

Wisconsin Fisheries Genetics Management Plan

January 28, 2026

Genetics and Fish Stocking

- Long history of fish stocking
- Assessment of genetics in fish stocking is a relatively new technology



Importance of Genetics

- Locally adapted strains tend to perform best
 - Survival and future natural reproduction
 - Well documented in scientific literature
 - Numerous Wisconsin genetics examples
- Being responsible with public resources
 - Maximize return on investment
 - Maintain genetic integrity
 - Long-term viability of population



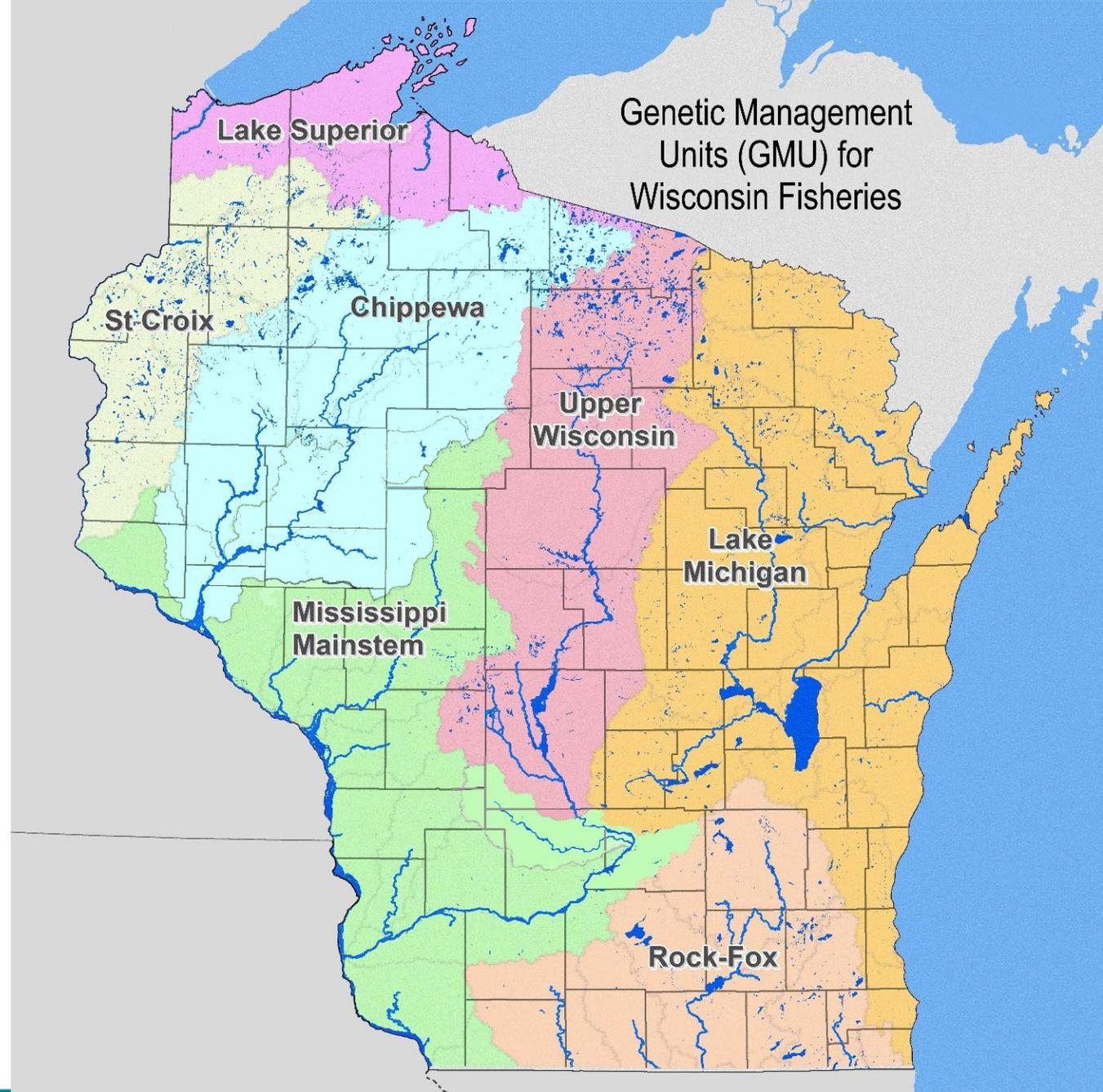
State Law - 2017 ACT 21; NR 1.02(4)

“Aquaculture Bill”

- Preserve genetic integrity of fish stocks ("strains")
- Private fish stocking shall be authorized by permit and conducted to maintain the genetic boundaries
- Implement fish stocking strategies that ensure fish stocked are best suited to survive and thrive
- Done in partnership with fish farmers to protect, sustain and improve the genetic integrity of fish populations

Genetic Management Units (DNR Admin. Report #97)

Despite the long history of stocking, we can still identify distinct genetic drainages



Genetic Management Policy Rationale

- Assure most current data and science are used to guide genetics management policy
 - Protect natural populations
 - Ensure that genetic boundaries are maintained
 - Protect existing genetic diversity
 - Assure that stocked fish have the greatest potential to survive
- What it DOES NOT do:
 - Address "selective breeding" for specific traits, which is counter to the goals of the plan

How does this impact you?

- State and private fish stockings must follow NR 1.02(4)
- Benefits the resource
 - Highest survival of stocked fish
 - Maintain genetic integrity
 - Long-term viability



Genetic Management Guidance (DNR Admin. Report #97)

Stock Origin	Reproductive status	Broodstock source
Native to waterbody	Self-sustained through NR	Fish should not be stocked
	Dependent on stocking	GMU stock
Introduced to waterbody; native to GMU	Self-sustained through NR	Fish should not be stocked
	Dependent on stocking; or new introduction	GMU stock
Introduced to waterbody; not native to GMU	Self-sustained through NR	Fish should not be stocked
	Dependent on stocking; or new introduction	Nearest GMU stock

An underwater photograph showing a large group of musky fish swimming over a rocky and sandy riverbed. The fish are characterized by their long, slender bodies and dark, wavy stripes. The water is clear, and sunlight filters through from the surface, creating a bright, slightly hazy atmosphere. A semi-transparent grey box with white text is overlaid at the top center of the image.

Is a musky, just a musky?

Photo: Kevin Bushnick

Musky Genetics in Action: Larson et al. 2020

- Evaluated contribution of Leech Lake and WI musky strains in WI lakes
- WI strain musky had better survival than Leech Lake in WI
- 90-98% of fish captured were WI strain
- *The local strain had greater survival*

A close-up photograph of a white mesh fishing net filled with numerous small walleye fish. The fish are packed together, showing their characteristic yellowish-green color and dark spots. The net is set against a dark background, likely water. A semi-transparent grey box with white text is overlaid on the upper portion of the net.

Is a walleye, just a walleye?

Walleye Genetics in Action: Logsdon et al. 2024

- Evaluated survival and cost effectiveness between southern MN and northern MN walleye strains in southern MN lakes
- “higher fitness of southern MN Walleye due to adaptation to environmental conditions in southern Minnesota waters”
- Cost per recruit to large fingerling was 43% to 96% less with local strain
- *The local strain had greater survival*



Brook Trout Genetics in Action: Thometz 2024

- Evaluated post stocking fitness of F1, F2 (wild strains) and domestic strain brook trout
 - F1: “wild strain” first generation in hatchery
 - F2: “wild strain” second generation in hatchery
 - Domestic: several generations in hatchery
- F1 had 1.4x better survival than F2
- F1 had 17.2x better survival than domestic
- F1 had highest reproductive potential
- *Brook trout less removed from the wild had greater survival and reproductive potential*

Genetics Management Policy Implementation

- Fisheries Bureau has pursued this policy internally
- Walleye and musky stocking must follow Genetics Management Policy
 - Bid process to acquire eggs and fry since 2019
- Currently encourage compliance of private stocking for other species
- Continue to work with fish farmers and other interests to gather input and finalize implementation in 2026
- Future considerations for wild fish transfer

Department Authority to Provide Fish to Private Fish Farms

- DNR is authorized to provide access to appropriate strains of fish for private Fish Farmers (29.705)
- Maintaining adult brood stocks in hatcheries results in "domestication"
 - Future generations are more adapted to a hatchery than the wild

Current Process to Acquire Appropriate Fish or Gametes

- Request for Bid (RFB) “Sale of Surplus Walleye and Muskellunge Fry” on the DOA eSupplier website in February
- Requirements
 - Bids must be at least 8 ounces
 - Bidders must have a Type 3 Fish Farm License
 - Fish must be stocked into waters of WI
- Successful bids were \$15-20 per oz last two years
- Best post stocking survival if gametes are collected each year

Current Process to Acquire Appropriate Fish or Gametes

- DNR Fisheries program is committed to providing appropriate guidance to private facilities
- Questions on the bidding process can be directed to

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Additional Options we Plan to Develop for Acquiring Appropriate Fish or Gametes

- Statute 29.705
 - Department may authorize fish to be taken for stocking other waters or for securing eggs for propagation under a permit issued by the department
 - The department may furnish fish or eggs to in-state Fish Farms under an agreement to provide some fish for stocking in public waters.
 - With approval or authorization, wild fish may be caught from public waters for the purposes of artificial propagation or for introduction, stocking or planting in fish farms.

Genetic Management Policy Next Steps

- Send comments on the WDNR genetic management policy to DNRFWPFHStockingGenetics@wisconsin.gov until March 1, 2026
- Fisheries Bureau will review all comments and determine next steps by April 1, 2026
- Anticipated timeline for implementation
 - Interim strains accepted in 2026. Actual strains in 2027
- Articles and reports referenced in this presentation will also be available:
<https://dnr.wisconsin.gov/topic/Fishing/fish-stock-genetics-management>

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"WILD WISCONSIN:
OFF THE RECORD"

Current Musky and Walleye Acceptable Strains

*interim strains accepted in 2026

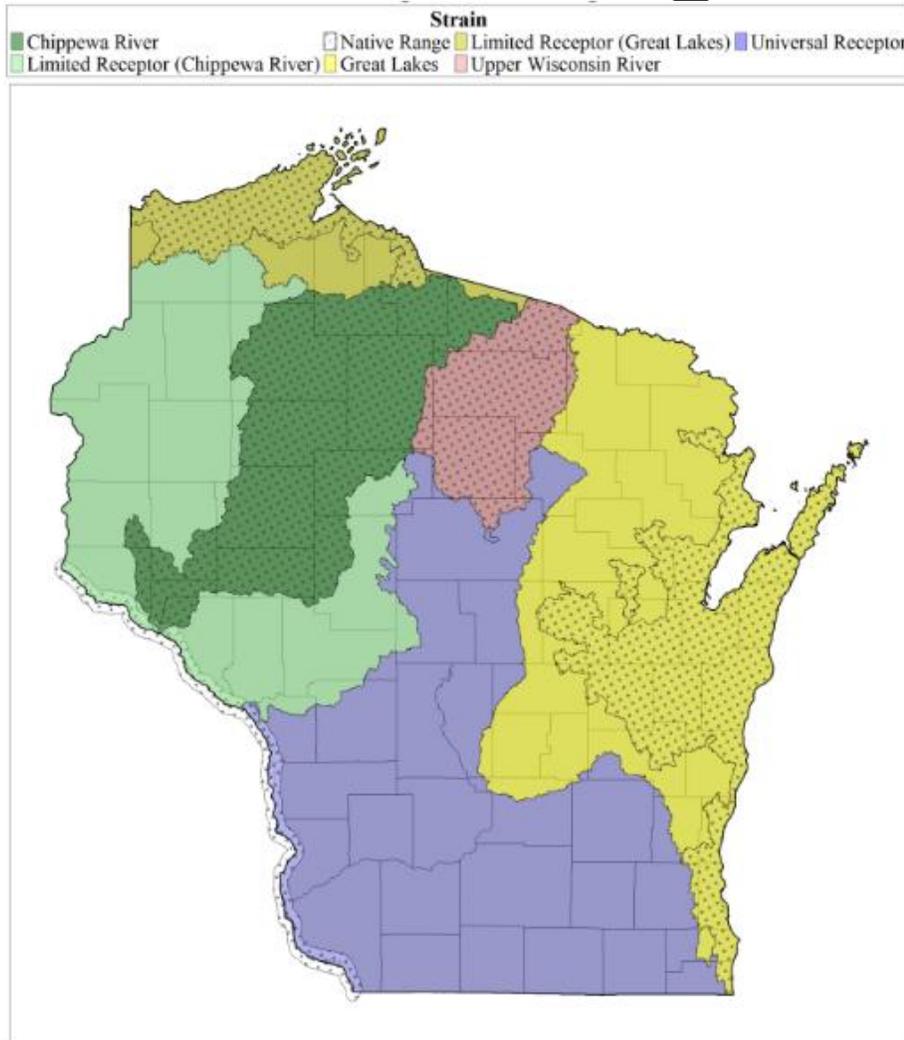
GMU (Basin)	Acceptable Interim Muskellunge Strains (Waters)
Chippewa	Chippewa
Lake Michigan (inland)	Great Lakes Spotted, Upper WI (north of Hwy 10); Any (south of Hwy 10)
Lake Superior (inland)	Great Lakes Spotted, Chippewa
Mississippi Mainstem	Any
Rock/Fox	Any
St. Croix	Chippewa
Upper WI	Upper WI (upstream of WI Rapids); Any (downstream of WI Rapids)

GMU (Basin)	Acceptable Interim Walleye Strains (Waters)
Chippewa*	Chippewa, Upper WI
Lake Michigan (inland)	Lake Michigan, Upper WI (north of Hwy 10); Any (south of Hwy 10)
Lake Superior (inland)	Lake Superior, Chippewa
Mississippi Mainstem	Mississippi Mainstem
Rock/Fox	Rock/Fox
St. Croix	Chippewa
Upper WI*	Upper WI, Chippewa

Walleye Strains Beginning in 2027

GMU (Basin)	Walleye Strains (Waters)
Chippewa	Chippewa
Lake Michigan (inland)	Lake Michigan
Lake Superior (inland)	Lake Superior
Mississippi Mainstem	Mississippi Mainstem
Rock/Fox	Rock/Fox
St. Croix	Chippewa
Upper WI	Upper WI

Muskellunge Strains Beginning in 2027



GMU (Basin)	Musky Strains (Waters)
Chippewa	Chippewa
Lake Michigan (inland)	Great Lakes
Lake Superior (inland)	Great Lakes
Mississippi Mainstem	Chippewa
St. Croix	Chippewa
Upper WI	Upper WI (upstream of Wausau Dam)
Universal Receptor*	Chippewa, Upper WI, Great Lakes

*“Universal Receptors” are waters outside the native muskellunge range that are dependent on stocking and not Limited Receptors (denoted by purple polygon)

Walleye**Large fingerlings**

Strain	Year	Number of stocking permits	Large fingerlings requested	Total number of permits	Total large fingerlings
Chippewa	2025	19	38,478	75	107,351
Lake Michigan		25	25,879		
Lake Superior		0			
Mississippi Mainstem		3	1,675		
Rock/Fox		18	32,294		
Upper Wisconsin		10	9,025		
Chippewa	2024	31	43,743	134	194,215
Lake Michigan		37	44,297		
Lake Superior		7	6,600		
Mississippi Mainstem		4	8,800		
Rock/Fox		19	44,225		
Upper Wisconsin		36	46,550		
Chippewa	2023	25	52,427	111	191,742
Lake Michigan		27	49,930		
Lake Superior		8	9,050		
Mississippi Mainstem		1	75		
Rock/Fox		16	33,110		
Upper Wisconsin		34	47,150		
Chippewa	2022	32	62,948	114	188,722
Lake Michigan		38	47,005		
Lake Superior		6	3,250		
Mississippi Mainstem		3	8,440		
Rock/Fox		13	34,424		
Upper Wisconsin		22	32,655		

Musky **Large fingerlings**

Strain	Year	Number of stocking permits	Large fingerlings requested	Total number of permits	Total large fingerlings
Any	2025	11	6,414	35	12,178
Chippewa		10	1,855		
Great Lakes		5	1,090		
Upper Wisconsin		9	2,819		
Any	2024	8	4,175	24	8,889
Chippewa		5	1,030		
Great Lakes		3	544		
Upper Wisconsin		8	3,140		
Any	2023	10	5,692	29	14,770
Chippewa		11	5,918		
Great Lakes		4	800		
Upper Wisconsin		4	2,360		
Any	2022	6	4,250	24	10,348
Chippewa		13	4,098		
Great Lakes		1	150		
Upper Wisconsin		4	1,850		