

[EXTERNAL] Re: Draft Annual Update of Risk Level (appendix F) - NPS Expanded Non-native Aquatics Management Plan - request input

David Rogowski <drogowski@azgfd.gov>

Fri 7/23/2021 1:16 PM

To: Healy, Brian BH <Brian_Healy@nps.gov>

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Hi Brian,

In regards to crayfish - the northern crayfish *Faxonius virilis* (no longer *Orconectes virilis* per Crandall and DeGrave 2017) has been found in the Lees Ferry reach of the Colorado River and into Marble Canyon by us and others. Below Diamond Creek we have found the red swamp crayfish *Procambarus clarkii* which is found throughout the lower basin, and was first reported in Lake Mead in 1978 (:Leavitt et al 1989, Peck et al 1987).

Crandall, K. A., and S. De Grave. 2017. An updated classification of the freshwater crayfishes (Decapoda: Astacidea) of the world, with a complete species list. *Journal of Crustacean Biology* 37(5):615–653. <https://doi.org/10.1093/jcbiol/rux070>

Leavitt, S. E., J. S. Haley, M. Hager, and D. H. Baepler. 1989. Red swamp crayfish ecology in Lake Mead. Page 77. Nevada Department of Wildlife.

Peck, S. K., W. L. Pratt, J. E. Pollard, L. J. Paulson, and D. H. Baepler. 1987. Benthic invertebrates and crayfish of Lake Mead. Page 91. Lake Mead Limnological Research Center, Environmental Research Center, University of Nevada-Las Vegas, 98, Las Vegas, Nevada.

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On Wed, Jul 14, 2021 at 7:13 AM Healy, Brian BH <Brian_Healy@nps.gov> wrote:

Hi All,

We would appreciate your feedback and input on a few changes to an appendix (F) in the NPS Expanded NNF Management Plan that outlines the risk each species poses to native fish in Grand Canyon NP and to rainbow trout in Glen Canyon NRA. The plan allows for annual review and updates of this appendix. I've developed a short paper explaining the changes that I've proposed for each species, which are based on new information related to distribution, abundance, and science related to threats. It is important to keep this information up-to-date to inform our management response in case new invasions or changes in abundance occur.

If you can, please provide feedback by August 1.

Thanks so much,

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