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29 May 2020

Mr. Joshua Hall
Ecosystem Staff Officer
U.S. Forest Service
11 Forest Lane
Santa Fe, NM 87501

**RE: Northern New Mexico Riparian, Aquatic, and Wetland Restoration Project
Environmental Assessment; NMDGF No. NMERT-529**

Dear Mr. Hall:

The Department of Game and Fish (Department) has reviewed the Northern New Mexico Riparian, Aquatic, and Wetland Restoration Project Environmental Assessment (EA). The Department supports the project objectives of restoring ecological processes and functions, and protecting and enhancing water quality and wildlife habitat. The proposed action will increase efficiency and consistency in implementing restoration projects across the Northern NM Forests. The Department also recommends addressing the following comments to strengthen measures benefitting wildlife and wildlife habitats.

Page 3, Purpose and Need. Riparian ecosystems provide important movement corridors for aquatic and terrestrial wildlife. The Department recommends adding objectives that include habitat connectivity and refugia that allow wildlife populations to adapt or adjust their movements (seasonal migration, foraging, etc.) in response to trends in climate or anthropogenic landscape use.

Page 14, and B-49, Riparian Vegetation Treatment (Prescribed Fire). This section states: "Conduct prescribed fire to help restore openings, meadows and plant species that would occur under normal fire regimes." The design criteria include using both low and medium severity fires within riparian habitat.

Data on historic fire regimes within riparian ecosystems is limited, but is thought to have been relatively uncommon (Dwire and Koffman 2003, Friggens et al. 2013, Webb et al. 2019). Although prescribed fire may be useful for increasing structural habitat diversity, preventing catastrophic wildlife, and acting as an important disturbance event to remove litter and downed timber in areas where natural flooding does not occur, there is currently little information on the effectiveness of prescribed fire as a restoration tool or post-fire rehabilitation techniques (Webb et al. 2019). Multiple interacting factors may influence post-fire outcomes, including hydrologic conditions and streamflow regimes, depth to groundwater, vegetation community composition, grazing/browsing pressure, and climate conditions (Dwire and Kauffman 2003, Glenn and

Nagler 2005, Smith et al. 2009, Stromberg and Rychener 2009, and Kazynski and Cooper 2015). Although many native woody riparian species can resprout following fire, altered hydrologic regimes and increased fire frequency and severity can cause declines in abundance and regeneration of native riparian species and facilitate expansion of non-native, drought-tolerant, vegetation (Busch 1995, Busch and Smith 1993, Smith et al. 2009, Friggens et al. 2013, Smith and Finch 2017, and Webb et al. 2019).

In addition, post-fire flooding events can have detrimental impacts on native fish populations (Whitney et al. 2016), and some species, such as southwest willow flycatchers, depend on dense understory vegetation.

The Department suggests limiting design criteria to low severity fires, and using prescribed fire in combination with restoring natural flow regimes, remediating native vegetation, removing non-native vegetation, mechanical reduction of fuel loads, and improving habitat connectivity. We recommend including more specific criteria for use of prescribed fire, and developing best management practices. Monitoring hydrologic conditions and post-fire outcomes will also provide important information to guide future management decisions.

Page 19, Table 2-5. Considerations for riparian habitat assessments include the Regional Riparian Mapping Project and Riparian Existing Vegetation datasets to identify habitats that do not meet desired conditions. Natural Heritage New Mexico is currently developing a state-wide [riparian habitat map](#) (Muldavin et al. 2020) that may also help to identify and prioritize restoration sites.

Page 45, Aquatic Organism Passage. The Department suggests rewording or removing the statement: “Further, there would be no chance of recolonization if a population upstream of the barrier is lost due to drought or fire”. Fish barriers are one of the most important tools available for restoring and maintaining native fish populations. The overall benefit of barriers to native fish restoration heavily outweigh any potentially negative impacts. In addition, mechanisms exist to reintroduce native fish to areas where populations decline or are extirpated above barriers following disturbance events.

Appendix B, Aquatic Restoration Categories, Descriptions, and Design Criteria.

The EA references Best Management Practices (BMPs) throughout the document, yet rarely indicates the source or provides citations for specific BMPs. The Department recommends including a reference for each BMP, or adding a section that describes the BMPs in more detail.

B-7, Monitoring. The EA should include more specifics and outline detailed methods for monitoring that includes designated timing and duration of monitoring, and quantitative criteria that can inform adaptive management and ensure that restoration projects meet objectives.

B-12 Conservation Measure for New Mexico Meadow Jumping Mouse. This section should include specific measures to avoid impacts to overwintering hibernation sites.

B-14 Conservation Measure for Amphibians. In addition to cleaning mud and debris from vehicles and heavy equipment, this section should reference disinfection protocols to avoid introduction of chytrid fungus or other diseases for any work within streams or within Jemez Mountain Salamander habitat.

B-24, Fish Passage Barriers. The Department supports the language recognizing the importance of barriers to fish movement. These structures are frequently necessary to restore

and protect native fish populations. Incorporating barrier construction into the EA should significantly increase efficiency in implementing these projects. Given the importance of barriers to native fish conservation, this will undoubtedly improve the status of native fish populations in New Mexico.

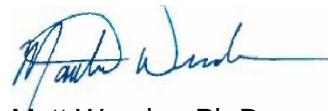
B-40, Beaver Habitat Restoration. The Department supports the use of beaver dam analogs to restore floodplain connectivity, enhance wetland and riparian habitat complexity, and promote sustained beaver occupancy. We recommend that the design criteria mention ensuring adequate fish passage in beaver dam analog structures.

B-41, Legacy Structure Removal. This section should also include consideration of impacts to overbank flooding and impact on riparian vegetation.

B-47, Mitigation Design Criteria – Channel Work and Revegetation. This section mentions sanitizing equipment, but does not provide any specifics. A similar statement appears on B-55. These sections should include specific references for decontamination procedures to prevent introduction or spread of non-native aquatic organisms and disease. The Department recommends Vikron or 10% bleach solution for disinfecting boots and equipment. The Partners in Amphibian and Reptile Conservation also provide additional recommendations for disinfection protocols available at http://www.northeastparc.org/products/pdfs/NEPARC_Pub_2014-02_Disinfection_Protocol.pdf

Thank you for the opportunity to review and comment on the proposed project. If you have any questions, please contact Meaghan Conway, Aquatic and Riparian Habitat Specialist, at 505-476-8160 or Meaghan.Conway@state.nm.us.

Sincerely,



Matt Wunder, Ph.D.
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MW/mc

cc: USFWS NMES Field Office
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Kirk Patten, NMDGF, Chief, Fisheries Management Division
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