

**FEDERAL AID
FINAL PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 25526
Juneau, AK 99802-5526

**Alaska Department of Fish and Game
State Wildlife Grant**

Grant Number: T-1 **Segment Number:** 6
Project Number: 2
Project Title: Banding Station, Creamer's Field
Project Duration: July 1, 2003 – June 30, 2007
Report Period: July 1, 2006 – June 30, 2007
Report Due Date: September 30, 2007
Partner: Alaska Bird Observatory

Project Objectives

1. To conduct a standardized migration-monitoring station in spring and fall at Creamer's Field Migration Station (CFMS), Fairbanks.
2. To analyze data and examine the population dynamics and timing of life-history events (e.g. migration, reproduction, molt, juvenile dispersal, and seasonal differences in body condition) of migratory passerines.

Summary of Project Accomplishments for entire project

Objective 1: We completed four spring and fall migration monitoring seasons at CFMS. During this time period, we captured and banded a total of 15,556 new birds—1,513 birds in 22,359 net hours during four spring seasons and 14,043 birds in 42,381 net hours during four fall seasons. In spring, the average number of species captured was 29 and in the fall it was 35 species. A total of 8,912 people were educated at CFMS, mostly through banding demonstrations, and 9 interns and 24 biologists were trained in mist-netting and banding techniques. In addition, 357 volunteers donated 7,756 hours of time in helping to operate CFMS. Several collaborations between CFMS and various researchers were initiated. Starting in Fall 2005, we began a collaboration with the Institute of Arctic Biology, University of Alaska, Fairbanks (UAF) to collect samples for detection of Avian Influenza. This collaboration has continued through Spring 2007. To date, ~ 4000 samples have been collected. In Fall 2006 in collaboration with USFWS, we collected samples from Gray-cheeked Thrushes to test for Avian Influenza. We also collected Rusty Blackbird feather and sperm samples during the Spring and Fall 2006 banding seasons for collaborations with scientists studying this species. We started two new collaborations in Spring 2007—we captured Solitary Sandpipers during normal mist-netting sessions and outfitted them with radio telemetry units. The second collaboration involved collecting feather samples from select boreal forest songbirds for a PhD student.

Objective 2: Starting in September 2006, we began proofing the 15-year CFMS banding dataset. These ~ 65,000 records were then transferred from Excel into Access, because we had reached our record limit in Excel in 2005. Access was used because it can store many more records and is a relational database program. Starting in February 2007, we analyzed mean passage dates of both adults and juveniles of 14 species that migrated through CFMS and a migration station in Tok, Alaska from 1993-2006. Annual abundance indices were calculated using daily capture rates (birds captured/1000 net hours) for 11 species from 1996-2004. Because weather is known to affect migration of birds, we incorporated daily weather variables into models to correct for

high or low captures that could have been caused by daily weather events. Annual abundance indices were then defined as mean annual capture rates adjusted for covariates. We conducted power calculations to determine the probability of detecting a 50 % linear decline during 25 years and a 50 % decline in 50 years for the same 11 species. This manuscript is nearing completion and will be submitted to the Journal of Wildlife Management. Future analyses of CFMS planned include examination of spring arrival dates, molt strategy of migrants, and effects of weather on range expansion of several species.

Project Accomplishments during last segment period only (July 1, 2006 – June 30, 2007):

Objective 1:

Fall Migration 2006:

1. Between 17 July and 29 September 2006, 36 standard mist nets (2.6m x 12m long, 30 mm mesh) were operated for 6 hours daily, weather permitting, for the purpose of capturing, identifying, banding and collecting data on: age, sex, stage of molting (if any), and breeding and body condition of migrating songbirds. Nets were operated for a total of 9,821 net hours. Capture rates were consistently high during the entire netting period—large fallouts of Common Redpolls started at the onset of the season and late arrivals of large flocks of American Tree Sparrows arrived at the latter half of September when migration has typically slowed.
2. We captured a total of 6004 birds of 38 species. The most abundant, newly-captured species were: American Tree Sparrow (1205), Dark-eyed Junco (1044), Yellow-rumped Warbler (925), Common Redpoll (665) and Orange-crowned Warbler (322). These five species comprised 79% of all new captures.
3. Captures for fall 2006 were the second highest in CFMS 15-year history. Yet, several species showed a decrease in population indices. These include Alder and Hammond's Flycatcher and all thrush species. The sample size for Gray-cheeked Thrush was too low to calculate a population index. In contrast, Ruby-crowned Kinglet, Yellow-rumped Warbler, American Tree Sparrow and Dark-eyed Junco showed increasing population indices from previous years. Population indices for many warbler and sparrow species remained stable.
4. We captured four HY Tennessee Warblers—a species not typically found breeding in interior Alaska. Past studies of this species have shown that it will follow Spruce Budworm outbreaks. Whether this species is responding to insect abundance or some other environmental cue is debatable; mist-netting at CFMS is helping to document the possible range expansion of this species.
5. We captured two new species at CFMS this fall—a HY Belted Kingfisher and a HY *Catharus* thrush that could not be identified to species that was called a bird of the Gray-cheeked/Bicknell's Thrush Complex. Other notable captures included: Green-winged Teal (3), Ruffed Grouse (1), a HY Solitary Sandpiper, a HY Wilson's Snipe, Downy (3) and Hairy Woodpecker (1), HY Northern Shrike (2), a HY Brown Creeper (the first since 2000), Rusty Blackbird (7) and Pine Siskin (1).
6. The mortality rate at CFMS was 0.3%, well below the accepted average of 1-2%. Much of the mortality could be attributed to predation by raptor(s) and red squirrel(s).

7. Seventy-three volunteers provided 1,833 hours of assistance, while two interns contributed 864 hours of service to the operation of CFMS during the fall season. Net trail repair, including the addition of two bridges and a set of stairs, was completed as part of an Eagle Scout Project. In addition, local volunteers made ~500 bird bags for CFMS.
8. Bird-banding presentations were given to 634 people in 24 groups in cooperation with the Alaska Department of Fish and Game Creamer's Nature Program. Informal banding demonstrations were given to an additional 237 independent visitors.

Spring Migration 2007:

9. Twenty-six standard mist nets were operated for 6 hours, weather permitting, on alternate days from 23 to 30 April and daily from 1 May – 7 June 2006. Nets were operated for a total of 4,991 hours.
10. We captured 978 new and previously banded birds of 32 species—one of the most productive spring banding seasons in CFMS history. The five most abundant newly-captured species include: Common Redpoll (133), Yellow-rumped Warbler (78), Dark-eyed Junco (69), American Robin (54) and Northern Waterthrush (53). These five species represent 62% of all new captures.
11. We captured 49 individuals banded in previous years (returns) that represented ~12% of our total captures. Noteworthy migrant returns include a Yellow-rumped Warbler first banded as a juvenile in 2003 and a Dark-eyed Junco banded as an adult in 2003. Noteworthy migrant returns are a Black-capped Chickadee first banded as a juvenile in 2002 and a Gray Jay banded as an adult in 2003.
12. For eleven species, capture rates (per 1000 net hours) were the highest they have ever been in CFMS 16-year history. These species include: Lesser Yellowlegs, Solitary Sandpiper, Wilson's Snipe, Downy Woodpecker, Boreal Chickadee, Black-capped Chickadee, Hammond's Flycatcher, Swainson's Thrush, Bohemian Waxwing, Northern Waterthrush and Dark-eyed Junco. Capture rates for several species were higher in 2006 than for 2005, including Orange-crowned and Yellow Warbler, and American Tree, Lincoln's and White-crowned Sparrow. Several species, including Ruby-crowned Kinglet, Yellow-rumped Warbler and Fox Sparrow showed similar capture rates as last spring. Capture rates of Common Redpolls were the highest they've been in almost 10 years. Unfortunately, 2007 also marked declines in capture rates of several species including: Blackpoll and Wilson's Warbler, and Savannah Sparrow.
13. Interesting captures include: 14 Solitary Sandpipers, 7 Lesser Yellowlegs, 5 Bohemian Waxwings, a Wilson's Snipe, a Green-winged Teal, and a SY male Sharp-shinned Hawk.
14. The mortality rate at CFMS for the spring was 0.1%, much lower than the accepted rate of 1-2%.
15. Trained 2 new banders and 1 intern for CFMS this spring—these staff will continue through the fall season. Held a volunteer orientation session before the spring banding season that was attended by ~30 new and returning volunteers.
16. Forty-two volunteers provided 918 hours of assistance—more than double the effort of spring 2006.

17. Bird-banding presentations were given to 657 people in 15 groups in cooperation with the Alaska Department of Fish and Game Creamer's Nature Program. Informal banding demonstrations were given to an additional 130 independent visitors.

Objective 2:

Benson, A-M., S.L. Guers and W.H. Johnson. An evaluation of autumn mist-netting data for monitoring songbird populations in interior Alaska. *In preparation.*

A summary of birds banded by ABO in spring 2006 was included in the *North American Bird Bander*, Vol. 31:No.2.

A summary of all birds banded by ABO in 2005 and 2006 was submitted to the Western Bird Banding Association to be included in their annual summary was included in the *North American Bird Bander*, Vol.31:No. 3.

Guers, S. Creamer's Field Migration Station: Fall 2006 Report. Submitted to the Alaska Department of Fish and Game and Bureau of Land Management. *Available at www.alaskabird.org*

Guers, S. Creamer's Field Migration Station: Spring 2007 Report. Submitted to the Alaska Department of Fish and Game and Bureau of Land Management. *Available at www.alaskabird.org*

Significant Deviations: None

Project Leader: Sue Guers, Migration Program Manager

Additional Information: The following publications involve the CFMS and its banding data, but were not funded by this grant:

Benson, A.M. and K. Winker. 2005. Fat-deposition strategies among high-latitude passerine migrants. *TheAuk* 122:544-557.

Benson, A.M., B. Andres, W.H. Johnson, S. Savage, and S.Sharbaugh. 2006. Differential Timing of Wilson's Warbler Migration in Alaska. *Wilson Journal of Ornithology*. 118: 547-551.

DeWitt, N. 2004. Alaska Bird Observatory Tackles High Water and Trail Erosion. *North American Bird Bander* 29:101.

ABO annually includes a summary of birds banded at CFMS for the Alaska Boreal Partners in Flight (BPIF) statewide banding summary.

A poster describing mist-netting at CFMS was assembled and displayed at CFMS during the fall and spring migration seasons. This poster is also currently displayed in the ABO Center for Education and Research.

A CFMS banding summary was written for the ABO winter 2006 and summer 2007 newsletters, and reports were posted on the ABO website.