



PROPOSED EXPANSION OF NAHANNI NATIONAL PARK RESERVE

Dall's Sheep Research

Parks Canada and the Nahanni Expansion Working Group have sponsored research studies related to the proposed expansion of Nahanni National Park Reserve. In the Dehcho region, these studies will help provide the information needed to propose a new boundary for Nahanni National Park Reserve. Additional studies may be required in the Sahtu Settlement Area.

WHY STUDY NAHANNI'S DALL'S SHEEP?

Dall's sheep are one of the larger animals found in Greater Nahanni Ecosystem. They prefer to use alpine tundra habitat near cliffs that provide an escape route from predators. Dall's sheep live in small, local populations. They cannot recover easily if the population is reduced or extirpated (extirpated = locally extinct).

Current park boundaries do not protect enough of the alpine habitat they need. Most of the known sheep ranges in the Greater Nahanni Ecosystem are outside the existing park. Parks Canada wants to help ensure long-term survival



Single Dall's sheep lamb at Prairie Creek mineral lick. Photo: Douglas Tate, Parks Canada.

of Dall's sheep populations within the Greater Nahanni Ecosystem.

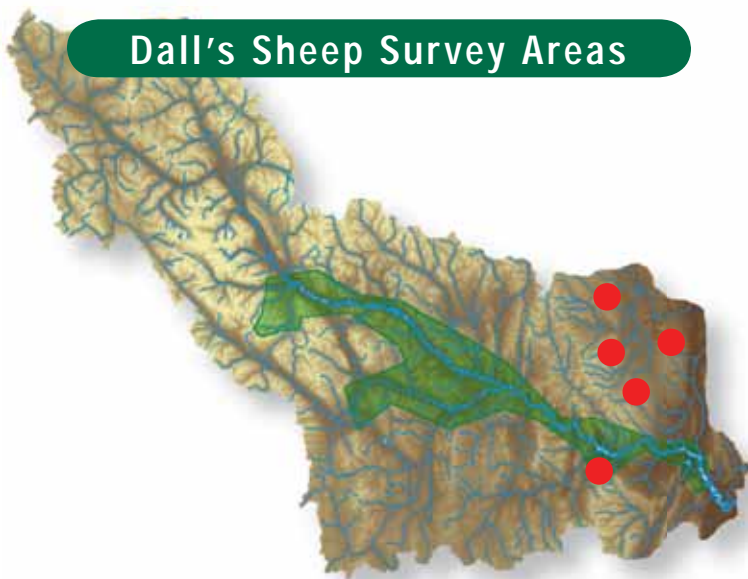
WHAT DID WE WANT TO LEARN?

- To understand and map the distribution of Dall's sheep and their habitat within the Greater Nahanni Ecosystem.
- To estimate the numbers of Dall's sheep in groups living in representative patches of habitat.
- To study genetic differences between groups of Dall's sheep that may have been isolated for very long periods of time.

HOW WAS THE RESEARCH DONE?

- In summer 2005, surveys of sheep and sheep habitat were carried out by helicopter, with some ground work, in the area of the Ram Plateau, Tundra Ridge, and Nahanni Plateau.
- Ground surveys (hiking) were undertaken on the Tlogotsho Plateau.
- Opportunistic observations of sheep at other locations were recorded.
- Hair and faecal samples were collected at numerous locations.

Dall's Sheep Survey Areas



- Dr. John Weaver also compiled all known data from previous studies (1966-Present) and included 567 year-round observations of sheep recorded by Nahanni park wardens on boundary and river patrols between 1977-1989.

WHO DID THE WORK?

- Parks Canada staff.
- Dr. John Weaver, Conservation Biologist with Wildlife Conservation Society – Canada.

WHAT ARE THE MOST IMPORTANT THINGS WE LEARNED?

Dall's sheep were observed at all of the main locations listed.

During the surveys in 2005, Dall's sheep (mostly ewe/lamb pairs and groups), were observed using caves as shelter.

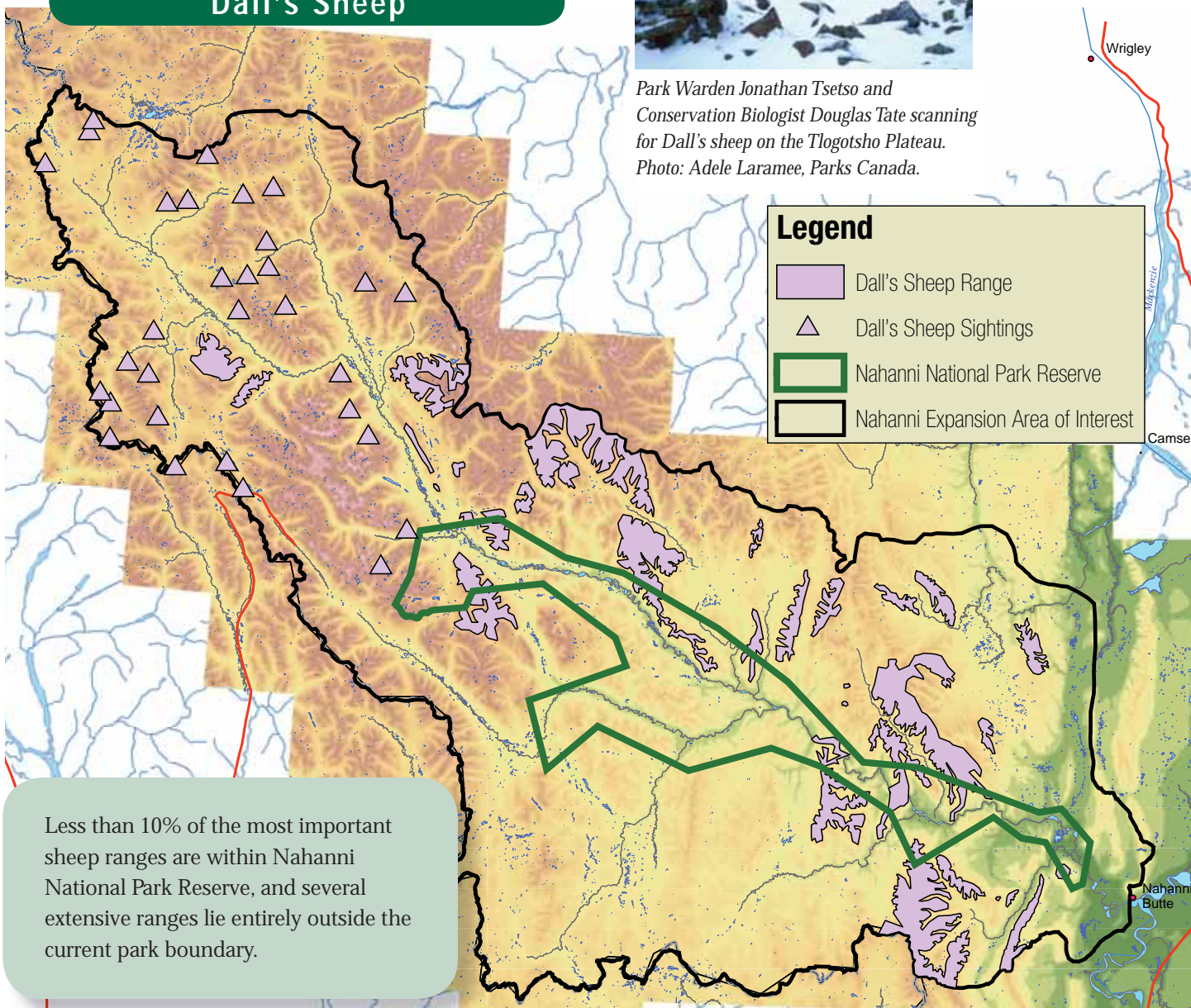


*Dall's sheep ewes rest amongst the rocks on the Tlogotsho Plateau.
Photo: Douglas Tate, Parks Canada.*



*Park Warden Jonathan Tsetso and Conservation Biologist Douglas Tate scanning for Dall's sheep on the Tlogotsho Plateau.
Photo: Adele Laramee, Parks Canada.*

Dall's Sheep



Less than 10% of the most important sheep ranges are within Nahanni National Park Reserve, and several extensive ranges lie entirely outside the current park boundary.

Altogether, 35 caves in two drainage basins were surveyed. Dall's sheep were observed in the entrance to several of these caves, and the presence of sheep hair and faeces was recorded at a number of other caves.

It's possible that some sheep in the Greater Nahanni Ecosystem have a unique genetic structure because of isolation during the last Ice Age. The researchers collected samples of faeces and shed hair to test this theory, but DNA analyses are not finished.

Key ranges that support some of the larger sheep populations are located in the northern and eastern sectors of the Greater Nahanni Ecosystem. These include the Liard Range, Tlogotsho Plateau, Headless and Funeral Ranges, and Nahanni Plateau. In these areas, winter snow pack is shallow and/or windblown, which probably helps sheep survive.

Average numbers of Dall's sheep were low but similar to estimates of sheep numbers throughout the Mackenzie Mountains.

The total population of Dall's sheep in the Greater Nahanni Ecosystem may be 800-1,200 animals.



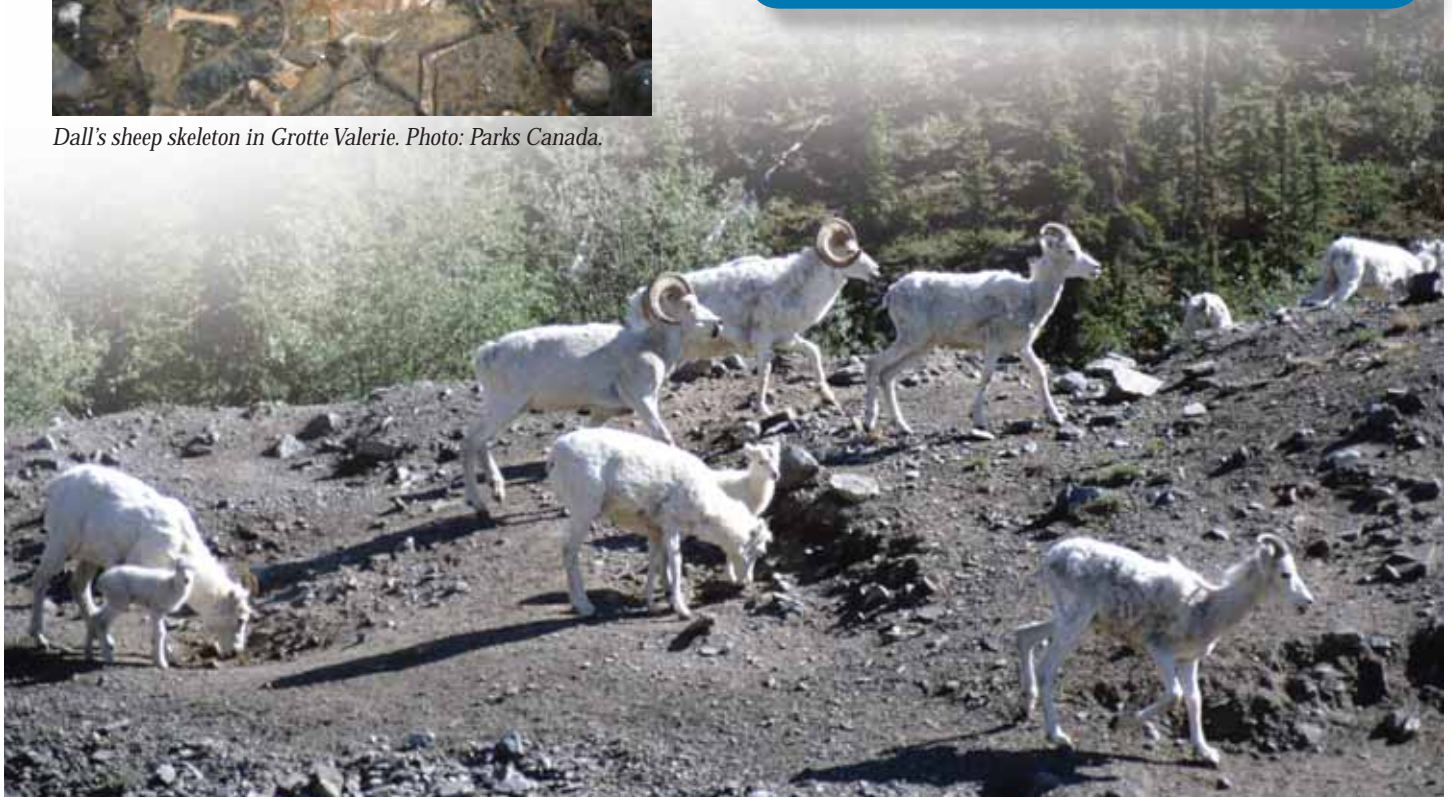
A young ram rests on a ledge overlooking Deadmen Valley. Photo: Douglas Tate, Parks Canada.



Dall's sheep skeleton in Grotte Valerie. Photo: Parks Canada.

DID YOU KNOW?

The skeletal remains of more than 100 Dall's sheep are located in Grotte Valerie, an extensive cave system located high on the wall of First Canyon. Carbon dating shows that some of these sheep skeletons are more than 2000 years old. The sheep became trapped in the cave after they slipped down a perpetually frozen slope of ice.



Dall's sheep at Prairie Creek mineral lick. Photo: Douglas Tate.



NAHANNI KARST AND NAHANNI'S SHEEP: A UNIQUE ARRANGEMENT?

In the northeastern part of the Greater Nahanni Ecosystem is the Nahanni Karst: a limestone landscape that has the most diverse and striking karst features anywhere in the arctic or sub-arctic regions of the world. During fieldwork in 2005, researchers discovered a new area with a high number of karst caves that were used by Dall's sheep. This is important for two reasons.

First, these karst caves have never been documented before, so their discovery alone is exciting. Second, and even more exciting, we learned that these caves may help increase the survival of Dall's sheep lambs. Each cave has a lush carpet of grasses and other plants at the entrance and is difficult for predators to reach – giving ewes and lambs both food and security. Dr. John Weaver has learned that this use of caves by Dall's sheep has been found nowhere else in North America!

WHAT WILL BE DONE WITH THIS INFORMATION?

We now know a great deal more about the most important areas for Dall's sheep in the Greater Nahanni Ecosystem. We will use this information to help propose a new boundary for Nahanni National Park Reserve that will better protect Dall's sheep and the habitat they need to survive.

DO YOU HAVE QUESTIONS?

Please contact us! Your questions, views and opinions are very important. Your voice will be heard.

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The information and maps in this fact sheet are from:

Parks Canada. In Press. Nahanni National Park Reserve of Canada Nah?à Dehé Report on Research and Monitoring 2004 & 2005. Unpublished Report.

Weaver, J.L. 2006. Big Animals and Small Parks: Implications of Wildlife Distribution and Movements for Expansion of Nahanni National Park Reserve. Wildlife Conservation Society Canada Conservation Report No. 1. Toronto, Ontario.

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(Above) John Weaver, a biologist with Wildlife Conservation Society, examines lush plant growth near the entrance to a cave used by Dall's sheep. Photo: Steve Catto, Parks Canada.

(Left) A Dall's sheep skull rests on the Tlogotsho Plateau, an area providing important year round habitat. Photo: Douglas Tate, Parks Canada.

