

Winter 2011

GUSTAVUS WILDLIFE NEWS

From the Alaska Department of Fish and Game



Wildlife Management and Research in Gustavus

The Alaska Department of Fish and Game is involved in or has initiated a number of studies and projects involving wildlife and their habitats on the Gustavus Forelands. Though many of you are familiar with the moose research that has occurred here since 2003, we've recently embarked on other studies or are involved in wildlife monitoring activities that we'd like to share with you.

These topics range from moose research and management, to understanding how bears and wolves use the areas around Gustavus, to creating a management plan for the Dude Creek Critical Habitat Area and recent occurrences with the Board of Game and your local Fish and Game Advisory Committee.

We hope you'll find this newsletter both informative and interesting. If you have any questions or feedback about current research and management strategies, please contact us at your local area office in Douglas. Your input is extremely valuable as we seek to manage wildlife populations in Gustavus and throughout the Southeast region in a manner that ensures public opportunity, while simultaneously ensuring the long-term conservation and sustainability of the species.

Neil Barten, Management Coordinator & Ryan Scott, Area Biologist
Region I- Southeast Alaska
Division of Wildlife Conservation
Alaska Department of Fish and Game

Inside

- Management Updates
- Moose Research
- Predator Research
- Wolf/Bear Pilot Study
- Field Notes
- Board of Game & Regulatory Changes



Management Updates

Moose Hunt

The fall 2010 moose season was the second year of the antler restriction hunt, where only antlered bulls with a spike/fork, 3-brow tines, or 50-inch spread are legal. While local participation remained high when this hunt was implemented in 2009, the number of hunters has declined from historic highs. This trend continued in the 2010 hunt. The decline was anticipated given the restrictive nature of the hunt, and the greater amount of time a hunter had to invest to be successful. However, it eliminated the 'derby' atmosphere associated with the previous hunt.

Whenever management strategies change, there are challenges for the hunters and managers alike. During these first two years, relatively few illegal moose were taken. Through outreach efforts, such as pre-season meetings and educational materials, we hope to reduce or even eliminate the harvest of illegal bulls.

We will establish a guideline harvest level for the bull moose hunt for fall 2011, after assessing the adult and calf survival through this winter. Data on cow and calf survival, herd composition from aerial surveys, and production of calves from our radio-collared sample of cows will be used in our population modeling efforts to estimate the number of bull moose available for harvest. These efforts will be completed by late spring, and will be shared with your local Fish and Game Advisory Committee.

December 2010 Moose Survey



Each winter we conduct at least one moose survey. These provide data on the number of moose, as well as the percentage of bulls, cows and calves in

the population. Additionally, we record the presence of all radio-collared moose seen during the surveys. This is used to determine the proportion of moose seen, providing a correction factor used to estimate the

actual number of moose in the population. We survey both the Gustavus Forelands and the upper Beartrack River, where habitats not covered in dense forest make for good visibility to count moose. A graph of the survey counts conducted during 1998-2010 is included on page 4.

On December 2, 2010 the Gustavus area received 8 inches of snow, making conditions ideal for the annual moose survey. We used binoculars to view each moose to ensure that we didn't miss any radio-collars, and to determine whether the animal had antlers. During the survey, we saw 22 of 34 collared moose (65%), which is similar to the numbers seen on previous Gustavus surveys, and also to numbers seen in Berners Bay.

Survey Results- Gustavus Forelands

During the survey, we saw 165 moose on the forelands, of which 14 were bulls, 22 were calves, and 129 were cows or antlerless adults. Using the sightability estimate of 65% from our radio-collared sample, our estimate of the number of moose on the forelands is approximately 253 animals.

We also surveyed the upper Beartrack River, and counted 18 moose consisting of 12 cows or unantlered adults, 5 bulls, and 1 calf.

How does this compare with previous years? You may turn to page 4 to compare the population estimates during the period of 1998-2010. In a nutshell, the number of moose has been similar the last three years.

Moose Survey Data

When conducting aerial surveys our objective is to tally the number of cows, calves and bulls within each group we see. The number of calves is important, as it provides information about the number of young animals being recruited into the moose population. We also monitor radio-collared cow moose to estimate calf survival throughout the year. We categorize the bull moose as small, medium, or large. The size of the bulls provide an estimate of the number of mature bulls and young bulls that are being recruited into the

population. The bull to cow ratio is an important measurement used to assess the health of the moose herd, and provides assurance there are enough bulls for timely breeding of cows. While this survey data is valuable for any given year, the trends we see over a longer period of time are the most valuable for interpreting how a population of moose is doing.

Dude Creek Critical Habitat Area

Dude Creek Critical Habitat Area (CHA) was established by the legislature in 1988 to protect and preserve staging habitat for migrating lesser sandhill cranes in the Gustavus Forelands and for continued public use and enjoyment of the area. In February 2010, the development of a management plan for Dude Creek CHA began with a series of scoping meetings held in Gustavus, Juneau, and Hoonah to gather public input. The management plan is primarily used by biologists to guide approval of land use activities through 'Special Area' permits. It also provides direction to the biologists managing the operations in the Critical Habitat Area.

A planning team is composed of representatives from the Alaska Department of Fish & Game, the Board of Game, the Alaska Department of Natural Resources, the City of Gustavus, the National Park Service, and the Nature Conservancy. The planning team has drafted goals and policies for the Dude Creek CHA management plan. These are based on scoping comments, statutory requirements, and resource information. A public review of the draft plan will be completed in the near future. It will be distributed in hard copy and



available online for public comment for 30 days. Once public comments are addressed and the final draft of the plan receives preliminary approval by the Commissioner of Fish and Game, the goals and policies are subject to a regulatory review and public comment period by the Division of Law. The final plan is approved by the commissioner, and the goals and policies are adopted into regulation.

Ryan Scott, Area Biologist and Neil Barten, Management Coordinator post boundary signs at Dude Creek CHA. For more information about local management issues, contact the Douglas Area office at 465-4265 or send an email to:

ryan.scott@alaska.gov or neil.barten@alaska.gov



Research Updates

Moose Research in Gustavus Forelands

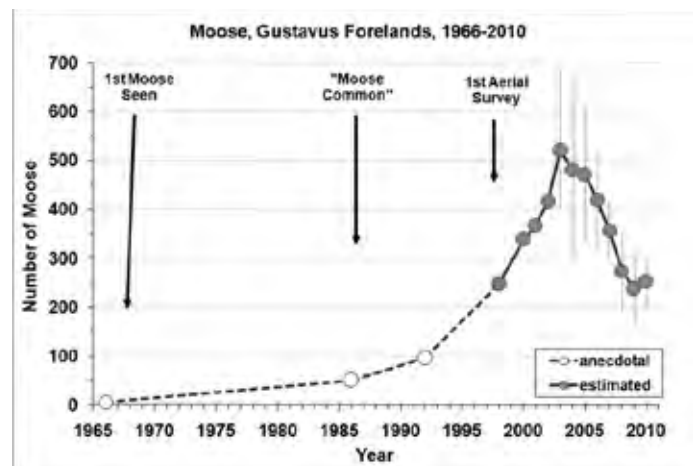


Since 2003, ADF&G biologists Kevin White (left photo), Neil Barten, Stacy Crouse, Ryan Scott and Jeff Jemison have been conducting moose research on the Gustavus forelands. The purpose of research activities has been to learn about the interplay between moose and their habitat with the specific purpose of

determining the impacts of extremely high moose densities on habitat conditions and moose population performance (i.e. body condition, reproduction and survival). Between 1992-1998, adult female moose were harvested during the annual fall hunting season to reduce the moose population to a moderate and more sustainable density. During this period, research data (based on radio-collared moose capture and monitoring) indicated that the moose population became more healthy (higher body condition) and more resilient (higher reproductive rates) as moose population density was reduced. Currently, the moose population is at a moderate density, though still higher than nearby populations in Haines and Berners Bay. Over the last 3 years (2008-2010) the moose population has stabilized at 250-300 moose, a level considered to be sustainable over the long-term.

During 2003-2010, several of the initial objectives of the moose research project have been addressed. Consequently, the moose research project in Gustavus is shifting from a program focused on routine capture

and monitoring of moose, to a less intensive program focused on routine monitoring of radio-marked moose and minimal capture activities. Currently, 34 adult female moose are marked with radio-collars and our intent is to monitor these animals annually to gather data relative to their reproduction, survival and abundance. These data are critical to the future management of the population, and specifically aid in determining appropriate harvest levels for the fall bull moose hunt. Every few years, additional moose will be captured to maintain a minimum number of radio-marked moose to compensate for those animals dying from natural causes (typically about 10% each year). This activity is crucial to ensure that the conclusions we draw from data collected from radio-collared moose monitoring are accurate and reliable.



Moose population estimates based on both anecdotal and survey information between 1966-2010.



For more information about this research project, contact Kevin White at the Douglas office, 465-4102 or by email: kevin.white@alaska.gov.

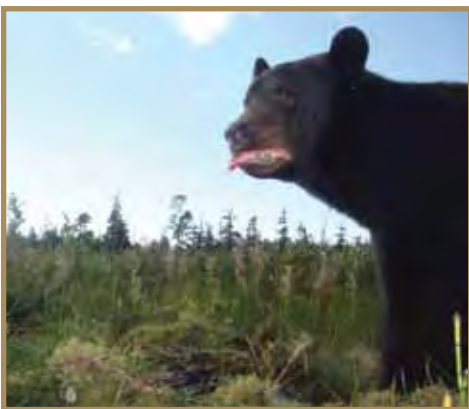
Predators of Gustavus Research



Beginning in the spring of 2010, graduate student Diana Raper (left photo) from Oregon State University in collaboration with ADF&G biologist Kevin White initiated a multiple year research project to investigate habitat use and food habits of wolves and black bears in the Gustavus-Glacier Bay ecosystem.

Researchers also set out to determine whether or not wolves and black bears, as well as other scavenger species were taking advantage of the different types of carrion resources available throughout the study area. This research effort uses multiple non-invasive techniques (sign surveys, scat analysis, camera-trapping) for collecting information on predator ecology in the Gustavus-Glacier Bay ecosystem.

A key component of learning about predator habitat use has been to conduct sign surveys. During these surveys, researchers record the type of predator sign (e.g., scat, tracks, hair, rub trees, daybeds), the location of the sign, and a brief description of the habitat where the sign was found. In doing so, researchers are able to integrate the sign type, location, and habitat information into a computer program to examine predator habitat use. During sign surveys, researchers collect wolf and black bear scat which is analyzed to gain insight into the food habits of wolves and black bears. Specifically, undigested items such as bone, hair, teeth, and feathers are identified in the feces of both predators using dissecting microscopes, museum specimens, and dichotomous keys. To determine if scavengers are using the variety of



A black bear scavenging the remains of a hunter-harvested bull moose, fall 2010

carrion available throughout the Gustavus-Glacier Bay study area, researchers are placing motion-triggered trail cameras at large mammal carrion sites to record scavenging activities. Locations of large mammal remains are obtained through a variety of methods including communicating with hunters, searching for aggregations of birds and opportunistically.



An eagle and several ravens scavenging the carcass of a hunter-harvested male wolf. (top photo) A wolf sniffing the hide of a harvested bull moose.



Findings From Year 1

- Preliminary results confirmed that both wolves and black bears use a variety of habitat types across the Gustavus-Glacier Bay ecosystem including beach meadows, upland meadows, conifer forests, deciduous forests, and conifer-deciduous mixed forests.
- Based on scat analysis, spring wolf diets were diverse, containing prey items such as moose, porcupine, snowshoe hare, and a couple of avian species. Spring black bear diets were dominated by vegetation, such as sedges, rye grass, and horsetail, but also contained amphipods (beach hoppers) and moose.
- Camera-trapping efforts resulted in more than 8,000 pictures and 10 different vertebrate scavenger species were documented across a variety of habitats. Birds such as ravens and magpie were the most common vertebrate scavengers and were detected at approximately 90% of the carrion sites. Terrestrial scavengers such as wolves, black bears, and brown bears were less common but detected at nearly 50%, 20%, and 15% of sites, respectively. For more information, email: Diana.Raper@oregonstate.edu

Research Updates

Wolf and Bear Studies in Gustavus

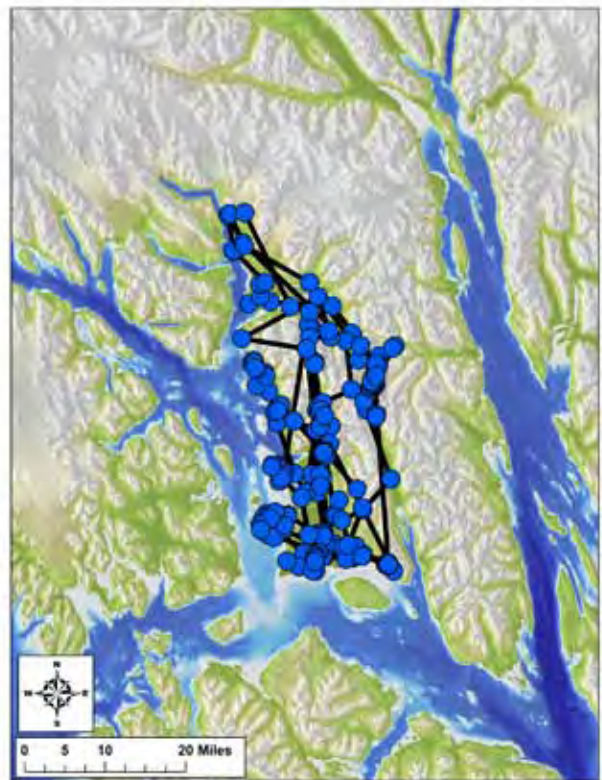
In October 2010, ADFG initiated a 'pilot' study focused on gathering baseline information about wolves and bears in Gustavus. The initial goal of the study is to determine which types of field methods can be effective for collecting meaningful data about wolf and bear ecology. The conventional methods for studying wolves in other parts of Alaska are less effective in the densely forested environment in Gustavus. Thus, the first step in learning more about these elusive animals lies in determining which field methods 'work' in this environment.

Overall, field activities have focused on gathering information about wolf and bear movement patterns, population (or pack) size, and diet composition. One key aspect of these activities involves capturing and attaching GPS-linked radio-collars to 4-5 wolves and bears. In early November 2010, one adult female wolf was successfully radio-collared. During the intervening time, ADFG biologists have remotely downloaded GPS locations (via aerial surveys) and mapped out the wolf distribution and movement patterns. In addition, wolf GPS locations have been visited from the ground or examined from aircraft to learn about the animals activities at location 'clusters' or spots where significant time was spent in a certain area. The intent is to determine what the wolf may have been feeding on at these feeding sites.

One initial finding of particular interest relates to boundary of the radio-collared wolf's 'home range', or area that it uses on a regular basis. During the first two months of monitoring (November-January), GPS locations downloaded from the wolf's collar revealed it has spent considerable time on the Gustavus Forelands, Beartrack River, Excursion Ridge and Endicott Gap. In addition, the wolf has been on multi-day forays to Secret Bay, Sandy Cove, Adams Inlet and as far north as McBride Inlet in the east arm of Glacier Bay (about 50 miles north of Gustavus). The home range of this wolf (1851km² or 714mi²) appears to be quite large, especially in comparison to wolves previously studied on Prince of Wales island (ca. 300 km²) by Ketchikan-based research biologist Dave Person. Nonetheless, the large size of the Gustavus

wolf home range is not entirely surprising since a recent study (2007-2009) of a mainland wolf pack monitored in the Berners Bay area encompassed a comparable size (from the Katzeihin River to Herbert Glacier with a few forays to Taku Inlet). The likely reason for the large home range of wolves on the mainland, as compared to Prince of Wales Island, presumably relates to the relatively lower prey density on the mainland, namely the lack of a high-density deer population.

In time, additional field efforts and further data collection will undoubtedly provide a greater understanding and a more complete perspective of wolves in the Gustavus area. Given the preliminary nature of the study, we have many more questions than answers. And if there is one common theme about wolves, it is to 'expect the unexpected' and never be surprised when your pre-conceived notions are shattered. For now, our knowledge of the Gustavus wolves is akin to having a few pieces of a complicated puzzle. Stay tuned!



GPS locations of a wolf fitted with a radio-collar in November 2010. The wolf traveled 407 miles in the first two months of monitoring.

Jeff's Field Notes: A day in the life of a wolf



The day is crisp and cold, an icy, hard packed snow underfoot and a brilliant blue sky overhead. Today's goal is to backtrack the route of a GPS radio-collared wolf's movements over the course of a day in mid-January. Just

yesterday, we radio-tracked the wolf from an aircraft and 'remotely' downloaded two months worth of locations (330 individual GPS locations, or 4 per day). These points were transferred onto my handheld GPS, which we'll use to navigate to each location.

Our hike across the frozen meadow is loud and crunchy, echoing deep into the forest. There's little chance we'll be sneaking up on any animals. Besides, we're visiting locations where the wolf had been on January 11, almost three weeks ago during a stretch of time when the snow was wet and soft. The recent cold snap has created a snapshot of frozen tracks showing what animals moved through during that time period. The first GPS location is in an icy swath of small alders with no discernable animal sign. We pass an old set of moose tracks in the ice, enter a forested area and arrive at the next GPS location. There are patches of snow where the canopy overhead is sparse. We search the area in expanding concentric circles. There are several heavily used moose trails. Lying partially embedded in the moss



are some old moose leg bones. They don't show any indication of chewing. We find a set of small wolf tracks in the snow, and

considering the size and age of our collared wolf, these could very well be her tracks. We find another set of wolf tracks; this time a pair



of wolves trotting side by side. These tracks are much larger, as big as my fist. We follow the three sets of wolf tracks, heading directly towards our next GPS location.

We cross a small creek and find a freshly chewed moose scapula and a lot more wolf tracks. Close by are some vertebrae completely clean of meat; the hide is nowhere to be found. We find another scapula, leg bones and the spine of an adult cow moose still connected to the skull. By looking closely at the molars, we determine it is an older cow, with its smooth, well worn surfaces.



Although we don't know if our wolf had anything to do with this particular cow's death, she was certainly there investigating or scavenging the bones. We collect a wolf scat, frozen solid. We'll have it analyzed and extract DNA from it for genetic sequencing. Before moving on, we set up a motion-triggered camera on the skeleton, which we'll check several weeks from now to see if any animals return to this specific bone pile.

In under two hours, we hiked 2 1/2 miles and found a freshly scavenged moose carcass, at least three different individual wolves' tracks, moose and wolf scat, and an old moose leg bone. We were not able to determine if the collared wolf was traveling with the others, but she may be following their scent trail and scavenging what they leave behind. We have several remotely triggered cameras set up in Gustavus, but have only captured one image of the collared wolf. We have no way of knowing if she is running around alone or in a pack. Since we have covered only three of the 330 waypoints, we have a long way to go... I wonder what we'll discover at the next cluster of GPS waypoints?

Jeff Jemison is a wildlife technician working with research biologist, Kevin White. For more information about this project, contact Kevin White at the ADF&G office in Douglas at 465-4102 or send an email to: kevin.white@alaska.gov.

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Moose Management & Surveys
Dude Creek Critical Habitat Area
Research Updates
Board of Game & Regulatory Changes

Alaska Board of Game Update

New Advisory Committee Members

In December 2010 the following Gustavus residents were elected to fill seats for the Icy Strait Advisory Committee: Archie Kendle, Hank Lentfer, Dave Lesh, Craig Murdoch, Sean Nielson and Dean Wagenspack

Use of Break-away Wolf Snares

At the 2010 Alaska Board of Game meeting held in Ketchikan in November, a proposal to allow the use of breakaway wolf snares with diverter wires at Gustavus was deliberated by the Board, and the proposal passed. The use of large diameter snares has been prohibited in the Gustavus area since 2003, when concerns for incidentally catching moose and pets led to the prohibition. New technology has yielded a snare that has proven to be nearly moose-proof. The concept of the breakaway snare and diverter wire is simple; the diverter wires greatly reduce the likelihood of a moose ever being caught, but if one does end up in the snare, the breakaway mechanism allows the moose to break free. Department research staff has fine tuned the snare design to minimize the chance of incidental captures. Additional information on this type of snare can be found on the department's website at:

www.wildlife.alaska.gov/index.cfm?adfg=trapping.breakaway

www.adfg.alaska.gov/index.cfm?adfg=librarycollections.wildliferesearch#tech_dev