



2011 Katmai National Park Butterfly Surveys

Brooks Camp and Lake Camp

Natural Resource Data Series NPS/AKR/NRDS—2012/411



ON THE COVER

Arctic Skipper (*Carterocephalus palaemon*)

Photograph by: Sherri A. Anderson

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The Natural Resource Data Series is intended for the timely release of basic data sets and data summaries. Care has been taken to assure accuracy of raw data values, but a thorough analysis and interpretation of the data has not been completed. Consequently, the initial analyses of data in this report are provisional and subject to change.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols. Variances from the protocols are identified in the text and limitations on using the data are described. This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data.

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Introduction

Since 1975, the North American Butterfly Association (NABA) has held a Fourth of July Butterfly Count. The count was designed to determine what butterflies are common or rare in a geographical region. Data are evaluated to identify variations in abundance, range shifts and species that may be declining. In 2010, 477 surveys were performed in 47 states and the District of Columbia (NABA, 2011). Species lists for surveyed and surrounding areas are created with information collected during these yearly counts.

Three surveys were done in Alaska in 2010, including the Anchorage, Fairbanks and Tok regions (NABA, 2011). All results are available to the public and scientific communities for further study and can be found at the NABA website (www.naba.org). No known survey has ever been performed at Katmai National Park though Dick Russell, formerly from the Alaska Department of Fish and Game, has studied the butterfly populations of the Bristol Bay area for a number of years (Russell, written communication, 2010).

The primary objective of this study was to gather baseline data on the diversity and abundance of butterfly species at Brooks Camp and Lake Camp in Katmai National Park (KATM). This information would be added to the NABA national database and used in subsequent years to monitor butterfly populations. A secondary objective was to determine if the Alaskan Orangetip butterfly (*Anthocharis sara alaskensis*) occurs in suitable habitats, particularly the Brooks Camp area, within KATM.

The Alaskan Orangetip has one flight a year, from May to early July and is one of the first butterflies to appear. A flight is the term used to describe one generation in the butterfly's life cycle. It feeds on plants found in the mustard family, hibernates in its pupa stage and is found in open habitats, such as hillsides. The adults have distinctive bright orange wing tips and are usually slow flyers. An occurrence at KATM would be an extension of their known range.

Methods

NABA Protocols

The National Butterfly Count is conducted using a circular plot with a diameter of 15 miles (NABA, 2011). New survey areas are submitted to the NABA 30 days prior to the start of the Fourth of July count. The count begins on June 1st and ends July 31st. The first year of the survey, a four-person team surveys as much of the area as possible in 6 person hours. This can be done as a single group or in teams. After the first year, the number of people performing the survey can vary as long as the survey includes 6 person hours. Butterflies observations are recorded and tallied. Surveys should be performed when weather is clear, temperature is over 50 degrees and wind speeds are below 15 mph. At the end of the survey, data are entered into the NABA database. Any butterfly surveys performed prior to or after the national dates, or for groups that did not submit survey maps prior to the 30-day cutoff can enter their data in the unofficial count section of the NABA database.

Katmai National Park Methods

A circular area with a 15 mile diameter was mapped within the Brooks Camp area (Figure 1). This area included Falls Trail, Dumpling Mountain Trail, and the shorelines of Naknek Lake and Brooks River and other areas inside the Brooks Camp Development area. Another circular area was mapped in the Lake Camp area, which included Lake Camp recreational area, shorelines of the Naknek River and Naknek Lake and surrounding area (Figure 1). This year's surveys will not be recorded in the national count data collection as the new sites were not chosen until after the national counts had begun. However, the data was added to the unofficial site information and listed in the national database.

The Brooks Camp survey was performed on July 11, 2011. Three and one half hours into the survey weather conditions changed and it started raining, so the survey was ended. Since Sherri Anderson was the only person doing the survey, the NABA occupation requirements were not met. The survey at Lake Camp was scheduled for July 30th, 2011, but weather delays forced postponement until August 7, 2011. Carissa Turner, Craig Watson and Sherri Anderson performed the Lake Camp count, with a total of 7.5 person hours. The weather met all standards at the start of the survey but conditions turned colder and cloudier. Once data was collected, species and number counts were entered in to the national database and original paperwork was submitted to NABA.

National American Butterfly Association
Fourth of July Butterfly Count
Survey Areas
Katmai National Park



Figure 1 Katmai National Park Fourth of July Butterfly Surveys areas, 2011.

Results

During the survey at Brooks Camp four species were recorded with 42 total butterflies seen. These included: 5 Arctic White (*Pieris angelika*), 10 Grizzled Skippers (*Pyrgus centaureae*), 21 Arctic Skippers (*Carterocephalus palaemon*), and 6 Arctic Fritillaries (*Boloria chariclea*). Also seen during the survey were 65 White-striped Black Moths (*Trichodezia albobittata*). No observations of the Alaskan Orangetip butterfly were made.

During the survey at Lake Camp, two species were recorded with total of nine butterflies seen. This included 1 Arctic White and 8 Common Ringlets (*Coenonympha tullia*)



Figure 2. Arctic Skipper and Arctic White butterflies found during the study. NPS photos by Sherri Anderson.

This was the first time a NABA-type survey was performed in this area, so there are no comparable data to evaluate our results against. All the species sighted are on the USGS 2009 list of Alaskan butterflies (Trainor, 2009). Russell's studies were conducted throughout the spring and summer and his list was more extensive than those documented during this short study (Russell, written communication, 2010). All of the species observed during this study were ones that had been documented by Russell.

Weather was a factor in both surveys, resulting in a shorter observance time at Brooks Camp and a delay (outside of the normally accepted time frame) of the Lake Camp survey. Changing the annual survey to June would result in fewer conflicts with other resource management activities that occur primarily in July and August. This would allow more scheduling flexibility and allow surveying during more ideal weather conditions. June surveys may also increase the chances of seeing the Alaskan Orangetip butterfly.

Proposed survey maps must to be submitted to NABA by May 2, 2012 to be officially recorded for the 2012 count. Next year's survey will require the help of two more people as NABA requires a four person team for the first year of data collection. Potential team members include Dick Russell, a retired USFWS biologist, who continues to monitor butterflies and other insects in the Bristol Bay region, and KATM superintendent Ralph Moore who has vast knowledge of area butterflies. For the Lake Camp survey, a more detailed survey map would help to identify more suitable habitat and would increase the chances of seeing more butterflies.

Literature Cited

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