

## Colvin, Mike

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**From:** Kroboth, Patrick <pkroboth@usgs.gov>  
**Sent:** Thursday, August 29, 2019 1:14 PM  
**To:** Hal Schramm; Colvin, Mike; Hann, Dylan; Paul Hartfield  
**Subject:** Fwd: [EXTERNAL] Journal of Applied Ichthyology - Decision on Manuscript ID JAI-2019-0328 [email ref: DL-SW-3-a]  
**Attachments:** JAI-2019-0328 Review.pdf

We got the JAI review back on the pallid sturgeon paper. A little work here with the revisions, but not too bad.

----- Forwarded message -----

From: **Christian Wolter** <[onbehalf@manuscriptcentral.com](mailto:onbehalf@manuscriptcentral.com)>  
Date: Thu, Aug 29, 2019 at 3:02 AM  
Subject: [EXTERNAL] Journal of Applied Ichthyology - Decision on Manuscript ID JAI-2019-0328 [email ref: DL-SW-3-a]  
To: <[pkroboth@usgs.gov](mailto:pkroboth@usgs.gov)>

29-Aug-2019

Dear Mr. Kroboth:

Manuscript ID JAI-2019-0328 entitled "Pallid sturgeon seasonal habitat selection in a large free-flowing river, the lower Mississippi River" which you submitted to Journal of Applied Ichthyology, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended some major revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript by 28-Oct-2019.

To submit your revised manuscript, log into <https://mc.manuscriptcentral.com/jai> and enter your Author Center. You will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision. Please DO NOT upload your revised manuscripts as a new submission.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please ensure you highlight the changes you make to your manuscript within the document by using the track changes mode in MS Word or by using bold or coloured text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center. When submitting your revised manuscript, please ensure you include a point-by-point response to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

**IMPORTANT:** Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to Journal of Applied Ichthyology, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time, we may have to consider your paper as a new submission. If you feel that you will be

unable to submit your revision within the time allowed please contact me to discuss the possibility of extending the revision time.

Once again, thank you for submitting your manuscript to Journal of Applied Ichthyology and I look forward to receiving your revision.

Sincerely,  
Dr. Christian Wolter  
Editor-in-Chief, Journal of Applied Ichthyology  
[wolter@igb-berlin.de](mailto:wolter@igb-berlin.de)

Subject Editor Comments to Author:

Subject Editor

Comments to the Author:

The referees have offered some excellent comments to help improve your manuscript. Remember, the Journal of Applied Ichthyology is an international journal with a wide audience. Your manuscript as written, really narrows the scope of the potential audience to those interested in pallid sturgeon in the Lower Mississippi River. However, the topic of habitat selection of an endangered species in free flowing rivers is of global interest. Please add a paragraph or two about the topic before introducing the species. Additionally, don't write "The pallid sturgeon..." but 'Pallid sturgeon...'.

Your introduction details habitat selection of pallid sturgeon in regulated extensively yet a comparison with free flowing is not listed as an objective for the study. Would you expect differences in habitat selection among regulated and free flowing sections?

As written, tracking was conducted once a month for up to six years. Can you really ascertain habitat selection based on that low frequency of tracking? And 30 m accuracy for a habitat selection study? Habitat can vary quite drastically within 30 m in a river (it also can be quite homogeneous).

What about ontogenetic differences in habitat selection? A relatively large number of fish were track, albeit with relatively low number of tracking occasions. Were there differences noted or observed based on size or life stage?

Were your habitat maps validated?

I agree with the reviewers, your discussion is too long and repetitive. Please focus it to the study and don't repeat the results. A discussion should provide context on how your study has advanced scientific knowledge while addressing the study's limitations.

Specific comments

Provide more detail on your study site (e.g., mean annual flow, width etc.).

Briefly describe your trotline technique (e.g., sets targeted?, baited?) and how you selected fish for transmitters


L95 - provide a reference

L99 - would you expect differences in habitat selection between 'introgressed' and 'pure' pallid sturgeon?

Provide more details on the MCMC (# iterations, burn'in, priors, convergence) 

Why does the results section start with temperature?

Figure 1- This may be discernible to someone familiar with the area or from NA but not necessarily to someone from Europe/Asia

Figure 2 - do not present raw data 

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author  
JAI-2019-0328

I have now reviewed the manuscript JAI-2019-0328. Overall, the manuscript is concerning a topic of interest to the journal readership. I have outlined a few suggestions below for consideration.

More information supporting similarities between two study reaches and the remaining LMR.


Did the majority of fish remain in the study reaches? Just trying to clarify that by the end of the study you had more than 1 or 2 fish in the reach.


A brief explanation of the physical characteristics used to define a pallid would enhance reader understanding without having to go to other literature. Do you feel like the introgression was to a point where calling the individuals pallids would be inappropriate?

How often were decisions made regarding habitat used when at the edge between two habitat types? The 30m accuracy would seemingly create times of uncertainty if an individual would be in a channel or channel border.

When was landsat data collected with respect to when the individual fish was relocated.


How do the characteristics of the habitat types change under different flow conditions? You mention some habitats were not available at low flows, but what about at high flows?

Please expand on what you mean by included as an "offset" in the model 

How were the habitat types incorporated into habitat selection models? Not clear how Figure 6 was generated when the models presented in table 2 do not explicitly state habitat type 

Line 149: P is being used to represent both a probability of use and a proportion. Can you use different symbols to be more clear.

The inclusion of the ANOVA models for depth and current velocity do not add a significant amount of information to the manuscript with respect to what habitat conditions pallids use. Perhaps this section could be rephrased to document and justify (to an extent) differences among the habitat types defined in table 1.

The inclusion of the appendix material regarding model construction into the methods would benefit  manuscript.

The first paragraph of the discussion needs to be incorporated into a different paragraph discussing your results. Or, the information could be included in the introduction as justification for your study.

Suggest mapping would be inefficient on the Mississippi. The Missouri is a very dynamic system as well yet mapping is

used extensively. I agree it would take time to extensively map reaches, but suggesting conditions would change so drastically (particularly for the habitat types you are examining) seems a bit off.

The discussion reads as a rehash of the results. There is a mention of the differences between reaches but those differences could be made more explicit and could be used to justify the importance of depth between both locations. It seems that is perhaps the main message of the manuscript.

Reviewer: 2

#### Comments to the Author

The manuscript is well written and adds to information gained in the Herrala paper by expanding the inferences to another location. Some may question whether this is actually pallid sturgeon habitat use without genetic ID, but authors do a good job of explaining this point. Overall the manuscript is informative and the analysis is a different way to develop habitat availability and selection. While the results seem to be similar to most other pallid sturgeon habitat use papers, this study starts to look at how those habitats change over time with temperature and river stage - enforcing the thought that use maybe more closely tied to depth and velocity than a habitat type as the depth and velocity within these habitat types change.

Only a few specific comments - the discussion is quite lengthy could the authors make this section more concise and focus more on what the results mean to habitat projects and potential channel modifications.

In References - I did not find Keenlyne, Killgore, or Gelman cited in the paper.

Reviewer: 3

#### Comments to the Author

This is a well-written manuscript with a great deal of research put into this study. I recommend accepting this manuscript for publication upon addressing a few clarifications and figure updates.

Summary: Excellent. Well-written, concise, hits all the important points.

Introduction: No comments. Read well and all integral components present.

Methods: No comments.

Results: See comment 1 of Discussion and comments in the Tables & Figures section.

#### Discussion:

1. The discussion is pretty lengthy and the first half of it reads like the results section where you are comparing and contrasting habitat and habitat use between the two reaches. I would recommend paring this down with more concise language and moving some of it to the results section.
2. There are some great references to how the results of this study compare to other studies focusing on pallid sturgeon habitat use in the MMR and LMR. In several instances, the findings of this study directly contrast what was documented by Koch et al. 2012 (lines 280-282 and 302-304), but you don't address why you think this occurred. Could you add your perspective on why you think the findings differ? Could it be differences in modeling methods, survey techniques, etc.?
3. I got a little hung-up on water depth paragraph (lines 340-350). There's a lot going on in this paragraph referencing water depth in systems that are incomparable (e.g., Platte vs. Yellowstone vs. LMR) and it's hard to understand the take-home message when the data seems contradictory. Also, only referencing 50% of pallid sturgeon locations leaves me wondering about the other 50% - were they found in deeper or shallower areas? And how do the other 50% compare to the literature? A similar comment can be made regarding the comparison of water velocities in lines 333-338 where the literature citations reference water velocity preferences between column and bottom current velocities while this study

documents surface velocity. It's worth acknowledging the difference between velocity measurements and what that might mean for comparing the studies.

4. I think this study provides some excellent and much needed perspective on pallid sturgeon habitat use. There are two lines in the manuscript (275-276 and 367-369) that emphasize the importance of these results and how they relate to habitat restoration/conservation. This is crucial information and I recommend you expand on these lines and elaborate how these results relate to conservation/restoration and how the results can be used to guide management decisions.

#### Tables & Figures:

1. For Figure 1, the JAI is an international journal with a wide-ranging audience. I recommend adding a small inset that displays where in the United States this study takes place. For our colleagues who may be unfamiliar with the southern U.S. or the LMR, this will help them orient to the location.
2. Each figure should stand alone and not require a reference to another figure to understand the symbology. For Figure 1, include a figure legend that explains the colors associated with each habitat type. And for standard cartography practice, include a North arrow in Figure 1.
3. In lines 181-183, there is a reference to unusually high and low water levels during a few seasons. It may be worth adding average high and low water lines and temperatures to Figure 2 to help elucidate some of the extreme water levels and temperatures.
4. Though not a necessity for publication acceptance, I would prefer to have more descriptive axis labels on figures 3-5. For instance, the Y-axis on Figure 3 is more clearly described 'Proportion of Available Habitat Types' and the Y-axis on Figure 4 is the 'Cumulative Probability of Habitat Use'. These are small changes, but they help with understanding the figures better at first glance.

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If you feel you wish to appeal against an editorial decision, please contact: [JAI.journal@wiley.com](mailto:JAI.journal@wiley.com)

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If you have any feedback about the Editorial Review Process, please feel free to share this with us by emailing the Editorial Office: [JAI.journal@wiley.com](mailto:JAI.journal@wiley.com)

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