wildlife conservation genomics lab

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Via regulations.gov
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Public Comments Processing
Attn: FWS-HQ-ES-2021-0033
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: Comments on Docket ID No. FWS-HQ-ES-2021-0033, Endangered and Threatened Species: Designation of Experimental Populations

To whom it may concern,

As members and affiliates of the Willoughby Wildlife Conservation Genomics Laboratory at Auburn University, we submit this comment in strong support of the proposed changes outlined in docket number FWS-HQ-ES-2021-0033, Endangered and Threatened Species: Designation of Experimental Populations. We include our rationale for support and one proposed addition to the language in §17.81(b).

1. <u>This proposed rule change is necessary to conserve threatened and endangered species under current and future climate change scenarios.</u>

Contemporary climate change is driven by anthropogenic activity and is proceeding at a rate orders of magnitude faster than any known past changes in climate[1]. Many species, including threatened and endangered species with already limited habitat availability, must either adapt to rapidly shifting temperature and precipitation regimes or migrate at a pace commensurate with climatic changes to avoid extinction. Species with low vagility or dispersal capability may not be able to keep up with such shifts and may be driven to extinction via this migration lag[2]. Alternatively, some species may be capable of rapid migration but could be locked in declining environmental conditions due to ongoing, intense loss of geographic connectivity to suitable habitat (i.e., habitat fragmentation)[3]. For such species, the only way to avoid extinction may be assisted migration to previously unoccupied habitat, informed by climate suitability modeling[4].

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[1] Diffenbaugh and Field. 2013. Changes in ecologically critical terrestrial climate conditions. *Science* 341:486-492.

[2] Corlett and Westcott. 2013. Will plant movements keep up with climate change? *Trends in Ecology and Evolution* 28:482-488.

[3] Haddad et al. 2015. Habitat fragmentation and its lasting impact on Earth's ecosystems. *Science Advances* 1: e1500052.

[4] Bellis et al. 2020. Climate suitability as a predictor of conservation translocation failure. *Conservation Biology* 34:1473-1481.

In these cases, establishment of experimental population(s) outside of a species' historic range simply replaces a process that could have taken place under more typical climate shifts and in the absence of anthropogenic habitat fragmentation. Experimental populations will continue to serve as critical conservation tools as climate change proceeds and we therefore strongly support the proposed regulatory revisions.

2. <u>We suggest that health and stability of the receiving ecosystem be added as a consideration to §17.81(b).</u>

Although the impetus for this rule change is persistence of threatened or endangered species, we suggest that explicit consideration of receiving ecosystems be added to §17.81(b). This could be considered an extension of §17.81(b)(2), as negative impacts of translocation on the receiving system could, in turn, threaten the persistence of the experimental population via loss of local biodiversity and/or habitat quality and function. For example, introduced individuals could act as vectors for pathogens that have negligible effects on the introduced species but result in negative consequences for susceptible species in the receiving community. Understanding and preventing cascades of unintended effects is critical to protecting not only the economic and cultural benefits of our natural resources but also overall ecosystem health. Although it is impossible to forecast all downstream effects of translocation, every effort should be made to anticipate negative impacts on the receiving system, both for the benefit of that system and the persistence of the experimental population.

Thank you for considering these comments.

Sincerely,

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