

Alaska Department of Fish and Game
State Wildlife Grant
ANNUAL INTERIM PERFORMANCE REPORT

Grant Number: T-1 **Segment Number:** 6
Project Number: 5
Project Title: Distribution and seasonal habitat use of American dippers
Project Duration: June 7, 2004 – December 31, 2006
Report Period: July 1, 2005 – June 30, 2006
Report Due Date: September 30, 2006
Partner: Willson Ecological Consulting

Objectives:

1. Determine distribution of American dippers in the Juneau area with respect to watershed and stream characteristics in nesting and wintering seasons;
2. Evaluate the limits to local dipper population size.

Summary of Accomplishments:

Objective 1:

1. During the last portion of the 2005 breeding season, we continued monitoring dipper nests that had been found earlier. Four additional adult birds were banded.
2. The density of benthic insects was sampled in numerous streams in summer of 2005, in order to compare potential food availability in streams occupied and unoccupied by dippers. Average density is lower in unoccupied streams, but overlap in density is substantial.
3. Average minimum seasonal streamflow for most Juneau streams was estimated using a USGS formula based on watershed area, estimated precipitation, and elevation, in order to relate dipper occupancy to stream size. Combining prey density with estimated stream size indicates a greater overall abundance of prey in larger streams.
4. During the 2005-2006 winter, we searched for marked birds in estuaries and open reaches of several streams. Of 56 possible marked birds alive during the previous breeding season, 21 (38%) were resighted. Several birds were recorded to visit more than one location during the winter, indicating extensive local (and possibly regional) movements.
5. Dippers foraging in estuaries in winter consume large numbers of amphipods, which contain markedly less lipid than benthic insects, on average. Foraging on amphipods is not previously recorded for American Dippers, as far as I can determine.
6. Nests found in 2006 (N = 41) will be added to the nest catalog, as described in the previous interim report. Thirty-five additional birds have been banded by the end of June, 2006. I intend to resight as many as possible this coming winter and spring, even though this contract will be ended.
7. Of 56 possible marked birds alive during the previous breeding season, 19 (34%) were found on nesting territories in 2006, suggesting an apparent overwintering mortality of 66%. Six pairs consisted of the same individuals on the same territories as last year.
8. As of the end of June, 2006, at least 7 (of 40) nests apparently failed to fledge young. Three renesting attempts (following failure) have so far been recorded (not documented in previous years).

Objective 2: The literature emphasizes nest sites as the most important limiting factor for American dippers, with food supply receiving a secondary mention. Dippers certainly use anthropogenic structures (bridges, old dams) for nest sites, sometimes on stream reaches that would otherwise be unoccupied. It is also clear, however, that nesting dippers do not usually occur on streams smaller than a certain size (by the USGS equation), indicating that the abundance of benthic insects may help regulate their distribution. In addition, several nesting territories that were occupied in 2005 are vacant in 2006, suggesting that there are more potential nest sites than there are birds to occupy them. Nevertheless, judging from from midseason mate-changes (not seen in previous years), it appears that there are some 'floaters' in the population, either unmated birds or birds whose initial nesting attempt failed.

The factors that limit dipper distribution in winter remain unclear. Streams that remained ice-free for long periods nevertheless harbored no dippers, showing that ice-free water is not the only factor limiting their distribution (contrary to some statements in the literature).

General objective:

Preliminary results from this study have been presented (in spring of 2006) to 1) the Alaska Bird Conference, held in Juneau; 2) a class in behavioral ecology at University of Alaska-Southeast; 3) a training session for interpreters at the Mendenhall Glacier Visitor Center.

Significant Deviations

1. None.

Actual Costs during this Report Period (*personnel plus all operating expense totals*):

(Reported costs included ADF&G indirect calculated at 13.5%)

Federal (from ADF&G):	Partner (nonfederal share):
\$22,699	\$7,566

Project Leader (*or Report Contact Person*): Mary F. Willson

Additional Information:

1. Is this project contributing samples to the Alaska Avian Influenza detection effort? no
2. Do you anticipate having any unspent funds at the end of the project? no