Government of
Northwest Territories

2018-2019

North Slave Region Operations Report

Barren-ground Caribou Collaring, Enhanced North Slave Wolf Harvest Incentive Program and the 2019 Wildfire Season

Fall 2019

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Introduction

In August 2018, the Department of Environment and Natural Resources (ENR) met with Indigenous leaders, Elders, youth and staff from throughout the North Slave Region at François Lake to discuss how to share knowledge and work together to support the recovery of barren-ground caribou herds.

Figures 1 and 2. ENR officials meet with North Slave Indigenous leaders, Elders, staff and youth at François Lake in August 2018 to discuss caribou recovery.

During this gathering, important discussions were had about a number of topics, including:

- Caribou satellite collaring;
- Protecting key caribou habitat through wildfire management;
- Barren-ground caribou population surveys, including preliminary population estimates and discussions about how the surveys are done and who's involved;
- The impact of predation on caribou;
- Results from ongoing caribou monitoring programs, such as the Tłı̨chǫ Government's *Boots on the Ground* program; and
- The need for increased wolf harvest incentives in areas closer to the caribou winter range.

These discussions became even more important after the release of the final population estimates for barren-ground caribou later that year, which showed a serious decline in numbers for the Bathurst and Bluenose-East herds. The ENR Minister toured all North Slave communities to share the unfortunate results with community members and Elders, and to spend time talking about ways we can work together as co-management partners to help the caribou.

Through those discussions, joint management proposals were developed for both the Bathurst and Bluenose-East herds, and an enhanced North Slave incentive program for wolf harvesting around the caribou winter range was established in early 2019. Since then, ENR has continued to work closely with our co-management partners to develop a broader joint management proposal for wolves in the North Slave.

This report shares information on the collaborative actions taken over the past year to support barren-ground caribou recovery in the North Slave Region, including results and next steps, focusing specifically on satellite collaring, results from the enhanced wolf harvest incentive program, and an overview of the 2019 fire season.

Figure 3. ENR and Tłı̨chǫ leaders and officials meet with residents to talk about barren-ground caribou population decline and recovery in Whatì in January 2019.

Satellite collaring of Bathurst and Bluenose-East barren-ground caribou

Satellite collars are an important tool for the management and conservation of barren-ground caribou. This report provides an overview of why we use satellite collars to monitor caribou, and a summary of the caribou collaring done on Bathurst and Bluenose-East caribou in 2019.

Figures 4 and 5. Calving ground survey crews from Kugluktuk (right) and Ekati (left), featuring community monitors. Satellite collaring data supports our ability to do population surveys.

Why do we use satellite collars on caribou?

Satellite collars provide key information on barren-ground caribou herds throughout the year. They help us to:

- Monitor where the herds are throughout the year, which is important, given the very large and remote areas they use;
- Support on-the-land monitoring programs, such as the Tłı̨chǫ Government's *Boots on the Ground* program;
- Define areas for population surveys and other monitoring activities;
- Identify key habitats like calving grounds, migration corridors and changes in habitat use over time;
- Monitor survival rates of caribou, and find out when, where and how they die;
- Understand how caribou respond to mines, roads and other development;
- Create the weekly Mobile Core Bathurst Caribou Management Zone (Mobile Zone);
- Help identify which herds are being harvested, based on where caribou are hunted and the distribution of the herds determined by satellite collar locations.

Satellite collars are used to monitor migratory caribou and reindeer in the NWT, Nunavut, Alaska, Québec/Labrador, Europe and Russia. The technology has improved tremendously over the years, and present-day collars are lighter (800 grams), provide more precise and frequent locations, and are programmed to fall off the animal before the battery runs out.

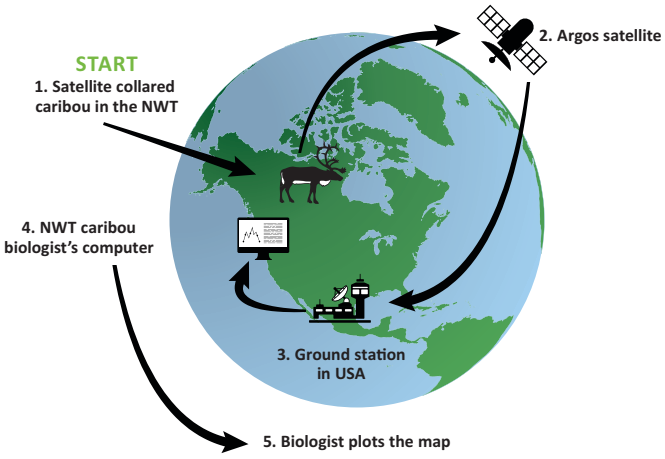


Figure 6. How information from caribou collars is collected.

Caribou herd population estimates*	
Bathurst:	**8,200**
Bluenose-East:	**19,000**
Beverly:	**103,000**

*as of November 2018

Figure 7. Collars used today (right) are much lighter than the old collars (left) due to a smaller, lighter battery.

How many collars do we need to put on a caribou herd?

The number of collars needed for a caribou herd depends on what the collar information is used for.

- Determining a herd's location at any time: minimum of 50 to 60 collared caribou per herd
- Monitoring cow survival rates: minimum of 40 to 60 collared cows per herd
- Supporting calving ground surveys: minimum of 40 to 60 collared cows per herd

Given the rapid declines in both the Bathurst and Bluenose-East caribou herds, the Tłı̨chǫ Government and GNWT discussed the need for more collars when they met at François Lake in August 2018. As a result of those discussions, both governments agreed to increase the number of collars on each herd to a maximum of 70 (50 cows and 20 bulls) in their joint management proposal to the Wek'èezhìı Renewable Resources Board (WRRB) in January 2019. This increase will help to provide the key information we need to more effectively monitor and manage both herds.

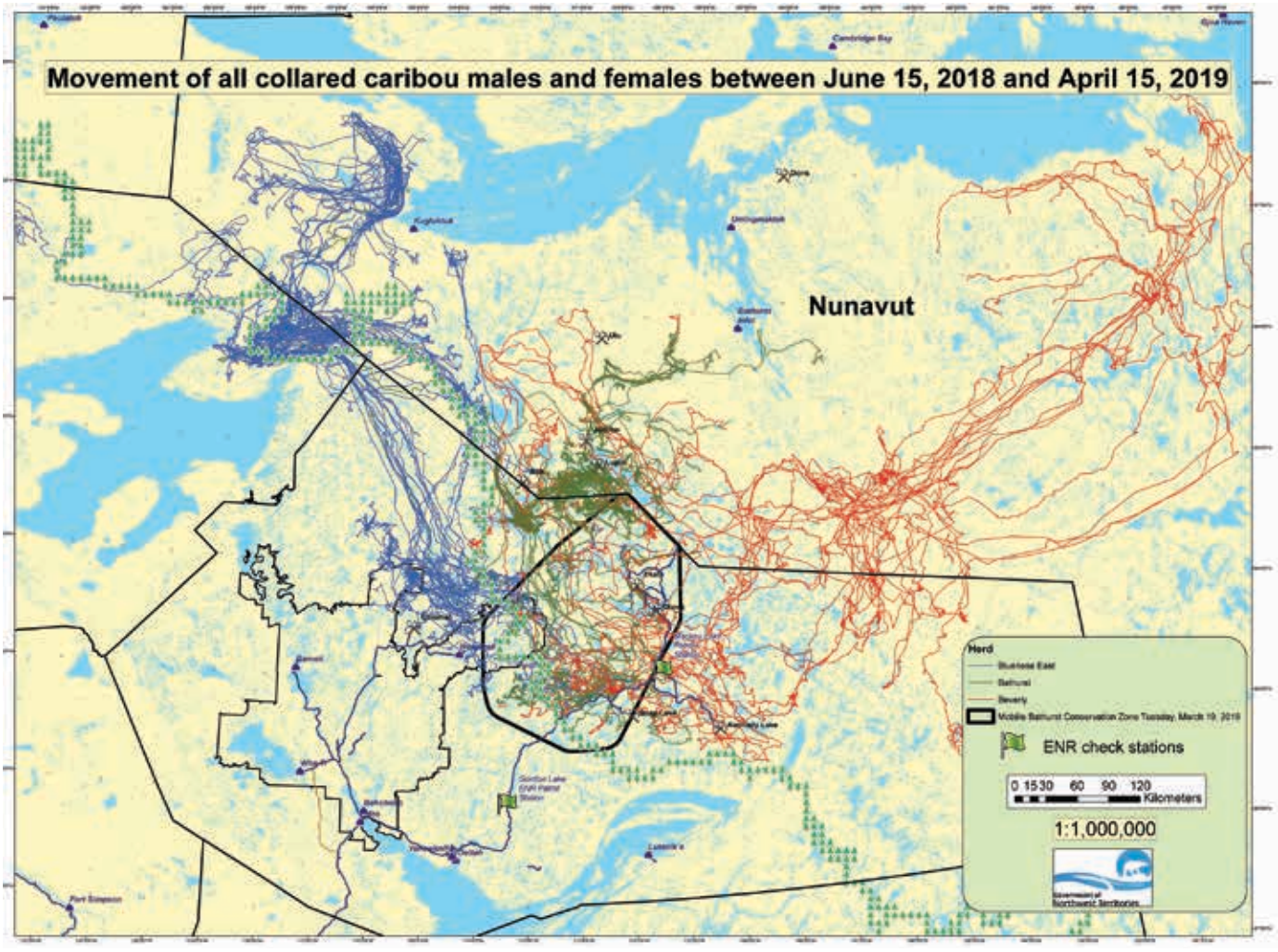
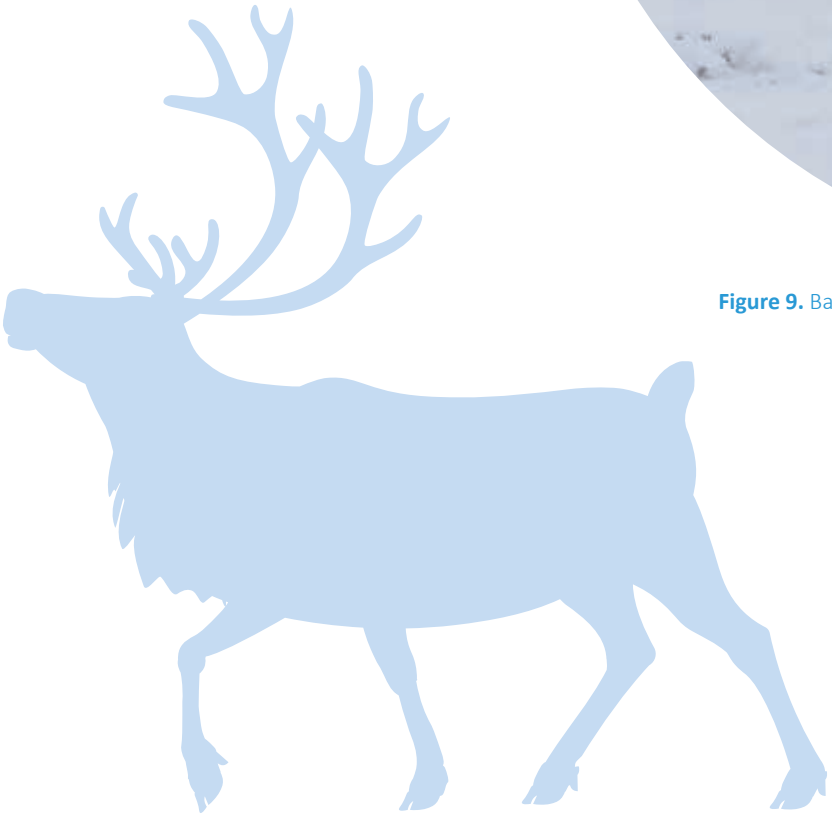


Figure 8. Map showing the movements of the Bathurst (green), Bluenose-East (blue) and Beverly (red) barren-ground caribou herds in 2018/19, based on satellite collar data.

When and how are collars placed on caribou in the NWT?

Collars are usually put on barren-ground caribou in late winter, often in March. At this time of year, the weather is ideal for captures and snow on the ground makes it safer to capture caribou with little risk of injury. Caribou are captured by highly trained specialists using a net-gun fired from a helicopter, which wraps around the animal and brings it to the ground. No drugs are used, and a caribou is fitted with a collar and released within 10 to 15 minutes of capture. Recognizing concerns from communities and Elders about being respectful to caribou, caribou collaring is done as safely and humanely as possible and captures follow strict rules established by the NWT Wildlife Care Committee.

Figure 9. Bathurst caribou on their wintering range.



Results of 2019 collaring of Bathurst and Bluenose-East caribou

Collaring in the North Slave Region began on March 19, 2019 and was completed on April 3, 2019. A total of 66 collars were placed on cows and bulls on the winter range of the Bathurst, Bluenose-East and Beverly herds in order to maintain the desired total of 70 collars per herd.

- 47 collars on the Bathurst herd
- 11 collars on the Bluenose-East herd
- 8 collars on the Beverly herd

Since the number of collars on the Bathurst herd was relatively low at the start of winter 2018/19, placing collars on this herd was made a priority during the 2019 collar deployment.

Because of herd mixing on the winter range, the herd identity of newly collared caribou is not always known until the herds separate at calving time in June. The Bluenose-East herd distribution remained somewhat distinct for most of the winter, but there was substantial mixing of the Beverly and Bathurst herds during winter 2018/19.

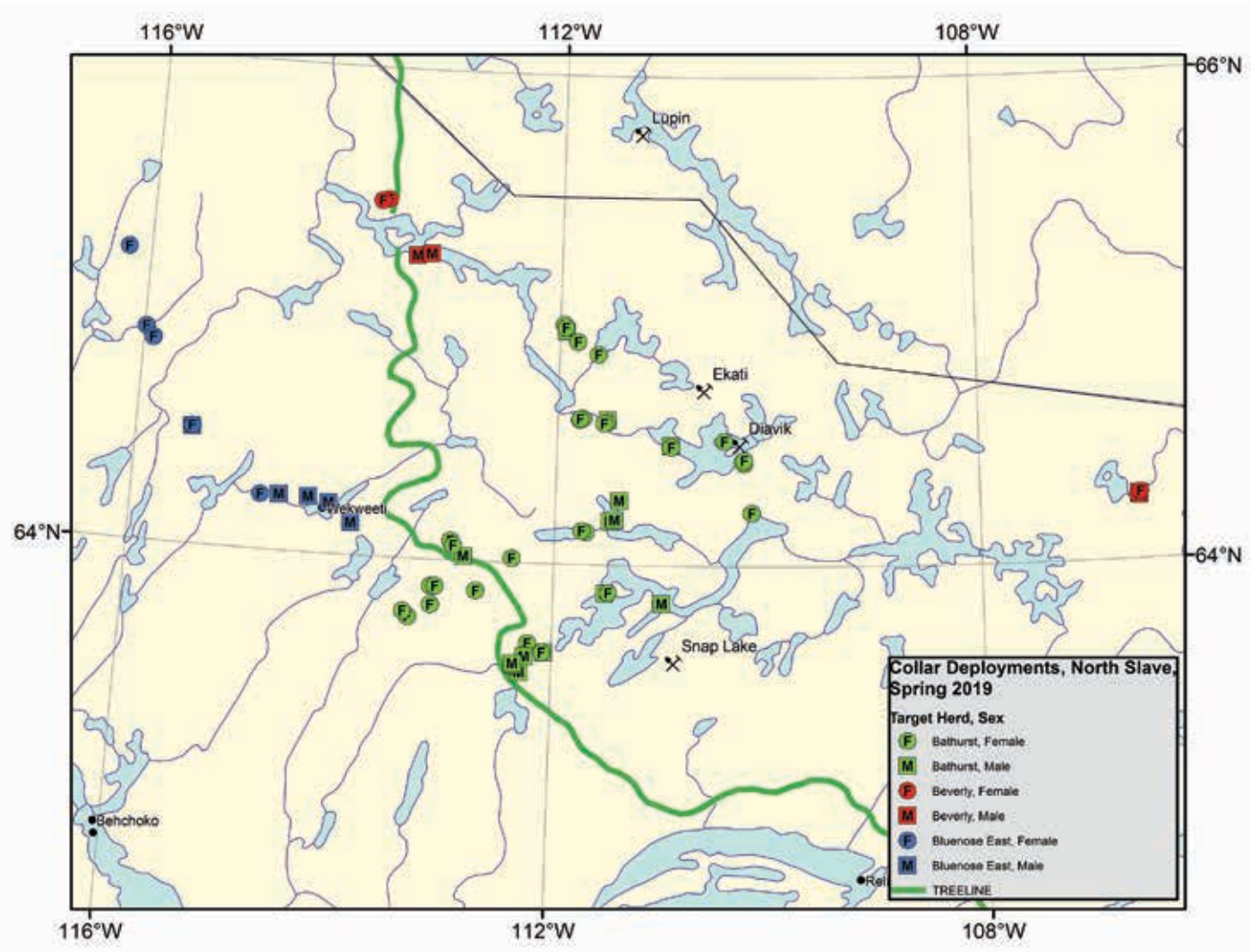


Figure 10. Locations in the North Slave Region where 66 barren-ground caribou were collared, March and April 2019. Of the 66 collars, 47 were for the Bathurst herd, 11 for the Bluenose-East and 8 for the Beverly.

In March and April 2019, a total of 43 cows and 23 bulls were collared by field capture crews. The average chase time during the captures was 52 seconds per animal, and average handling time (time from net launch to animal release) was 12 minutes and 58 seconds. Blood testing of the collared cows indicated a pregnancy rate of 92%, and no major diseases or parasites were noted. All captured caribou were safely released, except for one caribou that died during capture and was distributed as meat to local communities.

Mobile Core Bathurst Caribou Management Zone

The Mobile Core Bathurst Caribou Management Zone (Mobile Zone) was in effect throughout the 2018/19 barren-ground caribou harvest season, based on Bathurst caribou satellite collar locations. Maps were updated weekly, shared with communities, and posted on ENR's website, Facebook and Twitter pages as well as on signs along the Tibbitt-to-Contwoyto winter road.

ENR monitored caribou locations and harvesting activity along the winter road throughout the winter. ENR operated 24-hour check stations along the winter road at Gordon Lake and Mackay Lake, and conducted regular patrols of the Mobile Zone by truck, snow machine and aircraft.

Caribou hunting in the area during winter 2018/19 occurred primarily east of the winter road, and based on satellite collar locations, hunters were targeting Beverly caribou. ENR investigated a relatively small number of cases of illegal hunting within the Mobile Zone over the past three years as well as a number of cases of wastage. Łutsel K'e Dene First Nation (LKDFN) Guardians monitored caribou and hunting activity in the area east of the winter road throughout winter 2018/19, but ENR did not receive any reports from LKDFN monitors of potential wildlife infractions during the season.

Figures 12 and 13. Signs for the Bathurst Mobile Zone (bottom) and ENR check stations (top) are located along the Tibbitt-to-Contwoyto winter road.

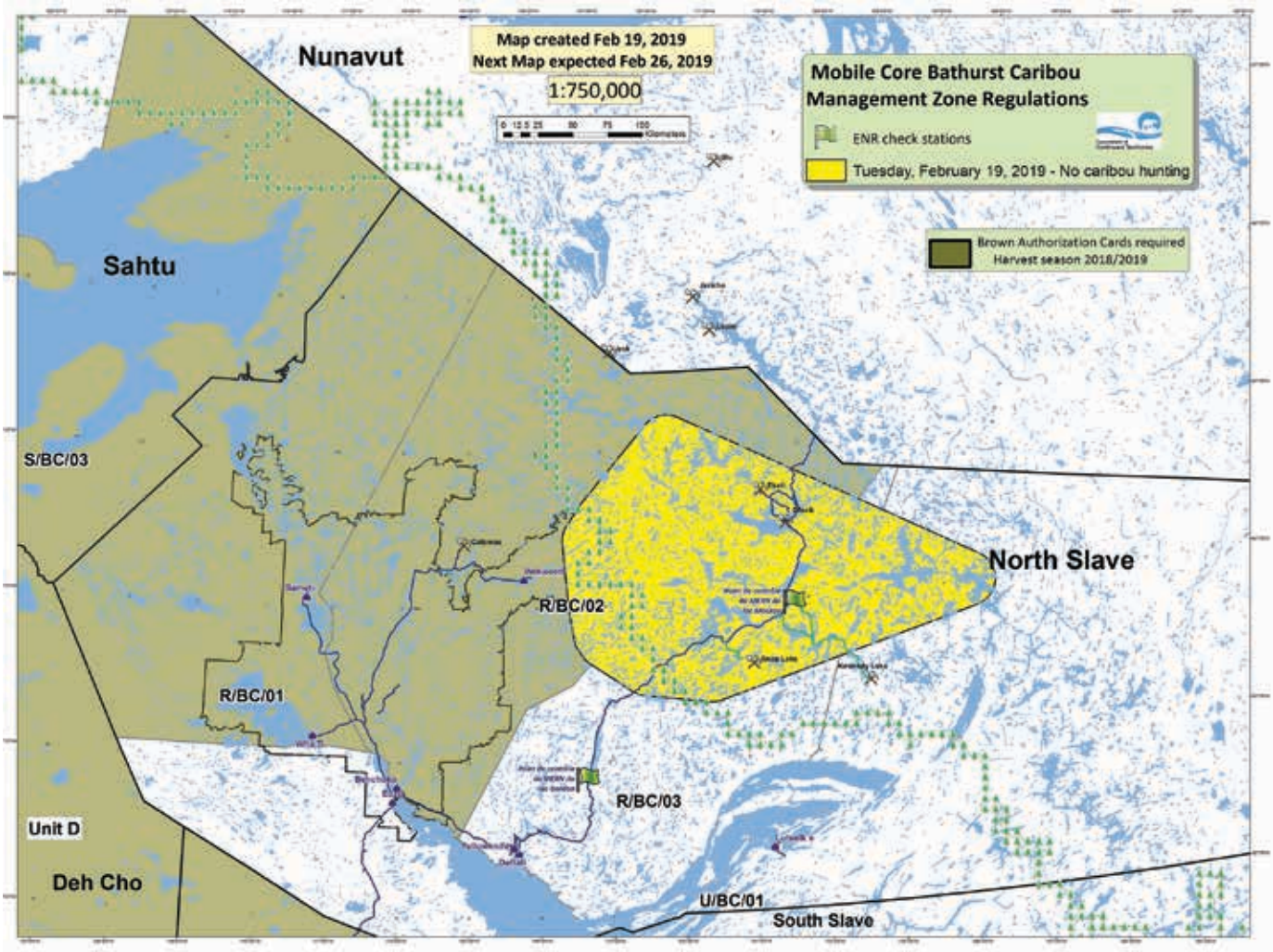


Figure 11. Mobile Core Bathurst Caribou Management Zone (Mobile Zone) for the week of February 19, 2019, established using locations of collared Bathurst caribou.

Next steps

Collars deployed in the winter of 2018/19 are providing valuable information for ENR and the Tłı̨chǫ Government to help monitor, assess and manage the Bathurst and Bluenose-East herds.

In 2019/20, ENR will continue to work closely with Tłı̨chǫ Government staff and leaders to:

- Apply for an NWT Wildlife Research Permit and submit a management proposal to the WRRB to maintain the total of 70 collars per herd, as agreed to by Tłı̨chǫ Government and ENR
- Monitor collar data throughout the year to inform caribou management and conservation efforts, including:
  - Fall composition survey (October)
  - Late winter composition survey (March)
  - Manage the Bathurst Mobile Zone and North Slave Wolf Harvest Incentive Area
  - Support the Tłı̨chǫ *Boots on the Ground* program
  - Provide valuable information to help understand and manage recovery of the Bathurst and Bluenose-East herds

Enhanced North Slave Wolf Harvest Incentive Program

Wolf harvest incentives

Wolves are harvested as both furbearers and big game in the NWT. Most regions have had a harvest incentive program for wolves since 2010 to encourage more wolves to be harvested to better support the trapping industry as well as the recovery of caribou.

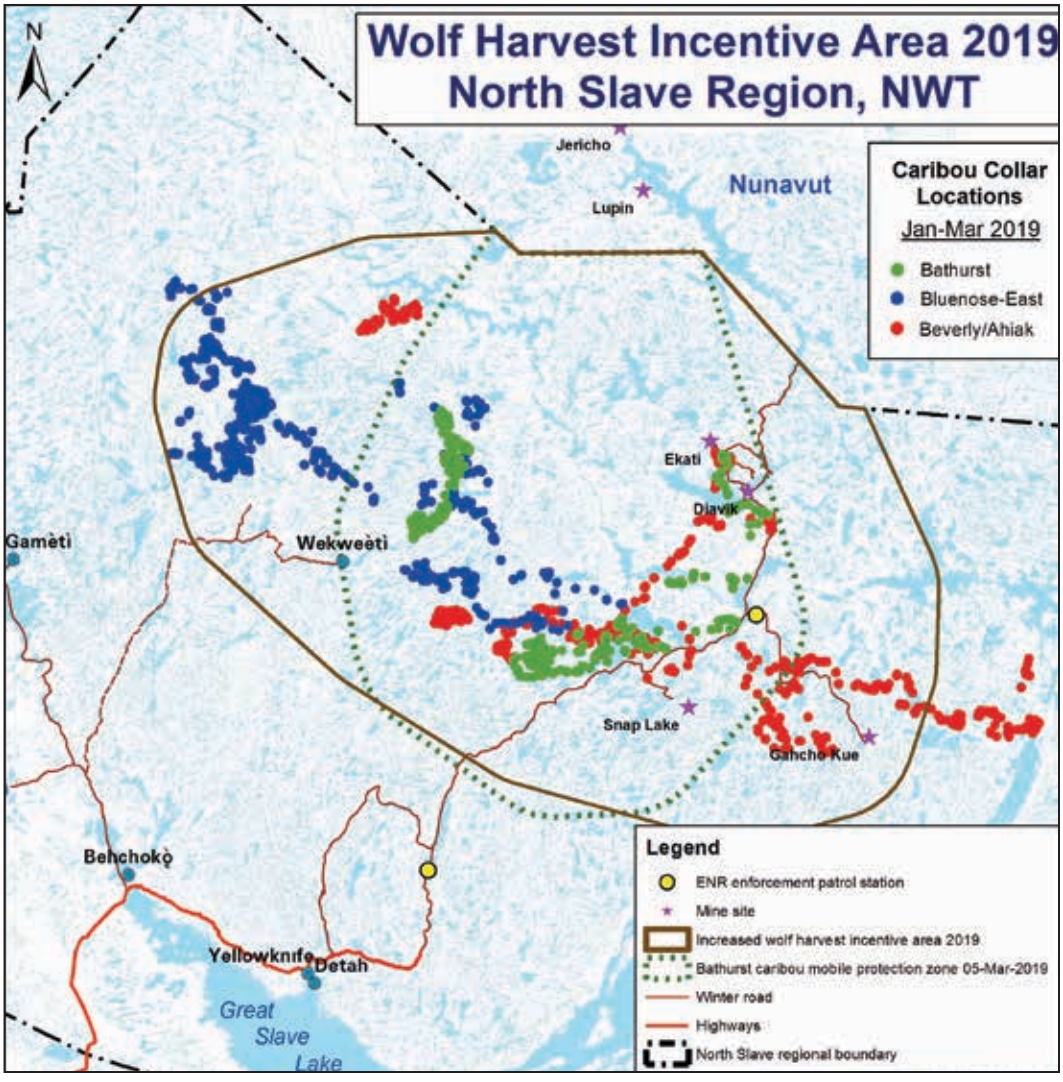


Figure 14. Boundaries for the new, increased wolf harvest incentive area for 2019 were generally based on the winter locations of barren-ground caribou within the North Slave Region. Considerable overlap in the winter ranges occurred in 2019 for the Bathurst, Bluenose-East and Beverly-Ahiak caribou herds.

The North Slave Region further increased its harvest incentive for wolves to $200/wolf carcass (skinned or unskinned) for the 2015/16 harvest season as a recovery effort in response to declines in barren-ground caribou numbers. This $200 incentive program has continued each year since, but levels of wolf harvests were not noticed to have increased in the areas closest to the barren-ground caribou winter range.

For the 2018/19 harvesting season, an additional incentive area for wolves was created as a result of discussions at the gathering of ENR staff and Indigenous leaders and Elders at François Lake in August 2018. This new wolf harvest incentive area was established where the Bathurst and Bluenose-East caribou herds were expected to winter in 2018/19 (see Figure 14). The program came into effect February 4, 2019.

The incentive for harvesting a wolf (skinned or unskinned) in this new area was $900/carcass for both Indigenous and resident hunters (see Figure 15). For Indigenous harvesters, a wolf pelt skinned to traditional standards would receive $400 under the Genuine Mackenzie Valley Fur Program. Another incentive was given to Indigenous harvesters if they skinned the wolf to taxidermy standards rather than traditional standards (potentially $350 more), meaning an Indigenous wolf harvester could earn up to $1,650/wolf (see Figure 15). Wolf pelts graded as "prime" receive a bonus of $350 if they sell for $200 or more at auction. While pelts sent to auction are encouraged to be skinned to taxidermy standards, it is not mandatory for the prime fur bonus. When an unskinned wolf carcass was submitted, ENR would pay the harvester $900 and arrange for an Indigenous person to skin the wolf. Skinners received $400 for the skinned pelt.

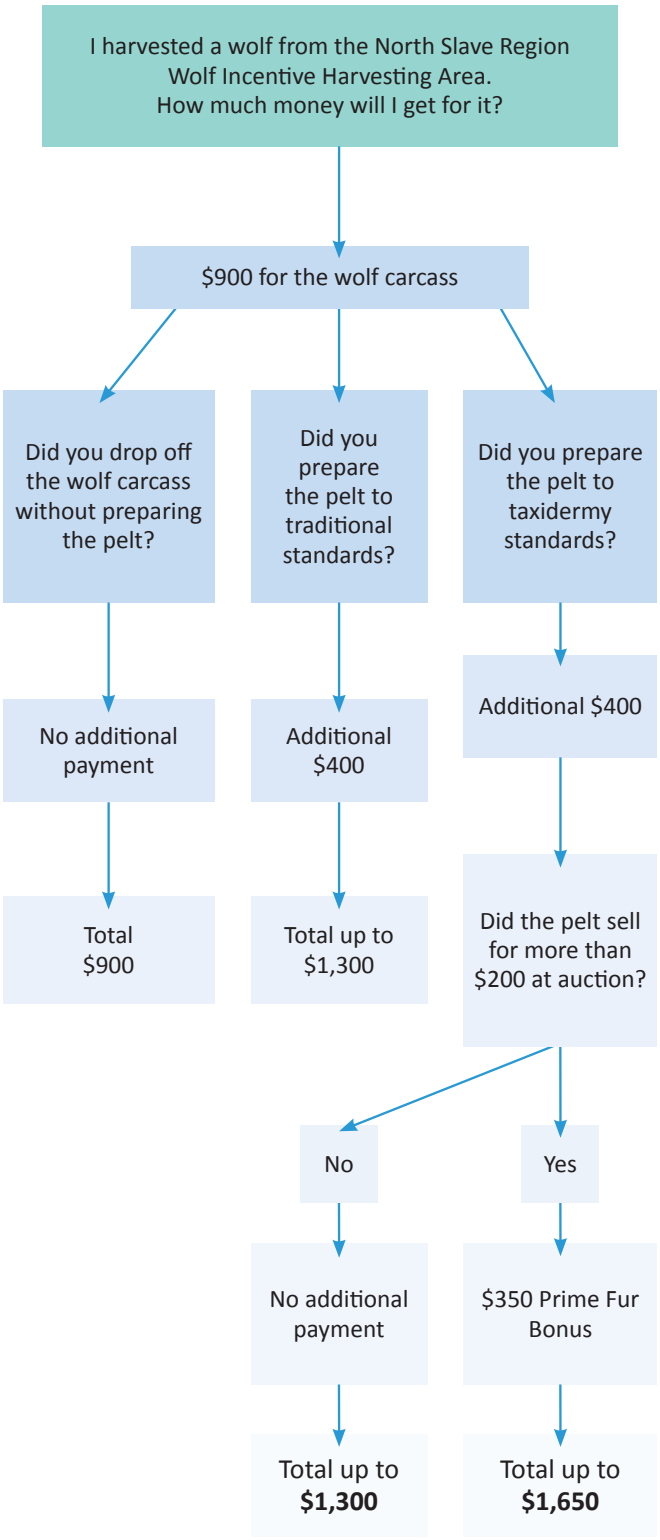


Figure 15. Flowchart for the 2019 increased wolf harvest incentive program.

Number of wolf tags issued

There were 954 hunting licences sold in the North Slave Region for the 2018/19 harvest season (July 1, 2018 to June 30, 2019). This was up slightly from 929 hunting licences sold the previous year. When these 2018/19 hunting licences were sold, 428 wolf tags were purchased with them. However, an additional 629 wolf tags were sold afterward as tag receipts, meaning that hunters added these wolf tags to their already held licence. Therefore, 1,057 wolf tags were purchased in 2018/19 at $22 each, totalling $23,254.

In comparison, 372 wolf tags were purchased for 2017/18, totalling $8,184. The increase in wolf tags purchased in 2018/19 from the previous year was a direct result of the enhanced incentive program. Much of the increase in wolf tags in 2018/19 was due to tag receipts, as many hunters who bought their hunting licence earlier in the year likely added wolf tags to take advantage of the new wolf incentive program.

In 2019/20, wolf tags will be available at no cost to all hunters.

Number of wolves harvested

There were 59 wolves taken by hunters in the new wolf harvest incentive area in winter 2018/19, 56 of which were paid $900/wolf ($50,400 total).

Here are some observations about the 2018/19 incentive program:

- One hunter in Wekweètì harvested two wolves in the area in mid-December 2018, prior to the new wolf harvest incentive program and, therefore, he could only collect $200/wolf.
- One wolf was shot illegally in February 2019 and the carcass seized. No payment was made for this wolf.
- One other wolf at the Gahcho Kué mine site was euthanized (authorized by ENR).

Therefore, 60 wolves were removed in total by people from the new enhanced wolf incentive area. Seven other wolves were harvested outside the new harvest area by seven hunters, who received a payment of $200/wolf ($1,400 total). Of these seven hunters, five were Indigenous.

Incentive payments totalled $50,800 ($900/wolf x 56 wolves + $200/wolf x 2 wolves) for the new wolf harvest target area and $1,400 ($200/wolf x 7 wolves) elsewhere in the North Slave Region.

There were 31 hunters who harvested wolves under the new incentive program. Of these, four hunters were non-Canadian hunters. These four non-resident alien hunters were not eligible to collect the harvest incentive so these payments were collected by their Indigenous guide. Of the remaining 27 hunters, 16 were Indigenous hunters (5 Tłı̨chǫ). The highest total of wolves harvested by one hunter was nine.

About twice as many wolves were harvested in March (36 total) compared to February (19 total). We expect this was somewhat due to program awareness, as this was the first year for the enhanced incentive program as well as March being a preferred hunting month because weather and daylight are more ideal. Most wolves were also harvested closer to the Tibbitt-to-Contwoyto winter road, which typically closes by the end of March.

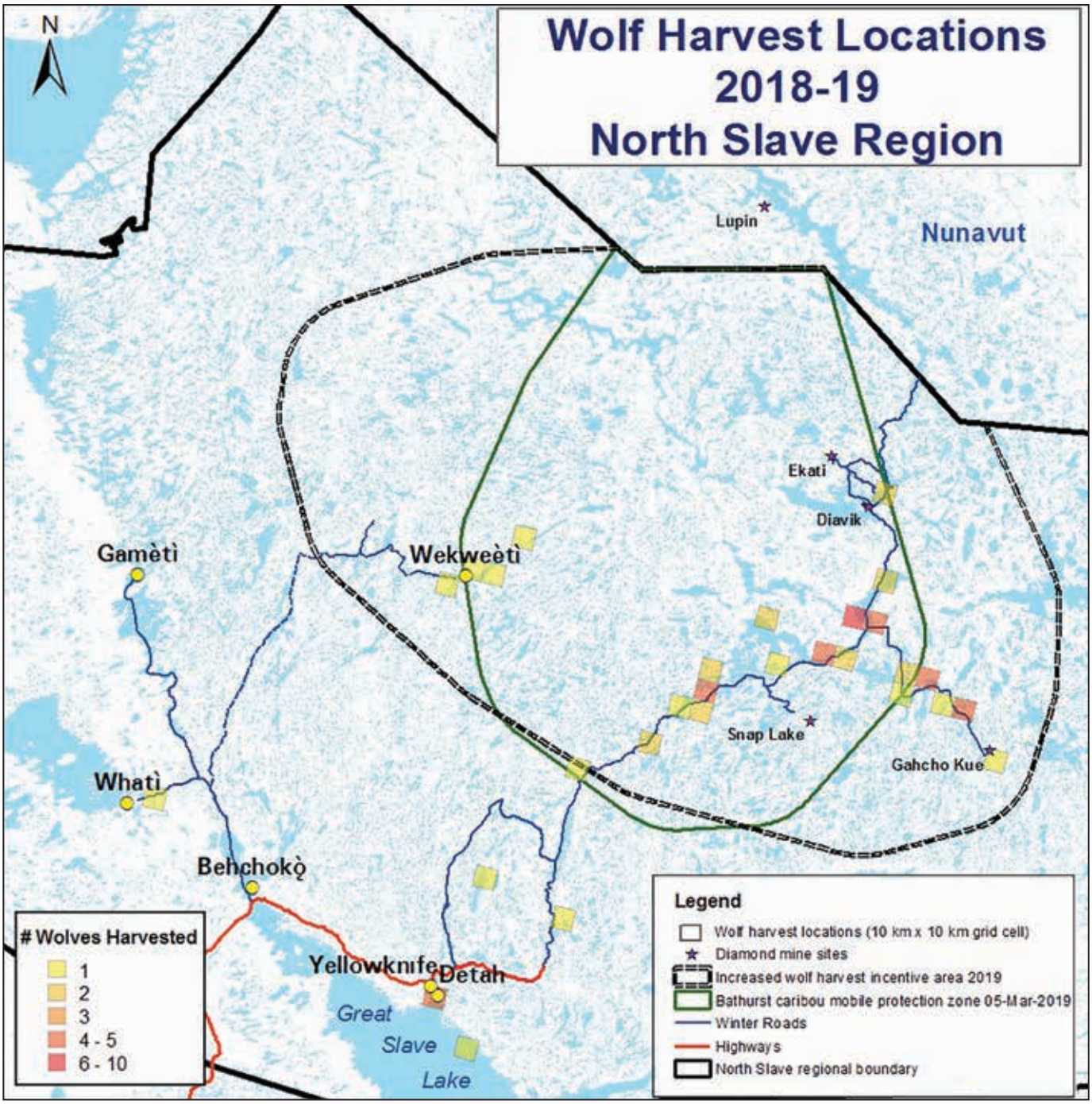


Figure 16. Spatial distribution of wolves harvested in the North Slave Region for winter 2018/19. Most wolves (59 of 66) were taken in the new increased wolf incentive area (dashed line) in February and March 2019.

Wolf necropsies

The North Slave Region received 65 wolf carcasses that were necropsied (examined/sampled), 58 of which came from the new wolf harvest incentive area. The other seven carcasses came from other areas within the region.

Here are some observations about the wolves harvested:

- The majority of wolves harvested in 2018/19 were males, at 43 males and 22 females.
- Most (69%) of the wolf carcasses submitted were classified as adults (3 years or older) at necropsy. These estimates were based on body size, tooth wear and uterine scars in females.
- Based on our estimates, there were 54 adults, two 2-year-olds, one yearling and eight juveniles (1 or 2 years old), meaning adults made up 83% of the wolves harvested.
    - This is somewhat surprising, as we would expect to see more juveniles in the harvest, since usually about half the pack in winter is composed of juvenile wolves. Furthermore, juvenile wolves are more naïve than adults and would be more vulnerable to being harvested. All wolves will be aged through tooth analysis to determine ages with more certainty.
- An external body condition score was given to each wolf during the necropsy based on a scale of zero to four for perceived fatness, with four being the fattest. The average external body condition score for all male and female wolves was 2.1.

Wolf stomach content analysis

Of the 65 wolves necropsied, 59 had stomachs collected for diet analysis. Here are some observations about the stomach content:

- Of the 43 wolf stomachs that had content, 37 contained barren-ground caribou (86%).
- Two wolves had eaten snowshoe hare, one of which was taken from the Whatì area and the other which was taken from the Drybones Lake area – both areas within the trees and snowshoe hare range.
- One wolf killed in the Wool Bay area of Great Slave Lake had only arctic fox in its stomach.
- Three wolves had garbage in their stomach – one from Wool Bay, one from the Wekweètì area and one from Duncan Lake.
- Sixteen of the wolves had empty stomachs (27%).

Working with Nunavut

The ENR Minister and officials met with Nunavut's Environment Minister and officials in Kugluktuk in April 2019 to discuss how our two governments can work together to facilitate Nunavut hunters being able to participate in the wolf incentive program within their asserted territory in the NWT. Both governments agreed to work together to make this happen. Officials from both governments continue to have discussions regarding methods, logistics and payments. Note that Nunavut harvesters would only be eligible for the $900 carcass incentive and not the additional bonuses through the Genuine Mackenzie Valley Fur Program.

Figures 17 and 18. Wolves are skinned at an ENR pelt preparation workshop in the North Slave in 2018.

Next steps

1. Wolf pelt preparation and harvesting workshops will be held in North Slave communities to ensure proper harvesting and handling of pelts this fall/winter.
2. Tissue samples collected from necropsies are being processed and shipped for further analysis, and information collected during the necropsies is being entered into the database. Data will be used to determine age, genetics and health to improve what we know about wolves in the NWT.
3. ENR is continuing discussions with Nunavut and the Kugluktuk Hunters and Trappers Organization to facilitate wolf harvest and sample collection in their area.
4. Improvements will be made to the hunter questionnaire to clarify questions and provide incentives for filling out the questionnaire prior to the 2019/20 harvest season.
5. There will be no cost for wolf tags for all hunters for the 2019/20 harvest season.
6. The field guide for wolf harvesters is being updated to include other important information.
7. Wolf necropsy sampling procedures are being refined to better assess body condition.
8. ENR is reviewing eligibility of wolf harvest incentive payments and the wolf carcass skinning policy in regards to outfitters, non-resident and non-Indigenous harvesters and skinners, and potential needs for pelts for Arctic Winter Games.

Figure 19. Members of the Wekweètì crew receive a helicopter briefing.

2019 North Slave Wildfire Season

Identifying key caribou habitat as a value-at-risk

Prior to the start of the 2019 wildfire season, North Slave staff met with Tłı̨chǫ leaders to identify key caribou habitat that would be considered a value-at-risk (VAR) for wildfire management. This work continues and it is expected that these key caribou areas will be integrated into the Department of Environment and Natural Resources' (ENR's) VAR database for 2020.

Wekweètì crew

To begin the 2019 wildfire season, the North Slave Region partnered with the Tłı̨chǫ Learning and Development Centre to establish a fire crew in Wekweètì to help fight wildfires near key caribou habitat.

The crew got excellent hands-on training in wildfire response this summer and will continue to build up their skills next season.

Exports

The start of the 2019 wildfire season was not overly busy in the North Slave Region. As a result, all North Slave crews that qualified for national export spent some time in Alberta assisting with their firefighting efforts. During these exports, crews were able to gain valuable experience while helping our neighbour during their time of need.

Wildfire overview

The first fires started on May 18 with two human-caused fires that are still under investigation. There were three more human-caused fires from May to July, resulting in human-caused fires accounting for 8% of the Region's fires. In response, ENR developed communications materials around fire prevention and safe campfires that were routinely

shared on social media and our website to curb human-caused fire starts. The other 92% of fires were all caused by lightning.

Some observations from the 2019 fire season:

- The region experienced 61 wildfire starts in total this season, which is slightly above the 10-year average of 43 fires per season for the North Slave Region.
- This year, there were several significant fires in July that kept wildfire management staff very busy.
- More fires were fought this season than in other years, with 57% of fires fought compared to the past 10-year average of 40%.
- Taking action on more fires may have contributed to the lower amount of area burned. In total, 14,521 hectares of forest burned in 2019 compared to a historic average of 119,090 hectares burned.

All of the 61 wildfires reported in the North Slave Region this summer received an operational response. Many factors were considered in the decisions to allocate resources on each fire, including: the risk to higher value areas, such as communities; the availability of crews and aircraft; the expected weather; the potential for natural breaks that might limit a fire's spread; and time of year.

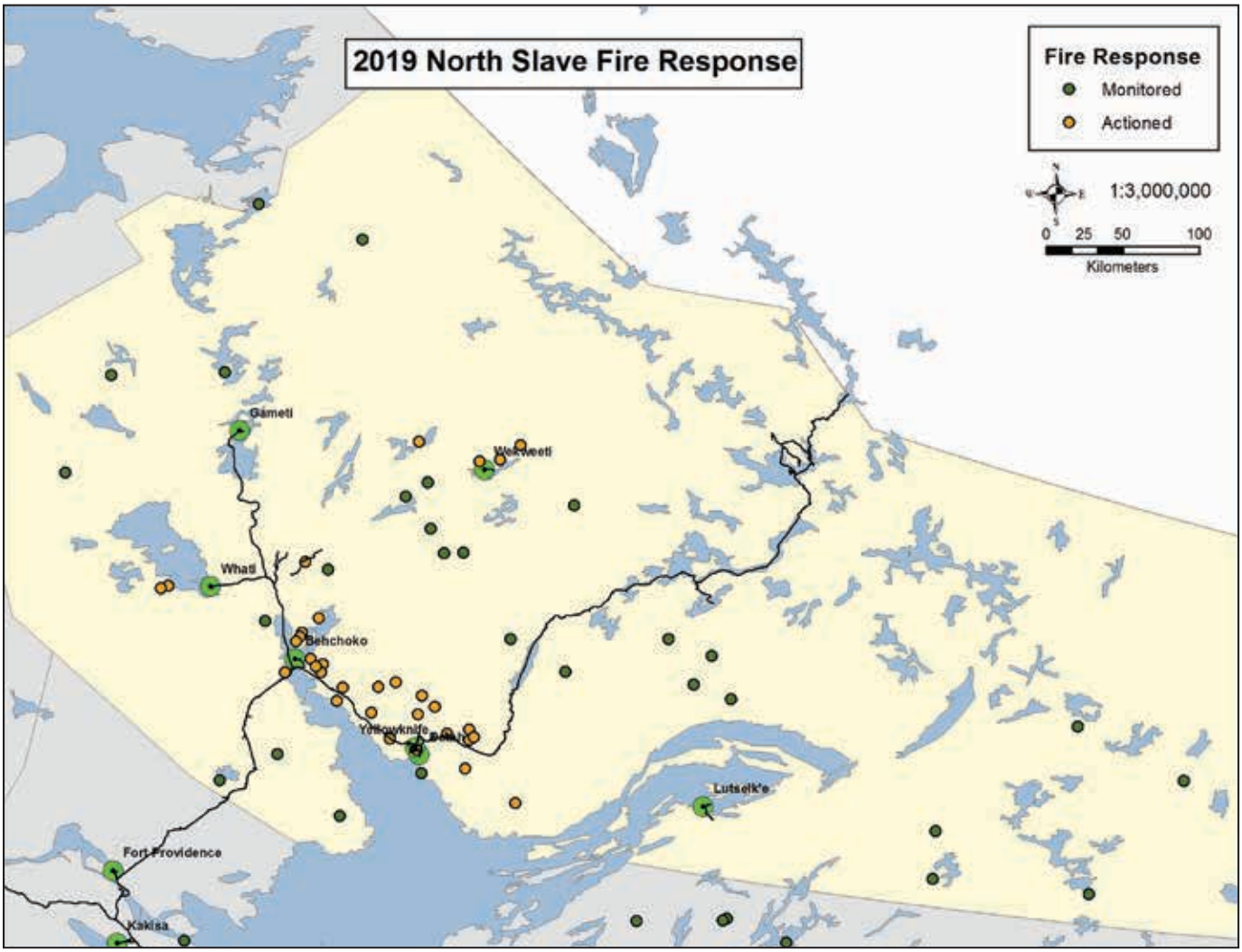


Figure 20. Fires fought and monitored in the North Slave Region in 2019.

Significant fires

There were numerous fires that needed multiple days and extra resources (crews and aircraft) to be brought under control. These fires had the most potential to impact communities or significant values-at-risk on the land and were the most challenging to manage; as a result, they also cost the most to manage. The cost of managing the 61 wildfires in the North Slave Region in 2019 was over $4 million, largely due to four problem fires. The most costly fires are summarized in the table below.

Significant Fires – North Slave – 2019		
Fire Number	**Location**	**Cost**
ZF-024 and ZF-041	Awry Lake Complex (Behchokǫ̀ / Yellowknife)	**$2,464,542**
ZF022-19	Watta Lake	**$317,674**
ZF045-19	Wekweètì	**$286,557**
ZF043-19	Wekweètì	**$199,975**
ZF012-19	Behchokǫ̀	**$111,167**
ZF018-19	Ingraham Trail	**$92,433**
ZF017-19	Whatì	**$81,866**
ZFOll-19	Behchokǫ̀	**$64,579**
ZF032-19	Snare Hydro	**$57,999**

Table 1. Cost per fire fought in the North Slave Region in 2019.

The region experienced over 30 fires in a one-week period in July 2019. The number of fires increased so quickly that crews on export in Alberta were redirected back to the Northwest Territories (NWT) and deployed to ZF024.

All crews from the North Slave helped to action fires. Additional resources were brought in from across the NWT to assist, including crews from Fort Smith, Fort Resolution, Fort Providence, Fort Simpson, Fort Good Hope, Fort McPherson and Tsiigehtchic. At one point, 20 Type-1 firefighters from Ontario were brought in so the North Slave crews could have time off after working for a couple of weeks straight. In addition, 47 Extra Fire Fighters (EFF) were hired from Tłı̨chǫ communities to assist, with 27 EFFs hired from Behchokǫ̀.

Figure 21. Behchokǫ̀ Chief Clifford Daniels joined North Slave fire management staff on a flyover of the Marian Lake fire (ZF041).

Given the serious nature of ZF-024 and ZF-041 near Behchokǫ̀ and Yellowknife, and the high number of active fires, an Incident Management Team (IMT) was brought in to assist the region. The IMT looked after fires ZF-024 and ZF-041, also known as the Awry Lake Complex. A total of 80 personnel were employed on ZF-024 at its peak operating period. Establishing an IMT allowed the North Slave Region to deal with other active fires and new starts, while the IMT focused solely on the Awry Lake Complex.

Monitored fires

While the region was able to fight more fires this summer, due to the high number of fires near high value areas, not all fires were fought. Of note were six fires that ignited south of Wekweètì, which did not receive fire suppression action. Each of these fires was assessed for its potential to affect VARs, such as communities, cabins, cultural sites and renewable resource values, including the risk to barren-ground caribou habitat.

While these six fires were not fought, they were monitored on a regular basis. Most of the fires remained relatively small, with each fire growing to less than 150 hectares; however, one fire did grow to reach 3,834 hectares in size.

Overview of ENR's fire suppression budget

The graph below illustrates a breakdown of where ENR's $13 million fire suppresssion budget was spent in 2019. Aircraft and associated costs such as fuel and retardant make up nearly two-thirds of the entire budget. Wages for extra firefighters, casual hires and overtime for firefighters make up just over 20% of the budget. Travel, materials and supplies, equipment rental and servicing make up the remaining portion of the budget.

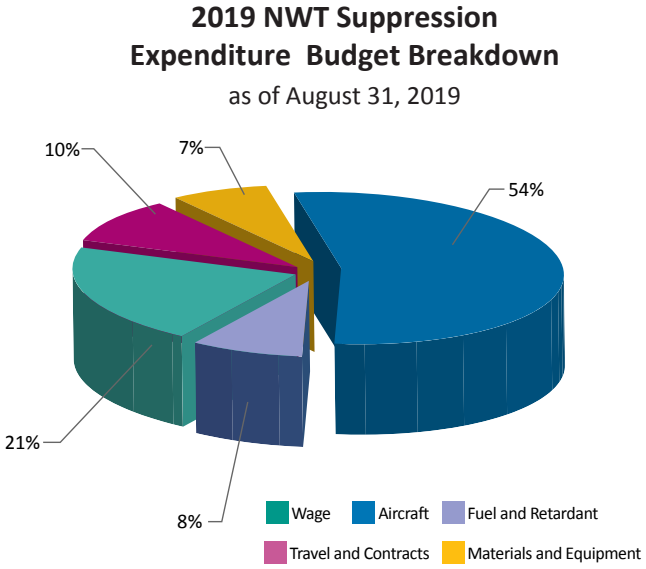


Figure 22. Breakdown of ENR's fire suppression budget for the NWT in 2019.

Next steps

The 2019 fire season offered good experience for all involved to practice the firefighting skills learned in training and to keep their skills sharp. By all accounts, the fire season was a succesful one.

Heading into the 2020 wildfire season, fire management staff in the North Slave Region will:

- continue to work with Tłı̨chǫ leaders to identify key caribou habitat to assist ENR when prioritizing which fires needs to be fought;
- continue working with the Tłı̨chǫ Learning and Development Centre to ensure the Wekweètì crew has the training and resources needed to perform their duties; and
- respond to any questions Tłı̨chǫ leaders may have regarding wildfire management.

Figure 23. NWT fire crews action fire ZF024.

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2018-2019

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