PROPHET RIVER ETHNOBOTANY

A report on traditional plant knowledge
and contemporary concerns of the
Prophet River First Nation

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Chief Liza Wolf and Council and the office staff kindly made available office facilities and meeting space and offered their assistance as needed.

The highlight of the project was the enthusiasm and participation of a large number of Prophet River community members (spanning three generations) in fieldwork, interviews, or other events. Elders and other knowledgeable community members shared their biological and cultural expertise, as well as their concerns about the health of local plants, animals and people affected by increasing industrial and other activities. Other community members (particularly youth) had an opportunity through the project to learn directly from their Elders as “apprentices” and visit places within their traditional territory that they had never been. A large number of youth participated in an all-day youth and Elders camp at Sikanni Chief Falls, as part of the project, to facilitate inter-generational sharing of cultural information.

Participants included Elders Mary Chipesia, Alex Chipesia, Fred Jumbie, Paul Notseta, Thomas Chipesia, and Peter Chipesia, as well as Dan Chipesia, Tina Stewart, Sandra St. Pierre, Brian Wolf, and Gabriel Wolf. Youth apprentices who worked with their Elders during the fieldwork and learned about documenting plant knowledge and taking photos included: Evangeline Attachie, Trisha Attachie, Sheldon Chipesia, Sheree Reno, Sherry Evans, Jennifer Reno, and Lisa Reno. Additional youth who participated in the youth and Elders camp included: Cody Attachie, Wyatt Attachie, Jeff Chipesia, Cory Tsakoza, Kirk Tsakoza, and Trevor Tsakoza.

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Some of the participants at Paul Noblegood's cabin (Mile 178) during fieldwork in August 2002. From left to right: Fred Jumbie, Alex Chipesia, Jennifer Reno (behind), Paul Notseta, Mary Chipesia, Dan Chipesia (behind), Sandra St. Pierre, Peter Chipesia.

Prophet River Ethnobotany: A report on traditional plant knowledge and contemporary concerns of the Prophet River First Nation

1 INTRODUCTION

The traditional territory of the Prophet River First Nation is situated mainly in the boreal forest region of northeastern British Columbia. The boreal forest (or taiga) is a vast circumpolar region that stretches across the northern part of our continent, and comprises over 60 % of total forested areas of Canada and Alaska (Johnson *et al.* 1995). A very limited region of the boreal forest extends into British Columbia, so it is a distinct and important ecosystem for the province, and of significant biological interest.

There is a number of older published works that describe boreal plant uses of certain Aboriginal peoples in Canada[1] (*e.g.*, technological uses of birch bark). However, much of the historical information is limited in value due to inaccurate documentation of plant species or lack of appropriate cultural context for plant use. The publication by Robin Marles *et al.* (2000) titled *Aboriginal Plant Use in Canada's Northwest Boreal Forest* is an excellent compilation of traditional plant uses of this region, but the study did not involve any Aboriginal groups west of Alberta.

This report summarises the results of an ethnobotanical study conducted with, and on behalf of, the Prophet River First Nation during 2002 - 2006. The project builds upon a preliminary ethnobotany study undertaken in 2000 with the Prophet River First Nation and complements studies conducted in other provinces. It provides an important foundation upon which the Prophet River First Nation and neighbouring Aboriginal communities situated within the boreal forest region of northeastern British Columbia can build.

The study was instigated at the request of the Prophet River First Nation. Funds were provided by the Oil and Gas Commission as part of their Science and Community Environmental Knowledge (SCEK) Fund, and supplemented by in kind support from the Band Council of the Prophet River First Nation as well as Prophet River Contracting Ltd.

The objective of the study was to document traditional plant knowledge and ecological values of Elders and other knowledgeable community members, as well as local concerns about industrial development activities at culturally significant sites. The results of the study are meant to increase the awareness and cultural and ecological sensitivity of the Oil and Gas Commission and the oil and gas sector, in their relations and decision-making involving the Prophet River First Nation.

In addition to this report, a community plant handbook was produced in 2006 for cultural and educational uses of the Prophet River First Nation. The handbook is an updated and revised version of a similar handbook produced in 2000. The new handbook is titled *Prophet River Ethnobotany: A community handbook of traditional plant knowledge shared by and for the Prophet River First Nation.* The handbook was created primarily for members of the Prophet River First Nation and the local school, to facilitate cross-generational learning. It is also seen as

[1] The term "Aboriginal" is used in this report as defined by the Indian Act to refer Indigenous peoples of First Nations, Inuit or Métis descent. The term "Indigenous" is used when referring to Indigenous peoples outside of Canada.

a potential tool to increase the cultural and ecological awareness of others, especially industrial developers (e.g., oil and gas, forestry, mining industries) working with the Prophet River First Nation or within their traditional territory. At the discretion of the Prophet River First Nation, copies may be made available for sale to others, with the intention that proceeds will support further community-based research and education on environment and culture to address the priorities of Prophet River Elders and to ensure that the Elders are directly involved in such work.

1.1 What is Ethnobotany?

Ethnobotany is the study of relationships between people and plants, and it is a tool to help understand the meaning of plants within a culture. Ethnobotany goes beyond just documenting traditional uses of plants; it is about understanding the interconnectedness and the interdependence of people (or cultures) and plants within the ecosystem. That is, understanding that the health (or harm) of plants and ecosystems affects the Aboriginal peoples whose traditional lifeways are interconnected with those plants and ecosystems. The broad goal of ethnobotany is to protect biological and cultural diversity, which involves protecting cultural integrity, which in turn involves understanding and supporting the cultural heritage and rights of Aboriginal peoples to their traditions and traditional lifeways. Therefore, our study on traditional plant knowledge also attempted to document contemporary concerns and cultural and ecological values of Prophet River Elders and other knowledgeable community members as related to traditional plant use. Local values and concerns are vital to consider in activities such as oil and gas development, that may impact the health and wellbeing of local plants, which in turn impacts the broader ecosystem and those who depend on it.

1.2 Sharing Cultural Knowledge

The timing of this study is such that there is both a sense of urgency about documenting plant knowledge for posterity, and reservations about using non-traditional routes of disseminating knowledge from one generation to the next and sharing this knowledge with those outside the community. This dilemma is increasingly common in Aboriginal communities today, and it is important that such concerns are acknowledged and respected by those outside the community, including researchers, governments, industries and other interested parties.

There are important considerations in sharing traditional knowledge outside of the cultural context where it originated. For example, over the last two decades, there has been much interest globally in the traditional plant knowledge of Indigenous peoples by herbal, biotechnology and pharmaceutical companies seeking to develop commercial products based on traditional foods and medicines. Indigenous and local communities have rarely shared in the benefits, and in many cases are completely unaware that their knowledge was used by others as the basis for commercial innovations and products.

However, with increasing awareness and concern about biological and cultural diversity, and increasing recognition of Indigenous rights (locally, nationally and internationally), this pattern is beginning to change. An example relevant to the oils and gas industry is the signing of a Traditional Knowledge Protocol in 2005 by the Kaska Nation and TransCanada Corporation for the Alaska highway pipelines project.[2] At a broader level beyond the industry, as part of our obligation under international environmental law (the 1992 *Convention on Biological Diversity*),

[2] http://www.turning-point.ca/index.php/article/view/674/1/51

Canada is currently engaged in a process to develop national law and policy on access to genetic resources and associated traditional knowledge, and sharing of benefits from commercialisation[3]. How new *Access and Benefit Sharing* policy or legislation may affect the oil and gas sector is not known, however it would be prudent for any sector involved in resource extraction on Aboriginal territories (whether treatied or under claim) to be aware of new norms regarding permissions, involvement and expected benefits for Aboriginal peoples in sharing their cultural knowledge or culture property. While each situation will be different, depending on goals of the project and the stakeholders involved, there are an increasing number of guidelines and examples available that may provide guidance on developing mutually-agreed terms for information sharing when traditional knowledge of Aboriginal peoples is involved. Some sample resources are listed in **Appendix A**.

The type and level of information to include in this report was determined through discussion with the participants who contributed their cultural knowledge and information to the project. The report aims for a level of disclosure of information that participants are comfortable sharing with the public to meet the objectives of the project. Access to further details (e.g., more detailed plant information, plant locations or site information) would require direct agreement with the Prophet River First Nation and those who provided the information. It is imperative to note that in sharing their cultural knowledge through this report (and the companion handbooks), the Prophet River First Nation and individual Elders as knowledge holders do not concede any of their Aboriginal or cultural heritage rights. Thus, the knowledge documented through this project remains the cultural heritage and property of those who have shared it. Any use of the cultural knowledge contained in this report should ensure that due credit and full acknowledgement are given to the knowledge holders. Any benefits arising from secondary use of the knowledge should be equitably shared with the knowledge holders and the Prophet River First Nation. Any intention for commercial application of the cultural knowledge documented in this study is prohibited without the expressed consent and direct involvement of the Prophet River First Nation.

[3] For more information, see cite http://www.biodiv.org/programmes/socio-eco/benefit/default.aspx

2 METHODS

2.1 Project design

An emergent, community-based participatory approach was used for all phases of this project, from identifying and refining the objectives, to conducting the fieldwork, to deciding on outcomes and levels of information that could be publicly shared. This approach recognizes the expertise of Aboriginal Elders and knowledgeable others on their culture and the local environment, and empowers local decision-making. Community-based participatory research has become the norm in studies involving Aboriginal peoples, for a number of political, ethical and practical reasons, not the least of which is because this approach is more likely to lead to outcomes that are relevant, legitimate and mutually-beneficial to all parties involved. As is common in community-based participatory studies, the goals and activities of this project evolved as the study proceeded, to address community concerns or priorities that emerged over the course of the work.

The fieldwork was mainly conducted in locations used for plant gathering, camping, hunting, fishing, traditional meetings, or other cultural activities. A small of number of well site locations were also examined so community members could explain and illustrate their concerns about impacts of well sites on local plants, animals and the environment. With limitations on time, resources, and accessibility, it is always a difficult choice to decide which sample locations to include in an ethnobotanical study, and which to exclude. It is important to note that the focus on some sites and not others does *not* mean that sites or areas that were not included in the study are less important. Indeed, as author Hugh Brody (1992) showed convincingly in *Maps and Dreams*, is impossible to understand traditional land use of Aboriginal peoples as simply activities that occur at specific sites. Community members emphasized throughout the fieldwork that the places *between* the sites are just as important as the sites themselves.

The original plan was to examine both sites that have been developed by the oil and gas industry and sites that are still relatively undisturbed. Proposed site visits to more remote areas were to be over multiple days, enabling an immersion of the research team in the cultural and ecological setting, which is difficult to achieve through day trips. However, a number of factors led to a decision to focus the study on more easily accessible areas in relatively close proximity to the Prophet River Reserve (Mile 233 Alaska Highway). Factors included the health and mobility of participants (particularly Elders), the desire to include a greater number of community members in the project (particularly youth), as well as heightened concern about impacts of increasing oil and gas activities on and adjacent to the Reserve itself. Participants chose to focus much of their efforts within a 10 km radius of the Reserve, to emphasize the importance of maintaining a buffer zone around the places that they live and use most frequently today.

Fieldwork took place in two phases, during the summers of 2002 and 2004. The initial phase was conducted between August 12-15, 2002 and the second phase between July 15-26, 2004. Plants of cultural significance were identified by knowledgeable community members, the location and habitats of these plant species were noted, plants were digitally photographed, voucher specimens were collected as permanent reference material, and cultural information related to traditional and contemporary plant use, cultural values and ecological or other concerns by Prophet River community members was documented by audiotape recordings and hand written notes. Detailed field records including transcriptions of the field notes and several hundred digital photos that could not be included in this report are held in trust by the author for future use by the community.

2.2 Participation

Participation in the ethnobotany study was open to all interested Prophet River First Nation community members and their families. In total, 23 community members (8 female and 15 male) participated in field portions of the project, which included ethnobotanical fieldwork and an all-day Elders and youth camp. Project participation spanned three generations: 6 of the participants were knowledgeable Elders, 13 were youth and 4 were adults. One additional Elder who wished to participate was unable due to ill health.

Planning meeting for Elders and Youth Camp, July 20, 2004

In addition to attending the Elders and youth camp, 7 of the youth accepted roles as youth apprentices and worked alongside their Elders to learn and document information during much of the fieldwork. Youth apprentices were compensated for their time and contributions to the project at a rate determined by the Band Manager. Supporting this cross-generational knowledge transmission was one of the highlights of the project for everyone involved.

Community members who participated in the fieldwork showed a high degree of interest in the project, and Elders in particular were willing to share some of their knowledge of plant uses and plant collecting sites within the traditional territory to meet the project objectives. Specific contributions made by individual participants were noted for acknowledgement in this report and the companion plant handbook, both as a form of respect and because not all knowledge is collectively held within the community.

Participation was voluntary and participants could decide at any time to join in or opt out. The only stipulation made for the project was that participants were not permitted to be under the influence of alcohol or drugs while engaging in fieldwork. This stipulation was strictly enforced to ensure safety in the field, and to maximise the efficiency of time and resources. Participation in fieldwork and interviews was noted so participants could be compensated financially for their time. The names of the community members who participated in fieldwork are included in **Appendix B**.

2.3 Ethnobotanical information

Information on plants was provided verbally by community members during informal, open-ended interviews conducted in English. Participants (especially Elders) often discussed the information with each other in their local Beaver language first and then translated the information in English for the researchers who were non-Beaver speakers. Interviews were conducted indoors (in meeting rooms or homes), 'on site' in the various plant habitats, or during transportation to and from sites. Records of the information were made in the form of written notes and (impermanent) audiotape recordings on a Sony mini-cassette recorder. In many cases, tape recording was essential for documenting information, for example: during poor weather conditions (*i.e.,* rain) that sometimes precluded making written notes in the field; during discussions while driving (when it was impossible to make written notes and drive simultaneously) or while making plant specimen collections. Tape recording the pronunciations of Beaver names for plants or sites assisted with communication between researchers and participants since a written form of the Prophet River peoples' dialect apparently has not been developed. When participants did not want to be tape recorded, their wishes were respected. Tape recordings were later transcribed into written notes and the tapes were erased.

2.4 Plant collections

Elders indicated that when a plant is collected, it is important to leave a small offering (such as tobacco) in place of what is taken. It was explained that this ritual shows respect for the plant and increases the healing power of medicine made with the plant material. Mary Chipesia explained it this way: "You put tobacco there, you pay him back and he help you. It's a life, eh. Everything is a life." Mary later added, "If you don't put snuff, sometimes it don't grow back and it loses its power."

This belief was respected by leaving some chewing tobacco when a plant was collected.

Peter Chipesia and Sheree Reno leave an offering of tobacco before harvesitng muskrat root.

Over 50 different plant species of cultural significance were located during the fieldwork. Whenever possible, plant specimens were collected for each plant discussed. Plants were pressed between newsprint and corrugated cardboard in a 45 x 30 cm plant press and subsequently air-dried to create a standard voucher collection for herbarium deposit. Collection location and habitat were noted for plant specimens.

Digital photographs were taken of each plant and/or specific plant part discussed and a selection of these was used in this report and in producing the community plant handbooks. Photographs were also taken of project participants engaged in fieldwork. Copies of the latter photos have been sent to individual participants as a courtesy. Selected photos of sites and participants have also been included in various sections of this report.

2.5 Field sites

The original plan to include multi-day visits to relatively remote cultural use sites was not feasible due to concerns about the impact on the physical health of Elders, which declined since the time the project proposal was conceived. Another consideration in site selection was maximizing the participation of community members who wished to join in the activities and have the opportunity to learn about plants, the environment and their culture directly from their Elders. The project was re-focused on day-trips to sites that were easily accessible by 4-wheel drive vehicles, quads or argos and hiking. Intermittent wet weather limited access to some sites but was not a major factor. The presence of bear also affected length of time spent at some sites, but was not a major factor.

Over 40 sites or areas were visited. The sites included a range of terrestrial and aquatic plant habitats at low and mid elevations (e.g., undisturbed boreal forest, aspen parkland, disturbed forests and grasslands, muskeg, pond, lake, river and creek). The majority of sites were examples of places considered of high traditional importance for cultural purposes (e.g., plant collecting, hunting, trapping, camping, fishing, meeting grounds). The areas visited have important histories, and some are spiritually potent with connections to cultural stories and prophecies, such as those described by Robin Ridington (1988) in his book *Trail to Heaven*. Most of the areas continue to be used today, except for those that have been damaged or made off-limits to cultural activities by industrial development (e.g., environmental impacts or contamination by oil and gas, forestry) privatization (e.g., fee simple or leased land used for cattle farming), or government regulation (e.g., creation of parks). Visits to several highly disturbed sites were also included (e.g., well sites, seismic cut lines). Habitat descriptions of sites were made and concerns that the participants had about these sites or the kinds of activities at these sites were also noted (e.g., impacts of logging, herbicide use, well site contamination). A summary of the main field sites is found in **Appendix C**.

3 RESULTS

This section contains a summary of the main findings and accomplishments of the project, including: youth apprenticeships, Elders and youth camp, ecological concerns of Elders, and an inventory of plants and associated cultural uses.

3.1 Youth Apprenticeships

Some activities involving youth were built into the project as an experiential learning and capacity-building component to stimulate inter-generational interest in plants and facilitate sharing of cultural knowledge within the community.

In summer 2002, two youth (Jennifer Reno and Lisa Reno) participated in the fieldwork, working directly with and under the guidance of their Elders. Field notebooks, pens, and a camera were provided to the youth to assist them in documenting the site locations and plant information discussed, however they learned that sometimes it is appropriate to write and other times to simply listen. The apprenticeship arrangement was highly successful and a commitment was made to include youth in the remainder of fieldwork.

Youth apprentices LIsa Reno with notebook and pen, and Jennifer Reno with camera in hand in Aug 2002.

In summer 2004, six youth (Evangeline Attachie, Trisha Attachie, Sheldon Chipesia, Sheree Reno, Sherry Evans, Jennifer Reno) participated in the fieldwork as youth apprentices. Again, field notebooks, pens, and a camera were provided and youth learned basic techniques to document cultural knowledge. Once again, inclusion of the youth was seen by everyone involved in the project as highly successful. Stimulating interest in youth about their culture and the environment and enabling them to have direct experience in learning from their Elders in the field was one of the most important accomplishments of this project.

Sheree Reno, Trisha Attachie, and Evangeline Attachie document the preparation and use of Beaver medicine as described by Alex Chipesia, with assistance from Gabriel Wolf and Tom Chipesia in July 2004.

3.2 Youth and Elders Camp

Building on the interest in the project shown by the youth apprentices, summer 2004 also included an all-day camp for Elders and youth at Sikanni Chief Falls. Eleven youth spent the day with 6 Elders and a small number of adults. After setting up camp, the day included a group hike to the falls to learn about traditional plant uses and local history from the Elders. Some ice-cream berry (*Shepherdia canadensis*) was gathered to make a traditional whipped desert that was sampled by everyone. It was the first time most of the youth had ever made or tasted this traditional food and it was one of the highlights of the day for many of them.

The group was reconvened at the Band office at the end of the day for a sharing circle and to thank the Elders. Despite wet weather for most of the day, everyone was enthusiastic about the opportunity to share time together in this way. Youth participants in the day-camp included: Cody Attachie, Evangeline Attachie, Trisha Attachie, Wyatt Attachie, Jeff Chipesia, Sheldon Chipesia, Sherry Evans, Sheree Reno, Cory Tsakoza, Kirk Tsakoza, and Trevor Tsakoza.

Plant discussion during Elders and Youth Camp at Sikanni Chief Falls, July 20, 2004.

3.3 Concerns expressed by Prophet River Elders and other community members

A close connection exists between the people, plants and animals within the traditional territory of the Prophet River First Nation. In many ways, the habits of local animals have instructed and informed the use of plants by the people of this area, such that many traditional plant uses emulate those of animals. In particular, the habits of the moose, grizzly, and beaver were noted by participants during the study. For example, Dan Chipesia explained that pregnant moose eat the bark of poplar for vitamins and they eat the bark of willow for its asprin-like affect before giving birth. Several participants explained that observing the dietary habits of the grizzly is particularly instructive. For example, Elders examined the ground where grizzlies had been digging above the Minaker River at Mile 206 and determined that the bears were after wild parsnip. Mary Chipesia commented: “We watch what bears eat and try too”. Dan Chipesia explained that Beaver people, like the beaver, are good engineers and able to make lots of things (e.g., snowshoes, weapons, drums) and live off the land.

Moose is a staple part of the local diet and considered a very healthy type of meat. According to Mary Chipesia: “If I eat straight dry meat, you see me about a hundred year old, and never get old too. … Straight meat, you can live on it. Moose eat them leaves, they eat medicine. They eat the top of the water lily and some kinds of roots. They eat leaves, that’s medicine, all the healthy stuff. Not like meat in stores, that makes you sick.”

Alex Chipesia explained that animals also have a key role in traditional healing as they provide part of the power for cures: “The old people got a power to cure. They got the power from the animals for cures to survive, like a doctor. Hard to believe but you gotta get that power from the

animals". The repeated references to animals during the study clearly indicates that animals remain integral to the way of life, and *essential* to the continued well-being of Prophet River community members.

Given the integral role of animals in Dene Tsaa Tse K'nai culture, it is not surprising that many ecological concerns of participants were as much for the welfare of local animals as for themselves. **Logging** was cited as one concern, since it is seen as destructive to animal habitat, which in turn is seen as having negative impacts on local hunting and trapping. Elders noted that logging roads do make access easier for these activities, however, this ease of **access** also attracts hunters from other parts of the world, many of whom do not share the same respect for animals as locals who are more dependent on hunting and trapping (e.g., hunting for food not for trophy, and using all parts of the kill). Concern about **encroachment by hunters** from elsewhere was commonly expressed during the study.

Furthermore, participants were concerned about the **timing of recreational hunting season**. On multiple occasions, Alex Chipesia explained his concern and his frustration that the timing of open season is before rutting season for the moose, so the strongest bull moose are killed and not able to reproduce:

> They kill all the moose. Hunters. BC hunters. Another 2 weeks you gonna see thousands and thousands of them all over British Columbia, from Ft St John and north to here. And besides the open the season is *wrong*. They open season the wrong time. Before bull get ruttin' season, they all been shot. Hunters from Vancouver all over place, come up here. … Rutting season's Sept 10, or between Sept 15-20. And open season is Aug 15. Today's the 13. Already camp there, they scouting around. … And somebody gotta see animals, you know. If they keep this we won't have nothing. Maybe like buffalo. Maybe rancher gonna start moose farm, then that's only way (AC).

Also directly related to logging are concerns about the use of **herbicides** by logging companies in the area. Herbicides such as glycophosphate are used routinely to suppress of the growth of deciduous trees in many logged areas, to assist in regeneration of the slow-growing conifers, either through aerial spraying or using the "hack and squirt" application method to selectively inoculate individual trees with the herbicide. While Elders understood the rational for use of the herbicide, they pointed out that many areas where it is used are important hunting grounds for the community and that deciduous trees (e.g., alder, willow) provide essential habitat for moose and other animals to forage.

Elders were also concerned about the impact of **herbicide ingestion** on moose and other animals that forage on the branches and leaves of the inoculated trees. Glycophosphate is said to be of a low order of toxicity to aquatic and terrestrial animals, and apparently there is no evidence of biological magnification in the food chain. The "hack and squirt" application method would certainly have less unintended impacts on non-target plant species (e.g., ash and high-bush cranberry) and wildlife than the aerial spray methods used in other sites.

Similarly, Elders and other community members are extremely concerned about **contamination at well sites**, specifically about animals foraging on contaminated plants at **unfenced well sites**, drinking contaminated rainwater that collects in the mud, and licking the soil for the presumed "salty" taste of the fallout from the flares. As Brian Wolf explained: "Whenever they flare, the fallout from the flare comes down around here and I think that's what the animals are getting at. That's what they are licking. See every time they flare – there's moose, elk. deer."

Well sites are typically replanted with grasses and the disturbed soil is easily re-populated by invasive species of herbaceous plants (e.g., clover, vetch), which attracts moose, deer, elk and other game. Prophet River Elders want the well sites fenced to keep the animals out because they believe the animals are getting sick and the meat is not safe to eat. The following series of quotes by Dan Chipesia, Peter Chipesia, Tom Chipesia, Paul Notseta, and Alex Chipesia illustrate the magnitude of collective concern expressed:

> Look the god damn moose ate contaminated stuff and now we gonna eat the moose. We're gonna eat it too, eh (DC).
>
> Like the one we kill over at 156. There's a big camp there. There's wells all over there. They kill it, there's nothing in the stomach, just that green water. Never checked the guts, there's food in it, but in the bladder there's green water. Normally see just like water, clear. Was about 2 years ago. We were out there camping, tried to kill a moose. We took the meat, just that we don't know what's wrong with it, just green water (PC).
>
> They should fence it off. Keep the animal from eating plants. Fresh tracks. Once the moose find that kind of thing, they always come back to eat that dirt. I guess it tastes like salt. Yup, once they find that kind of place they stay there, they come back. I think they gonna get sick and walk off in the bush and die. I don't think it would be safe to eat it. Like the green water in their stomach (TC).
>
> Why don't they have a good fence when they find gas? Look at 156 when we kill that moose, we have to just leave it. Inside was them white spots. And outside too, there was lumps. We want to find out what's wrong with it (PC).
>
> You see, right there, that's what I'm talking about, see? See they like that salt – just like a salt - the water, eh (PN).
>
> That's where they're eating the mud. You see all the tracks. There were more but they cover them up last winter, you see that Cat? They came and filled it back (AC).
>
> Should take that dirt and analyze it. Should fence it off. Why don't they do that? That's what I told that other women who did that moose study. They got lots of money, wherever they find gas, why don't they fence it? I don't know about the companies. They should make a steel fence. That way, keep the game out (PC).

The plants growing in the vicinity of the well sites are considered "poisonous" and unfit for people to use. Mary Chipesia noticed medicines growing at one of the well sites visited and cautioned: "You can't pick it from here. The gas plant is here. May be poison." Alex Chipesia suggested leaving the sites unseeded rather than replanting. "They shouldn't seed the grass, just leave the dirt. The other place is like a barnyard. Can't pick the plants – contaminated."

Elders' concern about contaminated soil at the well sites extended to impacts of **chemical waste** disposal methods and locations, such as the land forms found in the Petro Canada Oil and Gas "special waste" disposal site on Trutch Mountain. Peter Chipesia explained "On top of the Trutch, they dump poison in there. They dump it, then they bury it." Alex Chipesia added "They bury the poison in there, from the rig." Trutch Mountain has important berry picking areas,

as well as traditional hunting and camping grounds that are still routinely used. Hoof prints of deer and moose where found on the land forms. Mary Chipesia commented on “a stinky gas smell here”. She said there used to be berries on the numerous blueberry plants here but not anymore. When asked why not, she replied: “Maybe from the plant, the gas. Something kill it. If you don’t do anything, you gotta die fast, eh. That’s why them trees on Trutch are dying, see those jack pine on Trutch. It’s from the gas.” (MC).

Two of the four well sites visited were situated close to rivers, which evoked concerns from community members about **contamination of rivers and creeks**, especially because a number of infractions were observed on the rigs (e.g., missing drip pan, heavily rusted and leaking joints), clearly showing that leakage of chemicals was occurring (see photo below, left). Peter Chipesia noted: “Moose have been here a couple times. The moose eating where they drill. That dirt. Sure lots of tracks, just like a moose lick. They eat that dirt. Maybe that’s why there’s no fish in that 206.”

Ecological impacts of **seismic cut lines** were raised as a concern by many participants. One site located on a tributary of Adsett Creek (en route to 8 mile lake) that was viewed as an example of a conventional “Cat cut” line by industry was considered a “mess” (see photo below, right). The following day, Elder Mary Chipesia was walking with a limp. Dan Chipesia explained that she had fallen at the site. “The way the mess was left, Mary fell through the ground and got trapped. What about the animals, they will fall in too and get stuck in the debris from logging and lack of clean up. … Those Cats shouldn’t even be up there. They wreck it up.

Infractions at Anadarko Well Site near Prophet River

Inpacts of Cat cut seismic line on Adsett Creek tributary

For comparison, a mature spruce forest located north of the reserve, across Adsett Creek was viewed as an example of a “hand cut” seismic line made by industry the previous winter. Orchids were found in the understory along with a standing snag wild life tree that was referred

to as an “ant’s apartment”. Dan Chipesia explained the name as follows: “The wood worm eats the tree. Then the ants come to eat the wood worm. Then the woodpecker comes to eat the ants. And then it dries the tree and makes good firewood.” Finding a newly cut 100 year old spruce stump (calculated based on ring count) evoked strong reactions from participants who believed cutting such trees can be avoided with new technology. “Over a hundred years old and cut down for nothing. If it was under canopy it wouldn’t have happened. Now adays, we’re high tech with GPS and can go around them, it’s unnecessary to cut them.” (DC).

Other concerns raised about seismic cut lines involved the practice of not filling in the numerous **shot point drill holes**, especially where these occur on obvious trails or roadsides, where people walk (see photo below, left). “Those shot holes where they drill and put the dynamite. It’s not plugged up good enough and it creates a hole. Animals can get stuck, break a leg. Humans too.” (AC).

Hazardous shot point drill hole, left unfilled.

Elders have noticed a sharp increase in the number of people who come to the area for hunting, berry picking and recreation as industrial activities have built new roads and opened access to areas that in the past it was only possible to get to by horse or foot over several days (at a time when you needed to really *know* the forests, mountains and rivers or at least have someone with you who did). Better access leading to more hunters and berry pickers, has also resulted in high traffic (trucks, quads) that scares animals deeper into the forests, increased garbage and human excrement in places where it ought not be, and a general sense that these relative newcomers lack respect for the land and the Aboriginal people who continue to live here. When asked what could improve the situation, several community members proposed the idea of “ongoing monitoring”, some form of accountability for those impacting the land for profit and recreation.

Limits on traditional lifeways imposed by the creation of parks is also of concern to Prophet River Elders, who grew up in areas that are now off-limits for plant collecting, hunting and other activities. Mary Chipesia noted: “Here at 219 we fishing and there do everything. If they make a road, there won’t be nothing no more. Our life will be nothing. We’ll be just like…lost. We used to live in here and Environment [referring to provincial government creation of a provincial park] take it all. They turned to park, everything where we lived. Like where I was born. They get all that land.” Later, Gabriel Wolf explained: “That Muskwa-Kechika protected area has lots of restrictions, can’t tie a horse to the trees, can’t pick any berries.” A couple of the Elders noted that medicines grow up on the hill beyond the gate to the Sikanni River Trail but that we couldn’t get past the gate to drive our vehicle out to the medicine plant collecting site. At the same time, they also seemed to appreciate that the same locked gate would keep out hunters.

3.4 Inventory of plant species and their cultural importance

Cultural information provided by Prophet River community members on 48 plant species is summarised in this section. Several more plants of cultural importance were discussed but were either not located or not conclusively identified. There were several cases in which information on medicinal and other uses was recalled but the exact plant was not. Sometimes a Beaver name for a plant was known but the English name was not. These instances emphasised the degree of knowledge already lost from the community due to colonial forces and disruptions to traditional ways of life that began in the early childhood years of the present Elders. Such tragedies certainly underscore the importance and urgency of this study. Participants (particularly the Elders) seemed to really enjoy talking about the plants and visiting the sites. In fact, all of the Elders commented that the more they talked about the plants and got out to see them, the more they remembered. In some of these cases, the recommended sites were visited but the plant was not found so that elders concluded that the plant "used to be here but isn't any more", perhaps due to habitat destruction. In other cases, the recommended sites were simply not accessible or not feasible to visit as part of this study.

This remainder of this section summarises information on 48 plant species that were collected and discussed with participants during the study. Each plant is listed in alphabetical order by the local name(s) used by participants. Below this is listed the scientific name of the plant, followed by the most common name(s) found in local botanical references in parenthesis. When more than one scientific name exists for a given plant species, the name used in the field guide by Johnson *et al*. (1995) has been used here. Below the scientific name is the botanical family of the plant. The plant names are followed by a brief description of the plant and its habitat, then the traditional uses or other related plant knowledge shared by participants during the study. Additional notes of interest or caution are included, as appropriate.

The initials of the person(s) who provided the traditional plant knowledge are listed to acknowledge these individuals appropriately for their contributions and so they can be contacted if further clarification or use of the information is required. Photos of each plant are not included in this report (mainly to keep the electronic file size manageable), however most of the plant information and photos are included in the community plant handbook that was produced as a companion to this report (Bannister 2006).

The plants are grouped according to the following subsections:

3.4.1 Trees

Alder

Alnus crispa (Ait.) Pursh (Green alder)
Alnus rugosa (Du Roi) Spreng. (River alder)
Birch Family (Betulaceae)

Plant Description and Habitat: Small, broad-leaved trees or shrubs with male and female catkins and yellowish-brown bark. Several species of alder are common in this region. Green alder is common in open forests, sandy slopes and edges of wetlands and streams. River alder is most common along edges of streams, rivers and lakes. Sitka alder is common in upland forests and clearings on well-drained soils. All are widespread in this region, particularly in disturbed areas.

Dene Tsaa Tse K'nai Knowledge and Uses: The trees provide important animal habitat and forage, for example, leaves, bark and young seed cones are eaten by moose (PN). Dried alder bark is used to smoke meat (AC).

Additional Notes: Elders are concerned about the effects on moose, deer and elk habitat due to logging and large-scale herbicide application to alder (PN, AC, LN. MC, PC, TC, DC, BW).

Aspen or White Poplar

Populus tremuloides Michx. (Trembling Aspen)
Willow Family (Salicaceae)

Plant Description and Habitat: Slender deciduous tree (20-30 m tall) with smooth, grey-white bark that roughens at the trunk and small, broad leaves that tremble in a breeze. Male and female catkins are on separate trees. Common in moist to dry woods and parklands, such as hillsides adjacent to the highway on Sikanni Chief at Mile 171. Usually occurs in stands.

Dene Tsaa Tse K'nai Knowledge and Uses: The bark can be peeled from the tree and scraped with a knife to get the inner cambium layer, which is full of vitamins and "like sauerkraut" (MC). Bear and pregnant moose eat the bark in the spring for vitamins (DC). The leaves are boiled up and drunk as medicine (PC). The sap can be boiled and drunk to change your blood (MC). The white powder on the bark is a source of white paint (MC). The dead trees can be used for firewood (MC).

Additional Notes: Aspen wood is harvested commercially for pulp and chopsticks.

Big Poplar or Black Poplar

Populus balsamifera L. (Black Poplar or Balsam Poplar)
Willow Family (Salicaceae)

Plant Description and Habitat: Deciduous tree (10-25 m tall) with balsam-smelling sticky buds. Older bark is grey-brown and furrowed. Seeds have white, cottony hairs. Common in moist woods, parkland and along shores, such as along Beaver Creek and Minaker River at Mile 206.

Dene Tsaa Tse K'nai Knowledge and Uses: The leaves of the tree can be put in soup and used just like a Bay leaf to enhance the flavour, which "taste really good" according to Mary Chipesia.The burned ashes can be used to make soap (PN) as follows: after the wood is dried it is burned to make ashes; the ashes are mixed with a bit of water and some kind of grease (e.g., cooked fat from moose or bear); the mixture is boiled and makes bubbles for about 1 hour, after which it starts to shine like brown sugar candy; as it cools it turns to jelly and then hardens. This is cut into bars and used as soap, for example in washing clothes (MC). The burned ashes also kill germs and maggots so they can be spread on raw meat, in a pit toilet, or in the area that the dog has been tied up (MC).

Birch

Betula papyrifera Marsh. (Paper Birch)
Birch Family (Betulaceae)

Plant Description and Habitat: Small-medium deciduous tree (15-30 m) with white to coppery-brown bark that can be peeled off in horizontal strips. Common and widespread in open to dense forests in the region, especially in moist but well-drained sites. The continued use of birch bark in the vicinity of Mile 285 and Andy Bailey Lake is apparent by an abundance of trees that have ringed bark.

Dene Tsaa Tse K'nai Knowledge and Uses: The paper birch is well-known for its historical use in making bark baskets (MC) and other useful items such as hats (LN), but these techniques are no longer practiced in Prophet River. Birch can also be used with moose or deer hide in making drums and with caribou sinew for making snowshoes (MC). Birch bark can be used in making canoes; the bark is sewn around ribs made from spruce, with either spruce or birch roots used for sewing. The tree trunk can be chopped to collect sap to make syrup, which is best done in the springtime (FJ, LN). The sap is good for coughs (PC). It can be warmed and taken straight (without adding water) as a tea for general health (MC). The outer, paper-like bark peels easily and makes an excellent fire-starter (PN, LN). If the smell of spruce is too strong, birch smoke can be used instead to soften a hide for making moccasins (MC).

Fir

Abies balsamea (L.) P. Mill. (Balsam Fir)
Pine Family (Pinaceae)

Plant Description and Habitat: Evergreen up to 18 m with flat needles that are green above with two white stripes below and notches at the tips. Young bark is greyish and smooth with pitch blisters. Older bark is scaly. Common in moist woods, often growing with white spruce, aspen and birch in this region.

Dene Tsaa Tse K'nai Knowledge and Uses: The bark is scraped from the north side of the tree where the sun doesn't hit for use in medicine. It can be boiled and mixed with "Caribou Wheat" (*Eriophorum sp.*) for a cancer treatment (MC). The edible cambium is good for the stomach (PN) and tastes sweeter than the cambium of poplar (aspen) (FJ). The boughs can be boiled on a stove (as a vapourizer), to drive away sickness such as the flu (DC). The pitch is collected by puncturing a pitch blister on the trunk of a tree and used to treat swellings and infections (FJ, AC). Alex Chipesia says if you have an infection, "put pitch on and it sucks out the poison."

Pine or Jack Pine

Pinus banksiana Lamb. (Jack Pine)
Pinus contorta var. latifolia Engelm. (Lodgepole Pine)
Pine Family (Pinaceae)

Plant Description and Habitat: Evergreens of variable size. Needles in pairs, often twisted, with sharp tips. Seed cones 3-7 cm long, with prickles (*P. contorta*) and usually without prickles (*P. banksiana*) on tip. These two species may be difficult to distinguish and are known to form hybrids where their ranges overlap.

Dene Tsaa Tse K'nai Knowledge and Uses: The sap of jack pine can be used on cuts if there is no spruce around (FJ). The fallen cones can be used to colour moose hides if there is no rotten spruce available (MC). Mary Chipesia gathered the cones for her grandmother to smoke hides. According to Mary Chipesia, they burn the cones and then put them in water to create a smudge for smoking the hide. This gives you "a nice beautiful hide, and dark, just the way you want it."

Spruce

Picea glauca (Moench) Voss (White Spruce)
Picea mariana (Mill.) B.S.P. (Black Spruce)
Pine Family (Pinaceae)

Habitat: Smallish evergreens with sharp 4-sided needles. Pollen cones red. Seed cones light brown to purplish. White spruce grows on well-drained soils at low-med-high elevations. Black spruce grows on poorly drained and nutrient-porr sites (e.g., bogs) at low-medium elevations.

Dene Tsaa Tse K'nai Knowledge and Uses: Spruce sap is a source of vitamins and is good for the blood (MC). The pitch (Figure 11b) is chewed as a gum (TC, MC, AC), or it can be warmed up and put on infections (TC, PC, AC). The pitch also makes a good fire-starter and can be carried around easily in a pouch for use as needed (TC, MC). The bark and the new growing tips of branches (called "spruce buds") can be used in a medicinal mixture with red willow bark to treat colds (MC). This mixture is boiled up and apparently "better than whiskey" but is so strong that it should just be drunk in small amounts, a couple of times per day (MC). The cold remedy is better if the "spruce that grows in the mountains" is used (probably *Picea mariana*), and the bark should be taken from the "side without sunshine" which is the north side of the tree (MC). Black bear eat the inner bark (Figure 11c) and sap of spruce for vitamins (MC, AC, LN, PN). Rotten spruce wood is good for smoking moose hides. If picked at the peak time, "the smoke will burn just right and will tan a hide really fast" (DC). The tree is sometimes cut and used to dam fish in a creek. First the tree is put across the creek, then boughs are put down to catch the fish as they come down the creek (MC).

3.4.2 Shrubs and woody-stemmed plants

Blueberry and Blue Huckleberry

Vaccinium caespitosum Michx. (Dwarf bilberry or Dwarf blueberry)
Vaccinium uliginosum L. (Bog bilberry or Bog blueberry)
Vaccinium myrtilloides Michx. (Common blueberry)
Heath or Heather Family (Ericaceae)

Plant Description and Habitat: Deciduous shrubs with small pink urn-shaped flowers that set blue, round, edible berries. Common on peat bogs, acidic moist woods and rocky areas, such as Trutch Mountain.

Dene Tsaa Tse K'nai Knowledge and Uses: Elders distinguish three types of blueberry that they call high-bush blueberry, low-bush blueberry and blue huckleberry (MC, FJ). Blueberries are highly valued as a food item and seen as important food for both humans and bears. They are eaten in a variety of ways, raw or processed and they make excellent jam (PN). Elders believe that people have a responsibility to their berry patches and that "you always got to think about next year." They expressed concern about the increasing garbage and litter that they find in their traditional berry picking grounds. If berry patches aren't managed appropriately, Elders say the berries won't grow back again.

Buckbrush

Betula glandulosa Michx. (Scrub birch)
Birch Family (Betulaceae)

Plant Description and Habitat: Erect or spreading shrub up to 2 m tall.Twigs covered with wart-lie glands. Leaves thick and leathery, toothed and nearly circular 1-2 cm long with dotted glands. Flowers in small catkins, fruit in small winged nutlets. Found in wetlands and open forests, prefers acidic soil.

Dene Tsaa Tse K'nai Knowledge and Uses: Buckbrush can be boiled to use as a type of soap. Peter Chipesia explained, "Them days no soap, gotta use something." You boil the leaves and roots in water and wash with it (MC, PC).

Devil Root

Oplopanax horridus (Sm.) Torr. & Gray ex Miq. (Devil's Club)
Ginseng Family (Araliaceae)

Plant Description and Habitat: Tall shrub (1-3 m) with thick stems that are heavily armed with large spines. Large, maple leaf-shaped leaves with toothed-lobes and many spines on the underside. Small whitish flowers set bright red, flattened, shiny berries (not edible) in a pyramid-shaped cluster. Found in moist woods at medium elevations, especially near streams.

Dene Tsaa Tse K'nai Knowledge and Uses: Devil's Club can be used for colds, tuberculosis, and many other things (MC). Mary Chipesia said that one of her Elders told her "if you boil that root, you drink it, you live a long time." It is good for boiling and washing wherever you are sore (FJ). The Elders noted that you must not touch the thorns, just dig for the roots.

Additional Notes: The spines should be avoided as they can fester if they get embedded in the

skin. Some people have been known to develop allergic reactions to the compounds in the spines.

High-bush Cranberry

Viburnum edule (Michx.) Raf. (High-bush cranberry or Low-bush cranberry)
Honeysuckle Family (Caprifoliaceae)

Plant Description and Habitat: Shrub up to 2.5 m tall with three-lobed leaves and reddish-coloured bark. Flowers are white and clustered. Berry-like fruit are red-orange and edible but tart. Widespread and common in moist forests, especially in areas close to wetlands and streams.

Dene Tsaa Tse K'nai Knowledge and Uses: The berries have vitamins (PC) and are eaten by bears and humans. They can be boiled and drunk for colds (PC), or used to make jelly or jam for bannock (MC). They can be dried and mixed with dried meat to make an easy lunch to take hunting (MC). They can be eaten to cleanse the blood but can make you sick if you eat too many (DC).

The roots can be cooked in water to make an external wash or bath for sore areas of the body. **IMPORTANT: This root decoction should never be taken internally or used in the eyes.** Several people spoke of a man who went blind from putting the wash in his eye. The plant can be used in hunting (put on the end of a spear) to blind animals (DC).

Additional Notes: The fruit contains vitamin C. It should be eaten in moderation when raw as over-consumption can lead to cramps and vomiting.

Honeysuckle

Lonicera dioica
Honeysuckle Family (Caprifoliaceae)

Plant Description and Habitat: Twining woody vine, light-coloured bark that shreds. Leaves opposite, simple and oval, 5-8 cm long, dark green above and pale underside. Uppermost leaves form a cup around stem. Yellow-orange or red funnel-shaped flowers in clusters at tips, turning to red berries. Common in dry woods and rocky slopes.

Dene Tsaa Tse K'nai Knowledge and Uses: Alex and Mary Chipesia's dad would use a piece of the long, dried stem of honeysuckle for cleaning out his gun to "make more power" (AC). Mary Chipesia said if you use the dry part, "it stays clean, just have no oil" (MC).

Ice-cream Berry

Shepherdia canadensis (L.) Nutt. (Soapberry or Buffalo berry)
Oleaster family (Elaeagnaceae)

Plant Description and Habitat: Branches and leaves are covered in tiny reddish-brown and white star-shaped hairs. The juicy red berries are bitter in taste and soapy to the touch. Widespread and highly abundant in open forests, thickets, riverbanks and clearings throughout the region.

Dene Tsaa Tse K'nai Knowledge and Uses: The berry is used to make a whipped "ice-cream" dessert. A few berries and a teaspoon of water make a whole bowl, but because of the bitterness, sugar is usually added to sweeten it. Opinions on the taste of this dessert are typically strong—people either really like it or shudder when you mention it. As Mary Chipesia described it: "They call it Indian Ice-cream. I don't care how much sugar you put in there, never gonna be sweet. Sour!" Alex Chipesia also commented on the "sourness" of the berry: "Don't know how the bears eat that!"

The berries are good for just about everything (MC). They are eaten raw or boiled for heartburn or diabetes (MC). Mary Chipesia says, "Eat the soapberry straight and it chase your diabetes away." The berries can be mixed with water and drunk as a medicinal tea, which "kills everything" (MC). Bears eat the berries all the time for the vitamins (MC).

The roots of large plants can be boiled to give a red concoction that is put on a sore or swollen knee (LN). Louie Notseta learned this use from "an old guy" when he was out moose hunting with a swollen knee. The knee was so sore that Louie couldn't even walk. Louie used the red boiled liquid to treat his knee. Two days later, after several treatments, the swelling went down and the pain was gone: " One day and one night, rub more on, and next morning started walking again. No pain, nothing. Could walk again". Much to his delight, he was able to continue moose hunting.

Additional Notes: The berries have vitamin C and iron but can cause diarrhea if eaten in very high quantities.

Lupine

Lupinus sp.
Pea Family (Fabaceae)

Plant Description and Habitat: Perennial with several slender, hollow stems from branched rhizome. Leaves palmate and compound with 6-8 leaflets arranged like fingers on a hand. Pea-like blue-purple flowers turning to hairly pods. Common, mostly on open and grassy areas.

Dene Tsaa Tse K'nai Knowledge and Uses: The hollow stem of a dried lupine can be used as a straw for drinking water (AC).

Moose Stick and Moose Berry

Sorbus scopulina Greene (Mountain-ash)
Sorbus sitchensis Roemer (Sitka mountain ash)
Rose Family (Rosaceae)

Plant Description and Habitat: Deciduous shrubs up to 5 m tall with compound leaves and small white flowers. Fruit are orange to red. Relatively common in moist woods and open sites.

Dene Tsaa Tse K'nai Knowledge and Uses: The local names "Moose Stick" and "Moose Berry" is based on the observation that the plant provides food for moose (AC, FJ, LN). The roots can be dug up and used for medicine, for example, they can be boiled and used to treat tuberculosis (FJ) or used to bathe in to relieve soreness (MC).

Additional Notes: Berries are food for birds and twigs are eaten by deer and other undulates.

Muskeg Tea

Ledum palustre L. ssp. *decumbens* (Ait.) Hultén (Northern Labrador tea)
Heath or Heather Family (Ericaceae)

Plant Description and Habitat: A small, widespread shrub, common in bogs, muskegs, and moist woods. Leaves are green on top with a reddish-brown fuzz underneath. The fuzz on younger leaves may be white. Small, white flower clusters look similar to a rhododendron.

Dene Tsaa Tse K'nai Knowledge and Uses: The leaves can be boiled and drunk hot as a tea (AC, FJ, MC) or lukewarm as a stomach medicine (LN). According to Fred Jumbie: "It's like lemonade". It can be drunk to feel better, as a cleansing. Peter Chipesia said: "When feeling low, just drink that muskeg tea and come alive." It is not considered poisonous, but some people seem to be "allergic" to it as it makes them ill (FJ). The plant is good for diarrhea. Louie Notseta made the medicine for a fellow with a bad case of diarrhea. Two days later the diarrhea stopped and the fellow was fine. He exclaimed, "Holy Louie, that's good medicine!" The plant has more healing power if it is in flower (FJ, MC) and it is best to use the new growth (MC).

Additional Notes: Tea from leaves is high in vitamin C, but it is best consumed in moderation and not too strong as the leaves contain compounds that can cause headaches, cramps and other problems.

No-skwaw

Ribes glandulosum Grauer (Skunk red currant)
Currant or Gooseberry Family (Grossulariaceae)

Plant Description and Habitat: No-skwaw (the local Beaver name for this plant) is a common shrub in open woods and exposed rock sites. The stems and branches do not have prickles but the red berries have small hair-like glands on the surface. The leaves are somewhat maple leaf-shaped.

Dene Tsaa Tse K'nai Knowledge and Uses: Berries can be eaten and are good for making jam (MC). They have a strong skunky odour (due to compounds found in the glands on the berries). Elders consider No-skwaw a close relative of No-son-et (see below).

No-son-et

Ribes lacustre (Pers.) Poir. (Swamp Black Gooseberry)
Currant or Gooseberry Family (Grossulariaceae)

Plant Description and Habitat: No-son-et (the local Beaver name for this plant) occurs in moist woods (such as at Andy Bailey Lake) but is not abundant in this region. It has sharp pickles on stems and branches and dark, shiny purple-black berries with small hair-like glands on the surface. The leaves are somewhat maple leaf-shaped. Elders consider No-son-et a close relative of No-skwaw (see above).

Dene Tsaa Tse K'nai Knowledge and Uses: Berries can be eaten and are good for making jam (MC). They have a strong skunky odour (due to compounds found in the glands on the

berries). No-son-et can be used to “cover your smell” (MC). Mary Chipesia recommends taking a bath and washing your hair with it to “take away your smell so you can get close to a moose.” She says the more you sweat, the more is smells.

Onion Berry

Ribes oxyacanthoides L. (Northern Gooseberry)
Currant or Gooseberry Family (Grossulariaceae)

Plant Description and Habitat: Onion Berry (*Ribes oxyacanthoides*) is a common shrub in open woods and exposed rock sites, such as Mile 206 and Prophet River Recreation Area. The round, smooth berries turn from green to dark red-purple when ripe and have vertical lines like an onion running from top to bottom. Stems and branches are covered with sharp prickles and thorns. Leaves are somewhat maple-leaf shaped.

Dene Tsaa Tse K’nai Knowledge and Uses: The onion-looking berries of each of these plants are edible when ripe and good for making jam (MC).

Raspberry

Rubus idaeus L. (Wild Red Raspberry)
Rose Family (Rosaceae)

Plant Description and Habitat: Very common perennial shrub in thickets, open woods and clearings. Stems often prickly. Leaves are made up of 3-5 saw-toothed leaflets. White drooping flowers that set sweet, red berries.

Dene Tsaa Tse K’nai Knowledge and Uses: Raspberries are used in jams or eaten fresh (MC). The berries are considered good for the heart since they have lots of vitamins (LN).

Red Currant

Note: no local name used by participants
Ribes triste Pall. (Wild red currant)
Currant or Gooseberry Family (Grossulariaceae)

Habitat: Unarmed shrub up to 1 m tall, toothed leaves 3 or 5-lobed and heart-shaped. Reddish-green drooping flowers turn to bright red, smooth berries. Common in moist woods, such as Mile 206 near Beaver Creek.

Dene Tsaa Tse K’nai Knowledge and Uses: Edible berries. This plant is seen as closely related to “Onion Berry” (*Ribes oxyacanthoides*).

Red Willow

*Cornus stolonifer*a Michx. (Red-osier dogwood or Red willow)
Dogwood Family (Cornaceae)

Plant Description and Habitat: Deciduous shrub up to 3 m tall with bright red stems and oval-shaped leaves. Flowers are white and clustered. Berries start out green in colour but are white when ripe. Common in moist woods, clearings and on riverbanks. Widespread in this region.

Dene Tsaa Tse K'nai Knowledge and Uses: The white berries are eaten by bears (FJ). The bark can be scraped, dried and smoked in a pipe like tobacco (FJ, AC) but it should be smoked only when one is happy (FJ). The roots can be used to treat aching muscles and soreness (FJ). The bark can be boiled and used in a mixture with barks of poplar, birch and spruce as a cough mixture to treat a really bad cold (PC). Peter Chipesia remembered a fishing trip when he had a bad cough that left him unable to sleep. His dad boiled these four barks together, let it cool and made Peter drink 2 cups. "After that, no more cough, I could sleep." (PC)

Additional Notes: This plant provides important forage for moose and bear.

Rose

Rosa acicularis Lindl. (Prickly rose)
Rosa woodsii Lindl. (Common rose)
Rose Family (Rosaceae)

Plant Description and Habitat: Shrubs up to 1.5 m tall with pink flowers and scarlet, pear-shaped fruit (called rose hips). Wild roses are highly abundant in open forests, thickets, riverbanks and clearings at mid to low elevations throughout the region.

Dene Tsaa Tse K'nai Knowledge and Uses: The petals of the flower are edible (very pleasant tasting) and chewing them can help to quench a thirst when there is no water available (MC, LN). The leaves can be chewed and put on bee stings to prevent swelling and "make the poison come out." (AC, PC, MC) The red hips are locally known as "rose berries" and can be boiled, strained (to remove seeds) and drunk as a tea to treat colds and to loosen up the chest. The ripe hips can also be boiled and strained to make "ketchup". The hips can be picked in advance and stored in the fridge for use when needed (MC).

Additional Notes: Rose hips are high in vitamin C and other vitamins. Only the outside rind of the hips should be eaten as the small hairy seeds inside can irritate the digestive tract if consumed. Petals and hips should be consumed in moderation as too many can lead to diarrhea.

Saskatoon Berry Bush

Amelanchier alnifolia Nutt. (Saskatoon berry or Service berry)
Rose Family (Rosaceae)

Plant Description and Habitat: Common deciduous shrubs in thickets, open woods and clearings. Round or oval leaves with toothed edges. White flowers that set round, edible purple fruits. Provides winter forage for moose, deer and elk.

Dene Tsaa Tse K'nai Knowledge and Uses: Saskatoon berries are eaten fresh, baked on pies, or dried and stored like raisons for later use as they won't spoil when dry (AC). They can be boiled prior to eating to make them to swell into berries again (AC). The berries are good for eating with dry meat (MC). The fruit can make you sick if you keep eating beyond the point at which it tastes good (DC). The wood is good for making many things, such as axe handles and arrows (MC).

3.4.3 Herbaceous plants

Beaver's Ears

Pyrola asarifolia Michx. (Common pink wintergreen)
Heath or Heather Family (Ericaceae)

Plant Description and Habitat: Perennial plant with leathery, kidney-shaped leaves growing close to the ground in rosettes. The shape of the leaves is said to resemble the shape of beavers' ears. Light pink to dark pink-coloured flowers are borne on stalks that project above the leaves. Common in moist woods, such as Mile 206 above Minaker River and near the lake at Mile 285.

Dene Tsaa Tse K'nai Knowledge and Uses: Mary Chipesia's uncle cooked "Beaver's Ears" and "Frog's Blanket" (*Petasites sagittatus*) and successfully used the mixture as a wash to treat chickenpox. After this treatment, Mary Chipesia said there were "not even marks left" on her uncle's face.

Fireweed

Epilobium angustifolium L. (Fireweed)
Evening-primrose Family (Onagraceae)

Plant Description and Habitat: Perennial plant up to 3 m tall with alternating green, narrow lance-shaped leaves and rose to purples clusters of flowers. Common and abundant throughout the region, especially in disturbed and recently burned areas.

Dene Tsaa Tse K'nai Knowledge and Uses: Fireweed is considered a seasonal indicator. When the leaves start to turn red colour, winter is coming (DC). In the fall, the dried leaves can be smoked like cigarettes, to get rid of a craving for a real cigarette (AC). It doesn't have any drug effect (AC) but it can help when one is in the bush and needs a smoke (PC).

Frog's Blanket

Petasites sagittatus (Banks) Gray (Arrow-leaved coltsfoot)
Sunflower Family (Asteraceae)

Plant Description and Habitat: Perennial with large, arrowhead-shaped leaves and whitish flowers. Flowers appear before leaves. Supposed to be fairly common in moist woods, meadows and bogs, but not locally abundant. A patch of this plant was found at Mile 206 near the beaver pond.

Dene Tsaa Tse K'nai Knowledge and Uses: This plant gets its name from the shelter it provides to frogs in rainy weather as, according to Mary Chipesia, "when it is raining, frogs crawl underneath the leaves to stay dry." The leaves can be boiled to make a juice, which is wrapped as a poultice around a sore knee (PC). The leaves and roots boiled together are put on measles for healing (MC). A concoction of boiled leaves and roots can be drunk "to make babies" (MC). The leaves can be put all over the body to treat chicken pox, and they also can be boiled with "Wild Carrot" (probably Caraway or *Carum carvi*) for this purpose (MC).

Additional Notes: Consumption of leaves, roots or shoots by pregnant women is not recommended. Some sources indicate this plant may be toxic if taken internally.

Low-bush cranberry

Vaccinium vits-idaea L. (Bog cranberry)
Heath or Heather Family (Ericaceae)

Plant Description and Habitat: Small, creeping evergreen shrub (10-20 cm) that forms mats. Leathery egg-shaped leaves. Pinkish cup-shaped flowers in clusters at branch tips turning to bright red berries. Common in dry bogs and rocky areas, such as on Trutch Mountain.

Dene Tsaa Tse K'nai Knowledge and Uses: Fruit is edible but sour.

Mint or Mint Tea or Herb Tea

Mentha arvensis L. (Wild mint)
Mint Family (Lamiaceae)

Plant Description and Habitat: Perennial up to 50 cm tall with leafy stems and small clusters of small purple-pink flowers in leaf axils. Very distinctive sweet minty smell. Found in wet places, such as adjacent to Andy Bailey Lake.

Dene Tsaa Tse K'nai Knowledge and Uses: This important plant is well-known because of its distinctive sweet-smell. It is boiled to make a delicious herb tea that can be drunk for colds and generally to stay healthy (MC). However, Elders warned that drinking it too often over a long period of time (several months) could prevent one from having children. According to Peter Chipesia, "it's better than birth control." The leaves can be used in cooking, such as in potato dishes (MC).

Muskeg Berry or Cheese Berry

Rubus chamaemorus L. (Cloudberry)
Rose Family (Rosaceae)

Plant Description and Habitat: Perennial with low, maple leaf-shaped leaves and single white flowers. Fruits resemble raspberries in appearance. They are red and hard when unripe and soften to orange-yellow when ripe. Widespread in bogs and often growing in association with sphagnum moss. Growing abundantly adjacent to the lake at Mile 185 and on Trutch Mountain near Swan Lake.

Dene Tsaa Tse K'nai Knowledge and Uses: The ripe orange fruit is highly valued as a food (LN). According to Mary Chipesia, "If you eat it, you just feel great; you can live on it. Looks like cheese but sweet like inside of peach." Paul Notseta says it's "really sweet, just like jelly, you can spread it on your bread."

Additional Notes: The berries are high in vitamin C but too many berries on an empty stomach are said to cause cramps.

Stomach Medicine

Galium boreale L. (Northern bedstraw)
Madder Family (Rubiaceae)

Plant Description and Habitat: Perennial with square slender stem 20-60 cm tall and whorled leaves (in 4s) that are narrow and lance-shaped. Many small, showy white flowers in 3-forked clusters. Common in open woods and moist meadows, but specifically remembered by Elders as being collected on a certain south-facing slope on Sikanni Chief (Mile 171). This slope is located along the highway and is highly disturbed. The plant no longer grows where it originally did because the slope was re-seeded with white and yellow sweet clover to stabilize the disturbed bank. Fortunately, after much searching, the plant was found on a neighbouring slope by Alex Chipesia on the edge of an aspen parkland.

Dene Tsaa Tse K'nai Knowledge and Uses: This plant is used as a medicine for the stomach. The plant is picked when it is flowering (AC). It is boiled, strained and the liquid is drunk to treat an upset stomach (MC).

Strawberry (wild)

Fragaria virginiana Duchesne (Wild Strawberry)
Fragaria vesca L. (Woodland strawberry)
Rose Family (Rosaceae)

Plant Description and Habitat: Perennial plants with leaves divided into 3 parts, and long, red rhizomes (runners) that connect plants above ground. Flowers are white. Fruit are red when ripe. Very common in open woodlands, road edges and disturbed sites.

Dene Tsaa Tse K'nai Knowledge and Uses: The tiny fruits are delicious but are a lot of work to pick. They are considered good for the heart (MC). The large red runners can be boiled with "Frog's Blanket" (*Petasites sagittatus)* and "Beaver's Ears" (*Pyrola asarifolia*) and drunk as a medicine (MC).

Thunder Berry

Chenopodium capitatum (L.) Asch. (Strawberry blight)
Goosefoot Family (Chenopodiaceae)

Plant Description and Habitat: Succulent annual 10-50 cm tall with arrowhead-shaped leaves and tiny bright red flowers in dense, round clusters that resemble raspberries. Occurs infrequently in disturbed areas and river bars.

Dene Tsaa Tse K'nai Knowledge and Uses: This plant is a traditional source of red paint. It can be mixed with bear grease to make rouge for women to make their cheeks red (PC, MC). Men traditionally used the die for ink on drums and hides (MC).

Whiskey Jack Berry

Cornus canadensis L. (Bunchberry)
Dogwood Family (Cornaceae)

Plant Description and Habitat: Low-growing perennial with whorls of green leaves and

clusters of tiny flowers that are surrounded by 4 petal-like bracts. Produces clusters of red-orange berries. Widespread and common as a ground cover in shady woods and clearings. Highly abundant in this region.

Dene Tsaa Tse K'nai Knowledge and Uses: The name of this plant is based on the observation that the red-orange berries are food for the Whiskey Jack birds (TC, FJ, MC, PC). The berries are edible for humans and pleasant-tasting, but according to Mary Chipesia "You could eat it but can't get full on it. Just like air. Whiskey Jacks live on it but person can't live on it."

Additional Notes: The tiny white hairs on the fruit can cause mild irritation if rubbed on the skin.

Wild Parsnip

Hedysarum alpinum L. (Alpine sweet vetch)
Pea Family (Fabaceae)

Plant Description and Habitat: Perennial up to 70 cm tall with a taproot, compound leaves and pink/purple pea-shaped flowers. Fruits are flattened pods with constrictions between the seeds. Common in moist, open woods and meadows. Abundant at Mile 206 above Minaker River.

Dene Tsaa Tse K'nai Knowledge and Uses: The taproot is eaten as food when the plant is still flowering. When Mary Chipesia was young, her family survived on this plant for a whole week. She says it is "sweet and white" and considers it a healthy food as well as an emergency food (MC). Alex Chipesia made the important point that many plants in the pea family look alike: "You gotta know which one. Some poisonous." (AC). Mary Chipesia indicated the plant is hard to recognise when it loses its purple flowers. Elders pointed out grizzlies (but *not* black bear) dig the roots to eat in autumn (AC, FJ, LN, MC).

Additional Notes: It is very important to note that some plants in the pea family are edible but some are toxic to humans and livestock. **Never eat any plant unless you are certain of its identity and sure it is not poisonous.** Wild parsnip looks similar to a related plant called Northern hedysarum (*Hedysarum boreale)* that is poisonous.

Wild Carrot

Carum carvi L. (Caraway)
Carrot or Parsley Family (Apiaceae)

Plant Description and Habitat: Perennial up to 60 cm tall with feathery compound leaves. Roots are think and tuberous. Creamy flowers are small, white and in umbels. Produced small grey-brown curved seeds (0.5 cm long) that have 5 light ridges running lengthwise. This plant has a strong aroma and is used as a culinary spice. It has escaped from cultivation and is found on roadsides and open, grassy areas such as the picnic site at Prophet River Recreation Area.

Dene Tsaa Tse K'nai Knowledge and Uses: It is likely that this plant is what that several people referred to "Wild Carrot", although it was not conclusive from the study. The young caraway plant produces a rosette of feathery green leaves that look much like carrot leaves and it has an edible taproot, also like a carrot. The young leaves of caraway also resemble the unrelated yarrow plant (*Achillea millefolium*) before it has flowered (Figure 27b), however, yarrow does not produce a taproot. A significant amount of time was spent with Mary Chipesia

trying to determine if caraway is the “Wild Carrot”. After comparing the two plants directly, she was fairly convinced of this, however, further investigation should be undertaken for confirmation. “Wild Carrot” can be boiled with “Frog’s Blanket” (*Petasites sagittatus*) for treatment of chickenpox (MC).

Wild Rhubarb

Heracleum lanatum Michx. (Cow parsnip)
Carrot or Parsley Family (Apiaceae)

Plant Description and Habitat: Very tall-growing (1 to 2.5 m) and hairy perennial with large maple leaf-shaped leaves, umbrella-like clusters of tiny white flowers, and hollow stems. Seeds are flattened and egg-shaped or heart-shaped. Common in moist woods and clearings.

Dene Tsaa Tse K’nai Knowledge and Uses: The stalk of this plant is food for bears (AC, PN). Humans also can eat the stalk of the young plant, but only when young (in spring) as it is no longer good to eat after the plant makes a flower (MC). It is cooked in a low fire until just soft, and then peeled and salted before eating (MC, TC, AC). It is good to eat with meat (FJ).

Additional Notes: It is important that the stalks are peeled before consumption as there are small hairs on the stalks that contain skin-irritating chemicals that react with sunlight to cause blistering and skin discoloration. (Kuhnlein and Turner, 1991; Turner and Szczawinski, 1991).

Some similar-looking plants in this family are poisonous, such as Water hemlock (*Cicuta spp.*) and Poison hemlock (*Conium maculatum*). **Never eat any plant unless you are certain of its identity and sure it is not poisonous.**

Wild Peavine or Indian Pea

Lathyrus ochroleucus Hook. (Creamy peavine)
Pea Family (Fabaceae)

Plant Description and Habitat: Perennial with angular climbing stems and creeping rhizomes. Leaves in 3-4 pairs up to 7 cm long, hairless. Branched tendrils. Broad oval stipules. White-cream coloured pea-like flowers in clusters of 6-15. Fruits are hairless pods. Common in open woods, thickets and clearings, such as Mile 206.

Dene Tsaa Tse K’nai Knowledge and Uses: Seed pods are edible for humans and “bears like ‘em too” (MC).

Wild Spinach

Taraxacum officinale Weber (Common dandelion)
Sunflower Family (Asteraceae)

Plant Description and Habitat: Perennial with milky juice from stem. Basal leaves, long and toothed or lobed. Flowers are yellow, solitary heads of ray flowers. Fruits are beaked achenes. A wide-spread introduced species from Europe that is abundant in disturbed areas.

Dene Tsaa Tse K'nai Knowledge and Uses: The leaves of this plant are considered an emergency food, which can be boil and eaten "just like spinach" (MC). Mary Chipesia was told you can boil dandilion roots and "is good for diabetes".

Yarrow

Achillea millefolium L. (Yarrow)
Sunflower Family (Asteraceae)

Plant Description and Habitat: Aromatic perennial, 10-100 tall with fern-like leaves. White or pinkish flowers in flat clusters of heads. A widespread introduced species from Europe that is common in disturbed sites.

Dene Tsaa Tse K'nai Knowledge and Uses: Not all participants knew this plant but those who did recognised it by its distinctive smell. Most Elders did not know what to call it. The plant can be boiled and wrapped on a sore body or used to wash the body with to treat pain (MC, AC). The plant is also is used to stop bleeding (DC).

3.4.4 Aquatic plants

Beaver Root or Beaver Medicine or Beaver Log

Nuphar variegatum Engelm. (Small yellow pond lily)
Water Lily Family (Nymphaeaceae)

Plant Description and Habitat: Aquatic perennial plant with heart-shaped floating leaves, large yellow flowers and stout, underwater rhizomes that resemble small pineapples. Abundant in most ponds, lakes and other still waters, such as Andy Bailey Lake.

Dene Tsaa Tse K'nai Knowledge and Uses: The underwater rhizome of this plant is an important traditional medicine with a strong connection to the beaver. The rhizome is used to treat swellings and infections. It is dug out of the water by beaver when they chew off the roots, thereby freeing the rhizome, which is usually found floating in the lake or washed up on shore. The rhizome is sliced up and dried to store for later use. Before use, it is soaked or boiled, then the juice is put on a swollen area, aches or infections (FJ, PC, MC, AC). Mary Chipesia used it to treat swelling in her foot when she stepped on a rusty nail: "Went right down, sucked out all the poison…same night put it on, started getting better. Kills germs. That why it stops infection". Alex Chipesia described how his grandfather used it to treat a swollen knee: "Grandpa had swollen knee. Got root, sliced and boiled and washed with juice. Wrapped up with cloth and in morning was all right, never bothered him". Also use it to treat swelling from a bee sting (MC).

The first time this plant was found during our study in 2000, the Elders did not realise that the "Beaver Medicine" was the underwater rhizome of the Small yellow pond lily because they would usually find it washed up on shore after being chewed by a beaver. This discovery was seen as a major achievement of the project by the Elders.

Muskrat Root

Acorus americanus or *A. calamus* L. (Ratroot, Sweet Flag)
Arum or Calla-lily Family (Araceae)

Plant Description and Habitat: Aquatic perennial plant with slender, sword-shaped leaves that resemble an iris and cylindrical green-yellow spike of flowers that grows up between leaves. The long, greyish-yellow underwater rhizome resembles a carrot and grows in the mud of ponds, marshes and lakes. The root has a distinctive smell and is a favorite food of muskrats. It is no longer locally abundant.

Dene Tsaa Tse K'nai Knowledge and Uses: The underwater rhizome of this plant is an important traditional medicine that can be "used for everything" (PC). The root is chewed and the strong tasting juice is swallowed for colds, sore throats, chest congestion and other conditions (PC, MC, AC). If the taste is too strong, the root can be boiled a little first to reduce the potency (MC). It makes you vomit so is used to sober up a drunk person (LN, AC, MC, PC, TC, PN). It tastes "hot" so is good to chew on for a sore throat (PC). The root powder can be used to treat an infection in your chest (MC).

Additional Notes: This plant is known in many parts of the world for its medicinal, psychoactive and other properties. It is considered sacred by some Aboriginal groups. The European species (*A. calamus*) was found to cause cancer in rats in high doses whereas the North American species (*A. americanus*) does not contain the cancer-causing compounds. It is difficult to distinguish between the species so caution is needed.

3.4.5 Horsetails

Goose Grass

Equisetum hyemale L. (Branchless Horsetail)
Equisetum variegatum (Northern Scouring Rush)
Horsetail Family (Equisetaceae)

Plant Description and Habitat: Evergreen solitary or clustered branchless stems that appear "segmented" and have sheaths at each node. Stems with cavities. Small cones are tips of stems. Branchless horsetail is up to 1.5 m tall whereas Northern scouring rush is up to 40 cm tall. Abundant in moist, sandy areas, especially along stream banks and lakesides.

Dene Tsaa Tse K'nai Knowledge and Uses: Horsetails are known as "Indian fire crackers" since throwing them in a fire makes a loud pop (DC). Geese eat it, but if the plant is eaten by horses in the winter when there is no grass the horse swells up and "he won't piss no more" (PN).

3.4.6 Sedges

Caribou Wheat

Eriophorum sp. (Cotton Grasses)
Sedge Family (Cyperaceae)

Plant Description and Habitat: This sedge has a grass-like stem with a white cotton-like flower. It is common in bogs and muskegs, such as along Alaska Highway north of Prophet River, and wet areas on Trutch mountain.

Dene Tsaa Tse K'nai Knowledge and Uses: This plant is good for stomach problems. Mary Chipesia described how it is prepared: "Boil it up and drink it straight. About one whole cup, about two times a day, until you feel better, maybe a couple of months or so." The root is also used in a mixture with spruce bark or spruce tips (new growth) to treat cancer (MC). Leaving some tobacco when collecting this plant gives the plant more medicinal power (MC).

3.4.7 Mosses

Muskeg Moss

Sphagnum spp. (Sphagnum)
Peat Moss Family (Sphagnaceae)

Plant Description and Habitat: Peat mosses are common in damp woods, bogs and muskegs, such as Trutch Mountain near Swan Lake. They grow upright and have tiny branches in clusters along the stem with a tuft of branches on top. Colours range from green-yellow to reddish-purple, depending on species.

Dene Tsaa Tse K'nai Knowledge and Uses: This moss has many uses. According to Mary Chipesia "It's just like a Wet-One." It is used wet for washing hands or dishes (MC). It also can be hung to dry in a clean place, such as up in a tree, and later used as toilet paper, as menstrual pads, or a biodegradable liner inside cloth baby diapers (MC, AC). The baby will not get a rash (AC). Even in winter, the frozen moss can be cut out and thawed behind the stove, then put in a frying pan to warm it up for use (AC, PC). The moss can be used "like clay" in building a cabin, to fill holes and cracks, just like insulation. The squirrels won't bother the moss (MC).

Additional Notes: Peat mosses are known for their capacity to hold water and their antiseptic properties, which make them very useful for many purposes.

3.4.8 Lichens

Caribou Food

Cladina sp. (Reindeer lichens)
Reindeer Lichen Family (Cladoniaceae)

Stereocaulon spp. (Coral lichens)
Coral Lichen Family **(**Stereocaulaceae)

Plant Description and Habitat: Reindeer lichens are shrub-like, growing up to 10 cm tall and greyish-white to yellowish-green in colour. They are found on soil under open forests, such as Mile 206 near the beaver pond. Coral lichens are shrub-like, growing up to 8 cm tall and greyish-white in colour. They are branched and somewhat resembling coral in appearance. They are found on soil in open forests and on gravel river terraces.

Dene Tsaa Tse K'nai Knowledge and Uses: These lichens are food for the caribou (LN).

3.4.9 Fungi

Old Man's Fart

Lycoperdon spp. (Puffball fungus)
Puffball Fungus Family (Lycoperdaceae)

Plant Description and Habitat: Roundish, light brown, smooth-skinned fungal fruiting bodies that release brown spores when mature. Common on many soil types but not visible until later in summer.

Dene Tsaa Tse K'nai Knowledge and Uses: Much laughter was elicited from the Elders as they translated the local Beaver name into English for this plant. When puffballs are young, they have firm white centers that resemble marshmallow. When puffballs mature, the centers turn to a brownish-green dry spore powder inside that easily "puffs" if you happen to step on them as you walk. This powder is used on cuts to stop bleeding (MC, AC, LN). In Alex Chipesia's words, "that's a first aid kit."

Willow fungus

Trametes suaveolens (L. ex Fries) Fries (Diamond willow fungus)
Pore fungus Family (Polyporacaeae)

Plant Description and Habitat: Grey-cream coloured bracket fungus that grows on diseased or dead Diamond willow (*Salix discolor*) and occasionally on Birch (*Betula* sp.), Aspen (*Populus tremuloides*) or Popular (*Populus balsamifera*).

Dene Tsaa Tse K'nai Knowledge and Uses: This fungus grows predominantly on large Diamond willow trees. The fungus is described by Mary Chipesia as looking "like ears" and smelling "kind of good…like a perfume…like a wood, but different." It is considered an important medicine to take sickness away, if you feel bad (MC, LN, AC). The fungus is dried and then lit as a smudge, similar to a mosquito coil. The smoke can be put all over the body and inhaled as medicine (MC, AC). Mary Chipesia explained: "When you don't feel good they light it for medicine inside the house. Kids inhale it like a smudge." It does not hurt the eyes, even if you lean right over it (MC). It should be lit using a match rather than a lighter (AC, JR). Although the same species of fungus grows on other trees, according to Alex Chipesia, it's "no good if not from diamond willow." Elders also noted that the Diamond willow tree itself (*Salix discolor*) can be used to smoke meat (AC, MC).

4 DISCUSSION

Information from this ethnobotanical study provides a useful baseline inventory of the plants that are found within Prophet River territory and their associated cultural significance. In areas subject to development, this information will make stakeholders more aware of the traditional importance of these plants, and the need to protect their continued existence. It is hoped that such information will assist the Prophet River First Nation and proponents of oil and gas, logging, or other developments to make good decisions about land use and to determine the best practices and locations for developments that are least disruptive to the traditional lifeways of Prophet River community members. Such a commitment on the part of industry would show respect for the traditional values of the Prophet River community, and support their continued co-existence with the local flora and fauna that comprise such a significant part of Dene Tsaa Tse K'nai history and cultural traditions.

Importantly, simply identifying a specific plant or pinpointing the location(s) where it grows will not lead to an adequate strategy of ecological protection. Traditionally important plants and associated cultural knowledge *cannot* exist in isolation of the cultural and ecological contexts where they originated. That is, the way to protect traditional plant knowledge is *not* through documenting it in reports or handbooks (although these can serve as valuable tools), but in protecting the integrity of the cultural groups and the ability of local communities to learn and practice this knowledge within intact forests, mountains, lakes and rivers. It means listening to the Elders who still remain and are willing to share their local knowledge, wisdom and concerns from their decades living with the land. It means supporting and building capacity in the adult generation to learn and continue the practices of the Elders and to ensure decisions made on behalf of the community are founded on cultural and ecological values, and it means investing in the youth through experiential learning opportunities and educational opportunities.

For a multitude of reasons, the information compiled in this project most likely represents a fraction of the plant knowledge that once existed within the community, and is an underestimation of what presently exists. It is common for community members to share only certain kinds of knowledge or details of plant use in a study such as this. Many knowledgeable community members have already passed on. Additionally, the cumulative impacts of colonial influences on language, religion, diet, and lifestyle have eroded the cultural knowledge base of the community. These factors, combined with a decreased ability to physically get to traditional plant gathering sites to practice their skills, have left some of the present Elders reluctant to share certain plant information because they do not know if it is accurate. Alex Chipesia talked about how the present day Elders "know some but not all" about the plant medicines because the medicine people of previous generations charged for the information (e.g., paid one horse) and so they died with much of it. Chief Liza Wolf remarked, "Why they didn't show us more, those old timers?"

Regardless, what has been documented here is of tremendous value both within and outside of the Prophet River community, and it is clear that cultural knowledge transmission to future generations urgently requires protection of traditional use areas, particularly those easily accessible and in close proximity to the Prophet River Reserve, which were the focus of this study. The proposal raised by some community members of a 10 km "development free" buffer zone, wherein logging, oil and gas exploration and development and recreational hunting would be prohibited or at minimum highly regulated and monitored, is fully supported by this study as a means to protect the cultural and ecological health of the Prophet River community.

This information documented in this study will be valuable for educational and cultural uses within the Prophet River community. The information will be especially important to the younger generations if they do not have opportunities to spend quality time with the present Elders to learn about their cultural traditions first-hand. The community plant handbooks (an abbreviated, user-friendly summary of the traditional plant information in this report) will be of assistance in perpetuating cultural traditions into the future. The handbooks can serve as a reference guide for plant hikes, camping trips, or workshops and can complement youth programs that aim to teach traditional knowledge, skills and values. The handbooks likely will facilitate further ethnobotanical research opportunities, at formal and informal levels, both among the Prophet River community members themselves, and between the Prophet River Nation and neighbouring communities. HOWEVER, it is imperative (especially for novices) to be cautious about plant identification and use since many plants are difficult for the non-expert to tell apart and many are poisonous or dangerous if used incorrectly. In Alex Chipesia's words: "If it don't cure you it could kill you." And as Brian Wolf wisely advised, if you want to know about a plant or where it is, "take along an Elder". That's your best assurance and the community's safeguard that the plant knowledge will be shared appropriately.

This report and the handbooks are also important tools for dialogue with the industrial sector. Tools such as these can be essential to help the forestry, oil and gas and other sectors understand potential impacts of proposed developments, and to minimise negative impacts on local communities by choosing sites and using practices that acknowledge and respect local beliefs and values. For example, throughout the study, Prophet River Elders not only took time to explain the cultural significance of plants but the interconnectedness of certain plants with certain *places,* and with the *animals* that reside there. It became clear that the knowledge of particular plant species and their medicinal or other uses cannot really be separated from the larger knowledge *systems* that include the specific locations where plants have been traditionally harvested, certain seasons for harvest, and the belief systems (of which animals are key) that underlie the power and usefulness of the plants. Thus, it is important to realize that **impacts to any one of these interrelated components are seen as impacting the whole.**

The traditional medicine known as "Beaver Medicine" or "Beaver Root" is a case in point. Beaver Root is so named because it is a root (or more correctly a rhizome) that washes up on shore after the beaver digs it out of the mud and chews the tender roots and shoots, freeing the large pineapple-like rhizome from the aquatic plant. Beaver medicine has always been abundant on lakeshores in the past but it is now much harder to find since, according to Elders, many of the beavers have moved away. Previous to our initial ethnobotanical fieldwork in 2000, Elders did not know which plant the Beaver medicine came from (during the study we were able to determine it was small yellow pond lily or *Nuphar variegatum*), and in the past when beaver were abundant, this detail would not have been important. Now that local beaver populations have declined, Beaver medicine (an important traditional medicine used for its anti-inflammatory properties) is much harder to come by. A similar situation was discovered with muskrat root (*Acorus americanus*). Prior to our fieldwork in 2002, the Elders did not readily recognise the live growing plant as they were only accustomed to seeing the harvested underwater root (actually a rhizome) that is used as a medicine.

The Beaver medicine example illustrates a type of the interconnectedness of traditional plant medicines with specific locations and animals. Because of the key role of beavers in providing this important medicine, the decline in local beaver populations has had a negative impact on the traditional medicinal repertoire of the Prophet River community. While the information from this study may help to rectify this particular case (i.e., Elders now know which plant they can get

the Beaver Root from), **concerns expressed about the welfare of the local animal populations should not go unheeded.**

Another conclusion from the study is that “place” has a central role in knowledge retention and transmission. There are preferred sites for harvesting some plants, for example, plants from up in the mountains were often said to have stronger healing properties or “more power”. Since Elders have been unable to get out to these sites in recent years, they had a more difficult time recalling the plant names and uses, and did not wish to provide inaccurate information. Accessing these remote sites with Elders was a priority in the original plan for this project, however, considering site accessibility and physical constraints of Elders, it was decided instead to focus on more easily accessible sites in closer proximity to the reserve. When we were able to visit familiar sites where Elders had lived, camped and participated in plant harvesting and preparation as children or adults, Elders were most confident about sharing their knowledge.

A second reason that participants wanted to focus the study on sites in close proximity to the reserve was to underscore the importance of plants and cultural sites in this area, as they explained it is under threat from oil and gas exploration, with seismic lines planned right through the reserve. The potential hazards and perceived problems shared by participants in section 3.3 should be carefully considered and a buffer zone should be established to protect the health and wellbeing of human, plant and animal communities.

In a similar way to “place”, language also plays an important role in knowledge retention and transmission. All of the Elders who participated in the study are fluent speakers of the Beaver language and had learned the majority of what they knew about plants from their own parents or grandparents who were also speakers of the Beaver language. Conducting the study in English sometimes inhibited the ability of Elders to express their knowledge or recall plant information. It was beneficial when Elders took time to speak amongst themselves in Beaver about the plants (or incidents related to plant use) and then translate these conversations into English for the researchers. Incorporating language in future studies (e.g., including a linguist familiar with the Beaver language in fieldwork) would be invaluable. The expertise and keen interest that currently exists to share this knowledge for the good of the present and future generations should be encouraged and supported.

Finally, it is important to re-emphasise that the sites selected for this study should be viewed as simply *sample* sites, and that traditional uses also occur in all the places *between* the sites, so these are just as important as the sites themselves.

5 RECOMMENDATIONS

- Support for continued and regular environmental and cultural research and educational activities that incorporate the following:
    - Community-based participatory project design that supports and empowers community decision-making (i.e., involvement of community in planning, conducting and interpreting projects, and returning results to community in useful forms)
    - Participation of all interested community members and appropriate remuneration
    - Multi-generational participation with emphasis on facilitating direct involvement of Elders and youth in places of cultural significance
    - Inclusion of traditional language, and support for fun activities that stimulate language learning
- Use the products of this study (e.g., report, handbooks) to increase the ecological and cultural awareness and sensitivity of the industrial sector, to demonstrate the importance of protecting the area, and to negotiate preferred locations and methods for development on Prophet River First Nation territory. In particular:
    - Negotiate a plan for a 10 km “development-free” buffer zone around the community to protect human, plant and animal health of the Prophet Rover community from contamination and damage due to industrial activities.
    - Develop principles and community guidelines for sharing cultural knowledge and sensitive information with industrial and other sectors outside the community. The principles should recognise that healthy land is fundamental to a healthy community and culture, and that people, plants, animals are all interrelated.
- Use the products and activities developed in this study in future youth programs or Elder-youth programs
- Collaborate with neighbouring First Nations communities on traditional plant use and land stewardship studies and programs.

6 CONCLUDING COMMENTS

It seems appropriate to conclude this report with a glimpse of the future - with the words of some of the youth apprentices who invested themselves in this work and took time to share their reflections after the final day of fieldwork in July 2004. All of the youth who participated in this project have much reason to be proud of their contributions. Of all the outcomes of the project, facilitating their direct involvement with Elders in learning about, and from, their land was surely the most important accomplishment to which an ethnobotanical study such as this could aspire.

"The plant study was fun. I learned more about the plants and medicines and how they used to live. I went to different places that I never went before."

Evangeline Attachie

"The plant study was great. I learned a lot of stuff about the plants and had fun with Kelly and the Elders."

Trisha Attachie

"The plant study was great, I went a lot of places I never went before and hopefully we go out again."

Jennifer Reno

"

"I thought the plant study was good because we learned a lot about our culture and the medicines that the older people used to make and we had fun out there, even getting wet."

Sheree Reno

7 REFERENCES CITED

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APPENDIX A:
Information sharing resources for projects involving cultural knowledge of Aboriginal peoples

Kaska Nation and TransCanada – Traditional Knowledge Protocol
http://www.turning-point.ca/index.php/article/view/674/1/51

Template Traditional Knowledge Protocol
www.fntc.info/files/FNTC%20Strategic%20Plan/Traditional%20Knowledge%20Protocol%20Template.doc

Convention on Biological Diversity

Bonn Guidelines on Access to Genetic Resources and Benefit-sharing
http://www.biodiv.org/programmes/socio-eco/benefit/bonn.asp

Guidelines, Principles, Protocols and Codes of Ethics/Practice for the conduct of research in Indigenous and local communities
http://www.biodiv.org/programmes/socio-eco/traditional/instruments.aspx?grp=GLN

International Society of Ethnobiology

Code of Ethics
http://ise.arts.ubc.ca/ethics.html

Research Guidelines
http://ise.arts.ubc.ca/research.html

Canadian Institutes of Health Research

Aboriginal Ethics Policy Development
http://www.cihr-irsc.gc.ca/e/29339.html

APPENDIX B:
List of community members and their participation in field components

Full name	Initials (used in citations)	Dates of participation
Elders[4]		
Mary Chipesia	MC	2002, 2004
Alex Chipesia	AC	2002, 2004
Peter Chipesia	PC	2002, 2004
Thomas Chipesia	TC	2004
Fred Jumbie	FJ	2002, 2004
Paul Notseta	PN	2002, 2004
Adults[5]		
Dan Chipesia[6]	DC	2002, 2004
Sandra St. Pierre	–	2002
Brian Wolf	BW	2002, 2004
Gabriel Wolf	GW	2004
Youth Apprentices (7)		
Evangeline Attachie	–	2004
Trisha Attachie	–	2004
Sheldon Chipesia	–	2004
Sheree Reno	–	2004
Sherry Evans	–	2004
Jennifer Reno	JR	2002, 2004
Lisa Reno	–	2004
Additional Youth Day Campers (6)		
Cody Attachie	–	2004
Wyatt Attachie	–	2004
Jeff Chipesia	–	2004
Cory Tsakoza	–	2004
Kirk Tsakoza	–	2004
Trevor Tsakoza	–	2004

[4] Elder Louie Notseta was unable to participate due to health problems, however some contributions from Louie are included from a previous study in 2000.
[5] In addition to those listed here, Tina Steward contributed in-kind time for fieldwork support as well as vehicle/equipment usage.
[6] Dan Chipesia contributed in-kind time as guide/advisor as well as vehicle/equipment use.

APPENDIX C:
List of main field sites and areas

Thirty-six of the main field study or demonstration sites are listed below. An additional five well sites and/or contaminated areas are included in a separate table. Note that the sites listed are examples only, and that areas *between* the sites are seen by participants to be just as important as most of the sites listed. Site designations are given by participants. GPS readings are located within the area visited, with some sites covering several hundred meters.

Main Field Study Areas (36)

Designation	Location	Date	Participants' Comments
Camping/Fishing Site at Mile 248	N 58º 14.581 W 122º 48.429	Aug 12, 2002	Traditional camping and fishing area. No longer good fishing. "This is where we camped here, all the time." (MC). Concerns expressed about logging and herbicide use impacts on moose habitat. Also on killing poplar "There goes our vitamins" (MC).
Petroleum Development Road (PDR) 62 Lookout at top south side of Trutch Mountain Valley	N 57º 37.182 W 122º 40.813	Aug 13, 2002	Good food gathering and hunting area. Concerns expressed about increased access; increased logging in area (e.g., lots of cut blocks in Tommy Lakes); many well sites at headwaters of Trutch Creek (important food gathering sites); logging Lodgepole pine; litter. "If that road wasn't here, you wouldn't find this stuff [beer cans/litter]" BW.
Paul Gillis' Trappers Cabin	N 57º 36.996 W 122º 42.215	Aug 13, 2002	Hunting and berry picking area. Concerns expressed about high number of well sites in area; increased access and increased hunting by outsiders; litter and human excrement; overpopulation of wolves.
Gravel Pit /Grassy Chicken Creek	N 57º 16.132 W 122º 54.562	Aug 13, 2002	Highly disturbed area, used to serve as major camping area and horse range before gravel pit, some Elders felt it should have been part of Reserve. Access has ruined the site.
Paul Noblegood's Cabin at Mile 178	N 57º 28.290 W 123º 00.042	Aug 14, 2002	Camping and plant collecting area. "Used to be good camping. Now too many people. Hear a vehicle everywhere you go. Animals go where its quieter." (PC)

Bucking Horse River	N 57º 24.050 W 122º 59.729	Aug 14, 2002	"Look what they did to 175. The Bucking Horse. They make a road up to the mountain. There's nothing. No moose, a few elk, that's all." (AC).
Peat Bog and Lake	N 57º 25.613 W 123º 00.680	Aug 14, 2002	
Proposed Anadarko bridge across Prophet River	South of Bougie Creek, Mile 228 (no coordinates)	July 16, 2004	Proposed road would go through muskeg berry, muskeg tea, whiskey jack berry, rose, birch, spruce. Concerns about increased access by outsiders; need restricted access (locked gate). "The way I look at it, it'd be just like that Chicken Creek. It's be just people going in here. It'd be worse. Pretty soon there's be no moose. Even right now used to be lots of moose in Chicken Creek area. Now you can hardly see no bull moose. Too many hunters, too easy access, that's why" (PC).
Grave site of "Slim" (PN, LN and LW's mother) near Mile 220	N 57º 59.023 W 122º 45.559	July 16, 2004	Family burial site. Concerns that unmarked grave site was almost destroyed by a Cat recently (seismic cut line)."When you die, they bury you where you die" (MC).
Prophet River Campground / Provincial Park (Mile 222)	N 57º 58.279 W 122º 46.571	July 16, 2004	Traditional camping grounds and food harvesting area; concern about restrictions due to park. "Here at 219 we fishing and there do everything. If they make a road, there won't be nothing no more. Our life will be nothing. We'll be just like … lost. We used to live in here and Environment take it all [referring to Provincial Park]. They turned to park, everything where we lived. Like where I was born. They get all that land." (MC).
Minaker Meadows and Beaver Creek (Mile 206)	N 57º 48.122 W 122º 54.803	July 16	Plant collection and demonstration site.
Like Heaven Lake (lake for animals)	N 57º 48.021 W 122º 54.652	July 16	
Beaver Creek	N 57º 48.142 W 122º 54.535	July 16, 2004	
Adsett Creek tributary cut area (en route to 8 mile lake)	N 58º 07.117 W 122º 34.122	July 17, 2004	Poor cutting practices with lack of adherence to requirements for creek site cleanup; dangerous for animals and humans. "The way the mess

			was left, Mary [Chipesia] fell through the ground and got trapped. What about the animals, they will fall in too and get stuck in the debris from logging and lack of clean up." DC
8 Mile Lake	N 58º 06.910 W 122º 31.999	July 17, 2004	Hunting and camping stop. Elders hadn't been here for many years (too difficult for them to access). "Used to be pack trail going through here. You could go Fort St John through here. Sometime maybe 10 days. If you took your time, quite awhile. No horses nothing. That time there's no trees. You could see the mountain, you could see everything here. Now today you can't ride even horses. Right now you can't see nothing." (FJ).
Charlie Big Foot's Camp	(no coordinates)	July 17, 2004	Comments on fire/regular burning/changing landscape; logging and fire suppression is "wrecking the land"; lack of logging clean up at creeks.
Old growth forest (north of reserve, across Adsett Creek)	N 58º 06.653 W 122º 42.243	July 18, 2004	Viewed "hand cut" seismic lines made by industry the previous winter; observed newly cut 100 year old tree stump that participants claimed was unnecessary given GPS technology. "Over a hundred years old and cut down for nothing. If it was under canopy it wouldn't have happened. Now adays, we're high tech with GPS and can go around them, it's unnecessary to cut them." (DC).
Mile 235 (old highway)	N 58º 06.435 W 122º 44.663	July 18, 2004	Plant collecting area.
Prophet River Traditional Fish Harvesting Site on Adsett Creek (north of creek, west of old highway) near Mile 234	N 58º 06.285 W 122º 43.236	July 18, 2004	MC described catching her first fish here, without a hook! "I used to run out here in my bare feet. And first my big fish. You know everybody got fishing hook, I got nothing. Just a rope, a rope hanging on a pole. I got a rope and I tied that little fish really tight. Just like that, proud of myself. And I got a biggest fish from here. And everybody said, them kids, oh gonna take that hook. I got no hook they proud about that. Just a strength and a fish." (MC)

Mason Creek	N 57º 19.835 W 122º 47.416	July 19, 2004	Summer camping spot; hunting area; moose lick; important plant harvesting area. Concern about encroachment by other hunters and potential pollution by oil rig on Mason Lake.
Old Alaska Highway Army Supply Cabin	N 57º 19.952 W 122º 47.403	July 19, 2004	Old army cabin where stored rations discovered 1944-45 by Elders as children.
Sikanni Chief Falls	N 57º 15.457 W 122º 58.780	Aug 13, 2002 and July 20, 2004	Plant collection and demonstration site for youth apprentices.
Andy Bailey Lake	N 58º 32.907 W 122º 30.285	Aug 15, 2002 and July 21, 2004	Plant collection and demonstration site for youth apprentices.
Loon Lake (near Mile 285)	N 58º 37.536 W 122º 41.600	Aug 15, 2002 and July 21, 2004	Old fishing and camping area; plant gathering area; home for beaver; loon breeding grounds. “But road too close now. Fishing no good. Wolves here.” (PC). Concerns about garbage and use of place as party grounds for drinking.
Lele Lake and Prophet River (below DC’s house)	N 58º 04.532 W 122º 44.082	July 22, 2004	**Very important plant collecting area and sensitive ecosystem in need of protection**; hunting grounds; bird nesting area; traditional camping area. “When you’re young you don’t care, eh. When you get older you realize what you missed… I tell you when I go in the bush where my ancestors’ been, when I go there and have that nice clear water and see the mountains, I can image the village and everything. Just imagine.” (DC).
Bougie Mountain rock bluffs	N 58º 01.224 W 122º 36.978	July 22, 2004	View of area. Sensitive plant populations.
Bougie Mountain ridge	N 57º 58.023 W 122º 35.895	July 22, 2004	View of area.
Bougie Creek	N 58º 01.874 W 122º 43.832	July 23, 2004	Gravel pit now overgrown. Old camp area and berry picking site. “Used to be good berry grounds here.” (MC). Evidence of hack and squirt; concern about unfilled drill holes. “Dynamite hole. That’s when after they drill, they don’t put it back in. They just leave it open and that’s bad. A moose could go down here and doesn’t know and will hit it” (GW).

Prophet River traditional use area	N 58º 02.343 W 122º 44.561	July 23, 2004	Fishing area; old pack trail for hunting and traveling. "Used to hunt and fish here. Everything's changed…There used to be lots of geese in that lake. Not any more. I don't know. I tell you everything changes." (PC).
Airport strip near Chicken Creek	N 57º 15.907 W 123º 04.660	July 24, 2004	Collection of wild carrot (*C. carvi*).
Muskwa-Kechika Management Area Gate (Sikanni River Trail)	N 57º 15.996 W 123º 04.949	July 24, 2004	Concerns expressed about parks and prohibition of traditional use activities; medicinal plant collecting area. "Changed quite a bit. Can't even go hunting, this is our area." (PC)
Trappers Cabin	N 57º 15.369 W 123º 04.672	July 24, 2004	MC's great grandfather's grave is in this area. Very popular old campsite (est. 100y); old plant harvesting area and hunting area. Now prohibited due to park.
Trutch near Radio Tower	N 57º 40.098 W 122º 58.493	Aug 13, 2002 and July 24, 2004	Important berry picking, camping and moose hunting area. Concerns about increased use, litter, decline in berry productivity (poor treatment of/disrespect for patches); encroachment of hunters.
Swan Lake on Trutch	N 57º 40.207 W 122º 58.044	Aug 13, 2002 and July 24, 2004	Plant gathering, camping and moose hunting area.
Trutch at Minaker Creek Rodeo Grounds (Mile 200)	(no coordinates)	July 25	Traditional hunting, camping and berry picking area; old pack trail passes through. People from rophet and Blueberry came here in the fall to live and trap since 1920. "Stopped using this area in 1970s. Lost the old timers. Now young kids they don't want to do nothing. Too much TV." (PC).
Adsett Creek, north of reserve	N 58º 06.356 W 122º 43.193	July 25, 2004	"We grew up around here. We camped here. Good fishing here." (MC, PN).

Well Sites and Contaminated Areas (5)

Designation	Location	Date	Participants' Comments
B86K Well Site	N 58º 14.183 W 122º 49.248	Aug 12, 2002	B86K-94J2 Well was dug circa 2000 and is located along river. Concerns about chemical contamination of river; unfenced site so animals forage and lick contaminated plants and soil (presence of moose, elk. deer tracks); close proximity to reserve.
Anadarko Well Site (across from Prophet River)	N 58º 06.58 W 122º 41.363	July 18, 2004	Site was of great concern because of the various infractions observed; unfenced and evidence of animals foraging and licking; whole area was considered "poison"; noted that many useful plants grow in area but can't use due to contamination (plants observed were dried, brown, generally unhealthy); concern about contamination of creek nearby.
Esso Well site off highway (south of reserve)	D-96 F-94 G-15 (no coordinates)	July 25, 2004	Drilled for water and hit gas circa 1942-43. Capped but gas is still leaking.
Mile 214 well site	N 57º 51.929 W 122º 49.326	July 26, 2004	Unfenced site; plentiful forage around site; evidence of moose; concern about foraging and licking contaminated plants, water and soil. "Once the moose find that kind of thing, they always come back to eat that dirt. I guess it tastes like salt. I think they gonna get sick and walk off in the bush and die. I don't think it would be safe to eat it." (TC)
Trutch "Special Waste" disposal site	N 57º 38.868 W 122º 58.322	July 26, 2004	Untreated contaminated soil in close proximity to important, and high use hunting, camping and food gathering areas. "On top of the Trutch, they dump poison in there. They dump it, then they bury it." (AC, PC) "There used to be berries on the plants here but not no more. Maybe from the plant, the gas. Something kills… That's why them trees on Trutch are dying, see those jack pine on Trutch. It's from the gas." (MC).