

31 March 2005

Dr. Seth Willey
U.S. Fish and Wildlife Service
Ecological Services
P.O. Box 25486
Denver Federal Center
Denver, CO 80225-4467

Dear Dr. Willey:

I have completed the review of the report "Testing the uniqueness of *Z. h. intermedius* relative to *Z. h. campestris*" by Ramey et al. The review is included below.

Thanks for allowing me to be part of the review process.

Sincerely,

Robert D. Bradley
Associate Professor

This report was a little more difficult for me to review than was the last report by Ramey et al. (2004a). I don't think the morphological or phylogenetic studies were as robust as could have been and maybe I am missing something but I don't see the need for the population genetic study. Seems that what is needed is a straightforward morphometric and phylogenetic study. That doesn't mean their study is wrong, just that they take a different path than I would have.

For the morphometric study, I would have done a PCA to see how the variation (if any) was partitioned. The DFA is fine and shows *campestris* is difficult to distinguish from *intermedius*. But this does not indicate whether any variation exists and if it is partitioned in any way.

I really don't see the need for the population study. I would rather have seen some straightforward phylogenetic analyses (likelihood and Bayesian) that show the evolutionary history of the samples.

Given the data presented in the report, they appear to arrive at the obvious conclusions. However, I am not convinced that it is as thorough as it could have been. Perhaps the same conclusions would be obtained from a different approach, but perhaps not. At any rate, based on the data presented in this report, it appears that *campestris* and *intermedius* are sharing genes across the Plains area and that they belong to a single "population". Also, it appears that more evidence is provided for the synonymization of *preblei* with *campestris*.