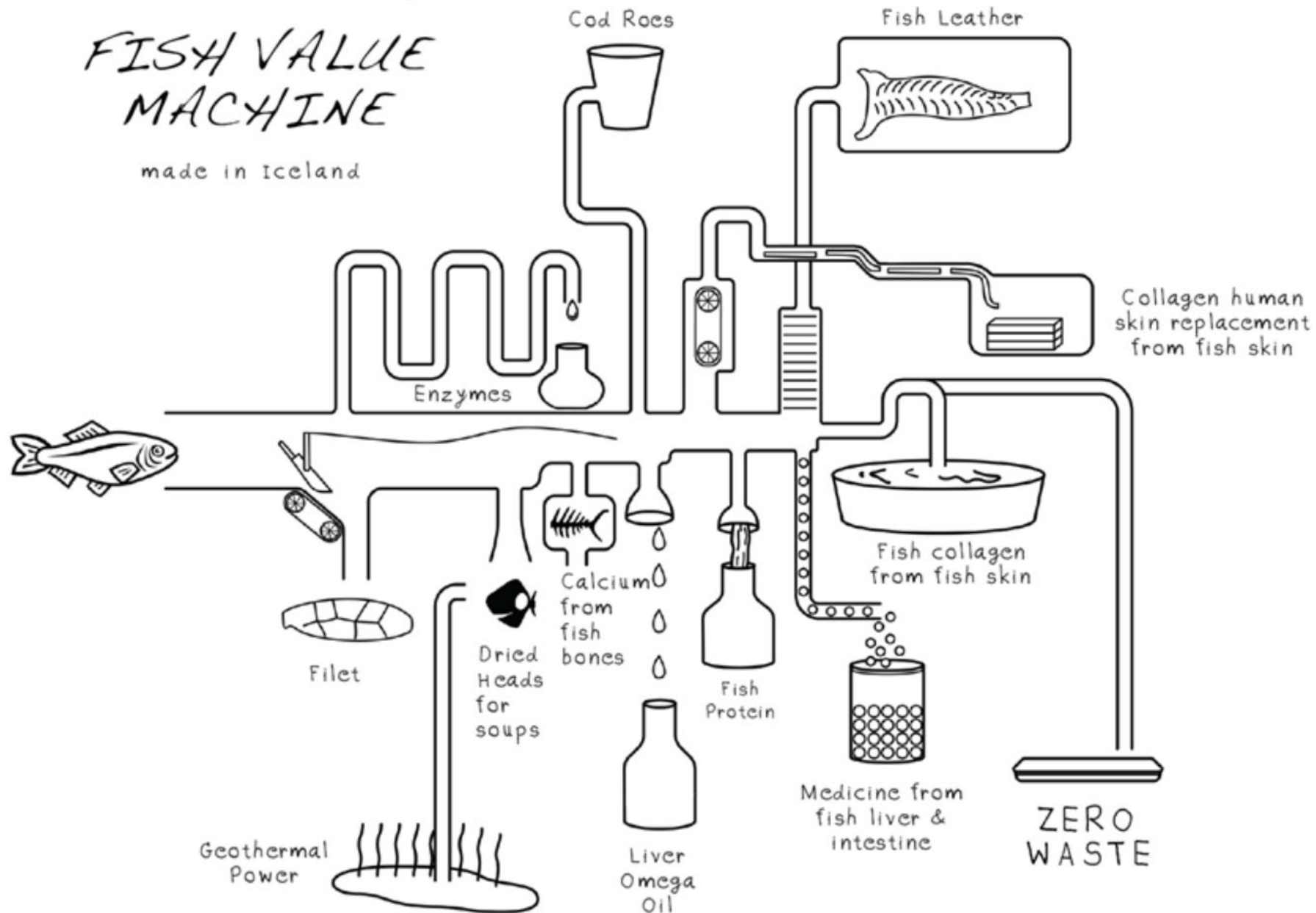
President of the United States
Environment and Conservation
Challenge Award



Seafood Industry
Climate Award

THE
INCREDIBLE
FISH VALUE
MACHINE

made in Iceland



The Icelandic Model Driving a New Fish Economy

Cod biomass utilization increase from 40% to more than 90%

Aquaculture is part of the solution set

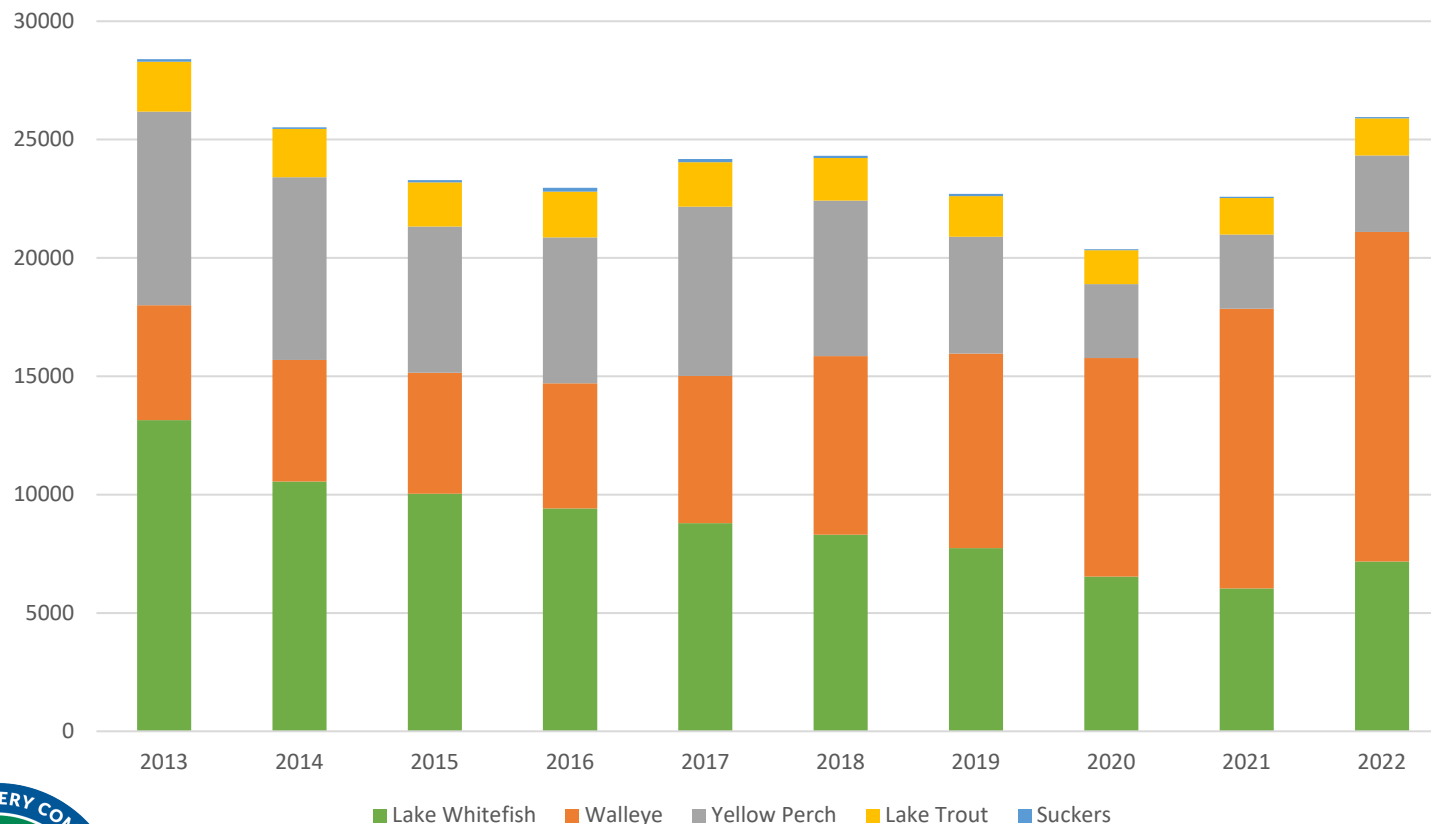
New high-value byproducts such as skin and collagen that are processed into a variety of food and non-food products

A cod that used to generate \$12 for filets now generates a remarkable \$5,000 per fish in expanded value!



Great Lakes Fisheries Challenges

Annual Catch for Key Species (thousands of pounds)



Broadly declining overall catch, especially for Lake Whitefish

Yield and prices fairly stable, so declining overall value

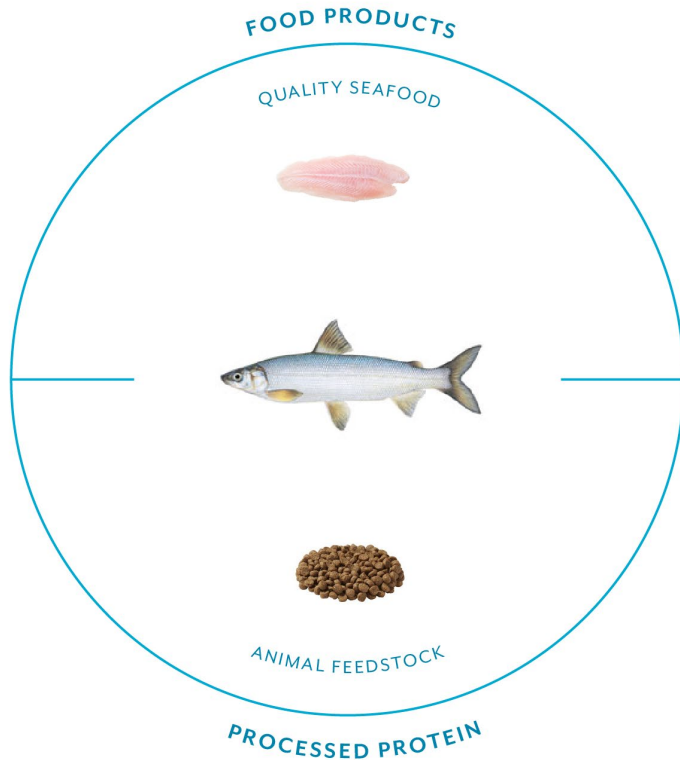
Not including aquaculture



Source: Great Lakes Fishery Commission



Great Lakes Fisheries ~~Challenges~~ *Opportunities*



Lack of product diversity

Traditional products facing competition

Low biomass utilization

Relatively low value per fish

100% fish opportunity!



Environmental ~~Challenges~~ *Opportunities*

Over 35 million pounds of fish processed in our region=
up to 21 million pounds of potential “waste”

Landfilling is the most GHG-intensive option for managing organic waste, emitting nearly 400 kg CO_{2e} per ton, + transport emissions

Composting reduces GHG emissions by roughly 90% compared to landfilling

100% fish solution=reduced emissions, improved sustainability



Economic ~~Challenges~~ Opportunities

Fish “waste” removal costs up to 20 cents/pound + processors’ handling and material management costs means millions of dollars in overall costs to the commercial and aquaculture industries

Potential revenue from “waste” sales*

(all amounts for illustrative purposes only)

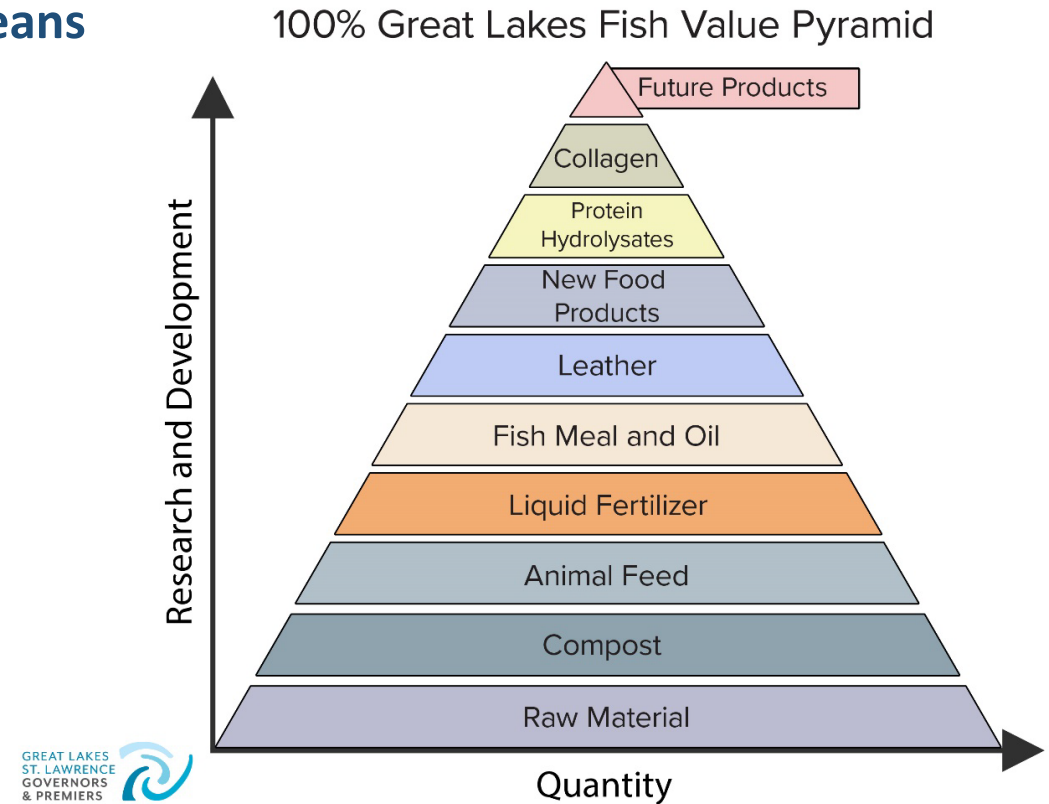
For compost: 0 cents/pound (but not a cost!)

For fertilizer (sold to intermediaries): 6 cents/pound

For pet food/treats: 20-75 cents/pound

For lobster/crab bait: 24-80 cents/pound

100% fish solution=revenue, jobs, rural economic development



100% Great Lakes Fish Partners



This project has been supported by grants from the Great Lakes Fisheries Trust, Great Lakes Fishery Commission, the Ontario Commercial Fisheries' Association, and the Acme Smoked Fish Foundation.





100% Great Lakes Fish 2022-2023

- 100% fish model for commercially caught fish in the Great Lakes
- Biotechnical testing —Lake Whitefish, Walleye/Pickrel, Lake Trout, Yellow Perch, White Sucker
- Exchanges between North American and Icelandic experts
- New prototype products—collagen, leather, hydrolysates
- High-level template for a regional fish research center where value-added products and equipment could be developed and tested





- Launched October 2023
- 100% utilization goal by 2025
- Employ strategies to maximize value
- Explore new ideas
- Share information
- Openness to expanding 100% fish to more species and products



WORLD FISHING
& AQUACULTURE
SINCE 1952

NORTHERN ONTARIO
Business

Fish Farmer



Six aquaculture companies have signed on to the Pledge, and we are actively recruiting more!



100% Great Lakes Fish Pledge

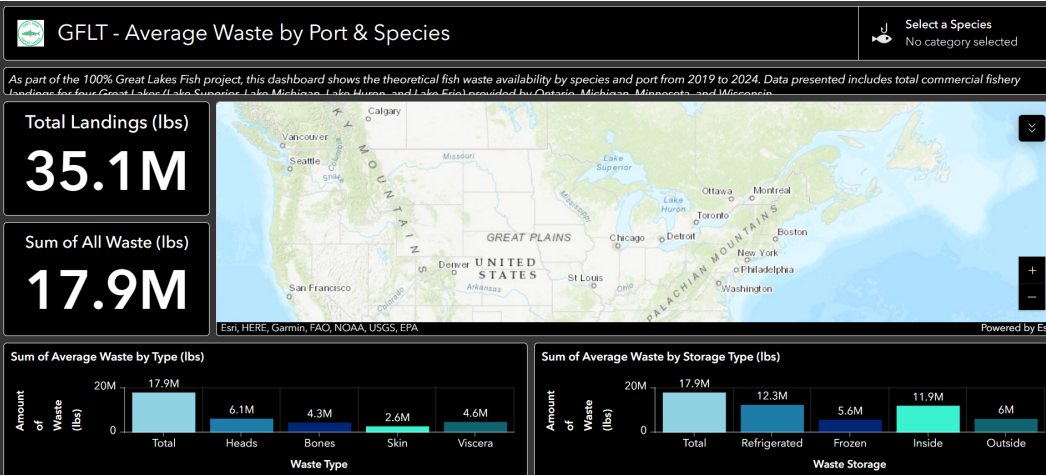
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2024 Research and Value Chain Development



100% fish in the Great Lakes region
Cisco (*Coregonus Artedi*) full utilization



Valorization of Walleye
processing by-products



Value chain analysis for compost, pet food and
treats, liquid fertilizer, and fish meal and oil



2024 Ontario Supply Chain Analysis

- Mapping and quantification of landings, raw materials
- Analysis of current “waste” management practices
- Established upcycling methods
- Transformational upcycling methods

Mink
feed



Pet
food



Fertilizer



Compost



Meal



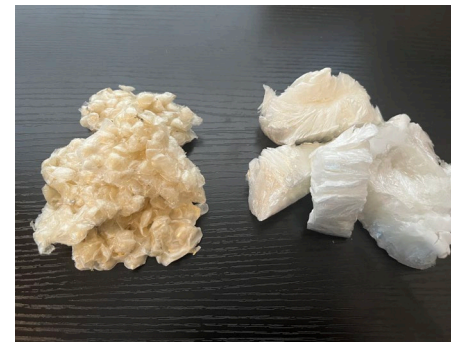
Oil



Gelatin



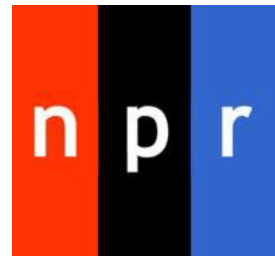
Collagen



Protein
Hydrolysates



2024 Communications and Outreach



...and many more!



2025 Research and Value Chain Development



Opportunities for small businesses
and solo practitioners



Tree planting with
Grand Traverse Band of
Ottawa and Chippewa
Indians using 100% fish
fertilizer



Virtual Fishskin
tanning workshop



2025 Research and Value Chain Development

- Value chain analysis for collagen, protein hydrolysates, and leather
- Global and regional 100% fish demand analysis
- Economic and environmental benefits analysis
- Recommendations to government and industry



100% Fish Sea Grant Proposal - Aquaculture

This project will study how aquaculture facilities manage “waste,” identify valorization pathways, and develop a strategy on how to transform this valuable raw material into revenue.

Partners:

- GSGP
- University of Wisconsin-Milwaukee
- Wisconsin Sea Grant
- New York Sea Grant
- Ohio Sea Grant
- Big Fish Farms LLC
- Freshwater Farms of Ohio
- Hudson Valley Fisheries
- Rushing Waters Fisheries
- Skytop Springs Fish Farm
- Superior Fresh
- OceanArc Technologies
- and others!



Activating 100% Great Lakes Fish – 2025 and Beyond

- 100% Great Lakes Fish Pledge—technical assistance, support to help meet 100% utilization and activate new value chains
- Expanded work with aquaculture producers
- Agenda for Growth--potential for future regional cluster?

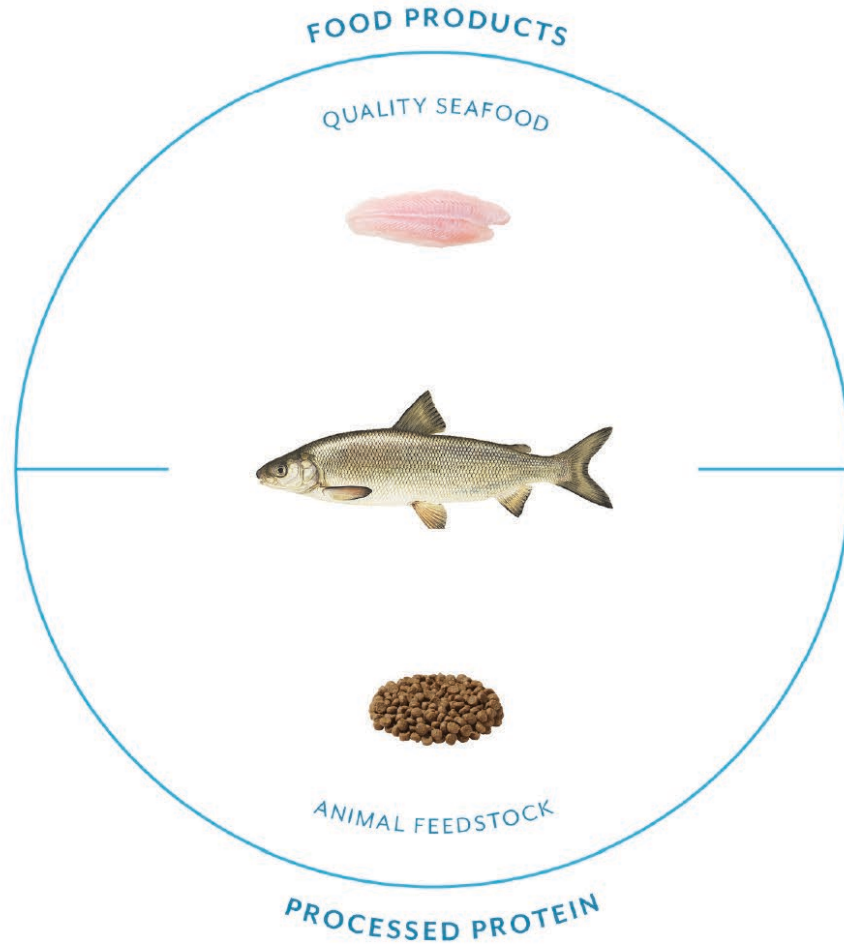


SAVE THE DATE
GSGP Leadership Summit
October 4-6, 2025

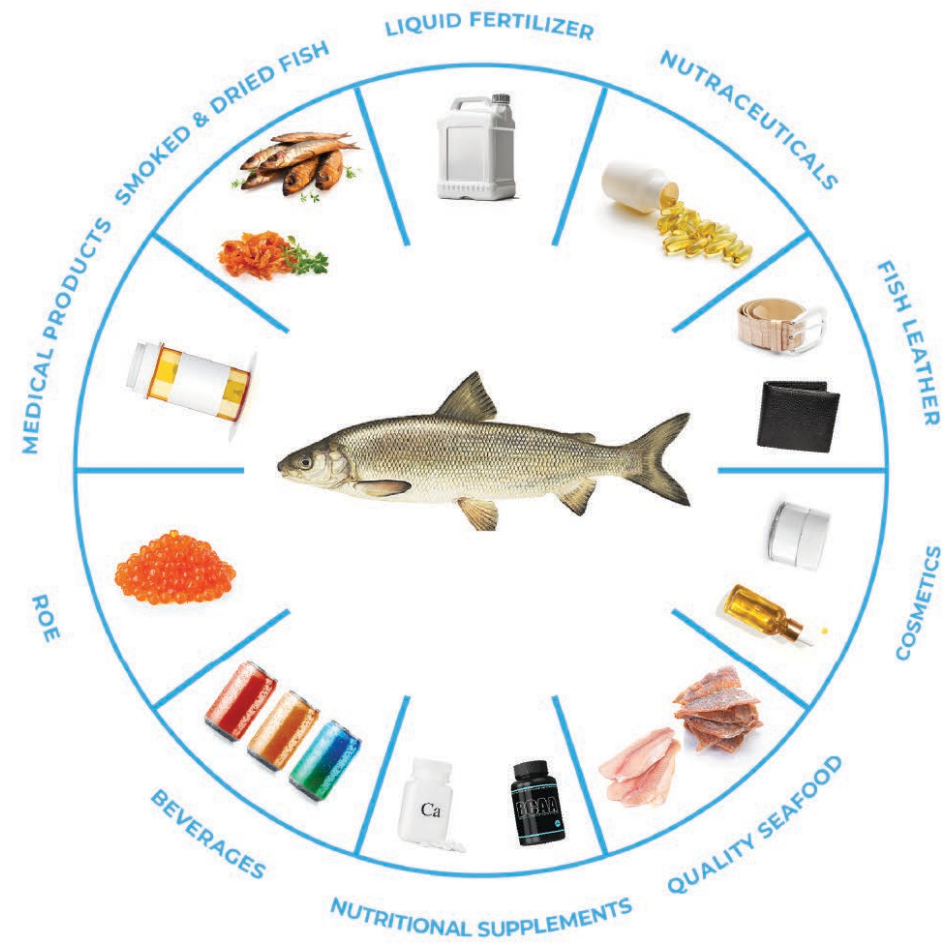


100% Great Lakes Fish

From today...



To tomorrow...





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