HF 2764 Testimony Supplement and References

Tyler Winter 2/1/2022

100 Talmadge Way Fridley, MN 55432

651-260-3474 TylerJWinter@gmail.com

Minnesota is home to 142 species of native fish.¹ However, 26 species are designated as "rough fish". The "rough fish" are generally species large enough to be caught with conventional angling gear, but not commonly utilized in American cuisine. (Fig 1) The term "rough fish" is defined by state statute (Minn. Stat. 97A.015, Subd. 43) but has no biological justification².

The current regulations for the 26 species of native rough fish are largely unchanged since 1909 (Minnesota Statutes, 1909, Chapter 545, § 2). However, some species have been removed from the rough fish definition, including yellow perch (*Perca flavescens*) and turtles. Most recently, burbot (*Lota lota*), lake whitefish (*Coregonus clupeaformis*) and lake herring (*C. artedi*) were recategorized.

Early management of native non-game fish was preoccupied with the presumed impacts of so called "rough fish" on game fish. However, those impacts have not been documented. ^{2,3} In fact, experimental rough fish removals conducted by the Minnesota DNR demonstrated the value of native rough fish to game fish.³ Native rough fish provide many ecosystem services.² They are prey for game fish and birds of prey. They are host to imperiled freshwater mussels⁴. They can enhance the productivity of streams⁵. And, they compete with and prey on invasive species⁶. Furthermore, many species of rough fish are threatened in all or part of their range⁷. Seven species of Minnesota's rough fish are listed as threatened by another state.

Research shows that recreational harvest has a negative impact on fish populations. ^{8, 9, 10, 11, 12} Possession limits are traditionally used to regulate recreational harvest on the assumption that harvest is density dependent.¹³ However, recreational harvest is not density dependent because fishing effort is directed to areas where fish concentrate.¹¹ Active harvest methods which target schools of spawning fish are 200 times more efficient than angling. ¹⁴ This efficiency allows recreational fishers to maintain high catch rates even as populations decline. Highly efficient density independent fisheries require careful management to prevent stock collapse. Researchers are raising concern^{2, 15} and proposing regulatory reforms to address these issues.¹⁶

A growing public awareness of our native rough fish^{17, 18} is creating an opportunity for regulatory reform. The Minnesota Division of the Izaak Walton League of America just passed a resolution calling for reforms to our native rough fish regulations. Adopting new regulations, which balance utilization and protection, will create responsible and sustainable fisheries.¹⁹

I would like to propose a friendly amendment. Because the DNR is currently in process of creating possession limits for gar, the report must also include any rules in process or adopted.

HF 2764 is the first step in rough fish regulatory reform, and it should be supported by all Minnesotans - especially those of us who pursue native, so called, rough fish.



Fig 1. A shorthead redhorse.

References:

- 1. Hatch, J. T. "Minnesota fishes: just how many species are there anyway." *American Currents* 40.2 (2015): 10-21.
- Rypel, A.L., Saffarinia, P., Vaughn, C.C., Nesper, L., O'Reilly, K., Parisek, C.A., Miller, M.L., Moyle, P.B., Fangue, N.A., Bell-Tilcock, M., Ayers, D. and David, S.R. (2021), Goodbye to "Rough Fish": Paradigm Shift in the Conservation of Native Fishes. Fisheries, 46: 605-616. <u>https://doi.org/10.1002/fsh.10660</u>
- 3. Holey, M., Hollender, B., Imhof, M., Jesien, R., Konopacky, R., Toneys, M., & Coble, D. (1979). Never give a sucker an even break. *Fisheries*, *4*(1), 2-6.
- 4. Sietman, B., Davis, M., Hove, M., Pletta, M., Wagner, T., Marr, S., ... & Sampson, A. (2017). Cumberlandia monodonta–Host enigma resolved. *Ellipsaria*, *19*, 18-20
- 5. Childress, Evan S., J. David Allan, and Peter B. McIntyre. "Nutrient subsidies from iteroparous fish migrations can enhance stream productivity." *Ecosystems* 17.3 (2014): 522-534.

- Bartsch, M. R., Bartsch, L. A., & Gutreuter, S. (2005). Strong effects of predation by fishes on an invasive macroinvertebrate in a large floodplain river. Journal of the North American Benthological Society, 24(1), 168-177.
- Cooke, Steven J., et al. "Threats, conservation strategies, and prognosis for suckers (Catostomidae) in North America: insights from regional case studies of a diverse family of nongame fishes." *Biological Conservation* 121.3 (2005): 317-331.
- 8. Post, John R., et al. "Canada's recreational fisheries: the invisible collapse?." *Fisheries* 27.1 (2002): 6-17.
- 9. Embke, Holly S., et al. "Production dynamics reveal hidden overharvest of inland recreational fisheries." *Proceedings of the National Academy of Sciences* 116.49 (2019): 24676-24681.
- Post, J. R. "Resilient recreational fisheries or prone to collapse? A decade of research on the science and management of recreational fisheries." *Fisheries Management and Ecology* 20.2-3 (2013): 99-110.
- 11. Dassow, Colin J., et al. "Experimental demonstration of catch hyperstability from habitat aggregation, not effort sorting, in a recreational fishery." *Canadian Journal of Fisheries and Aquatic Sciences* 77.4 (2020): 762-769.
- 12. Hunt, Len M., et al. "The effects of regional angling effort, angler behavior, and harvesting efficiency on landscape patterns of overfishing." *Ecological Applications* 21.7 (2011): 2555-2575.
- 13. Cook, Mark F., et al. "Creel limits in Minnesota: a proposal for change." *Fisheries* 26.5 (2001): 19-26.
- 14. Hansen, Michael J., T. Douglas Beard Jr, and Steven W. Hewett. "Effect of measurement error on tests of density dependence of catchability for walleyes in northern Wisconsin angling and spearing fisheries." *North American Journal of Fisheries Management* 25.3 (2005): 1010-1015.
- 15. Scarnecchia, Dennis L., and Jason D. Schooley. "Bowfishing in the United States: History, status, ecological impact, and a need for management." *Transactions of the Kansas Academy of Science* 123.3-4 (2020): 285-338.
- Scarnecchia, Dennis L., et al. "The Sport Fish Restoration Program as a Funding Source to Manage and Monitor Bowfishing and Monitor Inland Commercial Fisheries." *Fisheries* 46.12 (2021): 595-604.
- 17. Das Boat Bigmouth Buffalo Season 2 Episode 5 <u>https://www.themeateater.com/watch/6199187955001/s2-e05-big-mouth-buffalo-with-ryan-</u> <u>callaghan-and-miles-nolte</u>
- 18. B-Side Fishing Redhorse Season 2 Episode 3 <u>https://www.themeateater.com/watch/series/b-side-fishing?playlistVideoId=6282285427001</u>
- 19. Cooke, Steven J., et al. "Searching for responsible and sustainable recreational fisheries in the Anthropocene." *Journal of fish biology* 94.6 (2019): 845-856.