

February 12, 2026

Review of the draft Environmental Assessment (EA) Seasonal Sea Lamprey Barrier on the Sucker River in Alger County, Michigan.

Jeff Slade, Free Soil, MI

Personal and Professional Background

1981-1989 – Marquette Biological Station, Marquette, MI - Fish Technician – sea lamprey control - lampricide control, adult assessment, non-target assessment.

1989-1991 – Pendills Creek National Fish Hatchery, Brimley, MI - Fish Biologist – fish culture - lake trout.

1991-1995 – Ashland Fish and Wildlife Conservation Office, Ashland, WI - Fish Biologist – native species restoration, invasive species management, technical assistance to tribes and other Federal Agencies.

1995-2000 – Ludington Biological Station, Ludington, MI – Fish Biologist – sea lamprey control - larval assessment team leader.

2000-2001 – Great Lakes Fishery Commission, Ann Arbor, MI – Sea Lamprey Program Specialist

2001-2014 – Ludington Biological Station, Ludington MI – Fish Biologist/Fish and Wildlife Administrator – sea lamprey control - larval assessment team leader/Station Supervisor.

2014-present – retired

During the 1980's, while working for the Sea Lamprey Control Program (SLCP), I conducted lampricide control activities, stream habitat mapping and daily observation of spawning phase sea lampreys on the Sucker River. In addition to my professional background, I've been fishing the Sucker River since the early 1980's. From a fisherman's perspective, I have a fairly solid understanding of the fisheries it supports.

Introduction

I approached the review of the EA with the understanding that its primary purpose is to provide an objective, scientific, well balanced and impartial evaluation of the potential environmental impacts of the proposed action, with the overall goal of informing decision makers and the public about the merits and potential environmental impacts of the proposed project. In addition, the EA should clearly demonstrate the assertion that the proposed action is cost effective.

Prior to conducting my review I reviewed journal articles that discussed the merits and potential pitfalls of EA's. Several articles indicate that bias in EA's and Environmental Impact Statements is widespread. This bias often arises because of funding sources, lack of a systematic review and data interpretation that often leads to a lack of scientific integrity. EA's often suffer from pro-project bias, where consultants or proponents skew data, narrow the scope, or downplay risks to favor the alternative action or outcome they desire. The articles indicate that an EA must present a neutral, evidence-based analysis of the positive and negative impacts. Therefore, I based my review on three primary principles: 1) information in the EA should objective (i.e. lacking

agency bias), 2) statements in the document should be supported by science (i.e. referenced) and 3) information should be balanced and impartial.

I am a strong advocate of the SLCP in the Great Lakes and was proud to spend much of my career working with this program. My comments are meant to be constructive and to provide a straight forward, non-bias review. Public support is critical to the success of the SLCP. Constructing a barrier in a somewhat remote free flowing stream needs to be well justified, scrutinized prior to implementation and supported by science. Otherwise, this action may result in negative public response and reduced support and trust for the SLCP.

I focused my review of the draft EA to the information for which I have personal or professional experience (i.e. fisheries management, aquatic species, sea lamprey control, anecdotal information from fishing the river, etc). For reference, the alternative actions in the EA are A (no action) or B (construction and operation of a sea lamprey in-stream seasonal barrier on the Sucker River near fishing access location near Whitewash Road).

Summary

Metrics Used To Evaluate Proposed Action

The EA's evaluation of the potential impacts of the proposed action is poorly developed and lacks supporting information. The EA uses two primary metrics to evaluate the potential impacts of a seasonal barrier in the Sucker River: 1) improving stream connectivity and ecosystem health and 2) use of lampricides and the potential impacts they have to aquatic species.

Improving stream connectivity and ecosystem health

The repeated assertion that the proposed seasonal barrier will “*Improve stream connectivity and ecosystem health*” is both misleading and inaccurate. Since phase 1 of this project is complete (culvert replacement at H58), this statement has no validity and should be removed. By definition, any man made barrier installed in the Sucker River will not increase stream connectivity. Under Alternative A (status quo), there are no man made barriers to fish migration so the Sucker River is already fully “connected” to Lake Superior. If the authors have science based evidence that eliminating lampricide treatments upstream of the barrier would improve ecosystem health then a reference should be provided. In fact, there is strong evidence that lampricide treatments have improved ecosystem health (i.e. recovery of lake trout in Lake Superior, etc, etc). The repeated use of this metric throughout the document introduces what I would refer to as “feel good” bias that favors Alternative B.

Use of lampricides and the potential impacts they have to aquatic species

The EA begins by acknowledging that lampricides are the most widely used method of sea lamprey control in the Great Lakes, used to selectively kill sea lamprey larvae. According the Great Lakes Fishery Commission (Fact Sheet 5 – 2014), “*TFM and Bayluscide are registered by the U.S. Environmental Protection Agency Both agencies have extensively reviewed human health and environmental safety data for lampricides and have concluded that the concentrations of TFM and Bayluscide used to control sea lampreys pose no unreasonable risk to the general population or the environment.*” In contrast, many statements in the EA point to the potential

negative impacts of lampricides, most of which are not referenced. The potential negative impacts to native species is used repeatedly to support Alternative B. While this potential exists, even though lampricides have been used to control sea lamprey for more than 60 years, the EA provides no science based evidence that this has actually occurred. To the contrary, there are numerous peer reviewed publications that provide examples of how lampricide treatments have improved ecosystem health by reducing sea lamprey induced mortality on native fishes in the Great Lakes. If there is evidence that lampricide treatments have reduced ecosystem health then the authors should include them. However, using references that lack the appropriate context, such as the one on page 36, “*TFM at high concentrations has shown adverse effects on certain fish species, particularly trout, by disrupting ATP-related energy processes and reducing muscle and liver glycogen*” (Wilkie et al. 2021) is borderline reckless and demonstrates bias favoring Alternative B. I have worked with and collaborated with three of the four authors of this publication and doubt any of them would support this statement without providing further context. Lacking context, this statement and reference should be removed. Here are two direct quotes copied from this same publication: page 11 “*In trout exposed to routine, sub-lethal concentrations of TFM, few adverse effects have been noted, other than transient increases in plasma cortisol after treatment (Birceanu and Wilkie, 2018). At higher concentrations of TFM, decreases in muscle and liver glycogen have been observed (Birceanu et al., 2014). It is unlikely that such disturbances would have any long-term impact on the animal’s fitness, however, because liver glycogen fluctuates markedly in fishes with changes in food availability, food consumption and other stressors (Vijayan and Moon, 1992; Milligan, 2003; Miller et al., 2009).*” and page 14 “*When used appropriately, the adverse effects of TFM and niclosamide on aquatic ecosystems are minimal.*” Given the success of the SLCP in the Great Lakes, using this metric as justification for a barrier is a slippery slope, particularly when lampricides are the backbone of a highly successful program that has aided in the recovery of many native, naturalized and introduced species of fish that provide world class fisheries and support local economies. Once again, this sends a mixed message to the public and may lead to a lack of support for the primary control method, lampricides, particularly if future lampricide treatments are necessary upstream of the barrier.

This paragraph on pages 47 and 48 of the EA evaluates the impacts of Alternative A (no barrier) and is another example of what I would consider, pro-project bias and twisting of facts: “*As a result, sea lamprey in the Sucker River would continue to spawn and reproduce leading to increased parasitic sea lamprey recruitment to Lake Superior.....Additionally, long-term use of lampricides may lead to a resistance to lampricides in sea lamprey from physiological or behavioral changes over multiple generations, resulting in further adverse impacts to invasive species management long-term.*” First and foremost, there are no scientific references in this paragraph. If the proposed barrier works, Alternative B may result in less recruitment, but saying that Alternative A will “*...lead to increased parasitic sea lamprey recruitment.*” is just not true. Under Alternative A, recruitment of sea lampreys from the Sucker River will stay the same as it has been, granted, with great variability, but there is absolutely no evidence that it would increase. In addition, Great Lakes tributaries have been treated with lampricides for over 60 years and to my knowledge there is no evidence that sea lampreys have developed any resistance to lampricides. If there is evidence, then it should be provided and referenced.

Choosing to highlight the potential negative effects of lampricides to support Alternative B, while ignoring the positive affects of lampricide applications, demonstrates impartiality, lacks the balance needed to evaluate the proposed action and shows a clear bias that favors Alternative B.

Cost Effectiveness, Barrier Design and Period of Barrier Operation

Cost Effectiveness

The EA is based on the premise that the proposed barrier will be cost effective and lower control costs in the Sucker River (pages 3, 17, 36 and 48) and suggests that the proposed action would free up resources for control actions in other locations. On page 1, the EA states “*On average, for every \$1 million invested by GLFC in sea lamprey barriers, an estimated \$5.1 million in lampricide treatment costs and \$31.1 million in Great Lakes fish value are saved over the barrier’s 50-year lifespan (GLFC 2025).*” Although these average projected cost savings are impressive, they provide absolutely no information pertinent to the proposed action. In fact, nowhere in the EA are there any projected cost savings for the proposed action on the Sucker River. As we all know, averages can be deceiving and may or may not have a wide variance. The EA is meant to evaluate the environmental impacts of the proposed action. Therefore, when it asserts that the proposed action will be cost effective, it has a responsibility to demonstrate that this assertion has merit.

Under Alternative B, the area downstream of the barrier will likely need to be treated with lampricides and larval assessment surveys will still need to be conducted to evaluate barrier effectiveness. Thus, the cost savings in terms of lampricide (still have to treat for volume) and larval assessment are likely minimal. There may be cost savings due to the reduction in staff days required to treat the upper reaches of the river once every 4 years. However, these may be offset by the staff days required for the annual operation and maintenance of the barrier, trapping of adult sea lampreys, amortized cost of barrier and opening and maintaining the road (road to Whitewash area is not plowed in the winter). In order to better understand what the cost savings might be, the EA needs a transparent estimate of the current annual cost under Alternative A and the expected annual cost under Alternative B. This should be included in the Introduction, perhaps in a table.

Reduction in sea lamprey mortality to host fish in Lake Superior would be the primary positive environmental impact and ultimate cost savings of this proposed action, yet the EA provides no estimates of what these cost savings are expected to be. Estimates of control costs and parasitic lampreys that survive lampricide treatments for the two Alternative Actions should be used to develop a cost/kill metric that could be used to compare the two Alternatives. Similar computations are conducted by the SLCP to select streams for lampricide treatments, which may allow a direct comparison to the current cost/kill of streams that are selected for lampricide treatment. Since seasonal barriers are not always 100% effective, the cost/kill metric for Alternative B should include various barrier effectiveness scenarios, such as: effective every year, effective 3 out of 4 years, etc. The variance of effectiveness on streams with adjustable crest barriers should be used to develop the various scenarios.

Including more detail in the EA regarding the estimated savings, both monetary and in terms of reduced mortality to host fish in Lake Superior, along with a better understanding that the barrier

may not always be effective, would help the public better understand and evaluate the merit, risks and potential environmental impacts of the proposed barrier. Perhaps an analysis like this has already been done. If so it should be included in the EA. If not, it should be completed and the results, along with a brief description of the computations, should be included in tabular form. The public would benefit from seeing the results of this type of analyses and it is required to support the assertion that Alternative B is a cost effective option that will save the SLCP resources that can be applied elsewhere.

Barrier Design

On page 1, the EA states that “*Seasonal barriers (Figure 1-1) have proven especially effective, blocking lampreys during their spawning runs ...*”. This very broad statement is not supported by any scientific reference, to my knowledge is not accurate. This type of statement introduces bias that favors Alternative B. Figure 1-1 is simply a photo of a low head barrier. Throughout the history of the SLCP many seasonal barriers (primarily electric) have been used. However, few of these barriers eliminated the need for future lampricide treatments, which is one of the reasons most of them have been removed. This is well documented in various publications and is evident in SLCP data, even in the three streams referenced in the EA (Albany, Furnace and Greene Creeks).

The EA contains no supporting documentation that an adjustable crest barrier has proven to be effective in blocking sea lamprey on an annual basis. The only statement in the EA regarding the proven effectiveness of this technology is on page 1: “*Successful projects on streams like Albany, Furnace and Greene Creeks have nearly eliminated the need for chemical treatments, improving stream connectivity and ecosystem health.*” The phrase “*nearly eliminated*” suggests that these barriers have not been 100% effective, yet the variance is not quantified. According to SLCP data, only Albany Creek has a similarly designed adjustable crest barrier. Barriers in the other two streams are removable stop log structures (similar, but not the same). The Albany Creek barrier was constructed in 1985. Following construction of the barrier, until repairs were made in 2003 (18 years later), the entire system was treated six times. The treatment in 1986 was likely to rid lampreys that recruited above the barrier prior to construction in 1985, but the other five treatments clearly demonstrate that this barrier was not working. Since repairs in 2003, with one exception, when the barrier was not deployed early enough in 2020 (presumably due to covid), this barrier has performed well. My point here is that statements like “*successful projects...*” and “*..nearly eliminated..*” don’t really tell the whole story. This demonstrates a lack of transparency and a skewing of data to support Alternative B. I won’t dwell on the results for Greene and Furnace creeks because they do not use the same barrier technology, but based on a cursory review of the treatment history of these creeks, only Greene Creek has completely prevented treatment. Having said all this, stream treatment history records are not the best data to evaluate barrier effectiveness (larval sea lamprey could be found upstream of barrier but stream doesn’t rank for treatment). Therefore, a comprehensive evaluation of larval assessment data would be a more appropriate approach to evaluating barrier effectiveness and would be useful information that could be used to evaluate the merit of Alternative B.

On page 3, the EA makes the assertion that “*This barrier would restrict lamprey access to lower stretches of the river....*”, yet this assertion is not supported by any scientific evidence or data. Is the barrier expected to “*restrict lamprey access*” all the time or “*nearly*” all the time? To

address this question, the EA should provide data that clearly demonstrate the expected probability that this barrier technology will block sea lampreys. The probability and variance of success should be incorporated into any cost benefit analyses used to evaluate the proposed barrier. Lacking an assessment of the risk barrier effectiveness, if the proposed barrier is installed, the public may react negatively if and when SLCP staff have return to treat upstream of it, resulting in lack of trust. Transparency is critical to public support.

Other things to consider when comparing current barriers to the proposed barrier are their location to the mouth and stream discharge or drainage area. The existing barriers in the three streams referenced in the EA are all located very near the mouth. If those barriers are effective, they severely limit their sea lamprey production potential. In contrast, the proposed barrier in the Sucker River is located about 20 miles upstream from the mouth, so even if it is effective, plenty of production potential remains (there's good spawning and larval habitat in the Sucker River downstream of the proposed barrier). In addition, none of the three streams are comparable to the Sucker River in terms of drainage area, water discharge, and high spring discharge (educated guess). Has this barrier technology been demonstrated to work on a larger stream subject to large fluctuations in discharge?

Period of Barrier Operation

One of the risks of operating a seasonal barrier is sea lampreys migrating upstream of the barrier prior to or following barrier operation. The EA suggests that the SLCP will use several criteria to determine the operation period and proposes an operation period of March – June. The EA should demonstrate that the use of these criteria has been successful in estimating sea lamprey run timing and this should be referenced (i.e. where have these metrics been used in the past and how effective have they been). SLCP data indicate that the barriers on Albany, Furnace and Greene creeks, are all operated from March-September, a full 2 or 3 months longer than the period of operation of the proposed barrier. If this is the case, I can't think of any biological reason why the proposed barrier would only be operated through June in the Sucker River. This longer period of operation may change the potential impact to fall spawning fish and the potential environmental impacts the EA is designed to evaluate. Therefore, the discrepancy regarding dates of operation should be addressed and modified in the EA. The public may rightfully feel deceived if they are told March-June and find out the barrier operates from March-September. This oversight could result in negative public opinion of the SLCP.

Potential Impacts to Spring Spawning Fish

For decades, the Sucker River has supported a naturalized, self sustaining population of steelhead that provides quality nearshore and stream fisheries. Steelhead successfully reproduce upstream of the proposed barrier location (personal observations). The amount of recruitment that this portion of the stream contributes to the adult population of steelhead is likely unknown, but could be substantial. The proposed period of barrier would directly overlap with the upstream migration of spring steelhead, yet, oddly enough, this isn't even mentioned in the EA. At a minimum, the proposed barrier must have a jumping pool designed to pass jumping fish. In addition, it should address concerns such as the potential for increased angler harvest and adult steelhead mortality downstream of the barrier where they are likely to "stack" up and how increased angler access to the Whitewash area (historically this road is not plowed in March-

May) may impact harvest. Increased access and harvest may be viewed as a positive for anglers, but could result in a negative impact to this species.

The only fisheries data presented in the EA are species composition data collected at one point in time (August 2014). A more comprehensive understanding of the fish community, both up and downstream of the proposed barrier may allow for a better evaluation of the potential impacts it may have. Anecdotal accounts of a spring spawning run of redhorse and possibly white suckers also exist. Although these are not considered to be valuable sport fishes, they likely have an important contribution to the ecosystem. Comparable and seasonal fisheries assessment data from above and below the proposed barrier location would be better suited to evaluate potential impacts to the aquatic community and should be included if available or collected and included in the EA.

On page 6, the EA states: *“The project supports broader state, federal, and tribal fishery management objectives by: Aligning with conservation priorities identified by the MDNR for Lake Superior”*. However, on page 9 of Michigan DNR’s Lake Superior Fisheries Management Plan 2023-2033 (Fisheries Report 38), one of their objectives is to *“Improve wild steelhead production, where possible, to reduce reliance on stocking.”* and one of the management actions and evaluations designed to achieve this objective is to *“Continue to address habitat degradation issues in tributaries that support natural recruitment, including barrier removals, fish passage, and conservation of spawning substrates.”* As previously stated, the Sucker River has a naturalized, self-sustaining population of wild steelhead that spawn up and down stream of the proposed barrier location. Therefore, the proposed barrier contradicts the conservation priorities identified by the MDNR for Lake Superior. This contradiction should be addressed in the EA and an explanation provided for why MDNR supports the proposed barrier (increasing stream connectivity is not the answer). This contradiction may cause concern to avid steelhead fishers and at a minimum sends a confusing message to the public.

Additional Comments

Section 3.10.2 page 61 – Environmental Consequences - Land Use and Recreation

“Under this alternative, GLFC would not construct and operate a sea lamprey barrier, which would result in moderate, long-term adverse impacts to recreational activities (i.e., fishing) in the region due to continued spawning of sea lamprey upstream.”

These impacts already exist so Alternative A would not lead to these consequences (bias statement – delete it). Alternative B would likely reduce sea lamprey recruitment to Lake Superior, but the EA never quantifies what it would be so it isn’t clear how fishing would be improved.

“Importantly, the barrier would enhance recreational fishing in the Sucker River by improving sea lamprey control.”

The EA provides no evidence that the barrier would enhance recreational fishing in the Sucker River. Provide rationale for statement or delete.

Conclusion

As drafted, the EA fails to provide a neutral, evidence based analysis of the positive and negative impacts of the proposed action. There are many statements in the document that show clear agency bias and are not supported by science (or not referenced). Some of the information presented lacks balance and is impartial. The metrics used to evaluate the proposed action are inappropriate (improve stream connectivity) or are strongly biased in favor of the proposed action (use of lampricides). In addition, the EA provides no information to support that it is a cost effective option for sea lamprey control or that the barrier technology being proposed has been effective at consistently blocking spawning phase sea lampreys. As drafted, the EA requires substantial modification before it can adequately justify and evaluate the potential impacts of the proposed action.