

## **Porcupine Caribou Management Board Submission to YESAB**

### **YESAB file 2014-0112: Eagle Plains Multi-Well Exploration Program by Northern Cross Yukon: Follow-up review of potential impacts and mitigations with respect to the Porcupine Caribou Herd**

**December 15, 2015**

Northern Cross Yukon (NCY) proposes to conduct a 20-well drill program that includes the construction and use of winter and all-season roads to conduct extended flow testing and reinjection of well by-products. This document from the Porcupine Caribou Management Board (PCMB) provides an updated review of our December 2014 assessment of this project relative to Porcupine Caribou Herd (PCH). For clarity and brevity, we will not go over each point in our 2014 submission; however, we note that we continue to support the direction and comments that we submitted at that time. Rather, we will focus our current submission on areas of the proponent's plan that fall short or fail to meet concerns raised by the PCMB, with the objective of ensuring that significant negative impacts of the proposed project are mitigated.

#### **PCMB mandate and role in PCH management**

The PCMB was established under the *Porcupine Caribou Management Agreement* (PCMA) in 1985. The PCMB was created for the explicit purpose of ensuring the well-being of the PCH and the maintenance of its habitat, via co-ordinated and cooperative management between governments and traditional users. No other organization's sole mandate is related to the management and well-being of the herd. Signatories of the PCMA are the governments of Canada, Yukon, Northwest Territories, and First Nations and Inuvialuit within the range of the herd in Canada. Therefore, the PCMB should be considered a stakeholder of NCY's communication and engagement process.

The PCMB feels strongly that NCY needs to formalize regular communication with the PCMB during the proposed project. We note that IRA-29 on page 59 of Response to Information Request #4 Deficiencies, states that NCY does not support the concept of a technical working group. On the same page, NCY also states that they will engage with stakeholders, including YG, PCMB, and First Nations, and that if any issues or concerns arise, they will meet with stakeholders.

In acknowledgement of PCMB's key role in managing the PCH and who PCMB represents, the PCMB should be considered a key stakeholder and, as such, be included in regular communications, with the ability to provide information and feedback. Also, given NCY's need for technical information, specifically related to the mitigation measures which rely on collar proximity, the PCMB would like to be made aware of the process by which NCY plans to obtain this information. The fact that this information is alluded to, but not clearly defined, highlights concerns about potential communication challenges around caribou location, numbers and proximity.

## **Presence in the project area and potential impacts**

Although covered elsewhere (e.g., PCMB 2013), the distribution of and use of habitats by the herd in the project area is worth reviewing, particularly since the fall and early winter of 2015 have allowed us to document movements in high detail thanks to the deployment of high-resolution satellite GPS collars that previously were not available. The past three years also provide an example of caribou use of the project area which can vary considerably from year to year or even within a single winter. For example, during the 2013-14 3D seismic project, caribou were present in relatively small numbers (e.g. hundreds) throughout the project, as noted in the proponent's proposal. In 2014-15, very small numbers of caribou remained in Yukon to winter although small numbers were detected just west of the proposed project area. This current winter, we have documented heavy use of the specific project area by the herd as demonstrated in Figures 1-8. We note this movement was nearly identical to those recorded in 2006. Migration movements of slightly less, to similar, population magnitude, but different movement trajectories have also been observed since 2006 (e.g., 2009 saw large numbers in the area).

Detailed data from this year allows us to demonstrate caribou movements more definitively than previously because of the high resolution of data available today (i.e. weekly as compared to every day). Movements in November of this year likely represented 50,000+ caribou migrating directly through the project area with many tens of thousands immediately adjacent, for a total of >100,000 caribou. Once the bulk of caribou moved through the area (Figures 1-2), many turned around and moved back north through and into the project area again (Figures 3-4). Large segments have moved back into this same area and we anticipate large numbers in the general region (Figure 8). Currently, PCH are wintering throughout the general area, including in the specific project area. Movements this year typify what can be expected in the future, although it is impossible to anticipate the frequency which could range from many consecutive years to more sporadic occupation of the area. It is clear that we can anticipate a wide range of use of the project area from tens of thousands to small or no groups of caribou in a given year, and the period may vary from days to all winter. Therefore, detection of groups in the project area prior to new activities is key to successful mitigation (Figure 6-7).

## **Anticipated impacts**

As outlined in the PCMB's earlier submission, impacts of the proposed project will last for many years, decades or even centuries owing to the landscape in which the project is occurring. Activities such as all-season road construction and operation, extended flow testing, and year-round road traffic will alter this landscape for caribou. Below, we review suggested mitigations offered by the PCMB to reduce these impacts and provide rationale on why the PCMB's mitigations are appropriate in each case. We have omitted suggested mitigations that align with those recommended by the PCMB.

Generally we note concerns around the level of commitment offered by NCY on many of the mitigations included in their plans. The use of words like "may", "to the extent

possible”, or “as much as possible” weaken commitments. Almost all commitments in the wildlife plan are qualified in this way. Previous experience during the 2013-14 seismic project conducted by NCY in this area has demonstrated inadequate follow-up to similar commitments even when action was urged by all major stakeholders and from technical staff tasked with monitoring the herd. Therefore, we recommend that key mitigations be incorporated into authorizations rather than remaining in plans where these commitments remain at the discretion of NCY. We also recommend that YESAB identify major points in submissions from the PCMB and others (e.g. Environment Yukon) and incorporate accepted and suggested mitigations into the recommendation report that will form the terms and conditions of the authorizations.

### **Suggested Mitigation and Recommendations**

NCY has developed an Access Management Plan to address concerns noted by the PCMB and other parties. Sufficient access management will likely be one of the most significant mitigations for caribou. As proposed, the plan fails to meet the criteria as outlined in the PCMB’s request. Specifically, the following points have been only partially included or have been excluded from the plan.

We note that the company is largely relying on a gate and the road being private. We note there are many examples from other jurisdictions, including Yukon, that have demonstrated the inadequacy of this approach in controlling access.

- An Access Management Plan shall be developed in collaboration with the caribou working group (defined below) and submitted for review and approval prior to or accompanying application for project authorization. The plan should address how new information will be incorporated and implemented.
- In addition to offering the following mitigations for authorizations, we also recommend that the following are incorporated within the Access Management Plan:
  - The number of access points on the highway will be limited to a maximum of four but ideally will be the least number technically feasible. *We have no confidence that this point is being addressed in the plan. The PCMB is of the opinion that the overall access created by this project is more significant than the increase in footprint-related disturbance. Reducing access points is more crucial, as it reduces the risk of unauthorized use. While we understand operational flexibility is desirable we also acknowledge the severe risk of enhanced access to this area from multiple access points.*
  - Sequencing and decision points for construction of all-season roads will be explicit in authorizations to ensure all-season road construction to any given well is only allowed when year-round extended flow testing is imminent. *We note at this time that no clear commitment to sequencing has been included, although in some instances NCY has stated that they*

*will not construct all-season roads until extended flow testing is required. This is contradicted in other areas of the proposal, however. The use of all-season roads should only occur when absolutely necessary, keeping with the approved North Yukon Land Use Plan which states that winter roads are to be used wherever possible. All-season roads should only be considered when extended flow testing for a period longer than the winter months is a demonstrated need. Authorizations should reflect this.*

- *Road traffic will be monitored year-round to determine whether mitigations to limit use are effective and the results will be reported annually. Where mitigations are found to be ineffective, NCY will put into effect other mitigations as deemed necessary by the Land Use Inspector to restrict non-authorized traffic. As proposed, NCY will opportunistically monitor unauthorized traffic. However, this will not monitor and track use when the company is temporarily shut down or inactive in an area. Inexpensive, efficient, and reliable tools are available to monitor traffic and should be engaged in a way that ensures all traffic levels are monitored throughout the road system. Monitoring should be year-round to ensure a reliable understanding of access is captured.*
- *NCY will suspend activities if it is determined, through collar monitoring conducted in collaboration with Environment Yukon, that the PCH is wintering or migrating through and/or within 30 km of the project area. We note that the company has stated that a shutdown of operating drills is unsafe. The PCMB does not have the expertise to make a determination whether or not this is possible; however, we note that implementation of the proposed mitigation will not be sufficient as many thousands of caribou flood the project area. October and November of this year provides the perfect example of a situation where sufficient mitigation is near impossible to reduce the risk to many thousands of caribou. A shutdown to the extent possible is warranted. Waiting for caribou to enter either the second or third tier is not required to initiate mitigation in these cases. Further, we note the term “non-essential activities” is used by the company; however, this term is not defined. A clear description of exactly what these activities are is required and should be included in authorizations.*
- *The proponent shall initiate aerial surveys to determine the numbers and locations of Porcupine caribou when: (1) 500 or more caribou, or (2) one or more GPS collared caribou, are known to be within 30 km of ongoing or imminent project activities. Such surveys shall be conducted monthly if the conditions/circumstances that initiated the survey continue to exist. Aerial surveys provide an important means to locate caribou groups in a project area prior to creating disturbances in their specific wintering areas. Once accessed from the ground, it is too late. Such overviews are extremely helpful for project planning as they would identify areas where the proponent is likely to encounter greater mitigation requirements. For example, this year, we anticipate areas east of the highway will hold many fewer caribou than areas west of the highway. The*

*only way to efficiently confirm this would be an aerial survey of the specific project area.*

- The proponent shall suspend non-essential activities (e.g. clearing, road construction, drill moves) when >250 caribou (as determined by aerial surveys or direct observations) or one satellite GPS collars is found to be within 6 km of these activities. The suspension of activities shall remain in effect until less than 250 caribou (as determined by aerial surveys or direct observations) are found within 6 km of drilling and road construction activities; and resumption of drilling and road construction activities shall require the approval of Chief Operations Officer. *We have modified this mitigation to more closely align with that presented in the proponent's terms and conditions. However, we note that existing commitments rely on collar data only. This is inappropriate as only a very small percentage of caribou are collared (i.e. 0.02%). We note that ~50 caribou have satellite GPS collars (as opposed to the 100 indicated by NCY) and it is uncertain how long PCH management partners will be able to maintain this level of commitment to the collar program. The addition of 50 collars to achieve 100 would cost in excess of \$300,000 in a single year. Therefore, all mitigations should be tied not only to the presence of collars, but also to the presence of a specified number of caribou as indicated by the PCMB.*
- The proponent shall suspend non-essential activities when 25 or more caribou are known to be within 600 meters of a work site. *Comments provided for the point above also apply to this tier of mitigation.*

**Note:** The Porcupine Caribou Technical Committee has over 40 years of experience locating Porcupine caribou during aerial survey work and almost 30 years of experience working with satellite collars on the herd. Over that time, staff have become very aware of the limitations and strengths of using satellite collars. The PCMB's recommendations on monitoring of the herd are based on recommendations from technical staff which includes this knowledge.

### **Adaptive Management**

To date, NCY's wildlife mitigation and monitoring plan does not meet all the requirements of an effective adaptive management plan, nor does it provide a clear link to stakeholders. As demonstrated by diagrams presented in their wildlife management plan, a key aspect of adaptive management is rigorous monitoring that can identify whether pre-identified thresholds are being met or exceeded. Much of the monitoring presented in the document is focused on the reporting of incidental sightings which will not be useful in determining the effect of project activities. For example, if a group of caribou leave the project area, would that be because they are simply moving away or because they've been displaced by activities? Incidental sightings cannot address this question. While identification of effects is generally described, a clear monitoring plan to determine if effects are occurring is not described, nor are there clear thresholds that would initiate a suspension of activities. In other words, no clear mechanisms for

adaptive management are described, leading the PCMB to believe it is unlikely that adaptive management will actually be initiated.

The PCMB is still concerned that there is no clear mechanism to engage with stakeholders, and any engagement that occurs will be ad hoc at best. In our previous submission, the PCMB recommended the following, and we continue to recommend that:

- A caribou working group will be established with terms of reference that address the following:
  - Objectives of the group;
  - Work of the group; and
  - Implementation of recommendations.
- The caribou working group should include representation from First Nation governments with traditional territories overlapping or immediately adjacent to the project area, appropriate government agencies and boards or councils, including the PCMB. Given the mandate of the PCMB under PCMA, as described above, we feel that the PCMB must be included as a participant on the caribou working group.
- The proponent will submit a wildlife effects monitoring plan that includes standardized wildlife observation and monitoring protocols for review and approval prior to or accompanying an application for authorizations. *At this time, no standardized approaches are presented in NCY's plan. While mitigation and monitoring levels are likened to quartz exploration, we note this is not an appropriate comparison. Oil and gas exploration activities such as extended flow testing are virtually the same as those encountered during an actual production phase. In this project, we could see up to 20 wells in an extended flow-testing program. While this is undoubtedly fewer than what would be used on a producing field, the activities are the same and the effects are the same. This is markedly distinct from quartz exploration which is considerably different in actual production. The initiation of baseline monitoring is required at this phase to understand the impacts that would be commensurate with full production, and to ensure this existing phase is not having undue impacts before proceeding.*
- The proponent shall submit weekly wildlife observation reports and annual wildlife effects monitoring reports and ensure the PCMB is included in the distribution of these reports.

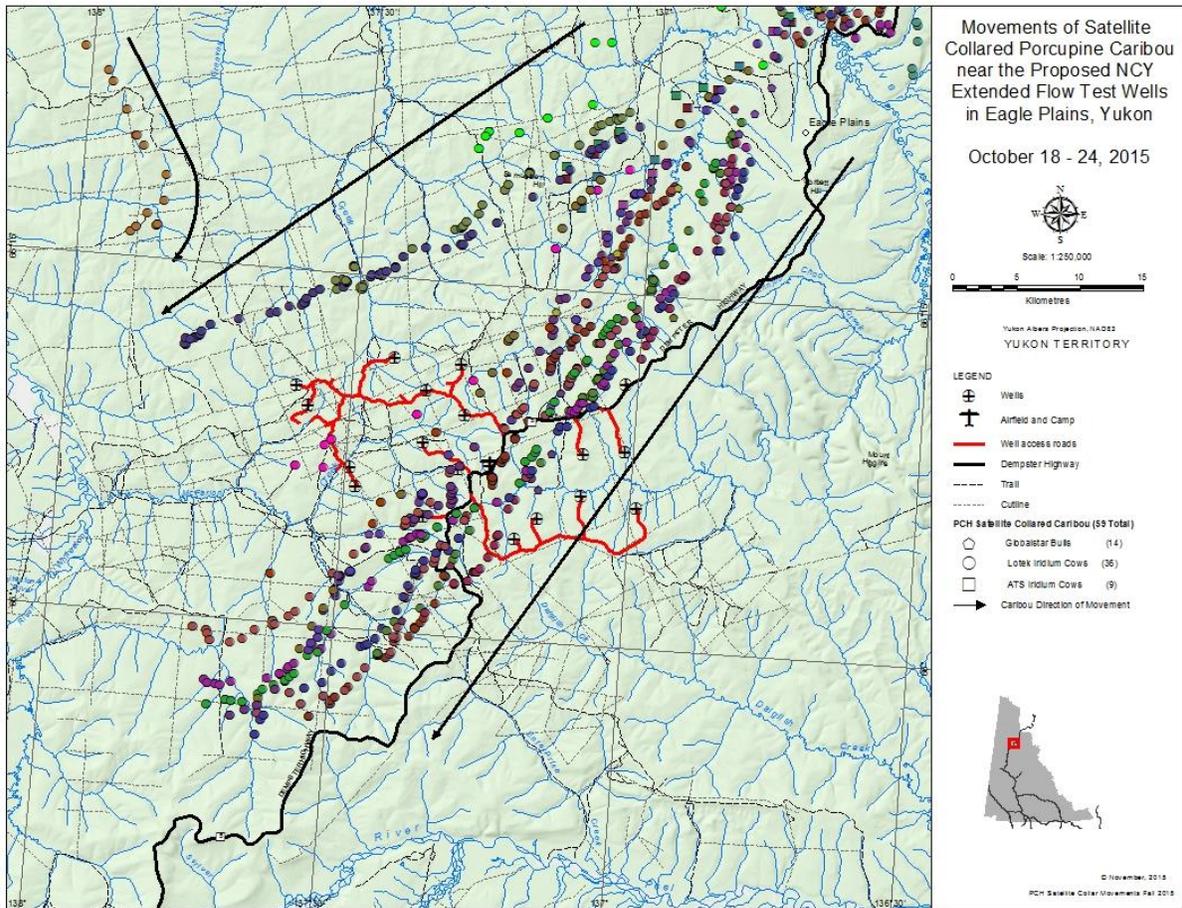


Figure 1 – The Porcupine caribou herd migrated SW following ridge features (including the Dempster Highway) between October 18 and 24. Although it is impossible to determine the exact numbers of caribou involved in this movement, based on the proportion of collars involved, at least 50,000 caribou moved through the project area. Closer to 100,000 caribou were likely in the area.

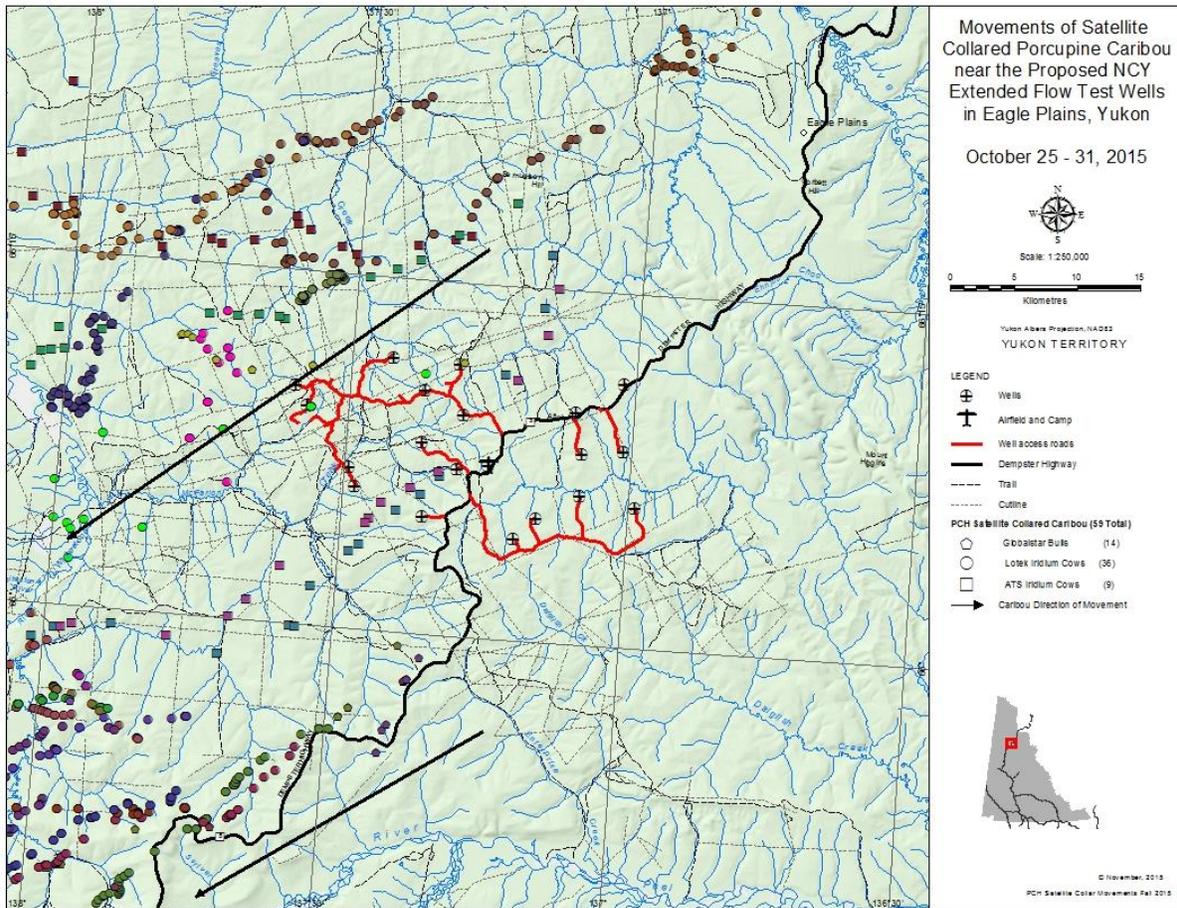


Figure 2 – From October 25 -31 caribou continued to stream SW, although some began to slow down in the project area.

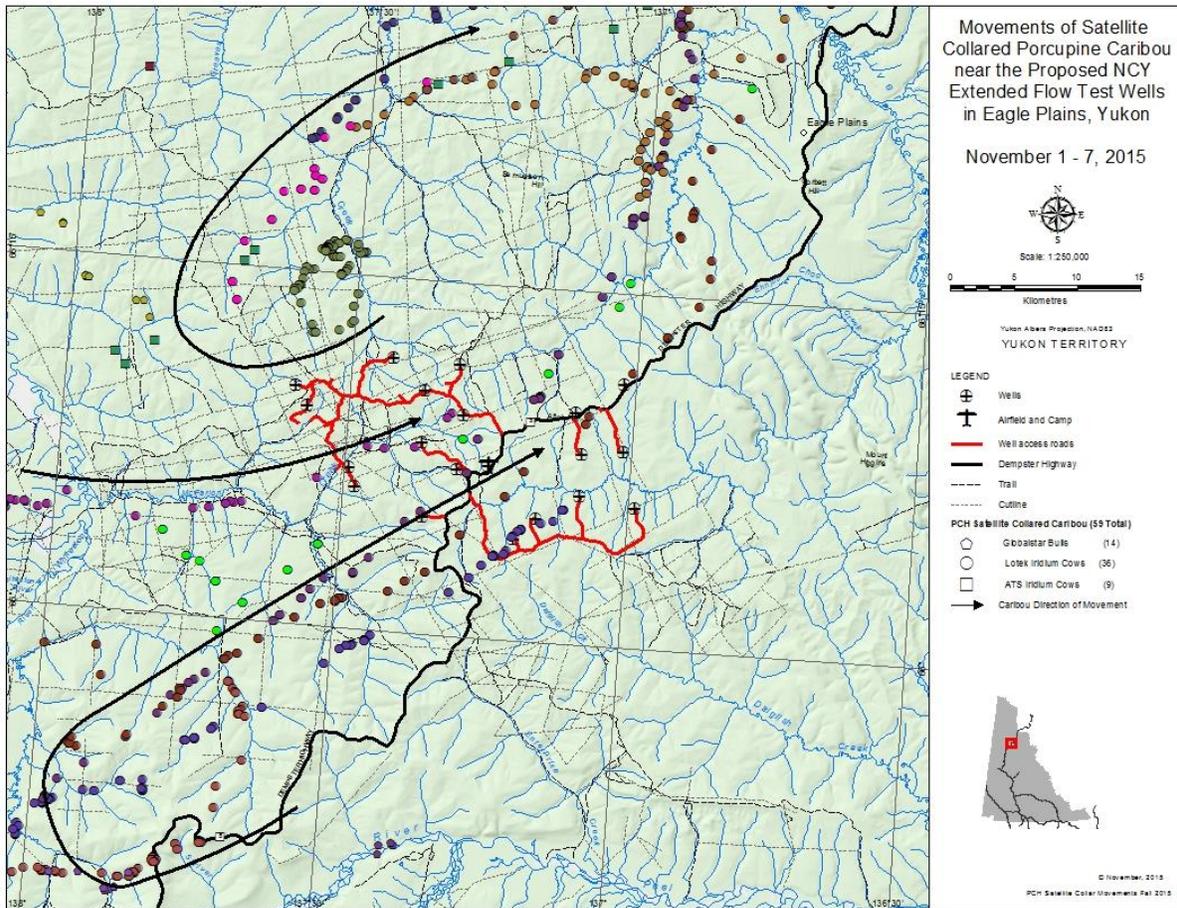


Figure 3 – Between November 1 and 7 most caribou turned around and moved back through the project area in large numbers (i.e. tens of thousands). We are uncertain what caused caribou to turn, although deep snow conditions relative to surrounding areas were present in the project area and just south.

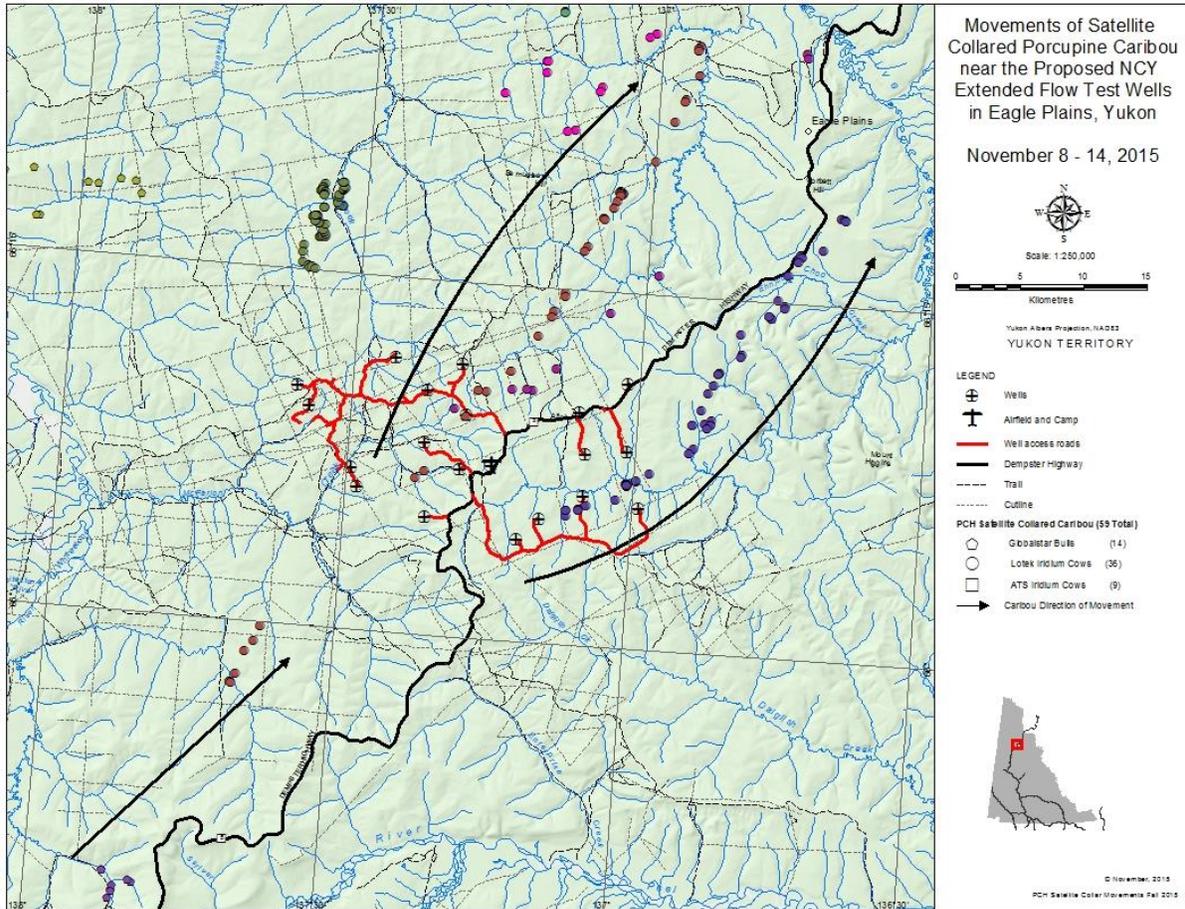


Figure 4 – Caribou continued to move north during the week of November 8 to 14 although movements were more scattered than those observed in mid to late October. Several caribou did not move and it is likely that caribou remained scattered throughout the area during this period.

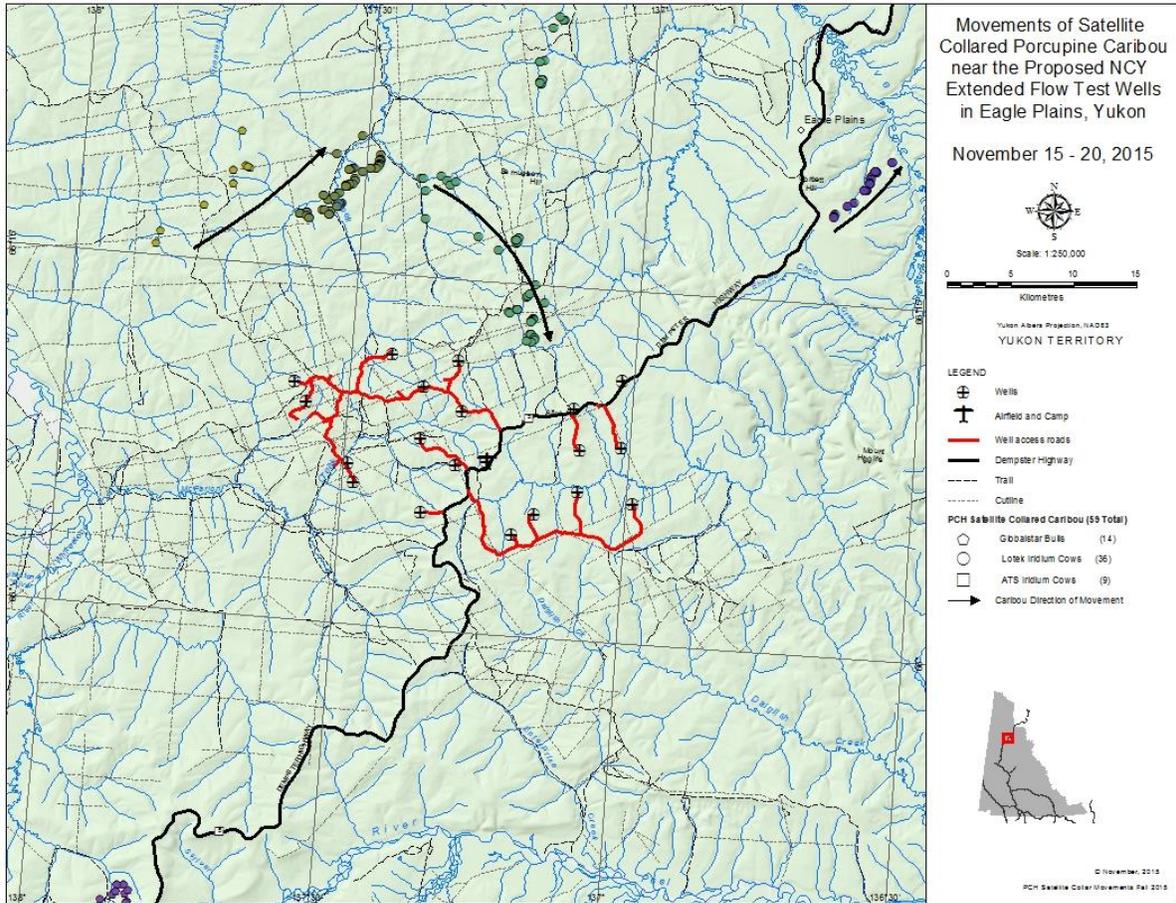


Figure 5 – Wintering caribou continued to move around, including local movements in the immediate vicinity of the project. At this time of year, groups of caribou are generally more scattered and there is a greater likelihood that groups without collars would be detected using aerial surveillance. Ground surveillance would also detect caribou although far less efficiently and with a much greater likelihood of missing groups. (See note on page 5)

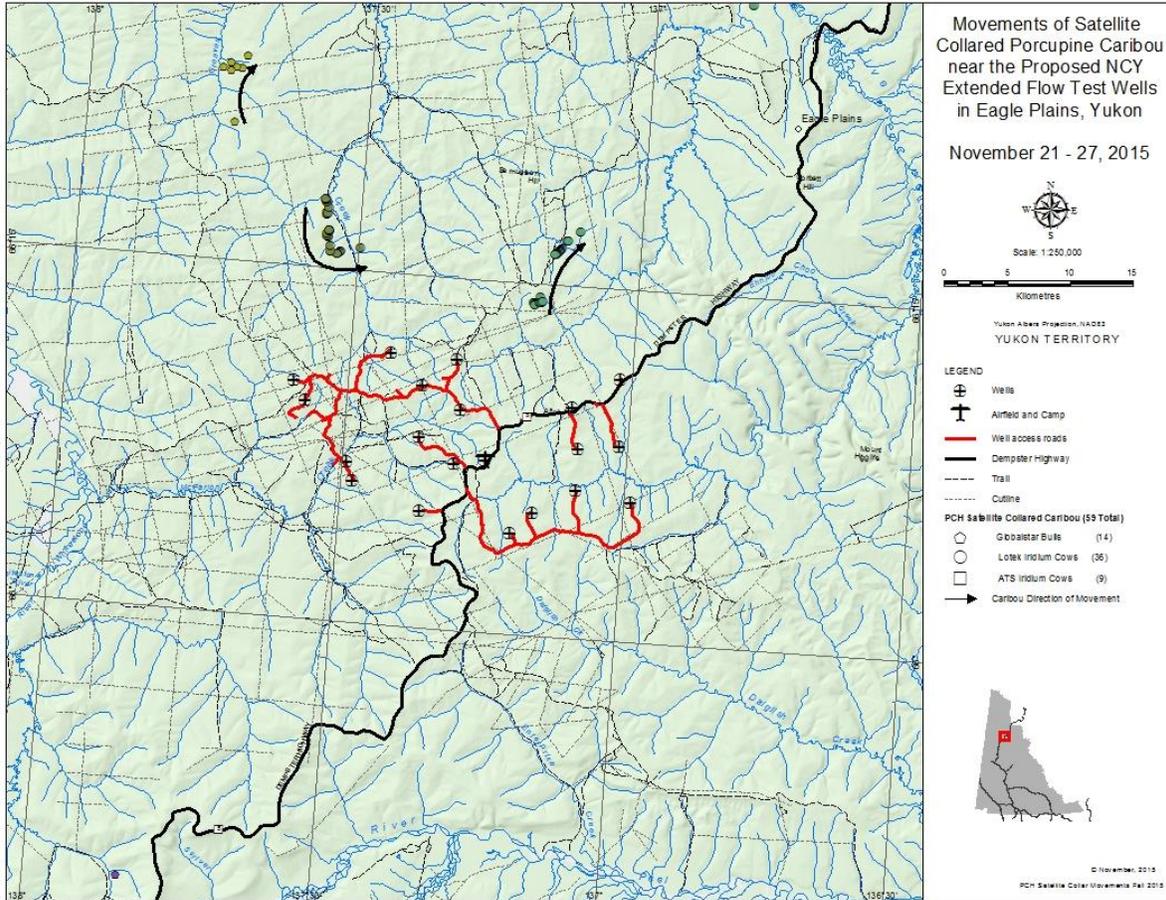


Figure 6 – Caribou continue local movements although the magnitude of movements decreases as winter progresses.

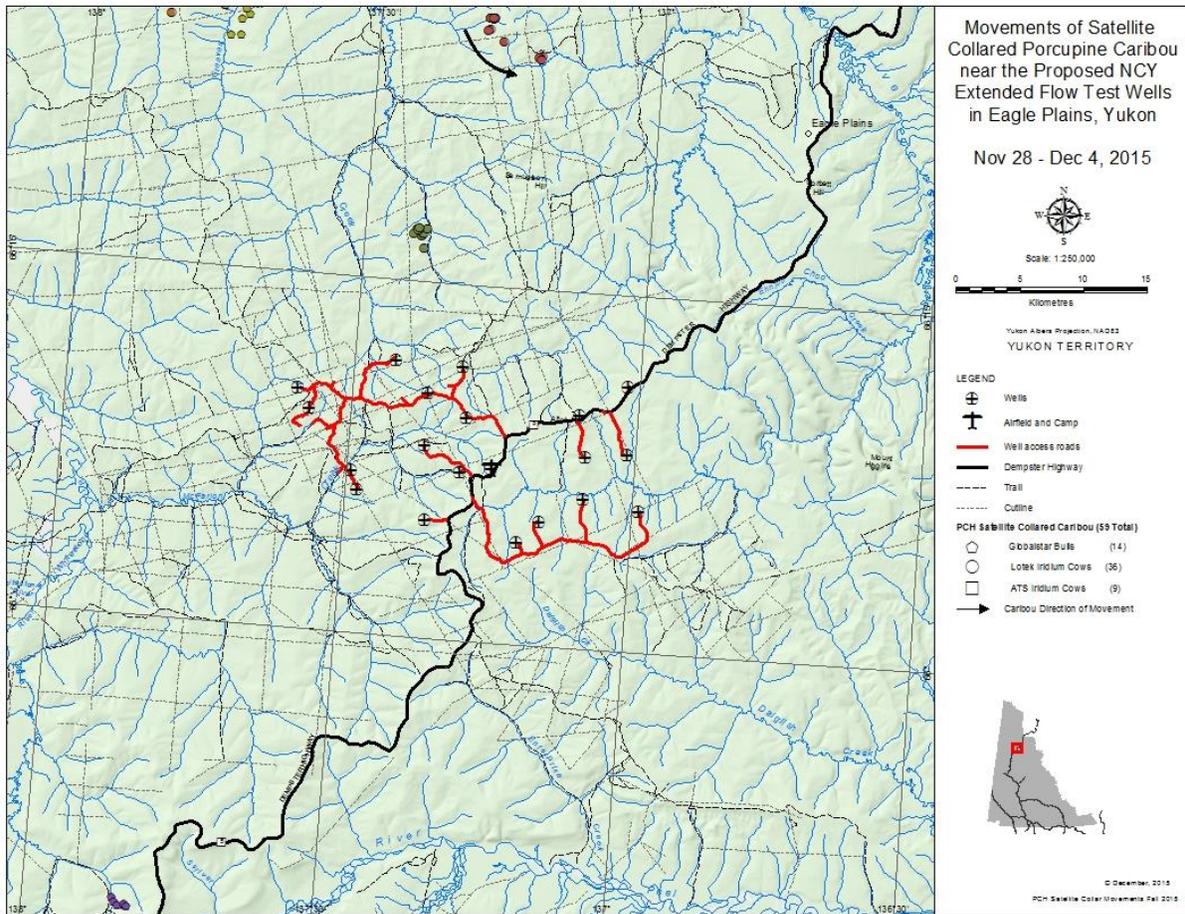


Figure 7 – One collar remains near the project area. It is extremely likely that many groups of caribou remain scattered through the area. For this reason the use of collars alone is insufficient. Collars may tell you where caribou are, but cannot tell you where caribou are not. Both visual and collar data is required to make this determination. (See note on page 5)

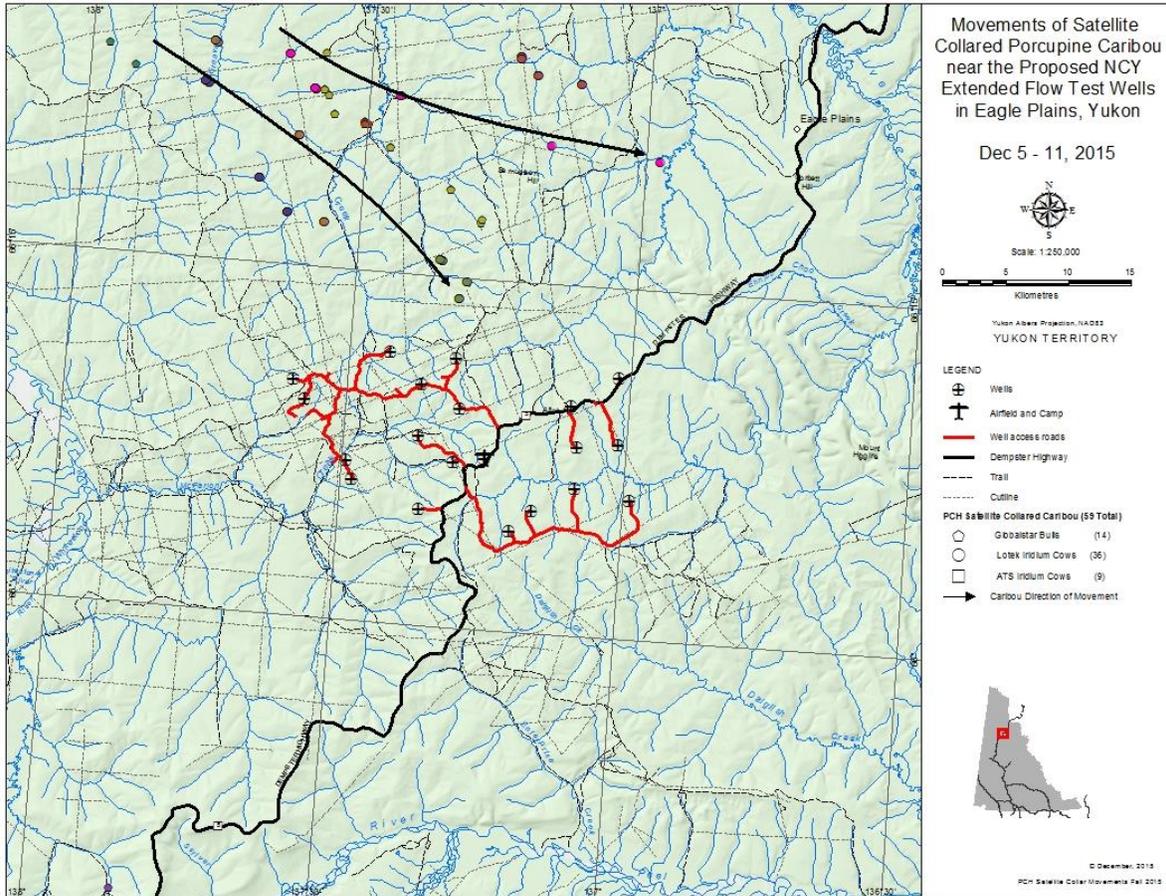


Figure 8 – Although not extremely evident from this figure, large numbers of caribou have again moved into and adjacent to the project area. This figure likely represents many thousands of caribou moving into the project area in addition to those already wintering there. Some areas within the project that are not burned contain very high-quality lichens. Even within burns, local areas such as riparian areas often are not burned and can hold caribou for long periods, as was noted east of the Dempster Highway in spring of 2014 when NCY’s 3D seismic program was operating.