



Table of Contents

	Fish and Wildlife Branch Highlights 2010	1
	Assessing Yukon lake trout populations	
	The Yukon Conservation Data Centre	
	A Celebration of Swans — A success story	
	Chisana caribou: Recovering a declining herd	
	Dall's sheep in the north Richardson Mountains	
	Learning about moose populations in the Nisutlin area	
	Implementing a harvest management plan for the Porcupine caribou herd	
	Coordinating the management of wildlife in the Southern Lakes area	
	Review of the 1992 Yukon Wolf Conservation and Management Plan	
	Peregrine Falcon inventory1	
	Public participation in an inventory of non-native small mammals	
CONTRACT BUILDING	Assessing the habitat of the Forty Mile caribou herd	
SECTION SOURCE	The role of ongoing fish and wildlife monitoring1	
	Fish and Wildlife technical reports released in 20101	
	New from the Wildlife Viewing Program1	



Fish and Wildlife Branch Highlights 2010

Learning by doing, or "adaptive management" is central to Fish and Wildlife Branch programs.

Through ongoing monitoring and periodic evaluations, we can respond to changing conditions and circumstances. Data gathered in one year is used to plan projects the next.

Ongoing monitoring also allows us to get a long-term view of changes in the environment over time and differences from year to year.

The projects here look at everything from mice to moose, from fish swimming in our lakes to swans flying overhead. The projects also illustrate some of the ways that Yukoners are engaged in wildlife management. It's by working together, using the best information we have, that we can achieve wise use of Yukon's wildlife resources.

This booklet highlights just some of the projects the Fish and Wildlife Branch carried out in 2010. If you would like more information about these or any of our other projects, contact your regional biologist or go to www.env.gov.yk.ca.





Assessing Yukon lake trout populations

In 2010, the Fish and Wildlife Branch did lake trout assessments on Fish, Snafu, Tarfu, Lewes, Sekulmun, and Pine lakes. Results show healthy populations of smaller fish in Fish and Lewes lakes. Lake trout abundance was low for Pine, Snafu, and Tarfu lakes, while Sekulmun Lake had a low density of large lake trout which biologists consider to be normal for a large unexploited lake.

Which lakes are assessed each year is determined by a number of factors. Important lake trout lakes with substantial recreational or other fisheries are usually assessed every five years. In some other cases, lakes are given priority because of concerns from First Nations and Renewable Resources Councils, or because of commitments made as part of management planning processes. Road accessible and remote fishing lodge lakes with relatively high levels of fishing effort and harvest are often included as well. In addition, some remote lakes are assessed to get baseline information for lakes with little or no fishing.

Stock assessments are the basis for many fisheries management decisions. They provide data on the current state and any trends in the population status of key species. If the fish population is declining, then managers can respond by taking appropriate management actions. For example, if fishing pressure is high enough to lower the quality and number of fish, fisheries managers can respond by lowering the catch or possession limits in the recreational fishery. If lake trout numbers decline, but there is little or no fishing pressure, then managers might suspect a problem with the fish's habitat and take action to fix this where possible.

Lake trout are also sensitive to environmental factors — they need clean cold water to thrive. Finally, lake trout live for a long time, but mature at an old age and have a very low rate of reproduction. This makes them more susceptible to over-harvest than other fish and means that once lake trout stocks have declined, recovery can take many decades.

The Fish and Wildlife Branch has been conducting assessments of lake trout stocks since the Fisheries Unit was formed in 1991. Assessments focus on lake trout for many reasons. Lake trout are not only a highly valued and sought after fish species, they are considered an indicator species of the health of lake systems. If the lake trout population is healthy, then the aquatic environment is likely healthy as well.

The Yukon Conservation Data Centre



The Yukon Conservation Data Centre (CDC) was established in 2002 as NatureServe Yukon. As part of an international network, its role is to gather, maintain, and distribute information on animals, plants and ecological communities of conservation concern in the territory.

The CDC's database currently contains information on the locations and conditions of more than 115 species of conservation concern in Yukon. This information is publically available and is used in a number of ways. For example, CDC information is used in environmental assessments, land-use planning, conservation actions, recovery planning, and conservation status assessments. The CDC also produces materials and hosts workshops to help people learn about species of conservation concern.

A major accomplishment in 2010 was the completion of the dataset for collared pika. The CDC examined collared pika specimens from 1906 to the present in museums across North America to identify and record where and when they had been collected. This was the most thorough review of data from outside the territory that the CDC has completed so far. These findings were combined with local information and observations from individuals out on the land. The resulting map shows all known locations of collared pika in Yukon.

Everyone is encouraged to participate in the work of the Yukon CDC. For more information on the CDC, how you can contribute to or request information, go to: **www.env.gov.yk.ca/cdc**



Collared pika are small mammals that live in rocky outcroppings in high, mountainous terrain. Their high-pitched "peep" calls can be heard bouncing across mountain tops. Pika themselves can be hard to spot but their distinctive "hay stacks" (piles of grass stockpiled in the late summer) indicate that they are living nearby.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is assessing the conservation status of the collared pika. Report writers for COSEWIC rely on accurate and up to date information from Conservation Data Centres for species assessments.

A Celebration of Swans — A success story



A Celebration of Swans has become a popular and exciting way for Yukoners to welcome the arrival of spring to the territory.

The Fish and Wildlife Branch's Wildlife Viewing Program first hosted A Celebration of Swans in 1994. It was started in the belief that human disturbance of migrating waterfowl could be reduced if people understood the need to respect and care for the key staging areas in southern Yukon. These few areas are very important for migrating birds to rest and feed on their long migrations to their northern nesting grounds. Disturbance by people on snowmachines, in boats, and on foot had become a problem and was distressing the swans, ducks, and geese at a time when they needed to be building up their strength.

The Swan Haven Interpretation Centre at M'Clintock Bay on Marsh Lake is the focus of most of the celebration's activities. M'Clintock Bay is one of five major staging areas in southern Yukon and a wonderful place for visitors to see and learn about swans.

In the spring of 2010, over 2500 people visited Swan Haven to view a record high number of swans. In addition, more than 600 Yukon students and teachers participated in the interpretive programs that focus on learning about wetlands, migration, and waterbirds. A 2010 survey indicated that two thirds of Yukon residents have attended *A Celebrations of Swans* event at least once.



A Celebration of Swans has proven to be a wonderful success. By providing activities designed to increase the awareness of the value and importance of staging areas, people have learned the value of watching from a distance, resulting in a decline in disturbance by people who are enthusiastic about seeing the spring migration of swans and other water birds.

Continued monitoring of the migration shows that waterfowl have been arriving earlier and in greater numbers since the spring counts began in 1974. On April 7th, 2010, there were over 2400 Trumpeter Swans at M'Clintock Bay on Marsh Lake. This was the largest gathering ever recorded in Yukon.

With the first open water in the region, M'Clintock Bay has many attractions for returning swans and other waterbirds. It offers shallow water, access to food, good visibility and little disturbance, making it an important place to stopover on the long migration to northern nesting grounds.

Chisana caribou: Recovering a declining herd

The Chisana caribou herd ranges across the Yukon/Alaska border near the headwaters of the White River, south of Beaver Creek. During the 1990s, local residents and wildlife managers became very concerned about the apparent decline in the number of caribou in this herd. Several factors including low rates of calf survival, predation, and harvest pressure combined to reduce the population size to a level that threatened the herd's survival.



Chisana caribou belong to the Northern Mountain population of woodland caribou (Rangifer tarandus caribou). The national Species at Risk Act recognizes the Northern Mountain population as a species of Special Concern. In Yukon, the Chisana caribou herd is listed as Specially Protected Wildlife under the Yukon Wildlife Act.

More information about the management of the Chisana caribou herd can be found at: www.env.gov.yk.ca/mapspublications/documents/chisana_caribou_recovery09.pdf

Environment Yukon and its partner agencies in Yukon and Alaska focused their recovery efforts on a captive breeding program, harvest management, and the development of a management plan for the herd. On-going monitoring has provided further information to support management decisions.

The captive breeding program took place for four years, beginning in 2003. The strategy was to increase the number of calves born and improve their chances of survival by providing protection and better nutrition for the cows and their young when they are most vulnerable. Pregnant cows were captured and held in a large pen the last few weeks before their calves were born and for a few weeks following calving. Follow-up studies found this strategy generally improved the survival rates of the calves during their first five months.

In 2010, Alaskan and Yukon biologists conducted the fourth in a series of aerial surveys to determine the size and distribution of the herd. Results of this survey, combined with the results of the 2003, 2005, and 2007 surveys and from the ongoing fall composition counts, showed that the herd size is now stable at about 700 animals.

Also in 2010, an inter-agency working group prepared a five-year management plan to guide the activities of the responsible wildlife agencies. The plan identifies objectives and actions related to population monitoring, harvest, habitat, predation, research, and public awareness. The plan is in the final stages of public review. Implementation should begin in 2011.



Dall's sheep in the northern Richardson Mountains

Yukon has more wild thinhorn sheep than any other jurisdiction of Canada. The white-coloured Dall's sheep (*Ovis dalli dalli*) is one of the two subspecies of thinhorn sheep that live in Yukon. The other is the grey-coloured Stone's sheep (*Ovis dalli stonei*).

Dall's sheep in the northern Richardson Mountains are at the extreme northeast end of the species' distribution. The range straddles the Yukon/ Northwest Territories border. A draft management plan for this population recommends a survey every three to five years to monitor its size and assess ongoing management strategies. If the number of adults falls below 500 and is believed to be declining, then population estimates must be done more frequently. The last survey of the area was completed in 2006.

Ewes, yearlings and young rams (usually up to two years old) group together and are collectively known as nursery sheep. Lambs are usually born between late May and early June and stick close to their mothers in these nursery groups.

Monitoring of the northern Richardson Mountains sheep population is a co-operative project between the Government of the Northwest Territories, the Gwich'in Renewable Resource Board and Government of Yukon.

Many lambs die within the first few weeks of birth. Counts are done after lambs are out of the danger period so that biologists can use the number of lambs relative to the number of nursery sheep as an indication of juvenile sheep survival.

In 2010, the Fish and Wildlife Branch was one of several agencies to participate in an aerial survey of Dall's sheep in the northern Richardson Mountains. The aim of this survey was to update population size and composition information and estimate lamb survival.

The study area was systematically surveyed in late June and early July using the same methods in place since surveys began in 1984. Not all areas are surveyed but results do provide an estimate of the minimum number of sheep in the population. The 2010 survey counted a total 699 sheep — 549 adults and 150 lambs. The adult sheep population consisted of 165 rams and 384 nursery sheep (ewes, yearlings and young males). The ratio of 39 lambs per 100 nursery sheep is one of the highest recorded

for this area and is enough to maintain a stable population. The current population size of 549 adults is large enough that the current management practices can

Management partners will use the results of this survey to assess the sustainability of sheep harvest for this population and to make recommendations about the future availability of licensed hunting

Learning about moose populations in the Nisutlin area

The Teslin Tlingit Council, Teslin Renewable Resources Council and local community members have expressed concerns about moose harvest rates and population trends in the Nisutlin area. In 2010, the Fish and Wildlife Branch responded to this concern by surveying the area's moose population and by furthering studies to learn about habitat availability and use.

A moose population survey was conducted in early winter. The survey teams recorded the sex of the adults, the age class (mature, immature, or calves) and locations of all the moose they saw. Biologists used the survey results to assess moose distribution, abundance and population composition. The 2010 results were similar to the estimated number of moose from the area's last survey, completed in 2003. The estimated density for the area is above the Yukon-wide average. The ratio of mature bulls to mature cows is below average for other surveyed areas in Yukon, and although the trend has been declining, the current bull numbers should not have an effect on the numbers of cows bred during the rut. An assessment of how many new calves are produced in the spring and how many survive over the fall and winter is a good indicator of the health of a population. The survival of calves born in 2010 was good, but was low for calves born in 2009. Overall, biologists believe that calf survival is good enough to maintain moose numbers in the area.

Habitat studies begun in 2008 are providing information on moose movement and habitat use patterns. By tracking the movements and locations of GPS radio-collared moose, biologists have been able to determine what type of habitat moose are using at different times of year. Biologists have also been able to use information from a Teslin area local and traditional knowledge study, as well as interviews done with harvesters.



participated in the population surveys of moose in the

Information on moose habitat use, movement, predation, population composition as well as harvesting contributes to planning and the assessment of management strategies. It is also important when determining the potential effects of development and to understand more ut the area's ecosystem.

Implementing a harvest management plan for the Porcupine caribou herd

Recent concerns about the status of the Porcupine caribou herd stressed the need for a coordinated plan to guide harvest management. In 2010,

the Government of Yukon joined the seven other Canadian parties responsible for the management of the herd in signing the Harvest Management Plan for the Porcupine Caribou Herd in Canada. The plan lays out a process for the Porcupine Caribou Management Board and the parties to recommend an allowable harvest depending on the number of animals in the herd. The plan also identifies the type of information about the caribou and hunters that wildlife managers need to be collecting to make informed decisions about harvest management. The goal of all management actions identified in the plan is to conserve the herd.

Over the summer and fall of 2010, the parties also developed an implementation plan that coordinates the actions and identifies which of the responsible parties are to carry out the objectives of the Harvest Management Plan.

The Fish and Wildlife Branch's role is to continue working with partner organizations to get up-to-date and reliable information that can be used to assess the status of the herd. Biologists regularly monitor caribou body condition, over-winter calf survival, herd distribution, harvest, and assist with maintaining about 100 collars to locate the herd for various studies. The Government of Yukon also has representatives on the Porcupine Caribou Management Board.

More information about the Harvest Management Plan can be found at: www.taiga.net/pcmb/harvest.html

The Fish and Wildlife Branch is one of many cooperating organizations in Yukon, Northwest Territories and Alaska studying the herd. Other research and monitoring projects include calving success, calving location, periodic estimates of herd size, adult female and early calf survival rates, snow conditions and the effects of development on caribou.

The 2010 photocensus estimated 169,000 caribou in the herd. While the number is good news, wildlife managers still need ongoing information about the herd's composition, health and harvest.

The eight Canadian parties responsible for the management of the Porcupine caribou herd are the First Nation of Na-Cho Nyäk Dun, Gwich'in Tribal Council, Inuvialuit Game Council, Tr'ondëk Hwëch'in, Vuntut Gwitchin Government, Government of the Northwest Territories, Government of Yukon and Government of Canada.

Coordinating the management of wildlife in the Southern Lakes area

The Southern Lakes Wildlife Coordinating
Committee was established in January 2008 under
the Carcross/Tagish First Nation and Kwanlin Dün
First Nation Final Agreements. The committee's
key responsibility is to prepare a Regional
Wildlife Assessment to support the co-ordinated
management of wildlife in the area.

The assessment will summarize the status of knowledge, human impacts, existing management plans and activities, and protection mechanisms for a number of species in the area. The assessment will also include the committee's recommendations to guide decisions about wildlife management of:

- ♦ Ungulates
- → Large carnivores
- ◆ Furbearers and small game
- ♦ Non-game species
- **♦** Raptors
- ♦ Migratory and resident birds
- ♦ Waterfowl
- ♦ Species at risk

The committee is giving special consideration to management issues and recommendations related to caribou, moose, sheep, habitat, and predation.

In 2010, the committee continued to work closely with communities, Renewable Resources Councils, the Yukon Fish and Wildlife Management Board, and member parties. The committee has received a commitment from its member parties to extend its work until March 2012.

More information on the Southern Lakes
Wildlife Coordinating Committee can be found at:
www.southernlakeswildlife.ca

The Southern Lakes Wildlife Coordinating Committee is dedicated to the recovery and management of caribou, moose, sheep and other wildlife populations and their habitat in the Southern Lakes area.

Members of the Southern Lakes Wildlife Coordinating Committee are delegates of the governments of the Carcross/Tagish First Nation, Champagne and Aishihik First Nations, Kwanlin Dün First Nation, Ta'an Kwäch'än Council, Taku River Tlingit First Nation, and Teslin Tlingit Council, Canada, Yukon, and British Columbia.

Dianne Villesèche photo

Review of the 1992 Yukon Wolf Conservation and Management Plan

Wolf management and conservation is a complex topic that must address many different biological, social, and economic needs, concerns and values. Since 1992, the management of wolves in the territory has been guided by the *Yukon Wolf Conservation and Management Plan*. The plan identifies the principles and goals that wildlife managers use when making decisions that affect wolves and their populations.

The plan recognizes the importance of maintaining healthy and balanced numbers of wolves in the ecosystem. Recommendations cover a wide variety of subjects that include the hunting and trapping of wolves, strategies to reduce conflict with agricultural interests, as well as population monitoring and other research activities. The plan also identifies special conditions under which the Yukon government may reduce wolf population numbers to recover ungulate populations.

In 2010, representatives of Environment Yukon and the Yukon Fish and Wildlife Management Board formed a six-person committee to review and update the plan. As part of the review process, committee members visited Yukon communities to hear what people think about wolf conservation and management. The committee also met with First Nations and wildlife management boards and councils. Anyone interested in providing comments was encouraged to participate. The review committee will evaluate the recommendations of the original management plan, taking into consideration the comments received and current research.

More information on the Yukon Wolf Conservation and Management Plan can be found at: www.yukonwolfplan.ca.

Wolves play a critical role in the ecosystem. Many smaller species including furbearers and birds depend on wolf kills as a source of food.

Peregrine Falcon inventory

The Peregrine Falcon was one of the first recognized endangered species in North America, threatened by a variety of human activities such as the use of DDT pesticides. In the 1970s, wildlife management agencies and other partners all over North America responded to the situation with one of the continent's largest wildlife recovery programs. One component of this ongoing program is to conduct an inventory every five years. Information from the inventory allows wildlife managers to determine population trends and provides a baseline to assess change over time.

During the summers of 2009 and 2010, the Fish and Wildlife Branch, in collaboration with Yukon College, Environment Canada, and Parks Canada, once again

took part in the international effort to assess the status of Peregrine Falcons. In total, 170 nest sites were surveyed throughout Yukon, representing 67% of all the previously recorded nest sites in Yukon. Nests were checked for current occupancy and evidence of breeding activity.

The results of the inventory show that the number of occupied nest sites has increased dramatically since the 1970s and 1980s. The number of breeding pairs of Peregrine Falcons and the number of young per nest was similar to the 2005 survey results. However, the 2005 numbers were substantially lower than in 2000.

The results of the inventory show that the number of Peregrine Falcons in Yukon is the highest recorded since their serious decline 40 years ago. The increase in population appears to have stabilized in the last five years but the production of young is low and biologists are concerned that there may not be enough young to maintain a stable population. The next census is scheduled for 2015.

Birds of prey (eagles, hawks, falcons, and owls) are key indicators of the health of ecosystems because they are at the top of the food chain.

Biologists inventoried Peregrine
Falcons at previously occupied nest
sites on the Yukon North Slope,
the Eagle, Porcupine, Yukon and
Wind rivers in central Yukon, along
the Dempster Highway, as well as
throughout the Southern Lakes
region. Many of the people who
participated were volunteers.



Gordon Court phot

Public participation in an inventory of non-native small mammals

In 2010, two species of non-native small mammals, the brown rat and the house mouse, were found in Whitehorse as part of a program to involve the public in an inventory of small mammals. While these species are common in urban areas around the world, neither species is part of the natural biodiversity of Yukon.

In the fall, the Fish and Wildlife Branch asked the public to submit samples of small mammals trapped in and around their homes. The objective of this simple, low-cost study was to involve the public in getting more information about the occurrence, distribution and abundance of any non-native species that were caught. This information will allow wildlife managers to assess the status of non-native species in Yukon and provides a baseline to assess change over time.

Biodiversity simply means the variety of living things. Healthy ecosystems must have a natural balance that includes many different kinds of plants and animals. Every living organism - big or small, on land or in the water — has a role to play. The presence of non-native species can disrupt Yukon's natural biodiversity.

Yukon's native mouse species are the deer mouse, western jumping mouse, and meadow jumping mouse. The house mouse is a recent arrival.

Yukoners submitted 134 mice and voles during the fall and early-winter of 2010. The samples came from Whitehorse, Dawson City, Tagish, Teslin, Marsh Lake, and Haines Junction. Biologists were surprised to find that 45 of the Whitehorse submissions were the non-native house mouse. The house mouse was common in captures from the Downtown, Hillcrest, and Riverdale neighbourhoods but none were submitted from Porter Creek or the country residential areas, such as Wolf Creek. Some of the samples were juvenile house mice which is evidence of a local breeding population.

One brown rat was submitted as well. Biologists believe that the species is likely not established in Yukon and that the animal may have been recently transported here by humans.



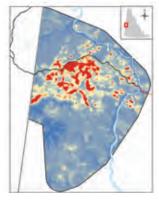
Assessing the habitat of the Forty Mile caribou herd

Lichen is the main winter food for caribou and there is a strong link between the distribution of caribou and their favourite lichens.

The Forty Mile Caribou Herd Working Group recommended that Environment Yukon study how much lichen habitat there is, and where it is found, throughout the primary range of the herd. This information is needed to guide future land-use planning in the Dawson region regarding habitat protection measures for the Forty Mile caribou herd.

The Forty Mile caribou herd once numbered in the hundreds of thousands but by 1974 had declined to about 4,000 animals. The most recent estimate, from 2003, has the Forty Mile herd at 43,000 animals. Since 2002, after a decades-long absence,

some caribou are once again returning to Yukon to winter. The Forty Mile caribou herd's winter range now extends into areas west of Dawson, in the vicinity of the Forty Mile, Sixty Mile, and Ladue rivers. Everyone hopes that the caribou will continue to expand and re-inhabit more of their former Yukon



range. But changes to the habitat (because of forest fires, for example), decreases in lichen abundance, and increased developments may affect their ability to use the range as they once did.

To better understand which areas might provide the most important winter range, biologists first mapped all of the lichen habitats and all of the human developments. Next, they looked at where caribou were in late winter, when resources are most scarce and used a statistical model that compares the habitat caribou are using with what they could be using. What they found was that good caribou habitat can best be described by three features: lichen, elevation, and distance to a burn. This information was then used to rank the entire area for its suitability as caribou habitat.



The role of ongoing fish and wildlife monitoring

Wildlife managers need to keep track of the numbers, distribution, and age groupings of fish and wildlife populations to detect any changes that could affect management decisions or practices.

The Fish and Wildlife Branch regularly surveys a number of species as part of ongoing monitoring and inventory programs. Surveys can be carried out from the ground or from the air, annually or periodically, depending on the species and the specific information needs.

In 2010, the Fish and Wildlife Branch completed monitoring surveys on several populations including woodland caribou, bison, sheep, moose, Peregrine Falcon, and lake trout. Biologists are able to compare the results with previous findings, evaluate their management strategies, and respond as needed.

The results of surveys, combined with other important information about the species, have led to opportunities for Yukoners to hunt bison and elk. Survey information has also lead to the introduction of permit hunts on some species for conservation purposes.

Monitoring moose populations

High priority moose populations near Whitehorse (Whitehorse North ("Pilot Mountain") and Whitehorse South), Carmacks (Tatchun), and Teslin (Nisutlin) areas were assessed this year. Moose numbers in the Nisutlin area have remained above the long-term Yukon average, but near Whitehorse and Carmacks we found moose numbers below the average.

Calf survival appears to have been good in the Tatchun and Nisutlin areas, but was a little low south of Whitehorse. Calf production in the Whitehorse North area should support a stable population.

The proportion of mature bulls is another indicator of the health of a moose population.

In the Nisutlin area the proportion of bulls appears to be on a long term downward trend and is now below the Yukon average. In the area south of Whitehorse the proportion of mature bulls appears to have increased since 2000 and is now near the Yukon average.

Biologists will use the information from these surveys to work with our management partners to develop appropriate management strategies for each area.

Dianne Villesèche photo



Fish and Wildlife technical reports released in 2010

Wolf survey in the Coast Mountains, 2009

The historical annual range use patterns of the Fortymile caribou herd in Yukon

Status of Dall's Sheep (Ovis dalli dalli) in the Northern Richardson Mountains

Status of Yukon Fisheries

Fish and Wildlife Branch Highlights 2009-2010

Finlayson Caribou Late-Winter Population Survey, 2007

Aishihik and Kluane northern mountain caribou herds 2009 census survey report.

These, and many other reports, are available for download from www.env.gov.yk.ca

New from the Wildlife Viewing Program

- Yukon Bats (revised)
- → Yukon Wildlife Colouring Sheets (revised)
- Yukon Freshwater Fishes (revised)
- → Yukon Wildflowers Guide (revised)

These, and many other booklets and brochures, are available for download from www.env.gov.yk.ca

