



Wildlife Observations 2011

Katmai National Park & Preserve, Alaska

Natural Resource Data Series NPS/KATM/NRDS—2011/615



ON THE COVER

Top left: Arctic Skipper (*Carterocephalus palaemon*), top right: White-crowned Sparrow (*Zonotrichia leucophrys*), bottom left: Arctic Ground Squirrel (*Spermophilus parryi*), and bottom right: Snowshoe Hare (*Lepus americanus*).
Photograph by: Sherri Anderson

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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.

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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Abstract

Katmai National Park and Preserve covers over four million acres. This study incorporates observations by staff and visitors from throughout the park. Sightings were recorded using a wildlife observation form, including animal type, location, date and time, how many adults and juveniles were seen, and observations of any unusual activities. Some observations included weather conditions. Data was recorded in excel and maps were made of where and how many species are seen. Data were used to update avian checklists and evaluated to see if there were areas requiring further study. In 2011, a total of 73 different species were sighted including 54 avian species, 14 mammal species, and 5 insect species being seen. Rare Garganey Ducks (*Anas querquedula*) were spotted in Katmai Bay. Uncommon Black-backed Woodpeckers (*Picoides arcticus*) were spotted twice in Brooks Camp. For the first time, Golden-crown Kinglets (*Regulus satrapa*) were seen nesting at Brooks Camp. Wolves were sighted in nine different areas of the park prompting investigations into the number of packs within Katmai National Park and Preserve. The park plans to expand the study to involve more visitors and increase the number of wildlife sightings recorded.

Acknowledgments

Thank you to all the visitors of Katmai National Park and Preserve for obtaining information to help the Natural Resource staff. The Interpretation Staff of the park were vital in getting information about the program out to the visiting population and for collecting data on their days off. Special thanks go to Mike Fitz and Roy Wood for helping initiate the program. Thank you to Susan Savage who was vital in interpreting the avian section of the report. Thank you to John Campbell and Carissa Turner for evaluating this report. This project was funded by the National Park Service.

Introduction

Katmai National Park and Preserve encompasses 4.1 million acres and is visited annually by approximately 10,000 people a year (Wood, personal communication). The park contains a variety of habitats that support a wide array of wildlife. The park is known for its large population of brown bear (*Ursus arctos*) and large annual sockeye salmon (*Oncorhynchus nerka*) runs. Twenty nine other species of terrestrial animals are known to inhabit the park along with 178 species of birds (USFWS 2010). The coastline also supports a number of marine mammals and aquatic animals.

Brooks Camp is the primary visitor destination of the park. Viewing platforms on the Brooks River attract thousands of visitors a year to watch and photograph bears. From Brooks Camp, there are trails to Brooks River Falls and up Dumpling Mountain, providing visitor ample opportunities to view bears and other wildlife. A 23-mile road from Brooks Camp to the Valley of Ten Thousand Smokes have the opportunity to see moose (*Alces alces*), wolves (*Canis lupus*), and bird species that are not seen in the Brooks Camp area. Guided tours of the Katmai coast provides opportunities to view coastal bears and marine wildlife.

Park staff frequently visit park areas seldom seen by visitors, including hiking Katmai pass, canoeing the various rivers, or boating to islands found in the park lakes, giving staff members a closer view of wildlife. Because of the park's size, biological staff tend conduct many surveys from the air where it may be difficult to see some species, especially those that are smaller.

Citizen science programs are growing nationwide and provide outdoor enthusiasts the opportunity to contribute to biological research. Since park biology staff cannot conduct observations simultaneously throughout such a large area, wildlife observations by visitors and non-biological staff members are important for supplementing their work. These observations can help park staff identify areas of concern, document previously unknown species behaviors, and reveal new habitat locations for known species. A previous wildlife observation effort was stopped in 2007 because of lack of staffing (Vaughn personal communication) and this study was designed to restart and expand that study, beginning in 2011.

Methods

Data Collection:

Wildlife observation forms are made available to visitors and staff at the Brooks Camp Visitor Center. Park rangers encourage visitors to record what they see as they spend their time in the park.

The observation forms collect date, time, weather conditions, along with species, how many are seen, age (juvenile or adult), and where the species is seen (Figure 1). The form also allows for descriptions and animal behavior. Completed forms are returned to the visitor center and collected by a member of the natural resource staff.

Wildlife Observation Record		
Date:	Time: (am/pm)	Location:
Weather/Temp:	Observer(s):	
Animal:	Observation: What characteristics did you use to identify this animal?	
description, distance from animal, behaviors, number, sketch, map etc...)		
act information: (optional)		

Figure 1 Wildlife Observation Form

Analysis:

Data from the observation forms were entered into Excel, where scientific name and family group were assigned. Pie graphs were made of the different species types observed. The graphs were then exported into ArcMap and placed in the location areas. The size of the circle represents the number of total species seen per location (Table 2 and Figure 3). To ease map construction all the areas that were in the near vicinity of Brooks Camp were totaled together and all sightings on the valley road or in the valley were added together. Figure 3 shows the number of species recorded in various Brooks Camp locations. Questionable data was verified, if possible, by a member of the resource staff and with the help of the Fish and Wildlife Service.

Results

In 2011, 352 individual sightings were recorded throughout Katmai National Park and Preserve. Insects were observed 38 times, mammals 35 times, and birds 279 times. Sightings took place in seven areas of the park within different habitats; two areas on the coast, the Valley of Ten Thousand Smokes, and four areas in the interior of the park. The Brooks Camp area was divided into 13 smaller areas with the most sightings recorded from the lower platform. More sightings occurred on the valley road than in the valley itself.

The total number of different species that were seen in the 2011 summer season was 73. Five insect species, 14 mammal species and 54 bird species were observed. Spruce Grouse (*Falcapennis canadensis*) sightings were the most frequent with 29, including 85 adults and 27 juveniles. Large numbers of avian sightings were made in October during the fall migration. These included more than 1000 Greater White-fronted Goose (*Anser albifrons*), 165 Sandhill Cranes (*Grus canadensis*), and 153 Greater Scaup (*Aythya marila*). The number of Glaucous-winged Gulls (*Larus glaucescens*) observed were 402, as large congregations of this species could always be seen on the Brooks River. Mallard (*Anas platyrhynchos*) had the most juveniles seen with 67 ducklings reported. The Arctic Skipper was the most seen insect with 15 sightings and 15 individual butterflies. Wolves were sighted 10 times with 10 adults and three juveniles seen. The unknown bat species (*Myotis spp*) was sighted four times with 29 total bats detected.

According to the US Fish and Wildlife Service (USFWS) bird list (USFWS, 2010) for the Alaska Peninsula, the Garganey (*Anas querquedula*) is only seen a few times every fifty years. Five adults were sighted off the Katmai coast. The Common Eider (*Somateria mollissima*) is a rarely seen bird in the area and pair of them were sighted on Brooks Lake. Barrow's Goldeneye (*Bucephala islandica*) is another species listed as rarely seen though nine adults were spotted on the Brooks River. Belted Kingfisher (*Ceryle alcyon*) are also listed as a rare species but were sighted three times with three birds seen at the platforms on the Brooks River. Black-backed Woodpeckers (*Picoides arcticus*) are not on the USFWS list and were spotted twice with 3 adults observed. Golden-crown Kinglets (*Regulus satrapa*) are listed as rare and non-nesting but a nest of them was observed in Brooks Camp.

According to past small mammal surveys there were no hares (*Lepus spp*) found in the valley but a visitor and a staff member sighted an unknown hare species while visiting there. Two marine mammals, a humpback whale and an unknown seal species were recorded. Wolves had been documented only on the valley road but were sighted in nine different areas of the park.

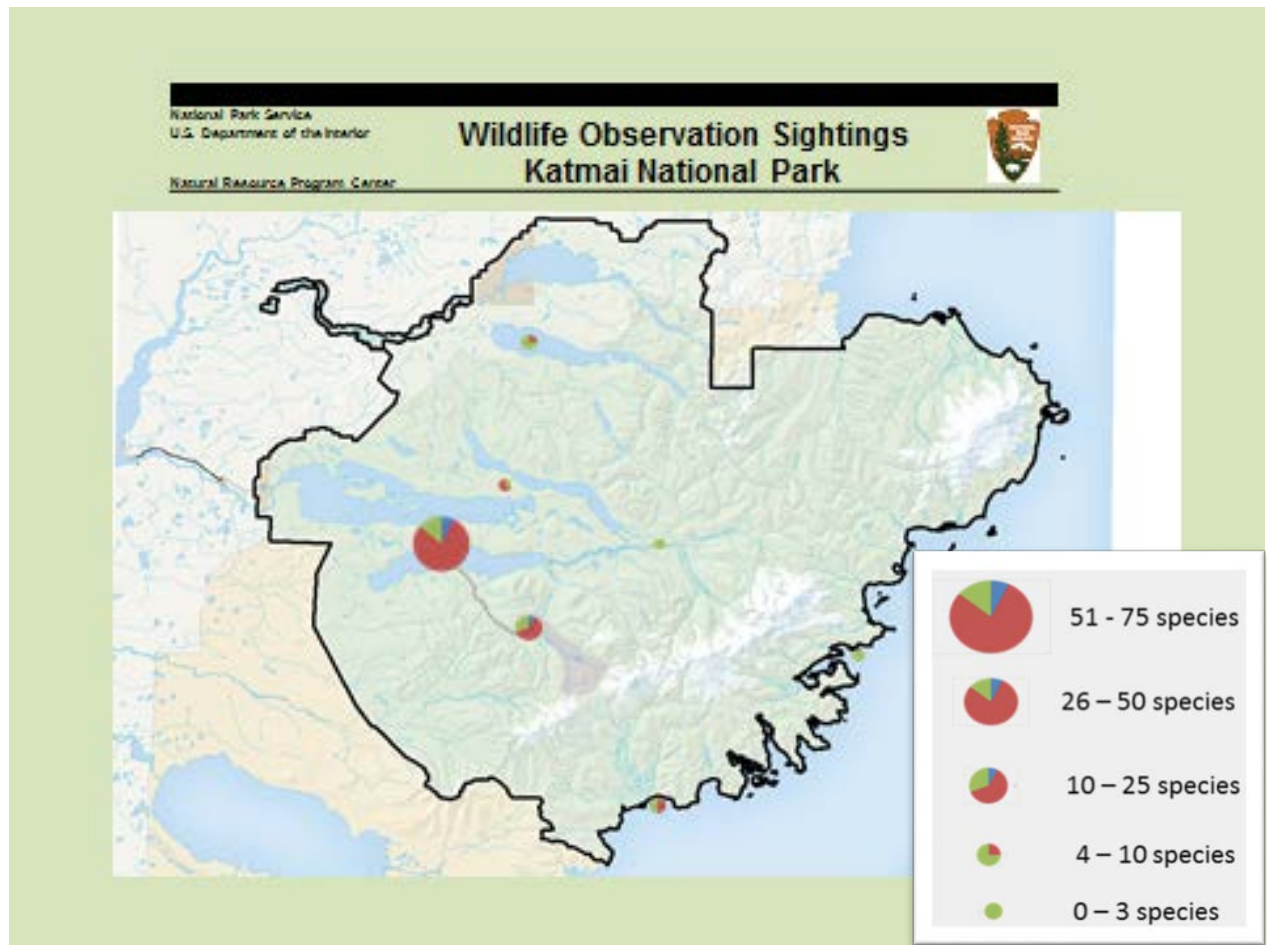


Figure 2. Wildlife Observations throughout Katmai National Park. The size of the circle represents the total number of species recorded while the colors represent the type of species (red=avian, green=mammal, and blue=insect) per location.

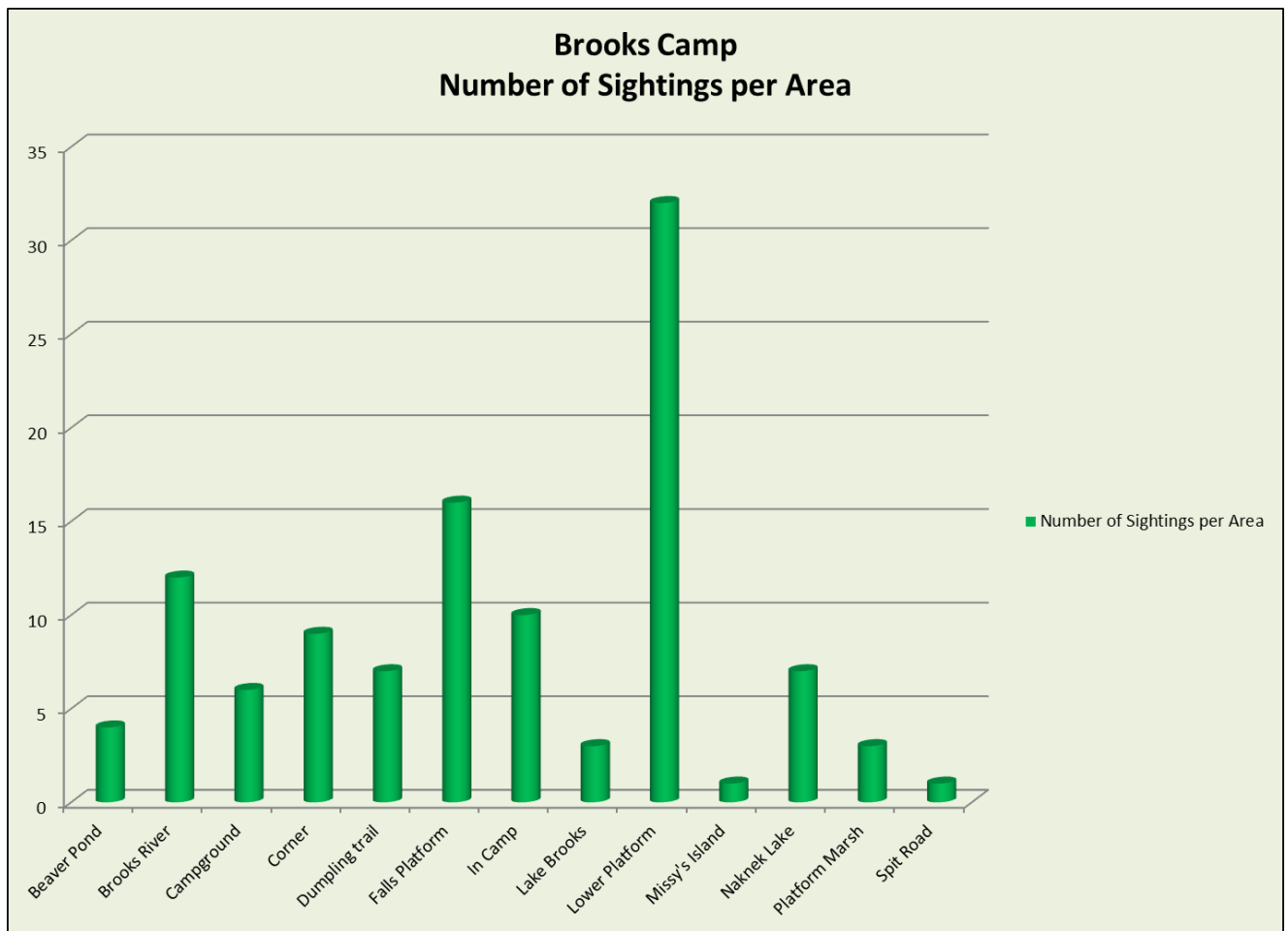


Figure 3 Brooks Camp Sightings

Discussion

The wildlife observation study was restarted in July, 2011 after a four year disruption. The information collected helped to update past records. Had the study started earlier in the spring, observations would have included spring migration and early flights of insects that emerge and have flights early. Seasonal staff generally begins work in May and future training on the observation program should begin then. Brooks Camp opens in early June, providing an opportunity for visitor observations before biology staff begin their work in the area. Throughout the year staff members perform other work in various areas of the park. It would be beneficial to future work if staff recorded wildlife sightings while performing other field work since Katmai staff spend much more time in the backcountry than could be directly supported by this study.

The need for spring observations suggests that it would be important to include an orientation to this study as part of the seasonal staff training and to brief full-time staff during early season staff meetings. Reaching out to bear viewing tour concessionaires about the program may also increase visitor involvement. A spruce grouse survey will begin on the Valley of Ten Thousand Smokes road in June 2012, allowing visitors the chance to record spruce grouse sightings during the drive to the valley. Adding other wildlife observations to this study may increase the number of sightings and species seen in that area.

The last recorded bird survey of Katmai National Park was performed in 2007 (USGS 2011). Avian sightings from the past year have improved the birding checklist. Breeding bird surveys and point counts are scheduled to resume in June of 2012 which will allow comparison to the species spotted in the observational sightings.

Some additional information gaps have been identified from the preliminary study results. No hares have been previously recorded in the valley, so a small mammal survey should be performed to identify the species of hare and to record movement of other small mammals into the area. Nine different areas had wolves, suggesting the possibility of more than two wolf packs in the park. A wolf survey of the park would identify where packs are located or verify that the observations were of lone wolves passing through the areas.

The Alaskan Orange Tip Butterfly (*Anthocharis sara alaskensis*) is a rare species that experts suggest may occur near the base of Dumpling Mountain. It is one of the butterflies whose life cycle happens in the spring, earlier than this study. Earlier program start times and distribution of photographs of the butterfly may help the biological staff identify and locate the species.

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Appendix A: 2011 Observed Species at Katmai National Park

Species	Common Name	Number of Sightings	Number of Adults	Number of Juveniles
<i>Circus cyaneus</i>	Northern Harrier	1	1	0
<i>Buteo lagopus</i>	Rough-legged Hawk	1	1	0
<i>Pandion haliaetus</i>	Osprey	3	3	0
<i>Haliaeetus leucocephalus</i>	Bald eagle	14	18	7
<i>Eremophila alpestris</i>	Horned Lark	1	1	0
<i>Ceryle alcyon</i>	Belted Kingfisher	3	3	0
<i>Cygnus columbianus</i>	Tundra Swan	2	3	0
<i>Anser albifrons</i>	Greater White-fronted Goose	6	1000	0
<i>Anas platyrhynchos</i>	Mallard	15	25	67
<i>Anas strepera</i>	Gadwall	6	10	13
<i>Anas acuta</i>	Northern Pintail	1	1	3
<i>Anas querquedula</i>	Garganey	1	5	0
<i>Aythya marila</i>	Greater Scaup	3	153	0
<i>Somateria mollissima</i>	Common Eider	1	2	0
<i>Histrionicus histrionicus</i>	Harlequin Duck	5	16	12
<i>Bucephala islandica</i>	Barrow's Goldeneye	1	9	0
<i>Bucephala clangula</i>	Common Goldeneye	12	60	0
<i>Mergus merganser</i>	Common Merganser	22	91	18
<i>Mergus serrator</i>	Red-breasted Merganser	10	32	0
<i>Megaptera novaeangliae</i>	Humpback Whale	1	1	0
<i>Canis lupus</i>	Gray Wolf	10	10	3
<i>Castor canadensis</i>	Beaver	3	3	0
<i>Certhia americana</i>	Brown Creeper	2	6	0
<i>Alces alces</i>	Moose	2	2	0
<i>Cinclus mexicanus</i>	American Dipper	2	4	0
<i>Enallagma cyathigerum</i>	Northern Bluet Dragonfly	1	1	0
<i>Perisoreus canadensis</i>	Gray Jay	3	12	0
<i>Pica hudsonia</i>	Black-billed Magpie	20	41	5
<i>Corvus corax</i>	Common Raven	5	10	0
Unknown	Vole	2	2	0
<i>Spizella arborea</i>	Tree Sparrow	3	13	0
<i>Passerculus sandwichensis</i>	Savanna Sparrow	2	5	0
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	3	7	0
<i>Melospiza lincolnii</i>	Lincolns sparrow	1	1	0
<i>Junco hyemalis</i>	Dark-eyed Junco	3	5	0
<i>Erethizon dorsatum</i>	Porcupine	2	2	0

Species	Common Name	Number of Sightings	Number of Adults	Number of Juveniles
Lynx canadensis	Lynx	2	2	0
Loxia leucoptera	White-winged Crossbill	2	11	0
Carduelis hornemanni	Common Redpoll	4	30	0
Gavia	Pacific Loon	1	5	0
Grus canadensis	Sandhill Crane	2	165	0
Carterocephalus palaemon	Arctic Skipper	15	15	0
Pyrgus centaureae	Grizzled Skipper	10	10	0
Tachycineta bicolor	Tree Swallow	3	6	0
Larus canus	Mew Gull	13	45	0
Larus hyperboreus	Glucous Gull	3	13	0
Larus glaucescens	Glaucous-winged Gull	20	402	0
Rissa tridactyla	Black-legged Kittiwake	1	1	0
Sterna paradisaea	Arctic Tern	2	4	0
unknown	Hare	2	2	0
Leucorrhinia hudsonica	Hudsonian Whiteface Dragonfly	1	1	0
Mustela erminea	Ermine	2	2	0
Martes americana	Martin	1	1	0
Lutra canadensis	River Otter	2	2	0
unknown	Seal	1	1	0
Poecile atricapilla	Black-capped Chickadee	8	19	0
Poecile hudsonica	Boreal Chickadee	1	2	0
Phalacrocorax auritus	Double-crested Cormorant	1	2	0
Falci pennis canadensis	Spruce Grouse	29	85	27
Lagopus lagopus	Willow Ptarmigan	2	3	5
Picoides pubescens	Downy Woodpecker	3	3	0
Picoides tridactylus	Three-toed Woodpecker	10	21	0
Picoides arcticus	Black-backed Woodpecker	2	3	0
Pieris angelika	Arctic White	11	11	0
Regulus satrapa	Golden-crowned Kinglet	1	2	?
Citellus parryi	Arctic Ground Squirrel	3	4	0
Tringa melanoleuca	Greater Yellowlegs	12	12	3
Arenaria melanocephala	Black Turnstone	1	2	0
Heteroscelus incanus	Wandering Tattler	1	1	0
Limnodromus griseus	Short-billed Dowitcher	1	1	0
Gallinago gallinago	Common Snipe	1	1	0
Turdus migratorius	American Robin	1	2	0
unknown	Bat	4	29	0