



United States Department of the Interior

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July 12, 2000

Memorandum

To: Regional Director, Bureau of Reclamation, Salt Lake City

From: Field Supervisor

Subject: Biological Opinion Amendment for Kanab ambersnail in Arizona

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This memorandum and biological opinion amendment is to follow up on discussions between our staffs, deliberations of the Kanab ambersnail Work Group, and the December 1999 workshop held in Phoenix, Arizona, to discuss the taxonomic and ecological management issues related to the Kanab ambersnail (*Oxyloma haydeni kanabensis*). One outcome of the Workshop was an expert panel report titled "Report of Kanab Ambersnail Review Panel on Taxonomic, Ecological, and Translocation Issues Concerning the Conservation of *Oxyloma* Snails in Arizona and Utah."

In the 1995 biological opinion issued to the Bureau of Reclamation on the preferred alternative on the operations of Glen Canyon Dam, the Service determined that incidental take would be exceeded if more than 10% of the occupied habitat in Grand Canyon was inundated by high flows or a controlled flood. This figure reflected the actual amount of incidental take anticipated. At the time of this biological opinion, the stage discharge relationship at Vaseys Paradise was poorly understood. Habitat had not been quantified by mapping of the area. Thus, the 10% figure was based on very rudimentary information.

In spring 1996, water levels in Lake Powell allowed Reclamation to test the beach/habitat building flow concept. Flows of 45,000 cfs were scheduled for seven days, with flows of 8,000 cfs planned before and after the peak. In a separate consultation, and after additional habitat mapping by the Glen Canyon Environmental Studies, the Service determined that this controlled flood would remove about 17% of the Kanab ambersnail habitat in Grand Canyon. On site, accurate stage-discharge measurements collected during the flow experiment revealed that the take would have been about 14% of the total habitat.

The Service acknowledges that the 10% level given in the 1995 biological opinion could be revised. The flow of 45,000 cfs, one in every five years on average, as included in the preferred alternative, would have likely always taken more than 10% of the habitat. A better estimate should have been somewhere between 14% (the actual take) and 17% (the estimated take) for a flow of 45,000 cfs following the establishment of vegetation down near the 25,000 cfs flow level.

A larger question remains regarding the significance of loss of habitat that could have occurred before the construction of Glen Canyon Dam. The expert panel report argues, and we agree, that very high flows are within the natural range of variability that occurred for the Kanab ambersnail in Grand Canyon prior to dam construction. We interpret this to mean that a much smaller habitat area would have occurred at this location prior to flow regulation by Glen Canyon Dam.

Given that the 10% incidental take figure should be re-assessed to more accurately represent the stage-discharge relationship of the beach/habitat building flow of the preferred alternative (between 14 and 17%), the reasonable and prudent measures and associated terms and conditions required if the 10% figure is exceeded should also be re-assessed. We believe most of the items given in the February 1996 biological opinion are appropriate for conservation of the species and have resulted in an increase in understanding about the species and habitat recolonization. The one item which may no longer be appropriate is reasonable and prudent measure #2 which specifically deals with exceeding a take of 10% and reads:

Before another habitat-building flow, Reclamation will enter into informal consultation with the Service to evaluate test flow studies, the establishment or discovery of a second population of Kanab ambersnail (will occur) in Arizona, and (Reclamation will) reinstate formal consultation with the Service if incidental take will exceed the 10 % as established in the 1995 biological opinion.

We believe that the 10% incidental take figure should be revised and any associated requirements deleted. The Service provides the following amendment to the January 7, 1995, and February 16, 1996, biological opinions.

BIOLOGICAL OPINION AMENDMENT

This amendment does not change the findings for any species or its critical habitat as described in the January 7, 1995, and in the February 16, 1996, biological opinion.

EFFECTS OF THE ACTION

This amendment does not change the effects from the preferred alternative including the release of a 45,000 cfs beach/habitat building flow on any species or its critical habitat discussed in the January 7, 1995, and in the February 16, 1996, biological opinion.

INCIDENTAL TAKE

AMOUNT OF TAKE

The Service anticipates that as much as 17% of the Kanab ambersnail habitat in Grand Canyon could be taken as a result of the preferred alternative, which includes beach/habitat building

flows of 45,000 cfs on average, every five years. The incidental take is expected to be in the form of harm, harassment, and kill.

EFFECT OF TAKE

As stated in the January 7, 1995, biological opinion, and in the February 16, 1996, biological opinion the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. No critical habitat has been designated for this species, therefore, none will be affected.

REASONABLE AND PRUDENT MEASURES

This amendment does not change the reasonable and prudent measures listed in the January 7, 1995, biological opinion. This amendment deletes reasonable and prudent measure #2 listed above as stated in the February 16, 1996, biological opinion.

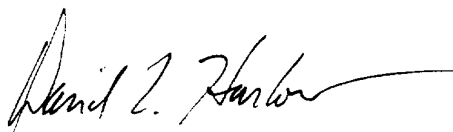
TERMS AND CONDITIONS

This amendment does not change the terms and conditions as stated in the January 7, 1995, or February 16, 1996, biological opinion.

SUMMARY

The provisions in the Summary of the January 7, 1995, and in the February 16, 1996, biological opinion for reinitiation of consultation under certain circumstances apply to this amendment.

We look forward to continuing work with you and your staff. If you have any questions, or if we can be of further assistance, please contact Debra Bills (x239) or Tom Gatz (x240).



David L. Harlow

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ES-ARD)
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