



April 3rd, 2018

Hello Steelhead Genetics Project Anglers!

The spring steelhead fishing season is right around the corner! The genetics project has progressed nicely and the number of samples you all provided over the past two years has far surpassed our expectations. To all who participated and provided samples in 2016 and 2017, **THANK YOU!** If you would like to see the genetics information from each individual fish you caught, or anything else, please let me know.

What we learned (so far): We have completed Objective 1 of the Steelhead Genetics Project: *Determine if hatchery-raised Kamloops Rainbow Trout are hybridizing with naturalized (wild) Steelhead in Lake Superior.* Extensive age-0 steelhead sampling (DNR surveys) and two years of adult sampling (both DNR and anglers) have verified that Kamloops descendants are out there and widespread. Exact prevalence of Kamloops and hybrids among Minnesota populations has some uncertainty due to assignment power and sampling effects (especially for juvenile fish), however we have decided that more defined estimates of hybridization are not needed for management decisions. Results from 2016 and 2017 were recently published in the Lake Superior Steelhead Association's 2018 Lake Superior Angler magazine and the Minnesota Steelheader Steelhead Genetics Project website. If you want to discuss this more, don't hesitate to contact me.

The Steelhead Genetics Project will continue in 2018! Why continue in 2018? Further adult steelhead sampling would help address possible population genetic differences along the shore and help to complete Objective 3: *Characterize the genetic variation and structure of wild Rainbow Trout among North Shore Rivers using microsatellite genetic markers (are populations 'unique?').* Genetic variation is the 'tool' that fish and other organisms need to sustain healthy populations, and genetic structure is a holistic approach to evaluate how genetic variation is partitioned among populations. Spawning adult samples are key for assessing genetic structure because we are looking for reproductive isolation. If Minnesota steelhead have strong homing tendencies, then the populations in each stream may develop distinct genetic profiles. Ultimately, isolated populations can evolve distinct traits that help them adapt to the local stream conditions. High natural straying rates, or stocking, could mix genes and prevent fine-scale local adaptation. Population differences along the North Shore, if they exist, are likely to be subtle. Differences detected from a single year's sampling may be misleading because of sampling variation. Sampling multiple years allows us to assess consistency – are temporal samples from the same stream more alike than comparisons among streams? Previous adult samples from MNDNR have been restricted to the French and Knife Rivers, with adult traps, but anglers can sample more streams throughout the shore. In addition to helping assess population genetic structure, further angler samples would provide more information on recapture rates by anglers within the same season.

If you are interested in participating in 2018, please read below:

ALL ANGLERS WILL NEED A NEW SAMPLING PERMIT PRIOR TO COLLECTING SCALE SAMPLES. Permits will be revised for 2018. The same rule as the previous two years apply - please always have the 2018 permit with you while fishing. If you want to participate, please let me know as soon as possible (my contact information is shown below) so I can email or mail you a new permit.

WE WILL USE THE SAME SAMPLING PROCEDURES, ENVELOPES AND MATERIALS AS PREVIOUS YEARS. The sampling procedure and data needed are exactly the same as 2016 and 2017. If you have scale envelopes from previous years, you can use them. However, please make sure your individual angler ID is written in the top right corner of each envelope. If you need more envelopes, please let me know as soon as possible.

COLLECT SCALES FROM ADULT STEELHEAD CAUGHT AT ANY NORTH SHORE RIVER –or- ANY LAKE SUPERIOR TRIBUTARY IN THE NEMADJI RIVER WATERSHED (CARLTON COUNTY). We only want scales from adult steelhead, NO KAMLOOPS. Steelhead 14 inches or longer are probably adults, juvenile steelhead are typically less than 14 inches.

PLEASE REVISIT THE MINNESOTA STEELHEADERS STEELHEAD GENETICS PROJECT SITE TO REFRESH YOUR MEMORY ON HOW TO COLLECT THE SAMPLES, ETC. Click Here: <http://www.minnesotasteelheader.com/SGP.html>

If you want to participate, please let me know as soon as possible. Your efforts will bring more exciting genetics results to share over the next few years and will greatly improve our understanding of steelhead populations in Minnesota and Lake Superior. As always, don't hesitate to call or email me if you have questions, need envelopes and a permit, or just want to talk steelhead! Please continue to follow MNDNR and our SGP project partners for updates and other information about the project.

Good luck this spring and I hope you hear from you all soon!

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