

Questions and answers from the Fisheries Genetics Management Plan Public Meeting

UWSP Campus - 1/28/2025 - 6-8pm

This is a list of relevant questions asked at the Genetics Management Plan public outreach meeting. Some questions were combined with related questions or paraphrased for clarity and conciseness.

What species does the genetics guidance currently apply to?

- Walleye and muskellunge are the two main species at this point since they have been most studied. Future work is anticipated for bass, panfish, etc.

Concerns of splitting Genetic Management Units. Currently 7 GMUs, how many in the future?

- We do not plan to split GMUs. Previous research has indicated these to be the most appropriate GMUs. This structure of seven GMUs has been in place since 1999.

Post studies/literature that show native strains outperform non-native strains

- Examples of studies are included on this website. See Diana et al. 2017, Larson et al. 2020, and Logsdon et al. 2024.

When are genetics different enough to call it a different strain?

- The term "strain" refers to a group of organisms within a species that share distinct genetic and/or physical characteristics. Because strains are defined for management purposes, definitions are based not just on biology, but also on management history, goals, and limitations. The degree of genetic differentiation necessary to designate a strain will thus vary by species, geographic location, and specific management context.

Are the genetics of the current stocks/brood lakes really a pure native strain considering stocking has been conducted over the past 150 years?

- Brood lakes were selected because they have wild and genetically diverse populations without an extensive history of fish stocking. The development of genetic boundaries were delineated based on samples from many lakes within each GMU during the mid 2000's and on which was after the historic stocking had been completed on some of these lakes. Sample results indicate that there was little genetic introgression from non-GMU genetic strains. Which likely means either the native genetic strain outperformed the introduced genetic strain and/or the introduced strain had low survival and contribution to the populations.

Have there been any genetics studies that characterize the genetic differences between the 7 GMU units?

- Yes. Please see the studies included on the website, particularly Murphy 2008, Hammen 2009, Spude 2010, and Westbrook 2012.

There are some lakes on the WI / UP border that flow north into Lake Superior. Shouldn't they be in the Lake Superior GMU.

- Yes, these lakes are being managed as Great Lakes GMU.

In the Chippewa watershed (that leads to the Mississippi River and St. Croix River), how is this viable science when the St. Croix, Chippewa, and Mississippi watersheds are all connected?

- These rivers have natural falls or man-made barriers (e.g., dams) that prevent the exchange of genetics throughout an entire drainage. Gene flow in these systems often goes in a downstream direction, where fish are not able to reach the upstream most reaches. With this spatial separation the locally adapted strains perform best.

Panfish strains would not be feasible for the private industry.

- Panfish genetic strains are currently not offered by the DNR and more work needs to be done to develop options for private entities to obtain various strains. The DNR will

not require stocking of certain genetic strains if there is not a succinct process in place for hatcheries to acquire them.

This new policy will hurt private fish farms financially because they don't need more strains.

- Strains are available to all fish farms large and small.

Can seepage lakes without natural reproduction be exempt from this policy?

- Our current guidance is that all waterbodies, including seepage lakes, need to follow the GMU boundaries. Managing stocking within GMUs minimizes the risk of non-native genetics being transferred into a wild population. In addition, many seepage lakes may occasionally have a hydrologic connection to other waterbodies.

Describe the process for private egg collection or allowing fish farms to trap wild fish.

- DNR is in the initial stages of discussing a variety of options to allow private fish farmers to obtain various strains of fish. Wild fish transfers and egg takes are options that will be discussed. The potential positive and negative impacts will be thoroughly assessed prior to potentially pursuing these initiatives.

How does the bidding process work?

- The process to acquire appropriate fish or gametes includes a request for bid (RFB) for the "Sale of Surplus Walleye and Muskellunge Fry" which is posted on the DOA eSupplier website in February. There are several requirements for bidding (i.e., bids must be at least 8 oz, bidders must have a type 3 fish farm license, fish must be stocked into waters of WI). Wisconsin's eSupplier website is accessible here https://esupplier.wi.gov/psp/esupplier/SUPPLIER/ERP/h/?tab=WI_BIDDER and includes FAQs on "how do I use the bidder home page", "how do I update my bidder information", "how do I register as a bidder", etc.

What is the cost of walleye fry and what is the quantity per oz?

- The cost of recent successful bids have been between \$15-\$20/oz. There are approximately 4,000 fry per oz.

You need to “Guarantee” availability of eggs/fry of specific strains to the private hatcheries.

- DNR has a good track record of supplying surplus fry. Only one bid has not been fulfilled since 2019 and that was due to disease outbreak. Barring any natural disasters or unforeseen circumstances, we plan to make surplus fry available.

The Wisconsin DNR needs to be more transparent with their Genetic Management Plan and need consistent implementation.

- Our genetic management plan has been available since 2022 and presented to the public and other interest groups numerous times.

Fish farms need time to implement this new policy.

- Implementation of the genetics management plan has been an ongoing conversation with private fish farmers since 2016. The Wisconsin DNR has made the appropriate strains of walleye and muskellunge available through the bidding process, as described in the presentation since 2019.

Other state agencies do not seem to care about genetic strains as walleye and musky from some Wisconsin fish farms are stocked all over the Midwest. This new policy prohibits these fish from being stocked in Wisconsin.

- Genetics in fisheries has become a more popular topic in recent years due to advancements in genetic analysis and lower-cost genetic testing as well as increased understanding of the benefits (e.g., maximize natural reproduction, survival, and growth) of using the appropriate genetics.
- Also, other states may not have native populations of muskellunge or other species, which may reduce concerns with genetics elsewhere.

We have been allowed to stock from neighboring GMUs. Will this still be the case?

- We plan to continue to operate under our current genetics guidance through 2026. So, if you were allowed to stock fish from a neighboring GMU in the past you may be able to in 2026. A table of acceptable walleye and muskellunge strains in 2026 is included in the presentation. However, in general, beginning in 2027, stocking walleye and muskellunge from the neighboring GMU will only be accepted if a GMU strain is not available. An updated table is also in the presentation.

It seems the DNR hatcheries have a hard time keeping up with current needs. How does the DNR plan to have enough capacity for each strain? We are aware of DNR budget issues. So how do you keep up with stocking?

- DNR fish stockings are prioritized based on a variety of factors. Waterbodies that do not have adequate survival of stocked fish are unlikely to be stocked by DNR. We strive to direct our resources and stocked products to the most appropriate places.

People aren't interested in fishing for a strain. They are more interested in catch trophy fish, especially muskellunge. Limiting where you can find a true trophy will increase pressure on certain lakes or cause people to go out of state which will potentially impact our tourism.

- Stocking the correct strain allows the stockings to have the highest probability at survival and future natural reproduction. Therefore, stocking the local strain would maximize the return on investment and benefit the long-term viability of the population.

Is DNR stocking Great Lakes spotted muskellunge into inland lakes that drain to the Mississippi River?

- We do not stock Great Lakes spotted muskellunge in the upper Mississippi River basin. However, there have been limited cases where Great Lakes spotted muskellunge were stocked into Wisconsin River basin (which is connected to the lower Mississippi River basin), but these stockings only occur in what we refer to as “universal receptor waters” which are waterbodies that were outside the native

range of muskellunge and would not interfere with other native or naturally reproducing muskellunge populations. Refer to map in the presentation.

We have been stocking Upper Wisconsin strain walleye for the past 20 years in a lake that is in the far northeast of the Chippewa GMU. Can the current strain of walleye in the lake now be Upper Wisconsin strain.

- This lake would now be stocked with Chippewa strain walleye.

This plan shouldn't move forward until there is opportunity for clubs/associations to acquire the appropriate strains for stocking. We know the DNR can't stock everywhere, and these private groups are ready to augment DNR stocking efforts, but now we can't. Until fish farms can produce the strains, we should not move forward.

- Fish farmers have been able to obtain the appropriate strains of walleye and muskellunge since 2019 through the DNR bid process.

Why do this at a time when stocking is already being slashed because of rising hatchery costs and stagnant license cost? Clubs raise money to help out and bolster where state stocking is lacking, now you are preventing them from purchasing fish from hatcheries.

- Clubs would still be able to stock privately raised fish if they are of the correct strain. Using the correct strain should greatly improve the stocking survival and cost-effectiveness of the stocking.

Since non-native stains have been stocked for many years, how do we get back to native ones? Won't most fish likely already be mixed strains? Can you even get back to 100% native stains?

- Fortunately, even in waterbodies that contain mostly fish of mixed ancestry (i.e. hybrids between native and non-native strains), it is possible for the amount of native ancestry to increase over time. Non-native strains and their hybrids often show poor ability to survive and reproduce compared to native strains. Because of this difference in reproductive success, as long as non-native fish are no longer

stocked, the percentage of non-native fish in the waterbody should decline naturally over time. There is evidence of this pattern occurring in Midwestern brook trout.

Is habitat improvement a more cost-effective strategy to a healthy native population rather than stocking a waterbody with "trophy" fish species?

- Yes, in some cases habitat improvement is a more cost-effective long-term strategy to maintain sustainable fisheries resources.