October 29, 2004

Huslia tribal gathering on climate change and fire
January 7-10, March 8-11, and October 4-6, 2004
Summary comments about fire

These notes summarize conversations during three trips to Huslia. There was a gathering of the Huslia community (elders, students, and other residents) and researchers that was organized by Orville Huntington and hosted by Bill Derendoff (First Chief of Huslia) in January 2004. In March, 2004, there was a meeting of Western Interior Regional Advisory Council in Huslia. At this time we also interviewed several Huslia elders and past and current members of emergency fire fighting crews. The third workshop was organized by Orville Huntington and the fire research group and hosted by the community of Huslia.

These summary comments were prepared by Terry Chapin, Sarah Trainor, Henry Huntington, and Dave Natcher as a report to the Huslia Tribal Council. Statements come from the January meeting unless the March or October date is specifically indicated.

Importance of tribal intellectual property

We recognize that the traditional knowledge and wisdom that community members shared with researchers in meetings and interviews in Huslia are the intellectual property of the tribe and that the tribe should decide what knowledge is released to non-tribal members (Bill Derendoff, Orville Huntington, Stanley Ned). We will therefore provide reports to the tribal council of everything that we learned and request their permission to use any of this information in publications, reports, or casual communication outside of our research team. Any material that should not be shared will be taken out.

Values and knowledge related to the interactions of people with fire and climate

Part of the reason for communication with elders who hold traditional knowledge is to share knowledge, but it is also important to share the wisdom that comes from living off the land (Orville Huntington). One reason to share knowledge and wisdom is to get the message out to the rest of the world about how changes in climate and other things affect the lives of Huslia residents; in this way it may be possible to help fix the cause of the problem, rather than just trying to repair things after they are broken (Bill Derendoff). In order to develop the knowledge and wisdom, it is important to keep observing in order to store our knowledge, language, and stories (Catherine Attla).

Management needs to be based on the values that people have; in the lower 48, people value money but Huslia residents value the plants and animals and the land; managers need to recognize this and to listen to what communities say about the land, if they are going to make good wildlife management policies (Bill Derendoff). Therefore, when fire fighters build a fire line, they should go back later and rehabilitate the area (Bill Derendoff). Saying that fire is good is the “wrong thing to say to the land” (Catherine Attla). However, fire has always been part of the land, and everything happens for a reason (Bill Derendoff). In areas with fire suppression,
there may not be enough fire (Butch Yaska, 3/04). In areas without fire, timber dries up when it gets old, so beetles invade (Butch Yaska, 3/04).

Treating the land with respect is important. It provides us with what we need: “We live in paradise. We lead a millionaire life without a dollar” (Rose Ambrose, 3/04). “We live off the fat of the land” (La’ona DeWilde). Everyone used to be an animal, so you shouldn’t talk about game without respect, especially when there are women around (Phillip Esai, Catherine Attla). Fire does good, but some you don’t see. There are also bad impacts from fire that you don’t see. (Polluck Simon 10/04)

There is no reference to fire in the stories/legends that Catherine Attla knows, tells and has recorded. You should not play with fire or blow on fire, you’ll blow your soul out (Catherine Attla, 3/04).

Fire frequency

About one-third of the land around Huslia has burned in the last 50 years; this is typical of interior Alaska (La’ona DeWilde). One large fire in 1957 accounted for about half of the area burned in the Huslia quad map. Areas adjacent to the Koyukuk and Yukon Rivers seemed to burn less than areas distant from these rivers. This is probably because the area near rivers has vegetation that is not likely to burn (Orville Huntington, La’ona DeWilde).

Fire burned the area immediately around the present town of Huslia circa 1935 (Catherine Attla, Butch Yaska). The largest trees in the area are about 65 years old (Bob Lambrecht), which means that they established in the first 5 years after fire. The town name “Huslia” means fire burned down to the river (Sharon Yatlin).

Direct fire effects on people

Access

The most important direct effect of fire is to reduce access. The roots and trunks of fallen jack spruce make travel almost impossible. The upturned roots are so hard that they are dangerous to people and to snow machines (Orville Huntington, Stanley Ned, Butch Yaska). It takes 15-20 years before these are rotten enough to make travel easy (Butch Yaska, 3/04). In the Farewell burn near Nikolai dense regrowth of shrub and tree birch makes travel difficult; it is like driving along a rabbit trail through a jungle (Phillip Esai). Near Allakaket, tree birch is so think you can’t travel through it (Pollack Simon).

Smoke

Smoke from forest fires is a health problem in bad fire years, such as 1972, when there were fires all around Huslia (Rose Ambrose, 3/04).

Microclimate

Burned areas are colder than unburned areas in winter (Lloyd DeWilde), because the bare snow surface absorbs less heat that a forested landscape (Terry Chapin). Therefore, people tend to avoid traveling or hunting in burns, even when access is not a problem (Lloyd DeWilde). After a burn it is always colder for the first 20-25 years. If you don’t have snow cover (like the warm fall in 2003) than a burned area will be hotter and warm the surrounding area (Orville Huntington).
**Loss of cabins**

Most cabins burn as a result of urban fires, especially in older cabins with bad electrical wiring; the last cabin I remember that burned from wildfire was my parents’ cabin, about 30 years ago (La’ona DeWilde). However, wildfires sometimes burn trapping cabins, which is a major concern to trappers. Sometimes these cabins have been used for a long time and store valuable things such as fish traps that were made by earlier generations, stoves, and snowshoes (Catherine Attla, 3/04). These things stored in cabins may be much more valuable than the cabins themselves.

It is particularly important to protect shelter cabins from fire, and if they get destroyed in fire to find funds to rebuild them. This is a matter of safety and can make the difference between life and death to hunters, trappers or search and rescue operations that travel long distances in the winter and rely on the shelter cabins. (Orville Huntington)

**Threat to Cemeteries**

In 1934 when she was 8 years old, Catherine Attla remembers one summer there was a fire near Huslia. She remembers her grandfather praying and thought that he was praying for the village. They had a big cemetery with more than 200 graves, that was eventually lost into the river. Her grandfather was praying for the cemetery. Fire went right around the cemetery, but didn’t’ burn it. (10/04)

**Traditional use of the land**

Catherine Attla commented that her parents and grandparents had a traditional pattern of moving to different places in different seasons. She commented that this pattern of movement was not strongly affected by fire. They probably went to the same place year after year—to places that were not affected by fire; if an area burned, it had little effect on movement unless it blocked winter trails or burned an area that had previously been used; in this case, it might be avoided for a few years (La’ona DeWilde).

Huslia was built (about 1950) in an area that had burned in about 1935 (Rose Ambrose, Catherine Attla, Butch Yaska, 3/04). The site was chosen because it was high enough above the river to avoid flooding and had a topography that was good for buildings and the airport. The open views also made it easier to hunt.

**Use of fire as a management tool**

The community of Huslia and the Koyukon area did not traditionally use fire as a management tool. This area is on the edge of the boreal forest where it is important to have trees; therefore the people did not burn but let nature do what it will do (Orville Huntington). This differs from eastern Alaska, where fire was traditionally used for improving habitat for muskrat, waterfowl, and bison (Dave Natcher).

Fire has a strong spirit, so the ash from fire has strong effects (Catherine Attla, La’ona DeWilde). In the early days, people stored food, wrapped in birch bark, in a belowground cache over winter, so they would not be tempted to use it until April or May (the starvation months); They would light fires on top of the cache, because this prevented bears, foxes, mice and other animals from digging up the food (Catherine Attla, 3/04; Sarah Oskokoff, 10/04). Putting ashes in a tent or around a cabin would keep away insects, animals and harmful spirits (Catherine Attla, La’ona DeWilde, Polluck Simon) and protect the house from earthquakes (Sarah Oskolkoff). Ashes also make good fertilizer and keeps bugs away from the garden (Sarah
Ofkolkoff, La-ona DeWilde 10/04). Because fire has a spirit, you shouldn’t brag about fighting fires, just as you shouldn’t brag about hunting (Pollack Simon).

The old airstrip was built across a grass lake, so this part of the airstrip is burned regularly to prevent fuel buildup and fires that might directly threaten the village of Huslia (Bill Derendoff, 3/04). Several communities in interior Alaska have recently requested assistance from the Alaska Fire Service in reducing fuels immediately adjacent to the community (Mike Spindler, 3/04). Fuel reduction, by thinning or removal of spruce near the village, has been initiated in Tanacross and Northway and has been requested by Huslia. The village of Nulato has requested a prescribed burn near the community to reduce fuel buildup and to improve habitat for berries (Mike Spindler, 3/04). Tanacross has traditionally burned sedges around small lakes to improve habitat for ducks and geese (Bob Schultz, 3/04). Ruby used prescribed fire close to the community to reduce fire hazard. Fires that escape from village dumps are a major cause of fires near communities (La’ona DeWilde).

Gathering fire wood is a form of fuel reduction. If dead trees are taken for firewood, they are less likely to be ignited by lightening. In Huslia, for example, firewood is collected in ~ 20 mile radius around the town. Other villages may have woodlots farther from town or in specific locations. (3/04)

Fire effects on resources used by communities

Summary

Fire has very little direct positive effect on resources used by the residents of Huslia, Nikolai, Allakaket, and other Koyukon communities. Fire makes access to tralines and portages difficult and dangerous for about 20 years, destroys lichens used by caribou in winter for about 50 years, and reduces moose abundance for about 10 years. The time-scale of these long-term effects of fire depends on the nature of the fire. Severe fires that burn to mineral soil recover slowly; mild patchy fires provide favorable wildlife habitat within about 5 years. Therefore, the overall effect of fire on the community depends on the distance of the fire from the village, the severity of the fire, whether the community is located on an upland or lowland, and the time since fire (Orville Huntington). In the fires near Nikolai and Allakaket, the brush grew back so think after fires that moose did not use them, and it was difficult to travel. Most residents of Huslia oppose the use of prescribed fires and the let-burn policy in areas used for hunting and trapping by Huslia residents (Orville Huntington, Stanley Ned, Enoch Sheidt). In general, people today are more concerned about the fire effects on subsistence than about the wages that result from fire fighting (Enoch Sheidt).

Vegetation

Fire has many effects on vegetation. Under dry conditions, especially on sandy soils like those near Huslia, fire can burn away almost all the vegetation (Fred Bifelt). When the ground is wet, or the moss is thick, only part of the duff layer is burned, and plants resprout from what was there before the fire. The vegetation that comes back after fire is usually grasses and fireweed in the first few years, then brush, then hardwood trees (birch or aspen), then spruce (Terry Chapin). The regrowing vegetation can be so dense that it is too thick for moose to move through. For example, in the Farewell Burn near Nikolai, shrub birch (and some tree birch) came back so thick that the moose couldn’t walk through it, so it was bad habitat for moose (Phillip Esai, Sarah Oskolkoff, Willy Petruska). We tried to reburn this many times, but it wouldn’t burn; what it needs is a clean hot burn that removes everything (Phillip Esai). However, after the 1985 burn,
the vegetation came back as tree birch and the moose feed on this (Phillip Esai). In Allakaket, the brush also came back really thick, but it was a mixture of tree birch and aspen; this is typical of rolling hills in the area (Pollack Simon). It was also bad for hunting, because the brush was too thick to drive through, and you couldn’t see any animals.

When conditions are really dry, white spruce areas come back as birch after fire (Phillip Esai). One reason that the Farewell Burn came back as thick brush maybe that the climate was colder at the time of the fire, so the vegetation recovery was different (Pollack Simon).

**Berries**

Fire has very little effect on berry patches used by Huslia residents because most berries are collected near the village in areas that have not burned for a long time. However, after a fire near the dump, all of the berries (like cranberries and blueberries) came back except blackberries, which the people in Huslia love for Indian ice cream (Catherine Attla). Fire affects bears via its affect on blueberries (Orville Huntington). Berry production varies a lot with rainfall and other factors, separate from the effects of fire (Orville Huntington, Rose Ambrose, Catherine Attla). Forests and muskegs around the village last burned 60-70 years ago (1930s) (Rose Ambrose, Catherine Attla, Butch Yaska). Fires do affect berries, however. Near Allakaket, where fires have burned the same area repeatedly, berries are slow to recover and are very small (Stanley Ned). Crowberries (small black berries that grow close to the ground) are very small after a fire for a long time (maybe 20 years???) (Catherine Attla). However, blueberries have deep roots, so they grow back quickly, if the fire has low severity and does not burn away the organic soil; in this case fire makes the berry crop better (Rose Ambrose; Catherine Attla; Enoch Sheidt; Terry Chapin). This is one of the reasons that the village of Nulato has requested a prescribed burn near their village (Mike Spindler, 3/04). High-bush cranberries are usually collected in aspen forests that have not burned recently (Eleanor Yatlin). People keep track of berries all summer long, just like your garden (Catherine Attla).

**Firewood**

People collect firewood from unburned areas around the village that are close enough to reach easily by snow machine (Catherine Attla, Orville Huntington). Sometimes people ring the trees the year before so they die and have less pitch when they burn, but people do not burn trees to kill them for firewood (Catherine Attla). Near Ambler, however, people cut trees in an old burn near the village, because these trees are dry and have less pitch (Mike Spindler, 3/04).

**Other plant products**

Tall straight birch trees without lower branches are best for making sleds and snowshoes; the best place to find these birches is at the top of steep banks near the river in an open mixture of white spruce and birch (Butch Yaska). These trees are usually about one foot in diameter. If the trees are too old, they are rotten in the middle (Butch Yaska). These open forests are probably 60-90 years old and not recently affected by fire (Terry Chapin).

Labrador tea is used as an herbal tea. It is easy to find in areas without fire, but also regrows quickly after low-severity fires (Eleanor Yatlin). Therefore fire does not strongly affect its availability. Other plant products used are tips of jack spruce (small spruce) from regrowing spruce stands (Eleanor Yatlin). Stinkweed (*Polygonum alaskanum*?? Terry Chapin) is collected from disturbed areas near roads and runways (Eleanor Yatlin). In general, it seems that none of these non-berry foods and herbs are strongly affected by fire.
Moose

Moose may not be as strongly affected by fire as ADF&G reports suggest; aircraft surveys may report more moose in burns in part because the moose are easier to see (Orville Huntington). However, moose are very mobile and move in and out of burns easily (Catherine Attla, Orville Huntington), so moose may not benefit as much from fire as wildlife managers claim (Orville Huntington). Moose avoid recent burns because there is no food and because the fallen dead trees make travel difficult for them. However, moose do use the edges of recent burns (Orville Huntington). The time required before moose begin to recolonize a burned area depends on the patchiness and severity of the fire (Jack Reakoff, 3/04). In general, moose avoid large homogeneous burns that lack cover. Instead they tend to feed on edges of burns or in burns with mixtures of burned and unburned patches. Browse recovers slowly after severe fires, because there are few shrubs that resprout, and the ground dries out and may shift from a moss ground-cover to lichens (Catherine Attla, Jack Reakoff, 3/04). In moderate burns, moose begin to return after about five years when the willows resprout (Orville Huntington, 1/04; Butch Yaska, 3/04). Moose avoid old spruce forests (Butch Yaska, 3/04). [Note by Terry Chapin: ADF&G reports says that, for 10 years after fire, burned areas are avoided by moose; moose prefer areas that burned 10-30 years after fire; moose avoid areas that burned more than 30 years ago. However, Orville’s observation could explain these patterns: moose are easier to see 10-30 years after fire than in older stands.] In summary, everyone agrees that moose avoid recent burns, but we are not certain whether moose prefer stands that were burned 10-30 years ago, compared to older stands. Maybe it depends on the kind of forest that burned, or the size of the burn and availability of edges. Since community members don’t hunt in these stands because of problems with access, the response of moose to fire doesn’t influence the availability of moose to the community.

Most of the moose used by the Huslia community use willow stands that are created by ice scour along the rivers (Orville Huntington). The areas along the river are mostly too wet to burn, so fire has not affected these moose habitats. Even if a fire occurred, it would probably be a ground fire that would not have a strong effect on vegetation or ease of travel (La’ona DeWilde). With the warmer climate, the ice is not as thick and does not form the ice dams that create these willow habitats, and the water level is higher after break-up, reducing ice scour; at first the disappearance of ice scour allows willows to grow on bare sand bars; over the long term, however, residents worry that these habitats may disappear, causing moose to decline (Orville Huntington, La’ona DeWilde). In general, fire has little effect on moose harvested by Huslia residents, because most residents hunt for moose near the river in areas that are not affected by fire. In addition, during the hunting season and the rut, moose become more mobile and move along trails from uplands to the river; therefore, even moose that spend most of their time in the uplands are accessible to hunters along the river during hunting season (La’ona DeWilde).

The first moose that Catherine Attla remembers hearing about was shot in about 1920. That was really big news all up and down the river. In 1934, people had to travel a long way to get moose, and there were no moose in the Huslia area; in 1939 the first moose was shot near Huslia; there were a few more moose shot in 1941 (Catherine Attla). There are two distinct populations of moose, one west of the Hughes Canyon (near Huslia) and one east of the canyon (near Allakaket). There were reports of moose in the Koyukuk River drainage in the 19th century; commercial meat hunting during the gold rush and introduction of fire arms to native people upon white contact could explain the disappearance of moose during the first decades of the 20th
century (Jack Reakoff, 3/04). There are no traditional stories about moose, suggesting that moose were not present before the 1920s (Catherine Attla).

Wolves and Bears

Wolves and grizzly bears have increased in recent decades and are the main reason that the moose population has declined (Pollack Simon, Phillip Esai). The grizzly bears are large and therefore probably moved in from elsewhere rather than as a result of increased reproduction by local populations (Fred Bifelt). The drying of the land has reduced the berry crop, so bears have less berries to eat (Phillip Esai). They are desperate enough for food that they hunt black bears from their dens in addition to hunting caribou, moose, and ground squirrels. Wolf packs have also increased, probably due to more reproduction from local wolf packs. There are three wolf packs in the Huslia area that are in different locations along the river where the moose are; wolves are not associated with burns and are not used for food (Orville Huntington, Catherine Attla). Fire pushes away bears and as a result more fish get upstream (O. Huntington).

Caribou

Lichen range recovers very slowly after fire, so it takes at least 50 years after fire before the land makes good winter range for caribou (Enoch Sheidt; Orville Huntington, Pollack Simon). When caribou encounter a recent burn, they either move quickly across it without stopping, or they go around it (Enoch Sheidt). Allekaket has very few moose, so they depend on caribou and are therefore concerned about the large fires near their community (Pollack Simon).

Martin

The biggest effect of fire on trapping results from reduced access. Fallen trees make snow machine travel almost impossible (Orville Huntington). Hot fires ruin traps because the steel of the traps loses its temper (Jack Reakoff, 3/04). There are often more yellow-cheeked voles in burned areas within a few years after fire (Orville Huntington, Karen Lehmkuhl; Butch Yaska, 3/04), but only young martin move into these burns, so recent burns are not good for trapping, even if people could get there (Orville Huntington). Martin are more sensitive to fire severity and patchiness than are moose, because they need cover for protection from owl predation (Jack Reakoff, 3/04). For this reason, they often use only the edges of burns. Forests that burned 10 years ago are still not good for trapping (Orville Huntington). Fire should be good for martin, but around Allakaket there’s “something wrong.” They haven’t had good martin trapping for the past 3 years. The area also has not burned in the past few years (Polluck Simon).

It takes 15-20 years or more for these dead spruce to rot enough that travel becomes easier (Butch Yaska, 3/04). People trap in areas that are good habitat close to the community. These are often on public lands, so decisions about fire on public lands near these communities affect local residents.

Fur trapping was a major source of income in the 1930s and 1940s (Rose Ambrose, 3/04). The decline in fur prices in the 1960s and 1970s resulting from events that had nothing to do with Alaska (changes in fashions and animal rights movements), diminished the ability of people to earn enough money to get by from trapping alone.

Snowshoe hares

Snowshoe hares decrease immediately after a fire. Some are killed by the fire, and others leave because there is not much food (Rose Ambrose, 3/04). Some hares might die in their
burrows from the smoke (Lloyd DeWilde). After willows and deciduous trees grow back, the hares become common in burned areas. In the 1920s and 1930s, before moose were abundant in the Koyukuk area, hares were an important source of meat (Rose Ambrose, 3/04). At this time lots of babies (maybe half) died (Rose Ambrose, 3/04).

**Foxes**

There are fewer foxes now than in the first part of the 20th century (Rose Ambrose, 3/04).

**Spruce grouse and ptarmigan**

Spruce grouse and ptarmigan are less abundant immediately after fire, because they have no food (Rose Ambrose, 3/04).

**Beaver**

Most beaver disappear after a fire, probably because there is no food for them; however, they begin to come back within a year (Catherine Attla). Beaver usually move every year or two, because they eat up their food (Butch Yaska, 3/04). Beaver disappeared from areas near Allekaket that burned repeatedly (Stanley Ned). I don’t know how long it takes beaver populations to recover to numbers that were present before fire (Terry Chapin).

**Mink**

Mink are not strongly affected by fire (Catherine Attla). They were the main source of furs in the first half of this century, but they are less common now than they used to be (Rose Ambrose, Catherine Attla, 3/04).

**Fish**

In many cases fish in large rivers may not be strongly affected by fire; the vegetation close to rivers does not burn easily, so the fire usually burns down to the river in only a few places (La’ona DeWilde). However, fire could affect fish a lot if there are repeated fires in the same place or if the fish are in small creeks or if the fires are hot enough to burn right up to the river. For example, fish died out in areas near Allakaket that burned several times (Stanley Ned). The elders in Allakaket are concerned that ashes from fires being harmful to spawning areas (Pollock Simon). Pike disappeared from a small creek that flowed from a mineral spring after a fire went through (Butch Yaska). If ash has such a strong effect on animals on land, it must also affect the fish. Fish die when there is lots of ash (Catherine Attla). Smoke from fires can affect streams by “suffocating the water” (Jack Wholecheese). I don’t know what types of fish are most sensitive to fire, and how quickly the fish populations recover after fire (Terry Chapin).

Fish populations have declined in the last 10 years (Sarah Oskolkoff). This could be the result of warmer water related to climate change; the best places to fish are where the water is cold (Orville Huntington).