



June 27, 2019

Joanna Griffin
Wisconsin Department of Natural Resources
101 S. Webster St
Madison, WI 53703

RE: Comment letter for Wisconsin Department of Natural Resources (WDNR) Draft Inland Trout Management Plan 2020-2029.

Dear Joanna,

This letter provides comments from Wisconsin's Green Fire (WGF) on the WDNR's proposed Inland Trout Management Plan for 2020-2029 available at <https://dnr.wi.gov/topic/fishing/trout/inlandtroutmanagementplan.html>.

Wisconsin's Green Fire is a nongovernmental organization dedicated to supporting Wisconsin's conservation legacy by promoting science-based management of natural resources. We are writing as co-chairs of WGF's Fisheries Work Group. Our Fisheries Work Group is comprised of current and former natural resources and fisheries professionals and avid anglers and conservationists, many of whom have provided comments, including Fisheries Work Group co-chair, Dave Vetrano. At the end of this letter we have also provided a listing of minor editorial suggestions and comments.

Plan Strengths

Overall, we think the draft is a good plan, long overdue, that will help greatly in guiding the WDNR's inland trout program going forward. We applaud the thorough and detailed summary of the state's inland trout resources and the fisheries management policies and practices that have been used to conserve them. This summary alone will make the plan highly valuable as a reference document inside and outside of the WDNR. The goals, objectives, and strategies proposed in the plan are all appropriate and important and will help keep Wisconsin trout management moving in the right direction. The plan sets broad direction but is not overly prescriptive about particular management actions, which we believe is appropriate and will give fish managers important flexibility in their work around the state.

Plan Deficiencies

However, we also state that as written this plan has some important deficiencies and some areas warrant revision and changes in emphasis to better guide future management directions. The plan is very much a "status quo" document. Most of the strategies describe practices already in place, and few if any truly new initiatives are proposed. This is perhaps understandable given the current excellent status of the trout fisheries of the state. **However, the future is ominous for Wisconsin's inland trout, and without new management innovations and applications, we fear the resource will begin a steep**

and inexorable decline within the next 10-20 years. This plan does not adequately address those threats.

Climate Change

Climate change is an existential threat to the inland trout resource and trout fishing in Wisconsin. This is clearly illustrated by the maps on pages 31-32 of the draft plan (Fig. 7, 8) and the text on pages 33-35, which project an approximately 67% decline for brook trout and a 33% decline for brown trout occurrence over the next 30-40 years owing to rising air temperatures. Despite the catastrophic nature of these predictions, the plan lacks both a coherent and clearly articulated framework for addressing climate change impacts, and a sense of urgency in developing adaptation strategies to reduce trout losses.

Climate change is discussed in the plan, and there are strategies proposed that explicitly or implicitly deal with the issue (e.g., Brook Trout Reserves), but they are not given any particular prominence or organized in such a way to provide a unified and synchronized approach to the climate change problem. Because of the magnitude of projected climate warming, some decline in the trout resource is inevitable regardless of what the WDNR trout program does, but many population losses might be prevented or at least reduced with the appropriate application of both existing and new approaches to trout management. **Key strategies to help address climate change impacts on our trout fishery need to be highlighted and put front and center in future management strategies.**

Recommendations

- We recommend that **adaptation to reduce climate change losses** becomes the first Objective under Goal One (“Protect, enhance, and restore sustainable cold-water aquatic habitats and ecosystems”).

An explicit objective regarding climate change will highlight the seriousness of the climate change peril and focus attention on strategies that could be used to address the crisis. **The WDNR has never faced a threat to its trout resources as dire as climate change, and many of the strategies will necessarily require modifications to existing practices and perhaps even completely new approaches.** Research, innovation, and adaptive management will be essential.

- We recommend a focus on **protecting and improving groundwater recharge**, and **increasing stream shading** as the two primary strategies to maintain stream temperatures suitable for trout in the face of climate change.

Groundwater management would take place largely away from the stream channel, and would include the following: protecting and restoring existing springs and wetlands, limiting groundwater pumping - especially high-capacity wells, promoting natural vegetative cover in the watershed, improving agricultural and other land-use practices and minimizing impervious surfaces to enhance groundwater recharge, and reducing and directing runoff from precipitation and snow melt. This would require a watershed perspective and a close collaboration with other WDNR programs and governmental and private entities that deal with water and land use.

Increased stream shading will necessarily focus on the riparian corridor and may require a re-examination of some existing instream and stream bank habitat practices. In certain cases, protection of cold stream temperatures via shading may need to take priority over ease of access and “fishability” and may also restrict or even preclude certain bank and channel habitat modifications that require removal of woody vegetation or use of heavy machinery.

- Given the magnitude of the threat, **we recommend that climate change adaptation permeate all of the goals, objectives, and strategies in the plan.**

For example, improving stream connectivity (Goal 1, Objective 1, Strategy 5) can be framed explicitly in terms of providing trout a way to escape climate change-induced extreme condition. Purchases of properties and easements (Goal 1, Objective 2, Strategy 2) can be focused on building resilience to climate change by protecting important groundwater recharge areas or encouraging land management to improve stream shading. Optimizing the use of hatchery trout (Goal 2, Objective 3, Strategy 2) could include developing and stocking strains with greater tolerance to the warmer stream temperatures that will result from warmer air temperatures. Research (Goal 3, Objective 2, Strategies 1 and 2) could be steered towards projects designed to develop and evaluate innovative approaches to adapt to climate change.

Demographic Trends among Trout Anglers

We are also concerned about the increasing age and declining numbers of the trout fishing public. Although this threat may not be of the same magnitude as the threat from climate change, it is still a critical trend with direct impacts on both fishery management and available revenues.

Fishing license and trout stamp revenues coupled with federal excise taxes on purchases of fishing and boating gear provide nearly all of the funding for the WDNR trout program. With fewer trout anglers, there will be less money to manage trout fisheries, and there will also be fewer voices to advocate for the protection and restoration of trout habitats and populations. These participation and funding issues are discussed in the plan, and some strategies are proposed, but we feel that the plan lacks sufficient emphasis and urgency regarding angler recruitment, retention, and re-engagement (R3).

As you know, the **WDNR R3 program** is specifically designated to address those issues, however the funding and staffing resources allocated to this broad-based program are not sufficient to address the scope of this issue in trout fishing. We believe that the trout program must take a more proactive and engaged role in ensuring a sufficient core of trout anglers (and trout funding) going forward.

Strategies such as developing outreach plans or promoting Wisconsin’s trout fisheries (Goal 4, Objective 2) should be moved from “Need More Resources” to “Core” strategies, even if this requires reducing efforts to tackle some of the other strategies in the plan. Close coordination with the R3 program is essential, and some of the resources applied to the two research strategies (Goal 3, Objective 2) should focus on exploring ways to maintain trout angler numbers in Wisconsin.

Summary

The issues we have addressed here are significant enough to warrant revision and some restructuring of this plan. Despite these issues, we think the trout plan represents a major step forward for the WDNR trout program and for the management of the inland trout resource in the state. We thank you for the opportunity to comment, and we are happy to discuss our comments with you in detail. We've also attached a list of editorial comments and suggestions to improve the content and clarity of the plan.

Sincerely,

A handwritten signature in black ink, appearing to read "John Lyons". The signature is fluid and cursive, with the first name "John" being more prominent than the last name "Lyons".

John Lyons
Co-Chair, Fisheries Work Group, Wisconsin's Green Fire
Johnlyons1957@gmail.com

Wisconsin's Green Fire minor editorial suggestions for the WDNR Trout Management Plan:

P. 11: We found the text discussing strategies classified as “to the extent feasible” a little confusing. Are all of these strategies being pursued at this time, or only some?

P. 12, 2nd column, 1st sentence: drop “typically in November”, which is confusing when you say two sentences later “begins in October and ends in December”

P. 15: for winter habitat, it's important to mention that in many systems, trout will move downstream, sometimes for many miles, to overwinter in non-trout waters (e.g., see Meyers et al. 1992 NAJFM 12:433-441). This emphasizes the need for connectivity among habitats and a watershed approach in managing trout streams.

P. 15: In discussing requirements for good trout habitat, the importance of high dissolved oxygen concentrations should also be mentioned. Trout are relatively intolerant of low DO. And this is especially true for eggs and larvae. Wisconsin has stricter dissolved oxygen water quality standards for trout streams than for other waters. You mention the importance of high DO for lake trout on p. 18, but it's equally important for stream trout.

P. 31-32: formatting – the climate change maps (Fig. 7, 8) on these pages should be moved and inserted within the relevant text on page 33-35. As currently positioned, the maps are out of place in relation to the content of the text and will confuse the reader. Similarly, the VHS map on page 35 should be moved to the relevant text on page 37.

P. 32: The mining of sand for fracking and the mining of sand and gravel for construction are very different in scope and have different potential environmental effects and shouldn't be conflated the way they are in this paragraph. The Kanehl et al. 1992 manuscript only pertains to sand and gravel mining for construction. Have a separate paragraph for each topic.

P. 33: The appropriate reference for urbanization impacts on trout is Wang et al. 2003 (TAFS 132: 825-839), not Lyons et al. 2010.

P. 33, 1st Paragraph on climate change: the projected changes in high and low temperatures from climate change will be about 3 F, not 33 F.

P. 35: Another good reference documenting the importance of stream shading for maintaining cold water temperatures is Gaffield, S. J., K. W. Potter, and L. Wang. 2005. Predicting the summer temperature of small streams in southwestern Wisconsin. *Journal of the American Water Resources Association* 41:25-36.

P. 37: lower-left paragraph: largemouth bass is a warmwater not a coolwater species

P. 38, 2nd paragraph: the national statistics cited and used to conclude that WI angler numbers will increase through 2060 are far more optimistic than specific projections for WI, which predict decreases in angler numbers by 2030 (Burkett, E. M., and R. L. Winkler. 2017. *Recreational fishing in Wisconsin*:

Using an age-period-cohort approach to understanding fishing participation. Publication of Michigan Technological University, Houghton, MI. This paragraph should be reworked to include the Wisconsin-specific information.

P. 47 A2.1.B.2 – need to define what a “Brook Trout Reserve” is here, or at least refer explicitly to its definition in the Glossary on p. 102.

P. 54 A3.1 – need to explain what “rotational” data are, probably by referring to the sampling section on page 77.

P. 59 A3.3 C.1 – need to clarify what “Incorporate NR1.02” means, perhaps by referring to the legal section on pages 100-101.

P. 59, Strategy 3.4.B “Provide adequate resources to habitat crews and fish managers”. Perhaps rephrase this. Because it’s under a strategy that is classified as “To the Extent Feasible”, it implies that you sometimes (or often?) provide *inadequate* resources. Is that what you’re trying to say? It seems like providing adequate resources would be essential or otherwise, why employ the strategy?

P. 92: Funding: isn’t the trout program also funded by the SFR excise tax? All the trout research work (staff and expenses) in the WDNR Office of Applied Sciences is SFR funded, and we thought a lot of the contract research at UWSP was too. Does no SFR money go to the FM trout program?