NORTH SLOPE FEDERAL SUBSISTENCE REGIONAL

ADVISORY COUNCIL MEETING

PUBLIC MEETING

VOLUME II

Barrow Inupiat Heritage Center
Barrow, Alaska
February 20, 2014
9:00 a.m.

COUNCIL MEMBERS PRESENT:

Harry Brower, Chair
Rosemary Ahtuangaruak - Telephonic
Gordon Brower
James Nageak
Robert Shears

Regional Council Coordinator, Eva Patton

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P R O C E E D I N G S

(Barrow, Alaska - 2/20/2014)

(On record)

CHAIRMAN BROWER: We'll bring the Council meeting back to order after the recess. Today is February 26th -- no.

REPORTER: 20th.

CHAIRMAN BROWER: Is it 19 or 20, Tina?

REPORTER: The 20th.

MS. PATTON: 20.

CHAIRMAN BROWER: 20. Okay, thank you. February 20. It's 9:21 by this clock. At this time I'd like to call the meeting back to order. Again, we have a listening audience and we have participants through the teleconference. Maybe at this time I'd like to have the folks on the teleconference to introduce themselves so we can at least identify who is all on this morning.

DR. FERGUSON: Yeah, this is Jayde Ferguson. I'm with Alaska Fish and Game, the fish pathology lab in Anchorage.

MS. INGLES: Good morning. I'm Palma Ingles with OSM in Anchorage.

MS. AHTUANGARUAK: Rosemary Ahtuangaruak, Barrow.

MR. SHARP: Good morning. This is Dan Sharp with Bureau of Land Management in Anchorage.

MR. BROOKS: Thank you, Mr. Chair. Good morning everyone. This is Jeff Brooks in the Office of Subsistence Management in Anchorage.

MS. OKADA: Good morning. This is Marcy Okada with National Park Service in Fairbanks.

CHAIRMAN BROWER: I guess if that's everyone, thank you for your introductions. I've heard Katie, Rosemary, Palmer, Sam, Jeff, Marcy.

REPORTER: Dan.

CHAIRMAN BROWER: And Stan?

REPORTER: Dan.

CHAIRMAN BROWER: Stan?

REPORTER: Dan.

CHAIRMAN BROWER: S-T-A-N?

REPORTER: D-A-N.

CHAIRMAN BROWER: Dan, D-A-N. I'm sorry. I heard Sam. My ears are ringing. I'm sorry if I heard wrong. Dan, D-A-N. Okay. Thank you again. We have our following agenda, but James Nageak (in Inupiaq). I'm going to ask James to give an invocation this morning. It's something that we practice here, so I'll follow along with that.

(Invocation)

CHAIRMAN BROWER: Thank you, James. Following our agenda this morning -- maybe before I do that and maybe just for the benefit of the folks that are on teleconference we can go through and introduce ourselves as to who is present here.

We'll start with Bob.

MR. SHEARS: Good morning. Bob Shears.

MR. NAGEAK: James Nageak from Anaktuvuk.

MR. G. BROWER: Gordon Brower, Barrow, Alaska, Chipp River area.

CHAIRMAN BROWER: Thank you, Gordon. Harry Brower from Barrow in Browerville.

(Laughter)

CHAIRMAN BROWER: Eva.

MS. PATTON: Good morning. Eva Patton, Council coordinator, OSM.

MR. MATHEWS: Vince Mathews with Arctic, Yukon Flats and Kanuti Refuges.

DR. JENKINS: Good morning. David Jenkins with OSM.

DR. YOKEL: Good morning. Dave Yokel with BLM.

PAT PETRIVELLI: Pat Petrivelli with BIA, Anchorage.

MR. LASSUY: Denny Lassuy, North Slope Science Initiative.

MR. SCANLON: Brendan Scanlon, Alaska Department of Fish and Game, Sport Fish Division.

MR. LEAVITT: Isaac Leavitt, North Slope Borough, Department of Wildlife.

MR. ADAMS: Good morning. Billy Adams, North Slope Borough, Wildlife Department.

CHAIRMAN BROWER: Thank you, Billy. Thank you, everyone. I thank you all for taking your time and spending it with us here with the North Slope Regional Advisory Council meeting. We did hear from Denny during the evening yesterday regarding the North Slope Science Initiative. We'll start with -- is it Brandon?

MS. PATTON: Mr. Chair. This morning the first presentation we have is from Jayde Ferguson on the whitefish pathology and he's online.

CHAIRMAN BROWER: All right. Yeah, I'm just looking too far up on top of the agenda. The written information here is Thursday 9:00 a.m., Floyd Hoyt fish pathology report for Nuiqsut.

MR. G. BROWER: Is that new business?

CHAIRMAN BROWER: That's under our part of the report in regard to fisheries. The name again?

MS. PATTON: Jayde Ferguson.

CHAIRMAN BROWER: Jayde Ferguson.

MS. PATTON: From the ADF&G fish pathology lab.

CHAIRMAN BROWER: Okay. Jayde, are you on?

DR. FERGUSON: Yes, sir.

CHAIRMAN BROWER: So I'll give you the floor to provide your presentation.

DR. FERGUSON: Okay. Thank you. I hope everybody can hear me all right. I'm Jayde Ferguson with Fish and Game, the fish pathology lab. I'm the fish pathologist. I'm just going to go over an overview regarding a diagnostic case involving broad whitefish from Nuiqsut area that we had sent out a little while ago. I've provided a copy of this overview to the Council and other folks there in Barrow. I'll just start with a background here. We'd received reports about broad whitefish from the Colville River having a patchy fungal-like mass on their exterior. There's no known estimate on the number of fish that were affected in the catch and there was no summary of reported observations that was provided.

The first confirmed report was from fish caught on October 12th, 2013 and there were three fish that were submitted to the North Slope Borough. Subsequently our lab received five fresh and partially frozen fish that were caught on the 15th of October and also fixed tissues from six fish that were caught on the 18th of that month. There was no mortality reported. These affected fish were found in gillnets along with apparently healthy fish.

There was some concern that radiation from the Japanese disaster could be involved, so the North Slope biologist measured ionizing radiation in fish with a Geiger-Mueller counter and found that there was no elevated levels there.

So our lab performed a necropsy. What we found was all the fish appeared to be in spawning or post-spawning condition. Some of the females had egg reabsorption, meaning the eggs that didn't spawn were breaking down and being reabsorbed in the body. The lesion was characterized as being small to large, brown to greenish cottony fungal growth on the exterior,

mostly the head and snout region. For you folks that have a copy of the overview, you can see in the picture that I provided what that looked like.

Some of the lesions had a reddened area and the skin appeared to be ulcerated. Looking more closely at it under a microscope, we found fungal-like material that was branched, had no divisions and had a club spore forming structure and this corresponds with Saprolegnia, which is a common water mold. We also saw some diatoms, which are a single cell plant made out of glass-like material and some bacteria.

There were no net marks -- or there were -- sorry, there were net marks on several fish. There was no food in the GI track and there was no fat or very little fat internally, but other than that they looked normal internally.

Then we performed some specific tests looking for infections. We did bacteriology, which is a way of detecting bacteria and it detects any type of bacteria. It's not specific for any one type. We tested two fish. We used kidney tissue because that's a blood-filtering organ that's good to look out for an internal infection. What we found was a negative result.

We also performed a test called a fluorescent antibody test. This looks for specific bacteria of interest. The three bacteria we were interested in are common pathogens in Alaska and these are Aeromonas salmonicida, Yersinia ruckeri Types I and II. I won't go into detail of how the test worked, but just basically a probe fluoresces if the bacteria is present when kidney was tested and the result was negative.

We also performed mycology to grow the fungal-like material and to identify it. This again can detect many different types of fungus, not specific. The external lesions that were tested of the six fish, half of those fungus grew on our test and all of them appeared to have the same type of growth. This is characterized as a large amount of white cottony growth that was branched rarely with divisions and produced a few spore-forming structures. This again corresponded to Saprolegnia, a water mold.

I also performed histopathology. This

is a way of looking at tissues under a microscope to determine what's changed in the tissue of diseased animals. I found a lot of post-mortem decomposition. All the internal organs appeared to be normal and the skin lesions contained fungal-like material that was branched and, again, all the same features that are consistent with Saprolegnia. I saw a few diatoms and bacteria as well.

And the last test we performed was virology and this is a way of testing for viruses. We used three different cell lines to allow to test for many different test viruses and one fish was tested we used kidney and spleen and I have on here that it's in progress, but as of yesterday this test was finalized. I'm happy to report that this was also a negative result on this test.

So, in conclusion, the lesion was caused by a common water mold called Saprolegnia. There are no other pathogens associated with the lesion. This is not an exotic organism to the North Slope and surrounding area. Our earliest record is from Barrow, Alaska in 1980 from a whitefish and this dates back to when our lab was created and started testing fish. Other locations include Noatak, Wulik River, Kotzebue, Selawik, Nome, Elim and Koyukuk and these all involved salmonids.

Saprolegnia is generally regarded as an opportunistic pathogen because it's ever present in the environment and it is a Saprophyte that's important for decomposing material in the environment; however, it can act as a pathogen particularly in stressed fish because their immune system is depressed. Some common stressors for fish becoming infected with Saprolegnia would include sexual maturation. This actually causes a physiological change in the skin and the mucus of the fish. Any sort of physical activity that occurs on the spawning beds, trauma from predation and fishing gear, changes in water quality and temperature, other pathogens and parasites and pollution can all be important stressors and basically anything that could compromise the mucus slime coat of the fish.

So, in this case, fish were in spawning condition and had evidence of physical trauma marks. These are known causes for this infection. Water quality data is lacking in this river, so it's difficult to speculate there on what could be applied.

There was concern about pollution, so water samples were sent to a lab in Oregon and they came back negative for metals and hydrocarbons.

So there's a growing concern that this mold is exotic, which it's not, and that it could lead to a food shortage at a subsistence level and it's increased occurrence could be due to climate change, industrial development or other anthropogenic activities. So, in order to try and answer some of those questions, a very large interdisciplinary project would need to be instituted and this would require some baseline data and some long-term monitoring.

Some water quality measurements that would be important to look at here would be organic road because Saprolegnia grows on organic material. So things like total organic carbon or TOC could be looked at as well as BOD, which is biochemical oxygen demand, things like nitrite and ammonia could be measured as well because those would be important stressors to fish. Water flow could be important because of decreased water flow would potentially allow more contact with the fish and the mold. Dissolved oxygen, again that would be a stress factor if there's low DO.

And temperature. For temperature, Saprolegnia actually grows at a pretty broad range of temperatures, anywhere from about 3 degrees to 33 degrees Celsius. I did find a report that had an optimal growth of about 22 to 28 degrees Celsius and that was an isolate from British Columbia. So it's likely that temperature -- the importance of temperature as a stressor of fish, so any temperature that would be out of the optimal range of the fish, if it's too high, it could create stress, if it's too low, the fish immune system actually slows down and it could be infected more easily.

I couldn't find a whole lot of information on broad whitefish what their temperature optimum range is, but I did find for European whitefish they had an optimum range of 8 to 15 degrees Celsius and a lethal threshold or stressful threshold of about 20 to 25 Celsius. It's also important to point out that fish would seek out refugia, which is basically they would find areas in the watershed that would be cooler if that's optimum habitat for them to be in.

One other thing to consider here would be that it's important to try and separate out spawning as the cause versus water quality. So we may be looking at juveniles or immature fish or different time of year might be a way to try and separate that out. Then just to give us a starting point, a suggestion would be to conduct a systematic recording of how many fish are affected in the catch, have an established reporting system with the same methods and a way of confirming it's presence. So one idea would be a form could be created and filled out for each catch and then if the lesion is present, it could be photographed and sent to North Slope biologists for confirmation.

Then just real briefly before I open it up to any questions I wanted to touch on just for a minute a totally unrelated fungal case that is of interest to our lab because there's not a lot known about it and it's distinctly different from the Saprolegnia in that it's very black and large, so it looks quite different. As I mentioned before, there's not a lot known. With Saprolegnia, that's pretty well studied. It's probably been looked at or researched for the last 100 to 150 years, but there's not a lot out in the literature on this black fungus.

We've received reports of this occurring in Saffron cod and we've actually received Saffron cod and studied some material and they all come from the Norton Sound area since 2005, is when the reports started, and that would include Unalakleet, Nome, Snake River and most recently the Shaktoolik River. So far we've isolated three species of fungus that all belong to the same group of fungus. As I mentioned before, it has a large black lesion and those that have a copy of the overview can see what it looks like there.

Internally the fish appear to be completely normal. The lesion is just contained to the outside of the fish. There's just not a lot known about transmission or anything else, so we're wanting to get a better idea of what's going on there. So if folks do come across this, they could contact our lab. The best would be to try and get a photograph and that way we could see if it looks like it's actually the black fungus of interest here and then it would be good to send it in if it's warranted.

I've listed my phone number there.

It's 267-2394 as well as my email address, which is jayde.ferguson@alaska.gov and, again, photos would be very helpful in determining if it should be sent in. We would actually need fresh material, not frozen, which I understand can be difficult, but Fish & Game is actually willing to pay for the shipping costs if we could get some good material to study.

So, with that, I'll open up to any questions.

CHAIRMAN BROWER: Any questions to Jayde.

MR. SHEARS: Mr. Chair.

CHAIRMAN BROWER: Robert.

MR. SHEARS: Good morning, Jayde. Bob Shears from Wainwright. A good presentation. We've also heard some similar information from Raphaela, our expert scientist at Wildlife Department, and others, but this broke it down even further. I'm curious about Saprolegnia. The mold spores, how long can they exist in the environment in a frozen state and still be able to propagate when brought back into a thawed condition?

DR. FERGUSON: You know, I don't know the exact amount of time. I mean I guess what I would say is that in the aquatic environment they're not going to be completely frozen, you know, down in their substrate in the water column and whatnot. Once they come outside of the water, you know, in the air they could freeze and until -- I'm not real sure how long they're viable after that, but certainly within the environment that the fish are in and that water media that they're swimming in they would be viable because they wouldn't be frozen.

MR. SHEARS: Yeah, exactly. What I'm noticing in Wainwright over the last decade is the water coming -- the water condition in the tributaries upstream around the places where we subsist, there's always a light brown color. It had a lot of dissolved carbon in it. Tundra Tea they called it. It was completely edible, no problem with that, but since the accelerated warming we're seeing an active layer just above the permafrost digging into the ground. You know, you used to be able to -- you know, in late August you used to be able to dig down about 12 inches

before you hit the permafrost layer. Now you can dig down three feet.

This area that formerly used to be permanently frozen is now in the active zone and it's dissolving incredible amounts of material into the water. There are little feeder streams and tributaries far up the rivers. You can't call it Tundra Tea anymore. It's more like tundra espresso. You can't even see through it.

There's a lot of dissolved material that's coming out of the tundra that hasn't been dissolved for centuries. I'm just wondering.....

DR. FERGUSON: Yeah, that's a lot of material that things could feed off of, including the mold.

MR. SHEARS: Exactly. You can smell it and it's fresh smelling, you know, a fresh-smelling rot like wet hay. I'm just curious if new pathogens or new organisms are being introduced into the environment that the fish haven't seen or had to respond to genetically for thousands of years. Is there any way to look at this Saprolegnia to develop a DNA fingerprint of it to compare against.....

DR. FERGUSON: Actually there was a DNA test run on this. It wasn't by our lab. I guess I forgot to mention that. It came back as being, you know, genetically the same as every isolate that's been tested from fish across the world basically. It is pretty well distributed mold. It's quite common in all kinds of environments, so I don't think that new pathogens are coming in through that frozen material thawing out and feeding into the rivers. What could happen is, you know, it's releasing a lot more nutrients that anything that's present might, you know, reproduce and grow more quickly, but I don't see how anything new could come out of the earth in that location.

MR. SHEARS: Okay. Thank you. That's all I had, Mr. Chair.

CHAIRMAN BROWER: Thank you, Robert. Gordon.

MR. G. BROWER: Mr. Chairman, Gordon

Brower for the record. You know, I fish quite a bit for our community with these species of broad whitefish and used to fish quite a bit for tomcods along our beaches here, but that hasn't been available for maybe 20 years it seems like for the tomcods along our beach. We have to go towards (indiscernible) to do that nowadays. But my concern is about the mold itself. It looks like there was some case of that in the 1980s, somewhere around there, and then now we've got this in the Colville River area. Is this particular mold found in the lakes? Is it prevalent in lakes up here in the arctic?

The same type of concern that Mr. Shears just expressed about active layers of the tundra increasing, making lakes more susceptible to drain even these lakes that are not suitable for drinking water. There's some lakes in my area at my camp that I don't use for drinking water because you're going to get sick from those. It's not a good lake, but there are other lakes that we look at that we differentiate those lakes as a water source for our camps. I'm wondering if those have an impact.

The other concern I have is transmission. Let's say an ice road was being built across several rivers during the peak winter season. The industry likes to pick lakes that don't have fish because there's less regulatory -- you don't have to adhere to as much regulatory requirements, but if there's a lake with fish you're going to do a lot more different things. Measurements, pH levels and discover the life sustainability of that lake and the amount that you can withdraw to protect that life sustainability. You don't have to really do that with a lake that has no fish in it. I'm wondering if there was selecting the primary use for ice roads could be transmitting some of these types of sicknesses around through ice roads and putting them to other areas. I just want your opinion on that.

DR. FERGUSON: Yeah, I can touch on that. I guess the first thing I'd mention is that this Saprolegnia mold is definitely a freshwater species or living lakes and rivers. We're not finding in your coastal ocean area. It may be brackish, but it's certainly not a marine organism. With that said, I mean it is quite common in pretty much any body of water, so I don't really see it being transmissioned between a smaller, kind of local -- you know, that

geographic scale where it's going from one pond or lake to another. It's probably present in both. The organism itself, I mean it is a saprophyte. That's it's primary -- I mean that's why it's named that. It decomposes material, so it's going to be anywhere there's organic material because it has to be broken down in nature.

So I really don't think that there would be a concern for transmission of exotic introduced mold. It's everywhere essentially. But if there's an increase in nutrients for the mold, you might see higher numbers of it. Even though it's already present, you know, maybe it's growing faster because it's got more nutrients from, you know, maybe that material that's thawed out, you know, all the plants in the tundra that are then going into the soil that are going into the water. They have to be broken down and Saprolegnia is going to do that. If there's a lot of it, then it's going to grow and grow and grow to break down all that material.

Did that make sense?

MR. G. BROWER: Well, to the limited understanding that I can listen to that part.

(Laughter)

DR. FERGUSON: Yeah.

MR. G. BROWER: But, yeah, it does, it does make sense. There was a concern that we thought there could be some connection, but if it's prevalent all over the North Slope.....

DR. FERGUSON: Yeah. I mean it's common, but the numbers, you know, I mean that might be something important to look at. If the study were to go forward, you'd want to look at organic roads in these systems that are of concern. It's kind of like an indirect link basically. The mold is there, but there's several things that can affect the amount of it and whatnot.

MR. G. BROWER: Just one follow up, Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: This is something I expressed yesterday and since you're a fish person and I think there's some other fish person here as well, concerns with climate change and around very important fish habitat near Barrow, the Tusikvoak Lake, I'm not sure if you're familiar with that one, but there's the Sungovoak Lake and then there's the Tusikvoak Lake.

To my understanding from elders that passed already, maybe some are still alive today, Sungovoak has developed a creek, more like a river nowadays, which it never existed but was created by LVTs, like landing craft used by the Navy, that compacted the shoreline of the Sungovoak Lake and created an easy flow for the lake to go out. It's how an accelerated -- before all this climate change issues were around. That's what my folks talked about back in them days.

The government was doing anything and everything, including plowing the tundra. But that was a consequence of a manmade happening for Sungovoak is my understanding. Then the water levels come down for the lake, equally having nature do its own course of action about climate change. These lakes that are habitat known for resources for many, many, maybe thousands of years now. They really should be monitored, I think.

Tusikvoak I'm hearing from different hunters, fishermen, that the catch rate in that lake has substantially dropped. It's a major resource lake. I'm hearing that from many different fishermen that say, well, they pull their nets, they caught only one in two weeks. We pulled our nets because we only caught one in maybe, you know, three or four weeks period of time, but noticing that the water level was kind of low over there as well.

Anyway, I just thought maybe that could be something looked at, monitored, for fish people. Maybe that's an area where this mold might strike because, like you said, oxygen and these kind of things, when it's the dead of winter, the amount of freeze, it comes down. Potentially the fish only have maybe two or three feet of water underneath to swim around in and make it very concerning. Anyway, just thought I'd bring that up since there's fish people.

DR. FERGUSON: Yeah, it's good to

monitor. It definitely would be good to monitor habitats in those areas of interest.

MR. G. BROWER: Thank you.

CHAIRMAN BROWER: Thank you, Gordon.

MS. AHTUANGARUAK: This is Rosemary and I have a couple questions. Is there things that we could consider to help us intercept this in different ways? Are we to be worried about this getting transferred into our fishing gear and creating a problem with receding when we're doing our activities? Are there concerns for ways that we can help make recommendations on activities around our nearshore environment that may be contributing to this, such as water discharges from some of these plants that are nearby that may be affecting the viability of the water and the fish coming through these areas during our fishing season? Are any of those kinds of things things that we could do?

DR. FERGUSON: I think the first part of that with fishing gear transmitting from one body of water to another, that's not really a concern because the mold is in both, you know. The other part that you touched on about discharge and things, you know, other activities, I guess, that can change habitat, you know, water discharge and whatnot, those wouldn't be something -- I guess maybe I don't understand this real well, but the folks that are doing the fishing and whatnot, my understanding is that's maybe, you know, companies or something that's discharging things in the water different and so the water quality that could be affected by different activities, that might be important to look at.

So we just get back to basically, you know, anything that could stress the fish. So the mold comes into contact with the fish all the time and fish have a real good way of dealing with that with their slime on the outside of their body, but when they get stressed or they're spawning, they're more susceptible to actually getting infected. If they're stressed all the time, then they're more likely to get that infection. If the habitat and the water quality is within their optimum range to live in, then they're not going to be stressed and they're going to be able to just withstand the presence of the mold.

So, yeah, I mean looking at things like pollution in terms of organic or like a lot of areas like an agricultural area where there's a lot of nitrates and fertilizer getting into the waterways, that would be linked to, you know, susceptibility of those fish getting an infection if they got that kind of stuff going in, but in terms of like just fishing gear, I don't see that as being, you know, anything that's going to stress the fish or ruin the water quality.

MS. AHTUANGARUAK: Thanks for all this information. It's very helpful. There needs to be a process in which we get some communications out through the radio to help educate our people and to help encourage them to participate with this type of collection of fish that will help us assess what's going on.

Thank you.

DR. FERGUSON: Yeah, definitely.

CHAIRMAN BROWER: James and then Robert. Did you have another question or comment?

MR. SHEARS: No, he just answered it.

CHAIRMAN BROWER: Okay. James.

MR. NAGEAK: This is James Nageak for your record from Anaktuvuk Pass. I was reading the report here. I was wondering what's the term here luxurious growth of white cottony aerial mycelia. What does that mean?

DR. FERGUSON: Yeah. So in my overview I tried to use terms that were not as technical, you know, like I did in the report. Basically that means luxurious is just a way of describing there was a lot of growth and then the mycelia is the fungus structures. It's the branched structures of the mold. It's just a technical term used in the discipline, which goes in all our reports. If you look over the overview that I put together for my talk, that breaks it down into what those words -- you know, common descriptions of what that is. When I mentioned what it looked like under the microscope, I mentioned that it was branched, it didn't have divisions, you know, it had these round structures that form spores. So that's

what that means, you know. It's a lot of growth of white fungus basically.

MR. NAGEAK: Thank you. Another thought I had about the affect of the hydrology of the area and what affect does melting permafrost have on the hydrology of the area. You know, I'm from Anaktuvuk Pass and that's 2,200 feet up in the air and it's higher than North Slope, so there's a flow coming from our area through the Anaktuvuk River into the Colville and then on into the Arctic Ocean. I wonder whether there has ever been any study on how that melting permafrost is affecting the hydrology system.

DR. FERGUSON: Yeah, I don't know of any study, you know, particularly for that region, but in general terms, I mean I guess you'd maybe have to talk to a hydrologist to see exactly what can occur. What I would kind of take a stab here at answering would be -- it kind of gets back to what the other gentleman had mentioned where this melting occurs and you get erosion basically off your banks and you're getting a lot of soil and plant material that's in that soil dumping in the river. I would think that would affect the hydrology and habitat. It's putting more organic material in there that has to be broken down. It's causing turbidity, you know, so that it's not as clear water, so fish won't be able to see as well and things like that.

We certainly -- you know, those were interesting questions and it's certainly a larger thing than what our lab can answer and get at. But, yeah, I mean that would be good to get some hydrology folks in there looking at what's happening with all this discharge of material that's eroding off the banks and how that's affecting things, you know, for fish in particular.

MR. NAGEAK: I think that there would be a stressful time for a fish to all of a sudden take a gulp and it's different than what it used to be, you know, because.....

DR. FERGUSON: Yeah. There's a lot of material in the water there. It's turbid and they can't see and it's got soil and, you know, like you said there, ingesting some of that, it could be stressful definitely and it certainly would change the water quality parameters.

MR. NAGEAK: Yeah, I'm curious about that. We do get a lot of fish that go up the river, Colville and into Anaktuvuk and the Chandalar River. We get the arctic char and the lake trouts there at the lake. When the fish are running in the summertime, you know, the arctic char and Dolly Varden, we get those in the summertime, so there are concerns and how the melting -- the longer summer seasons that we've been having. You know, you've never heard of Anaktuvuk Pass having to be about 85 to 90 degrees in the summertime.

We've seen some changes in the tundra or, you know, we'd be going along on our trail in the summertime and all of a sudden there's a big drop because the tundra had dropped maybe four or five feet down. There's something happening underneath there that made that thing to drop.

Thank you.

DR. FERGUSON: Yeah. Yeah, habitat would be definitely something to get those folks involved in.

CHAIRMAN BROWER: Robert, you said the question you were going to ask was already brought forward?

MR. SHEARS: Not really. Answered for myself, but for the public let me repeat it. I hear Jayde saying Saprolegnia is not a cause but a symptom of stress on the fish. You know, as he is looking at trying to look at other conditions that could be causing the stress, he's finding out that he has -- there's a lack of information, a lack of baseline environmental knowledge about the river system. We don't have water quality samples that we can draw on for testing, you know, stored anywhere or baseline assessments. You know, we don't have old tissue pathology stored. It's just indicative to me of the greater problem in regards to the environmental baseline, our knowledge, the science side of our knowledge, how limited it is. That's all.

DR. FERGUSON: Yeah, that's a great point and that's -- I mean not just in this case, but all kinds of things that tie into that. So it would be great to get a more robust monitoring program because it's related to all kinds of different things. In this

particular case, it's really hard to tease things out because I mean not only the lack of water quality data, but even if there was there's still this other factor that's important and that's their spawning condition. I mean this can happen to just a normal spawning fish. It's part of the way their bodies break down when they're spawning. It's actually a physiological change or hormones. In particular, males seem to be more affected where they don't produce as much mucus and they become thus more susceptible to any organism that's in the environment that can take advantage of that exposed skin, you know.

So it's really hard with spawning fish to determine, you know, which is it. Was it just because of normal spawning or is there environment stress there due to water quality that's making it even, you know, a higher prevalence of these fish getting affected or whatever. You'd have to have fish that are not sexually mature and expose them and see, you know, if it can be done, if it causes the infection in the absence of spawning conditions.

CHAIRMAN BROWER: Did that help, Bob?

MR. SHEARS: Yes. Thank you.

CHAIRMAN BROWER: We have one of our participants here wanting to comment and raise some questions, Jayde. Taqulik.

MS. HEPA: Thank you, Mr. Chair. Members of the RAC. It's an honor to be here. Taqulik Hepa, director of the Department of Wildlife Management for the North Slope Borough. A very good presentation and good discussion. I just wanted to add what the North Slope Borough, Department of Wildlife Management has in regards to continued monitoring with this specific concern that was brought to our attention from the residents of Nuiqsut.

So we are going to continue to monitor the situation. Right now we have plans to travel to Nuiqsut the next several weeks to collect samples from burbot just to monitor if the mold has transferred from species to species and we will work with local fishermen to collect samples. During the break-up time we also would like to -- we're planning to have a presence in Nuiqsut to see if there was any die-off of fish during the break-up time.

In the fall time, we will have ongoing monitoring, collecting samples from fish that are taken by local fishermen. I just wanted to share that with you that we do have a monitoring plan in place. Dr. Raphaela Stimmelmayr and Todd Sformo are taking the lead from our department as well as Billy Adams.

CHAIRMAN BROWER: Todd, did you want to add onto that? Come on up to the mic.

MR. SFORMO: Todd Sformo. I work for Taqulik. I just wanted to make a few other comments. As Taqulik mentioned, we do have a monitoring plan for the coming year and we also will be taking water samples and looking specifically for this mold now that we do have the genetic level identification of this mold. So we've sent off samples and it's been positively identified in this genus.

It can persist in the environment for a long time depending on the state of reproduction, so it has a real complicated life cycle. It goes through a sexual and the asexual reproduction and I believe it's the sexual reproductive stage that can be very cold hardy, salt tolerant, heat tolerant. So it really does depend on the state of reproduction of when the mold is in the environment that the fish may encounter it.

There is a lake near the Nigliq Channel that was also fished at the same time that the fish mold was being found in the channel and that lake was -- the fish were free of mold at least at that time of the year. So obviously we'll be looking at that again and that was just very close to those areas.

ABR has been out in that area working on the kaaktak fishery for a number of years, so they do have water samples and analyses of the water in that area for the last 10, maybe 15 years. Unfortunately they do the sampling during that fishery and it tends to be right after the aanaakliq fishing. It still is a resource and the water measurements are nitrate, nitrite, ammonia levels, levels of organic material in the water. So we do have a little bit of information to go on, so that is a positive.

The last point was just to clarify. I don't think a number of people thought that this mold was necessarily something exotic. I think the main concern was that if this mold is really present in the

environment as Jayde has mentioned and it's been reported a lot. I mean it's everywhere from here all the way to Antarctica. If it's prevalent in the environment, I think the main question wasn't why does it seem exotic as much as it is why is the mold coming up being on fish at this point. So we have very few records in the North Slope and Jayde mentioned the one in the Inaru River in the 1980s, so that was just one fish with that mold that we had recorded up until this point.

So I just wanted to emphasize I don't think many people thought it was necessarily an exotic mold as much as it was why is it occurring now if it's so prevalent in the environment. Thanks.

MR. G. BROWER: I have a question for Todd too.

CHAIRMAN BROWER: Gordon.

DR. FERGUSON: Yeah, that's a good point probably. I guess just one thing I'd add to that and it sort of gets back to monitoring as well is even though there haven't been a lot of reports in the past maybe nobody's been looking for it and also, you know, if it's incidently found in catches or whatever, maybe it's not reported systematically, you know. So I mean getting all those reports from various groups of people and compiling that is important, you know, so there's that.

I'd still get back to the time of year it's occurring is in the spawning season, which is extremely important. I can actually provide papers on that. They've done studies where they'll do spawning maturation in fish in a controlled environment and they'll develop the disease. You know, they can take fish that are sexually immature juveniles, inject them with hormones and they'll get the infection, so that is definitely one cause.

It's hard to separate that out from anything else that's changed in the environment, so monitoring is definitely important.

CHAIRMAN BROWER: Thank you, Jayde. Gordon.

MR. G. BROWER: A few years ago --

well, it's quite a while, there was age studies on the fish in the Ikpikpuk area. I think Craig George was part of that maybe and also aging and the fish were long lived. They didn't die after they spawned, but they were probably stressed after they spawned as well. But I'm wondering if any of these fish -- you know, what their life stage is when they got the mold. Is it in all age brackets that you're seeing with the ones that are currently caught or is this something that this is a 42-year-old fish, it's getting ready to die and it's just roaming around doing that? I'm just wondering if it's affecting different age factors of that fish.

MR. SFORMO: Billy and I, when we went to Nuiqsut, we measured a number of the fish that were caught that had the mold and that did not have the mold and the size of the fish didn't seem to matter at all. They were all basically the same. So you could have male and female and same size fish that had the mold and didn't have the mold.

We didn't find many small aanaakliq at all, but I don't know if that may be due to the size mesh, so we don't have very good information at the moment on younger and smaller aanaakliq and whether they have it or not. So that would be one of the things that Taqulik was talking about. When we'd go out next, we'd have a variable mesh size in order to catch the smaller broad whitefish as well as the larger to see if they do have the mold or not.

DR. FERGUSON: Yeah, that would be a good thing to look at and see if you could -- if you can even sample like juveniles, that would be really helpful. Because if we're seeing it in the juveniles, then that really does support, you know, some sort of environmental issue if they're not sexually mature. So when we go out in the spring looking for morts, you could look for young of the years or whatever.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: Just be careful when you put your size mesh because I put the wrong size mesh when I was fishing one time and, holy cow, there was like 400 fish of the smaller size, so you've got to be careful.

MR. SFORMO: Thanks.

CHAIRMAN BROWER: James.

MR. NAGEAK: On the sampling of the hydrology of the area, we had a big storm here in 1963 and it affected some of the lakes around the area One of them was at Nuwuk. Of course the scientists at that time wanted to find out what salinity factor was in those lakes after that big storm and I did the sampling for Dr. Durham. I don't know if you remember Dr. Durham back in the 1960s. So every month I'd go to Nuwuk and then I'd go to Teshekpuk Lake.

Bobby Fischer and I would get this little auger, hand-held auger, and we'd drill the hole on that big lake on the ice. The way that they let me do the sampling was that we had little vials that they had set up and every feet they would be -- and they had cork cover. When I'd get them down to the bottom of the lake, I would open them all at the same time and the sampling from the depth, different depths of the lake. That's the way they let me do the sampling. Of course I'd go back to the lab and see how the salinity difference was in each level. If you take the sampling at the top of the lake, the bottom part is a lot different. There's a different sampling down there.

I just wanted to make sure that when you do the sampling that different levels of the lake, you know, are just like in the big oceans, they're different layers. So I wanted to ask if in the sampling this type of sampling is happening.

Thank you.

MR. SFORMO: Yes. When Billy and I went out, we sampled right at the surface and at the bottom, so we had two water samples that we took at those two distinct locations in order just to see exactly what you said, what is the difference between the upper layer and the bottom layer of that river. So we definitely have done that and we're going to continue to do that.

We also did it for salinity too because at a certain time there is kind of a saltwater wedge that comes up the Colville River, so we were wondering if that saltwater had made it in the area where we were sampling and at that time it hadn't, so the bottom was the same as the top. There was really no salinity. It was fresh water at the time. There was no difference

in the other measurements of the water samples from the top to the bottom at that time.

But, yeah, I thank you and we'll continue to do that.

MR. NAGEAK: Thank you.

CHAIRMAN BROWER: Finally my turn. I've got to read out of my notebook. I've been taking notes, Todd and Jayde and Taqulik, I've got a whole list of questions.

(Laughter)

CHAIRMAN BROWER: No, I'm just kidding. Anyway, this is very informative and there's a lot of things that are just stirring up in my mind in terms of the amount of discussion and the monitoring and the information presented regarding the conditions that we're -- you know, the global climate change impacts that associate at different stages through the season. Summer being the most important one. The thawing of the permafrost, the recharge of the lakes not as adequate as it used to be because of our previous winter conditions that snow accumulation didn't occur as much as it used to and not recharging the lakes, which makes the lakes dry out in the sense that the water column is much lower within the lakes.

In regard to the life span of this fungal matter, there's questions in my mind in terms of how long does it persist on the fish once it's been -- seemed to attach itself to the fish. Does that kind of life span of that fish -- or through that life span of that fish, how long is that fungal matter going to be persistent or have it being -- not persistent, but being on that fish? Is it going to remain for the rest of its life now or is it at some point in time that fungal matter going to drop -- you know, lessening the amount in the area as to what you see in the picture.

There's a big effect in the area and then over the course of the winter the water quality may change. Nutrients that this fungal matter lives off of lessen and it condenses itself to a smaller portion or eventually eliminate itself. I don't know. Those are the things I'm trying to think about in terms of what we should be looking for in the oncoming season. We find this stuff during the, as it's been

mentioned, during the spawning season. It's not so prevalent during the summer months before the spawning. There may be some reports of those types of findings from other fishermen in different states.

In regards to mapping, you know, where these things are being found near the Colville or the community of Nuiqsut and in regard to mapping of that river system where were the most concentrated efforts being conducted in terms of monitoring this fish. Did it change as you get further away from a certain area or start from the community of Nuiqsut. If you're going further away from Nuiqsut, what's the fish along that river increased in numbers with the mold on it or did it lessen within the concentration in the ranges away from the community?

Those are the kind of things I'm just thinking about in my mind in terms of long-term monitoring because these fish are very important to our communities for food. We're looking for the health state of the fish that we would rather provide -- you know, be provided for food.

In regards to that mapping, you know, there's these incidents before and what accelerates that fungal matter in its life cycles. What accelerates this thing? I hear these different things through the report, Jayde, but I need to better understand what is it in the environment that it thrives off of?

You know, if there's these things that -- I'm cognizant about remembering there's the drilling fluid that happened near the Colville where the drilling fluids were being released into the subsurface, not knowing where they went, and could that be part of the acceleration of this fungal matter if it's concentrated near Nuiqsut? I don't know. It was something having to do with drilling underneath the subsurface for the pipe crossing.

So those things I have in my mind that I bring up and question. Could some of that be part of that? This fungal matter being persistent in the tundra and in the lakes and streams, it kind of dissipates in a sense that maybe it's not so much associated with this activity that occurred, but -- and other things happening.

So those are the kind of things I have in my mind I just keep wanting to learn more about and see what information comes out of these things. I look at this species as a food source for our people and it's not just along the Colville that the fish are present. There's the Ikpikpuk River, the Topagoruk River and the coastal areas and they go back out into the ocean and come back. The movement of that fish, you know, it's huge.

I mentioned to you, Todd, and others about when my grandmother used to tell me about these fish. She used to think that these were the same fish -- the fish got taken out in the Fish Creek River were the same fish that went up the Chipp and Ikpikpuk Rivers through the Smith Bay and Admiralty Bay. It has two accesses and including the fish in that Fish Creek, which is in that Harrison Bay, are the same fish. She used to think -- she used to tell me she used to think that these rivers meet up way up in the tundra someplace and the fish go in a circle. I never mentioned to her that they may be swimming back out into the ocean and coming back around at a different location, you know. It's just her thinking that the rivers met someplace up there and the fish went in a big circle in that sense. That's what she would be explaining to me.

The concern about when fish are at this stage and where this fungal is transmittable through fishing gear, if you harvest a bunch of fish that were sick like this and you continue to use that same net, is that net transmitting that fungal matter to the other fish? What kind of life span if the gillnet retains some of that fungal matter on the net itself? Is that a pathogen to transmit to other fish nets or other fish?

These kind of things just keep going through my mind as the presentation was going on. It just raises more concerns sometimes than need be. Again, you know, we have other situations that still are unanswered. This is something that I think we could continue monitoring in regards to our fisheries.

You know, within our Federal Subsistence Management Program, fisheries is part of our agenda topic and this is something that needs to be elevated in the sense that both the State and Federal agencies working together and help provide additional

information as to what's being done here. This is a lot of information that we're trying to work with, but the end result is are these fish going to be in a healthy state for our subsistence users to take for food. That's my biggest concern and I wanted to make that known.

You know, we raise all these questions, but at the end are these fish going to be in a healthy state or is this going to cause a big die-off of that species, not knowing how that fungal matter -- is it accelerating it on the fish over the course of winter or is it decreasing as winter sets in because of the conditions of the water, food, the food the fish is eating may be different from the time of food availability in the summer months.

I don't know. You know, these are the kind of questions I'm thinking in terms of what would it take to make that fungal matter disappear from the fish. You know, is there something that we could put in the water? If it's a concentrated area, what is it that we could put in that water column to lessen the availability or the impact to that fish along the Colville? I mean these are the kind of thoughts.

I mean because we talk about oil spill and dispersants for dispersing oil, but here's a real live fungal matter that we're dealing with in the river column on a species of fish that we utilize for food. If that same kind of thought could be brought on to help the conditions of the fish is something I'm looking to look forward to working with and through our Council and the science behind all this.

These are -- I mean, like I said, it's just there in my mind and in the sense that it just keeps revolving and raising more concern, maybe more ideas. I don't know. It just continues, you know, the discussion and more dialogue is needed. It's one of our -- I have to keep repeating. It's an important fish resource for our communities and when the community goes without that type of food source to supplement their dietary needs, it becomes a hardship. We've experienced that in each of our villages for different resources. When one gets impacted, the flag gets raised higher. That's just the thing I have to communicate to you in regard to this fish.

Thank you for being here, Taqulik and

Todd and Jayde. I'm not sure if there were other discussion points you would like to provide at this time.

DR. FERGUSON: Yeah. I mean I definitely appreciate all those points and we'd be happy to answer any of those questions. You guys feel free to contact us on any of these fish issues. I don't know if I can touch on everything that was mentioned there, but I guess certainly, you know, is a plan just put together on monitoring or whatever. Feel free to contact our lab or, you know, ideas or whatever.

CHAIRMAN BROWER: Thank you, Jayde. James.

MR. NAGEAK: Yeah, I forgot to mention that I did the sampling of the ice core that we got drilling the ice on the lake. I would cut the ice core into sections and melt the ice so that I could figure out how much salinity differences there were from the bottom of the ice and also on the top.

I also wanted to thank a new definition of what luxurious means.

Thank you.

(Laughter)

CHAIRMAN BROWER: Is that it, James?

MR. NAGEAK: Yeah.

CHAIRMAN BROWER: Thank you, everyone for -- Doreen, come on down. Again, Taqulik and Todd, thank you.

MS. LAMPE: Good morning, Mr. Chairman. Doreen Lampe for the record. I had mentioned yesterday that we're trying to create a hunter/gatherer commission and some of these concerns regarding the fish mold are quite alarming as a consumer of these fish. Basically we want to know if they re safe to eat and, if we do have this fungus fish, is it safe to feed that part to the dogs or how do we dispose of it without spreading the fungus? So we are concerned about the impacted fish in that region.

How can this Council help us to identify some impact funding for this type of problem that is starting with the fish? If it's the water source, you know, will it impact the migratory birds, will it impact the migrating caribou, the furbearing animals? We would like to find out basic consumption rates of, you know, how many can you eat, is it safe to eat, safe to give it to your dogs, how to dispose of it properly. So we've got quite a few concerns regarding some of these impacts that are occurring and how to get the impact aid that's needed for these impacts that we're feeling today.

Thank you.

CHAIRMAN BROWER: Thank you, Doreen.

DR. FERGUSON: I could try to answer a couple of those questions here. With the human health concern with Saprolegnia, it's not a human health concern. I guess it's sort of analogous -- I don't know how many people are familiar with ichthyophonus that's in the chinook on the Yukon River there, but it's really -- the fish doesn't look appetizing, you know, but it does not infect people. You know, you could cut off the affected parts, but there really isn't a human health concern here. It's just product quality, you know, sort of a deal.

MS. HEPA: Mr. Chair, if I can add to that.

CHAIRMAN BROWER: Yes, Taqulik.

MS. HEPA: Doreen, I thank you for the concerns that you did bring up and we did hear the exact concerns coming from the residents of Nuiqsut at the time it was happening. From the experts, such as the man on the phone and Raphaela, they did indicate to us that the fish were safe to consume by humans. The residents and the local people in our department did discuss that and we did have reservations and concern about eating sick -- or fish that have signs of mold or of the disease that we are talking about.

One thing that we did advise in the outreach materials that were sent out was to use your customary and traditional practices when you handle diseased or injured or sick animals. Basically over our time as we evolved our people have learned to

protect ourselves from sick animals. At least the way that I was raised is when you come upon a sick animal or an injured animal, most likely they're not good for consumption, so we do not eat those types of animals. In addition, just the way that we prepare our food, like aging it before you eat it raw, making sure that you cook it or dry it properly. So I think we have things in place from our customary and traditional practices.

CHAIRMAN BROWER: Thank you, Taqulik. Jayde, did you have another response to -- you said a couple. I heard one, so I wasn't sure if you were quite done with your responses.

DR. FERGUSON: Yeah. I mean I think I touched on most of that. Some of the stuff earlier I guess that was brought up I could go over briefly as well. I was just thinking here. One question was brought up on how long it stays on the fish. Fish are constantly being exposed to it and it's sloughed off through their mucus and controlled that way. Once the fungus takes hold and you see those large lesions that you see, you know, that's pretty advanced and it's likely those individual fish will eventually die as it progresses. They basically can't osmoregulate and the water is coming in through those ulcers. It's possible there's a small percentage of fish that can overcome that, but once it gets so far and widespread across the body like that, they're probably not going to survive. Most of them. So that would be the answer there.

With the monitoring, what would come in as important is how many of these fish are affected. I mean if only a handful, which is what we've seen so far, don't make it after spawning, you know, it might not have an impact at the population level, but if there's a large amount of fish that are affected, then that's a different thing. So that would be the answer there is that when it becomes really advanced, huge areas on the fish that are eroded like that, they probably won't make it.

The other question I guess I was going to touch on was any sort of treatment. Even though this is controlled in fish hatcheries with chemicals like Formalin and things like that, but I don't see that really being a practical or even legal way of controlling it in a wild environment because those are pretty harsh chemicals to be putting in the environment

to try and kill this mold infection in the handful of fish that are affected or whatever. So I don't see chemical treatment really being a viable solution.

The only thing I can think of is just some sort of habitat modification, I guess. I mean there are some projects out there that have tried to modify habitat to reduce disease or stress on fish. You know, dam removal, for example, in the Lower 48. They're removing several dams to improve habitat. So that might be more of, I guess, a realistic approach, I guess, some sort of modification of the habitat. Not knowing what's going on in the habitat it's hard to say what could be done, but if there's a lot of discharge of organic material, maybe there's a way to flush some of that out or hold back the bank. Again, you'd have to talk to like a hydrologist or habitat folks.

CHAIRMAN BROWER: All right. Thank you for sharing that, Jayde. I guess I'm maybe looking to maybe Doreen's question in regards to impact aid if you may know about something regarding impact aid. I didn't quite hear anything on that.

DR. FERGUSON: Oh, the human health?

CHAIRMAN BROWER: Doreen wasn't.....

DR. FERGUSON: I guess.....

CHAIRMAN BROWER: Go ahead, Jayde.

DR. FERGUSON: I guess I wasn't clear. So you're just wondering about the human health impact?

CHAIRMAN BROWER: Doreen is coming down and I'll give her an opportunity to comment.

DR. FERGUSON: Okay.

MS. LAMPE: Thank you, Mr. Chairman. Doreen Lampe for the record with Inupiat Community of the Arctic Slope. We're trying to create a hunter/gatherer commission and we're lacking some funding. If we're seeing our resources have this impact already, what type of impact aid is available for tribes to take advantage of this funding that is surely needed by a lot of the tribes out here that are barely operational with one or two staff at the most in some of the smaller villages. We do see impacts and we

do see these environmental impact statements and we see very little impact funds.

DR. FERGUSON: Unfortunately I don't have any answers on funding. We're a diagnostic lab, so I would definitely not be the appropriate person to ask on that. I guess maybe there's some folks on the Council that are -- well, I know Eva had spoke to me about this being a topic of interest to fund, so she would probably be the best person to ask on what's available in terms of funding.

CHAIRMAN BROWER: Eva, did you want to share some comments.

MS. PATTON: Sure.

CHAIRMAN BROWER: Thank you.

MS. PATTON: Mr. Chair and Council and Doreen. Thank you for your questions. I know we had received some calls from Nuiqsut and others as well seeking ways to do the type of monitoring that the Council has requested and talked about here. We will be providing an update next after this about the subsistence program, Fisheries Monitoring Program, and it's limited funds, but it's a very specific program to address subsistence fisheries concerns and there's a high emphasis on collaborative projects with tribes and communities or North Slope Borough. Karen will speak in more detail about those opportunities next.

There are some other sources of folks who do contaminants monitoring and address concerns for human health and I can follow up on both those leads with specific questions from the Council and the communities or your organization. Fish and Wildlife Service does have a contaminants lab based in Fairbanks. Their director, Angela Matz, has done some excellent subsistence fishery sampling with subsistence fishers in the Y-K Delta extensively looking at metals contaminants and that sort of thing. Things that would be of concern to human health. So I can follow up with that contaminants lab and see what sorts of opportunities there are there. I know in the past they've had joint funding between the State and the Feds to do this sort of broad scale sampling for subsistence foods. She did do caribou work also across the North Slope.

So that's -- they're a great resource. The other is the Alaska Native Health Consortium, Alaska Native Tribal Health Care Consortium, and they have excellent research staff with a big focus on subsistence foods, monitoring for contaminants and any human health concerns. Because it is the Tribal Health Care Consortium, a good focus, as Taqulik had mentioned, of looking at the local and traditional knowledge and making sure that it's really understood if there is a health concern, also the importance of the health of eating traditional foods, so they're very good about communications as well. I can follow up with them to see if there's some opportunity to make some connections there.

Thank you.

MS. LAMPE: Thank you, Mr. Chairman. My other concern I had was if this is habitat area source of contamination that is now seeing in the fish, is it going to affect other habitat users, such as the migratory birds or the migrating caribou or the furbearing creatures, if they did start drinking that water or human beings started utilizing that water when they're out camping. If it has been identified that it is a habitat contamination issue for those fish, will it contaminate other species. That is my other question I was trying to get across earlier.

Thank you, Mr. Chairman.

DR. FERGUSON: Oh, okay.

CHAIRMAN BROWER: Thank you, Doreen.

DR. FERGUSON: I can try to answer that. Sorry I didn't quite catch that earlier. So with impacts to other species, the non-fish species, marine mammals, birds and whatnot, specifically with the Saprolegnia mold, I guess it gets back to the human health concern. I mean it's not a human health pathogen and it wouldn't be one for other mammals. It grows in a range of, as I mentioned before, about 3 to 33 degree Celsius, so it doesn't grow, you know, at a warm-blooded temperature. So that would be one thing to keep in mind in terms of that concern.

In terms of any habitat changes that are linked to these fish getting a mold or developing the infection from the mold that's present, I guess not

knowing what those habitat changes are it's difficult to speculate on how that would affect birds and other, you know, species that utilize that habitat, not knowing what, you know, what contaminant or what water quality parameter is affected.

If it's a high organic road, that's just organic material in there, that shouldn't cause other terrestrial species to be affected because they don't live in the water full time. It could be some sort of pollution contaminant. That could be a problem for other animals. Without the information on the habitat itself, it's really difficult to answer a question like that. It was reassuring though that the pollutants that were tested came back negative, so there's no heavy metals or oil, you know, hydrocarbons, but other things should be tested for.

CHAIRMAN BROWER: Again, thank you, Jayde, for your responses. That's helpful and gives an idea of a way forward on some of these discussion points. We've had a fairly healthy discussion on this overview. I'm not sure if there's anymore questions or comments to any of the -- maybe even from the teleconference participants.

MS. AHTUANGARUAK: One more question.

CHAIRMAN BROWER: Yes, Rose.

MS. AHTUANGARUAK: There is a lot of nitrous oxide that's released into the air related to gas development processes. This is something that can accumulate over time to get to the stage where we're seeing an increased process of this abnormality.

DR. FERGUSON: Nitrous oxide, that was the compound you mentioned. So that's going up in the air. I suppose some air pollutants could enter into the water environment. One example I can think of is mercury. There's a lot of that produced by industrial plants, you know, far away even, like in the Lower 48, that is up in the air and it's moved around with air currants and it actually can settle into remote areas, like in Alaska. So that can happen with certain air pollutants. The example of mercury, I mean that was on the list of metals that were tested.

Nitrous oxide, I mean it's a gas, so it's going to be in the air. It could settle out in a

different form of nitrogen and that would be, you know, things that are -- it sounds like they're being looked at now, like ammonia and nitrite and nitrate. It sounds like that's being built into the monitoring to look for those nitrogen compounds.

MS. AHTUANGARUAK: Okay. Thank you.

MR. G. BROWER: The chairman is taking a small, little dialogue in the corner and I m going to take advantage of that.

(Laughter)

MR. G. BROWER: There was this little pamphlet from ICAS that was handed around and we talked about this a little bit yesterday. She mentioned it from ICAS, Doreen Lampe, Arctic Slope Hunter/Gatherer Commission. Also the question about looking for funding. There is a fund called Autaaqtuq Fund. It resides in the mayor s office. It's a fund that was created from multiple oil and gas companies. It's got several, I don't know, maybe 200,000, three, four, maybe about 500,000 in there to use for various different things. There's a mechanism how to access those funds. I think something like this there's a criteria that you have to fit into to qualify for its use. I would look into that. It's called Autaaqtuq Fund.

MS. LAMPE: Good morning, Gordon. Doreen Lampe. Thank you. We have utilized that in the past and we will consider funding that. Putting in an application for funding on that. We're still in the very early stages yet. We haven't actually created the commission. We're trying to pass a tribal sensitive areas map. We utilize some of the maps at GIS where they did provide the NPR-A villages and show community sensitive areas within the NPR-A. So we just did the survey this summer or last summer and we're hoping to contract someone with GIS capabilities to produce the information that was gathered to produce a similar map to the villages within NPR-A that have that map for their communities.

Thank you for that opportunity. Appreciate it.

CHAIRMAN BROWER: Thank you, Doreen. If there's no other comments or concerns to be voiced

regarding this agenda item, I thank you all that participated for this presentation.

DR. FERGUSON: Thank you.

CHAIRMAN BROWER: Help me with his name.

MS. PATTON: Jayde.

CHAIRMAN BROWER: Jayde, thank you for providing the information and sharing the handout. That's very informative. Again, we'll definitely keep in communications with concerns that are voiced by our community members.

DR. FERGUSON: Thank you, sir. Thank you everyone else as well for listening and we re happy to try and help out. We're here to help, so any questions feel free to contact us.

CHAIRMAN BROWER: Thank you. So at this time I'd like to entertain a 10 minute recess.

(Off record)

(On record)

CHAIRMAN BROWER: I'd like to call back to order again the North Slope Regional Advisory Council. We still have a few more agenda items yet to address. Briefing on Fisheries Resource Monitoring Program. We have.....

MS. HYER: Karen Hyer.

CHAIRMAN BROWER: .....Brendan -- help me with the last name. Brendan.....

MS. PATTON: Scanlon.

CHAIRMAN BROWER: .....Scanlon. Dolly Varden, char, FRMP Kaktovik. I'm not good with acronyms, but there's one right there. Fisheries Research Monitoring Program. Is that it?

MS. PATTON: Yes.

CHAIRMAN BROWER: I could give it my own title because I didn't see anything else. Karen.

MS. HYER: Good morning, Mr. Chairman, and Council members. For the record, I'm Karen Hyer with the Office of Subsistence Management. I just kind of wanted to highlight how I think we should approach this. I'm going to kind of give you an overview of the Fisheries Resource Monitoring Program and the process. We just finished that process, but we're going to start again in the fall.

I'm going to quickly go over that and take any questions you might have and then we're going to talk about the priority information needs because the research on the Fisheries Resource Monitoring Program is driven by the priority information needs, so I want your input for that.

Then we have a Partners for Fisheries Monitoring Program. Is Palma on the line this morning? I didn't -- okay. So I'll give you a little bit of an introduction and she can give you a very quick overview of it. We are going to be accepting proposals for that this fall. It's more for your information than anything else.

Then we have Brendan here and he's going to present a project that we just received funding through the last go round with the Fisheries Resource Monitoring Program, so he's going to introduce to you what he's going to be doing up in this area in the next couple years. So that's kind of how I envision approaching this.

So, without further ado, we'll just start. The FRMP information starts on Page 40. It just kind of generally lays out our Fisheries Resource Monitoring Program. What our Fisheries Resource Monitoring Program is is a program that administers money and we get money every year through the whole ANILCA -- they set aside some money for research for fisheries projects. The funded fisheries projects help us manage Federal subsistence fisheries. So that's the overlying issue we're trying to address, is fisheries resource monitoring.

As you're familiar, we have the state divided up into several regions and you can see down here on the bottom of Page 40 each region has a Council associated with it and each region will have priority information needs that we'll address through the next call.

So what happens is we have this money allocated and we put out a call and we ask for research projects that meet these needs. If they don't meet the needs that are expressed in the call, things that are expressed as a priority, then they have to justify why the project would be important to fund. So we fund projects that address the call, but we also fund projects that don't address the call if the investigators do a good job of describing why their research is important to Federal subsistence fisheries resource monitoring and management.

So we put this call out. So this coming November we'll put a call out and we'll ask for research proposals and then these proposals come in to our office and they're evaluated by a Technical Review Committee and the Technical Review Committee evaluates them on a couple criteria and you can see that criteria listed at the bottom on Page 41 where it says funding recommendations.

So the Technical Review Committee will evaluate these proposals for research on strategic priority, so they'll evaluate how they respond to what has been identified as a strategic priority in the region. Then the projects will be evaluated on technical merit to ensure that they're technically and scientifically sound. Then they'll also evaluate them on the ability of the researcher to complete the work. Finally they're evaluated on partnership and capacity building because part of the call for these research proposals, one of the criteria we ask for is that they include a partnership and capacity building component. So the Technical Review Committee will evaluate the proposals that are submitted on these criteria.

If you remember in the last meeting there were several projects this last go around that were submitted that had things like climate change in their title and that's been a really important issue up here and the Council brought up a question as to why we funded what we funded and why we didn't fund some of the other projects, which appear to be addressing important issues in this region. One of the reasons was that the projects weren't technically sound or they weren't developed enough.

Another issue that we stumbled across is that they hand-develop the capacity building component of the project and so if the project

addresses a strategic priority but doesn't address these other components, it probably will not get approved for funding through the Technical Review Committee. So that's the first cut. Once the Technical Review Committee weighs in on fund or do not fund, we go before the Councils with these and we ask the Councils to evaluate them on the priority to the region. They can't really evaluate the proposals on their technical and scientific merit because they don't see the proposals because they're proprietary, so they only see the overviews.

We go to the Councils and we ask them what really is important in your region and given these proposals which ones do you feel are important. Then after that we take your recommendation and the Technical Review Committee's recommendation and we take it to the InterAgency Staff Committee and those are the individuals that work with the Federal Board and they also don't see the actual proposals. They just see the Technical Review Committee's recommendation and your recommendation and they put those together and they make a recommendation also.

Those recommendations are grouped together and they go before the Federal Subsistence Board. The Board makes the final decision as to what to fund and what not to fund. That recommendation was just made recently here for the last go round of projects. Once that decision is made, and it was made last January for projects, then OSM, based on the funding that they have available will fund those projects.

Because our budget changes from year to year we never know exactly what we're going to be able to fund, but the idea is that we're collecting a group of projects that we're committing to for anywhere from two to four years of funding and we'll fund those projects and they'll go out to the field and they'll collect the information and then report back to us and also report back to the Councils about what they find.

We're just finishing up a funding cycle, so these projects will go in the water this year in 2014 and we won't have new projects again going into the water until 2016. But because the process is so long we'll start this fall 2014 talking about what our priority information needs are at the Council. We've already started a little bit talking about that and

we'll continue here in a few minutes.

That's the overall process that takes place for funding these projects. I'm going to pause now and address any questions you might have. Mr. Chairman.

CHAIRMAN BROWER: Thank you, Karen. Just for my review on Page 40, the square on the bottom of Page 40, Regional Advisory Council, funding regions, Northern, Yukon, Kuskokwim, Southeast, Southcentral and then the next column reads Regional Advisory Councils, North Slope, Northwest Arctic and Seward Pen, then on the Yukon it says Yukon-Kuskokwim Delta, Western Interior, Eastern Interior. Then again on the third one it goes Kuskokwim and then there's Western Interior and Yukon-Kuskokwim Delta. It seems to be duplicating regions in two different regions and I'm trying to understand why there's a clumping of these specific regions and duplication of number 2 and number 3. It seems to be that there's more funding availability for this area than anywhere else. Just my perception of what I'm seeing here. Is that how that's structured or is that something that's just an oversight in terms of how this table is presented?

MS. HYER: The Western Interior Regional Advisory Council deals with both the Kuskokwim and the Yukon because of the areas that Council covers. So they do make recommendations for both those rivers and there are -- we get a total amount of funding and we do allocate it by region, so they do get to weigh in on two regions. So, in that way, your evaluation is true. They do get to say what happens in two different regions at two different funding sources.

We have divided up the state through Board guidelines, so we divide up the money in a way that allows us to spread it throughout the state, but that is just a recommendation. So if we have an area where we have several really good projects and maybe they go above the guideline and we have another area where we don't have good projects, because it's just a guideline we'll fund the good projects.

Up until this year we've always had more funding than we have had good sound projects. This was the first year that we actually had to make a decision and we made that decision in the Kuskokwim area to not fund projects that we probably would have

funded if we'd had more money. So that's a little bit about how that works.

In Northern Region, you have North Slope, Northwest Arctic and Seward Peninsula all weigh in on projects, so we've funded a project in Northwest Arctic, we funded a project in Seward Peninsula and we funded another one in the North Slope area, but all three Councils get to weigh in on all those projects and that's just an artifact of the way our regions were created.

Our regions were created when we dealt with wildlife. We dealt with wildlife before we dealt with fish. Sometimes, from a fisheries perspective, they don't make a lot of sense, but they're an artifact of the program when it was first initiated and fish was not part of it.

CHAIRMAN BROWER: So if there was a recommendation to separate any of these, I'll speak to our Northern Region, because of just the last comment you just made because of the fisheries being somewhat different, there may be similarities, but they're different in our respective regions and the conditions that are presented are not the same as well. If there's a recommendation for separation of these areas, what steps would be needing to occur to make that type of recommendation? Why is it not advisable to do so? I'm just questioning because of just what I'm reading here.

I've known this to be in place for quite some time, but it's not -- you know, I kind of feel uncomfortable trying to make recommendations as to what kind of research priorities should be happening in Seward Peninsula or Northwest Arctic because they have their own interest and concerns within their respective region.

MS. HYER: Mr. Chairman. Your observations are correct and these regions apply to more than the Fisheries Resource Monitoring Program. So I think from an administrative perspective it might be a challenge to divide them up. What has happened in the past that seems to work quite well is that the Regional Advisory Councils in their specific areas have not commented on projects in other areas.

So when the Northwest Arctic Council

met, they didn't comment on projects that were in the North Slope area or in the Seward Peninsula. They only gave feedback to the projects that were within their own area because they expressed exactly what you expressed and they didn't feel comfortable. So that kind of is historically how things have been done up here.

CHAIRMAN BROWER: Any other questions or comments from Council members.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Gordon.

MS. AHTUANGARUAK: Um.....

MR. G. BROWER: Maybe Rosemary, I think, was going to say something. I'll let her go first.

CHAIRMAN BROWER: Rosemary, you can go first.

MS. AHTUANGARUAK: I was just going to say that I hope that we come up with a few variables. I think our attempt last year was too broad, but it was a few possibilities of things that we could consider and hopefully get funded over the process. I think we've had a lot of good discussion over this meeting and within our community that we should be able to come up with some good proposals.

Thank you.

CHAIRMAN BROWER: Thank you, Rosemary.

Gordon.

MR. G. BROWER: Just trying to understand a little bit better here. I'm not worried about the different regions that are mixed here. In terms of proposals, what is an example of a proposal to do monitoring? Also for existing monitoring in studies that have been done in terms of maybe population, escapement, other things like that, in other parts of Alaska, are those used for enforcement of those resources by other categories of users up to and including the subsistence user on how much is going to be available for harvesting or if these studies are

going to prohibit the take of the subsistence resources?

I've heard some good concerns out of Akiak in the Kuskokwim River where their nets either are confiscated or destroyed. Basically people going hungry in those areas because their subsistence resource is heavily impacted somewhere for maybe even centuries people have been fishing and fishing without detriment to the population. Maybe there's issues somewhere else. Maybe open ocean catching, what they call bycatch or ocean intercepts or something like that by other big fishing trawlers that do this stuff because all of these fish, especially like salmon, go out in the ocean to grow and then come back to spawn.

So I want to get a little bit more understanding on what are the consequences on proposals and these kinds of things.

MS. HYER: Mr. Chairman. Council members. We fund a wide array of projects throughout the state of Alaska. As you're well aware, issues are very different in different places. On the Kuskokwim and in the Copper River, those are two that come to mind, we fund -- on the Kuskokwim we fund weirs and on the Copper River we fund fishwheels and these are just two examples of many, many projects we fund.

As you know, there are issues with chinook salmon throughout the state of Alaska and we do help with this money to monitor fish escaping into the river. On the Kuskokwim, that goes into their escapement goals. They do on the Kuskokwim open and close all fisheries, from commercial fishery to subsistence fishery to sport fishery based on how many fish are in the river. So there are some projects in that region that help. On the Copper, for example, they had no idea how many chinook salmon were migrating up that river before we started doing research there.

We have helped the Native Village of Eyak through funding to establish an escapement project for chinook salmon on that river. It's the only escapement project for chinook on that whole river. There's a really important subsistence fishery there and that project has been running now for maybe 10 years and they actually discovered that there were more fish going up the river than they thought when they first started monitoring it. So they've been able to

monitor the kind of the ebb and the flow of the fish migrating up that river and they're seeing chinook salmon decline also on that river because we're seeing that statewide.

You're right, there are many things that play into the decline and simply getting fish up the river is just one component of it But those are two issues where we have funded escapement projects. One has actually helped for more liberal harvest in the river because there are actually more fish in the river than they thought and the other one has helped for a more conservative approach because they're very concerned about their chinook on the Kuskokwim and that's probably what you're hearing about.

No projects of that nature have happened up here. Projects up here have been more about studying populations. They've been very active in Northwest Arctic about getting an estimate on Kobuk and sheefish populations, but not to impose regulatory -- or not to impose regulations on those fisheries but to better understand climate change and things like that. The projects in the north have been of a different nature because the needs here are very different than in other places. So those are just some examples.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Continue, Gordon.

MR. G. BROWER: Yeah, it would just -- I hear about it because I trade for smoked salmon with muktuk and with folks over that way, especially through my brother-in-law, his brothers fish in Akiak, up and down that river, and their regulatory climate is very restrictive over there. I think it shouldn't be, especially for the tribes and those kind that have to survive on these things. I've heard of these concerns.

You're saying all fisheries get closed, the commercial, the sport, the personal use. Without the latter, you know. You close the commercial, you close the sport and personal use, but you conserve for the last part of the subsistence user at that point. It seems like the connection is -- maybe I'm not getting it right. Those that subsist in making their dried fish over there are heavily impacted. I don't

know if it stems -- if we were to ask for studies to population trends and declines or issues of that, if that kind of rule would come around for us.

MS. HYER: To date that hasn't been an issue in the north and there have been population studies, especially on the sheefish as I was talking about on the Kobuk and the Selawik. We just had a presentation and they're concerned about a slump on the Selawik and we just had a presentation from Randy Brown who has done some work there and I asked that specific question. I said, well, if this climate change is affecting this population and you see a decline in the population, because right now we don't monitor that harvest at all, I said would there be an issue and he said no because now we know enough from our research to know that the fish from both the Kobuk and the Selawik come down and we know that the Kobuk stock is very, very healthy, so that will probably be able to support the subsistence fishery if the Selawik sheefish population does decline. Right now we don't know that it will decline. We just know that it might possibly decline. That is what the research is looking into. So, at this point, because of the nature of the fisheries up here, there haven't been any management restrictions

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: Sitting down with old-timers for many, many years and talking about what they did during reindeer herding times and they depend on other food sources, like lakes and fishing. They used to take a lot of depth measurements of lakes to see how deep they are and transport fish and move them around to make a stock for their own purposes. That was done. My dad was part of that. Some of the reasons for it back in the '40s, like the lake that we're concerned about, Tusikvoak, back in the '40s and '50s they actually put dynamite in the lake to take a measurement for seismic. The next summer there was hundreds and hundreds of dead fish. It was allowed to try to recover on its own over years and years.

It seems to me efforts should be made to -- and I don't know if that's what you guys do as well, is to look at the concerns raised by traditional users and do some of that. I mean I, myself, would

probably do something like that too.

MS. HYER: Looking at the concerns and the historical harvest of subsistence users would be something that we would fund under this. We do use the information. We had a discussion yesterday about C&T and C&T determinations. Part of determining if somebody has a history of harvesting any animal is by talking to local people and collecting that information and we have done that in other places. We've done a little bit of that work up here too, but that is something we'd be very interested in because we actually use that then directly for management of fisheries.

MR. G. BROWER: I won't take too much more time. Those fish change once they're landlocked in lakes. Their taste is very much different than the river -- going back and down the rivers there. Distinctly different taste. I actually prefer the ones in the lakes. They're really fattened up and they're really -- maybe their food source in the lake is different. But they do change when they're in the lakes versus when they're free going up and down the rivers to lakes that are open, so they would become a different type of a fish almost. I can really attest to the different taste that it becomes.

CHAIRMAN BROWER: James.

MR. NAGEAK: This is James Nageak. You were saying that there's not much impact on the northern part of the state, but there are some impacts in the lower part, like the Kuskokwim. What I'm hearing Gordon is saying it's impacting his relationship with the people in the Lower Kuskokwim area which he trades with. So what's happening down there is also affecting the northern part and the relationship between the north and the southcentral down there.

So if you use the monitoring system to make regulations affecting the fish that it be caught down there and it s not affecting the northern part, but actually what's going on down there is also affecting the people that do -- we get a lot of good salmon from down there too, you know. We have some good friends that we trade with, you know. They like our dried meat from Anaktuvuk Pass and we sometimes really like to have that big fish, the king salmon.

They're fatter down there when they're coming into the river system. They're different when they get to Tanana or, you know, there's two different types of fish. So I'm just making the comment that what's going on down there is also affecting us up here.

MS. HYER: That's a very good comment.

CHAIRMAN BROWER: Any other questions for Karen regarding the Fisheries Monitoring Program.

(No comments)

CHAIRMAN BROWER: I guess I'll just read the mission of the monitoring program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans.

Did you have more discussion topics regarding this program?

MS. HYER: I have several things, but I think Eva has something.

CHAIRMAN BROWER: Yes, Eva.

MS. PATTON: Mr. Chair, Council. If I may respond to a couple questions here just to clarify. The Fisheries Resource Monitoring Program has two avenues and one is looking at population and trends and population status of fish, so interaction with climate change. The other specifically is to document local and traditional knowledge of fish and those concerns that the community is seeing in terms of a relationship with fish, changes in harvest, concerns that the community have. So when this priority call goes out, the priorities really are identified.

This is a subsistence research program, so the priorities really get originated first and foremost from people in the region here to help identify that. We've had a lot of good discussions over teleconference and in the meeting. That call will go out officially the next meeting that we have. But just to be aware that that's what really drives those priorities and we're seeking to make that call clearer. As Rosemary had identified, it was a little too broad last time to get some really good proposals that address the concerns of the Council and the

communities.

Also you had mentioned how the information is used in the regulation. Federal subsistence priority is managed for for fisheries, so this information feeds into that management. So other fisheries are closed first because of the Federal subsistence priority. So the information does help to support that subsistence priority as well.

Thank you.

CHAIRMAN BROWER: Thank you for sharing that, Eva.

James.

MR. NAGEAK: I was just looking at the eligibility requirements to get into the funding or to put in proposals to the Fisheries Monitoring Program. On Page 43, you know, you have organizations that have the necessary technical and administrative abilities and resources to ensure successful completion of programs may submit proposals. Under that some of them are tribal governments. I don't know how a tribal government would have all the technical and administrative abilities and resources to make a successful proposal to the monitoring system.

MS. HYER: Mr. Chairman. Council members.

CHAIRMAN BROWER: Somebody on the teleconference has put on their telephone and there's an echo created if the phone has not been muted. So, Tina, what's the process for muting the phone, or Eva.

REPORTER: *6.

CHAIRMAN BROWER: Reach for the star and press 6. When you get there, we'll mute your phone. Thank you.

Karen.

MS. HYER: Mr. Chairman. Council members. Actually Page 43, you're getting ahead of yourself. That's the Partners for Fisheries Monitoring. We're going to talk about that in a bit. I just wanted to point that out. Your point is very

well taken.

What we have done in the past is -- you're right, there's certain entities that have interest, but they don't have the technical ability to do the research. We've working very successfully in pairing those entities, say, with the university or somebody else that has the technical ability that's interested in pursuing that knowledge. Partnership and capacity building is a component of what we ask for when we ask for these proposals. Many of our researchers are very interested in partnering with local people who might not have the biological expertise, but they have all the local expertise and that's what makes our projects truly successful.

The project that I referred to on the Copper earlier, they partnered with a consulting firm that provided a lot of the technical expertise and helped them establish those projects and help them get to the point that they now run -- the Native Village of Eyak runs those projects by themselves. They didn't have that technical expertise, but through our program they were able to partner with somebody that did and then they were able to provide all the knowledge of the river that these scientists that came from Outside didn't have, and all the traditional knowledge about how to build the fishwheels. So together they partnered for a successful project and that is what makes some of our projects really successful, is combining the local knowledge with the scientific knowledge.

So you're absolutely right in your statement that those organizations don't have that ability and we work very hard to partner those organizations with people that do.

MR. G. BROWER: Just one more.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: What was the fishwheel partnership for? I mean why would you have to partner to -- is it a monitoring aspect or is it a fishwheel to gauge population and what did you do with the fish if that was part of a project?

MS. HYER: They tagged the fish and then -- they caught the fish, they tagged the fish and

then they turn them loose and then they catch them again upriver and there's quite a complicated statistical model that goes along with making the estimate, so the consulting firm provided the statistical knowledge to build the model. They also worked with biologists at OSM. We helped build that model too. They had to figure out how to build the fishwheels to fish in the areas because fishwheels weren't traditionally used in that part of the river, but they wanted to be able to safely catch and handle these fish.

One other thing they did is they built a holding tank or kind of a holding basket where they had a shoot where the sockeye could leave because they were much smaller fish and it kept the kings that they wanted to estimate and that took several years to develop. They tried to do it through video technology and they weren't successful at that, but they worked with a consulting firm to try to develop that. So there were many different things that took place in that project over the years.

Another component of it is they wanted to understand where the fish were spawning, so they used radiotelemetry and all of those things they worked in conjunction with the consulting firm to do because they didn't necessarily have the expertise to administer those programs. Through time they were able to build up their program. They have a lot more expertise than when they started out.

CHAIRMAN BROWER: I'm just looking at this eligible applicants including regional Native non-profit. That would be like Inupiat Community of the Arctic Slope. And then Federally recognized tribe would be Native Village of Barrow. Tribal government. Native corporations would be like Ukpeagvik Inupiat Corporation or Nunamiut Corporation and the other non-profits. That's the one I'm having a hard time trying to identify who is our other non-profit that we would identify with on the North Slope. That's what I was trying to visualize and get clarity on in terms of who these organizations are.

Regional Native non-profit organizations, Federally recognized tribal governments and Native corporations, and other non-profit organizations. AEWC? That's because I'm a whaling commission. We're going fishing. That's what I was

trying to get clarification on. I was just trying to figure out -- identifying which organization would be eligible for this Partners for Fisheries Monitoring.

MS. HYER: Mr. Chairman. If you're ready to leave the Fisheries Resource Monitoring Program -- this is under that umbrella, but this is a little bit -- the Partners for Fisheries Monitoring is a subset and you're clearly getting ahead of me. So if we want to talk about that, let's talk about that now and then we'll go back to the priority information needs.

CHAIRMAN BROWER: If we could take our lunch break and come back after lunch and do that.

MS. HYER: Absolutely. We can start with this and do the information needs.

MR. G. BROWER: Can I just ask a last question.

CHAIRMAN BROWER: Gordon and then Eva.

MR. G. BROWER: From what we've talked about today and yesterday I have concerns on, is there anything in there that you see could be turned into a proposal so far?

MS. HYER: Yes, very definitely. If you could hold that thought until after lunch, I'd like to discuss that under the idea of the priority information needs because we're also starting to work on those and there's been a lot that's been presented that I think will fit into that and I'd like to tell you a little bit about that process too. That's also under the Fisheries Resource Monitoring Program umbrella, but that's kind of an avenue that we're going to begin developing. We've actually already worked a little bit on it and we've had some teleconferences with some of you. So probably should leave that until after lunch too.

CHAIRMAN BROWER: Okay. Eva.

MS. PATTON: Mr. Chair. I was just going to respond to your question about looking at others. There is a Partners Program which we'll talk about after. Other agencies that are open for partnering, the North Slope Borough for example. Your

department -- I mean clearly these are fisheries projects and not wildlife projects, but people who have scientific capacity that are working with the local communities are very much a good possibility for partnerships in the region. ICC, the Inuit Circumpolar Council. I actually have those reports. Carolina Behe had addressed the Council at our last meeting addressing food security.

So groups like ICC that are non-profits that are already working in the communities can address through the traditional knowledge grants those types of concerns and other non-profits you may be aware of or university partnerships. It's really quite open and creative and we're also a resource to help if you have questions for networking and that sort of thing. We're here to help as well.

Thank you.

CHAIRMAN BROWER: Thank you. At this time I think we'll go to our lunch recess. We'll be back at 1:15.

MR. G. BROWER: Enough time to check the post office.

CHAIRMAN BROWER: Okay, 1:15.

(Off record)

(On record)

CHAIRMAN BROWER: Call the meeting back to order and we're still on the Fisheries Monitoring Program. Karen, did you have any other -- we were still on the discussion of the Fisheries Monitoring Program and we jumped ahead a little bit into the Partners for Fisheries Monitoring. I'll see where you want to pick up unless you want to respond to the questions earlier.

MS. HYER: Mr. Chairman. Council members. We can pick right up with Partners for Fisheries Monitoring and then talk a little bit about the priority information needs. We have Brendan, who will talk to you about the upcoming fisheries project in this area. Without further ado, let's talk about Page 43 since you've all already been there.

We have a program called the Partners for Fisheries Monitoring Program where we support fishery biologist, anthropologist, and educators in rural organization. Currently we have no partners up here in the north, but we have partners in other regions and we are going to be putting out a call in November. So you guys have read -- because of your questions I can tell you've read this little briefing here. Basically we just wanted to make you aware in November that there will be a call coming out and we fund positions within these organizations up to $150,000 and these positions work with us on subsistence issues. Many of them are involved in our Fisheries Resource Monitoring Projects and then they work with the Councils and they provide information and they live in the local communities.

So currently we just wanted to make you aware that this is coming up in the fall. As the fall gets closer, we'll have more specific information and we'll be notifying you. That basically was all I had for that. I'll take any questions.

CHAIRMAN BROWER: Any questions to Karen regarding the Partners for Fisheries Monitoring.

(No comments)

CHAIRMAN BROWER: If no questions, continue Karen.

MS. HYER: Okay. Let's go back and talk about the priority information needs because the first thing we do when we put out a call for the Fisheries Resource Monitoring projects is we put out that call with the priority information needs that have been expressed by our Councils. You have expressed a lot of possibilities in this meeting.

So what I'll do is I'll go back and I'll work some of them up and then we'll continue to keep the dialogue going. I'll also consult some of the land managers and some of the fisheries biologists that work in the area and then I'll be revisiting these issues with you again and again until this fall when we have a pretty clearly articulated specific list of what the Council considers priorities, but if there's anything else that you want to add that hasn't been discussed here today or yesterday, now is the time to do that.

Like I said, this is just the beginning of a discussion that will continue until this fall, so it's not the last time we'll be talking about it, but it is a chance to give me any other input.

CHAIRMAN BROWER: Any comments, concerns. James and then Gordon.

MR. NAGEAK: I see that there is going to be some cooperative agreements to support these positions and there will be fishery biologist, anthropologist, and educators as principal and co-investigators and a combination of all of them. Then you have a local community where you are going to -- I don't know what percentages are those in funding for the biologist and then the local people.

MS. HYER: What we have done in the past is we have funded biologists and anthropologists and educators within local organizations, so the local organizations have put in proposals. This is also a competitive process as are the fisheries research projects. So when the call comes out in November, organizations that are interested can put proposals in. When the call comes out, the parameters will be within the call.

We're just letting you know at this point that the call is coming in November, but we'll have descriptions of what you need to apply for these positions. At that point, organizations that are interested in having an anthropologist or a biologist or some kind of social scientist or some kind of educator can create proposals to submit for the competitive process.

MR. NAGEAK: And those would be different or separated from the local proposal?

MS. HYER: No, those would be from local organizations. Those proposals would be from local organizations for those positions and those positions are within those organizations.

MR. NAGEAK: So those local proposals will have the expertise included in the proposal?

MS. HYER: No, the Partners are actually an opportunity for local organizations to hire that expertise. We provide the funding, up to

$150,000, and then they hire a biologist or an anthropologist. So that's how they get their expertise, is they actually have the finances to hire that.

MR. NAGEAK: So if our organization is interested in making a proposal, are there limitations as to how much we'll be able to pay the biologist or social scientists?

MS. HYER: Actually the positions that we fund through the Partners we pay the biologist, so the organization like the -- one of them we have is the Kuskokwim Native Association and they put forth a proposal for a fisheries biologist that they wanted and they described what they would do and how they'd be involved in our monitoring projects. They competed with other organizations to put in proposals too and then we chose their proposal and then we funded that position for them so that the organization didn't have to come up with the money for the position. They just had to come up with the ideas of what the biologist would do that worked for them.

MR. NAGEAK: And then you pay for them.

MS. HYER: Yeah. And then we have the money to pay for the position. The positions currently are up to four years we've provided funding. I don't know how they'll look in the future because we haven't completely drafted what the future looks like, but it will be something similar to what we're doing now.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: I wasn't really going to question about the partnership stuff. I would just like to bring out some other types of things related to fish. Some of these are just from stories. I always wanted to find out about them sometime. One of them is around Pittalukruak. It's an inland type of a lake. Around Wainwright has the same type of an inlet over there and they fish in the winter time for smelt, like a big smelt fishery over there, subsistence, and why they're always present over there.

From stories from old-timers, there's the same kind of condition in Pittalukruak and them old-timers -- my dad called them the old-timers, folks that were there back then, the Anatuks and around that

Alaktak area back in the 1930s and they would talk about their fishing in Pittalukruak for smelt. I was wondering if that was a spawning area for smelt as well and for fishing. People don't really fish for the smelt there, but it's just some handed-down traditional knowledge that there was a heavy presence of smelt for jigging and fishing over there.

With leasing and potential oil and gas activities in this area, nobody really knows what the actual conditions are even for a baseline information for that area. I always wanted to see if somebody can research that. I think if it was revitalized with information what goes on there, I would be jigging over there all the time. I've always wanted to go to just prove some of the stories. The same kind of thing with the lakes around....

(Telephone disconnect)

MS. PATTON: Mr. Chair, if I may check in. Are you able to hear me? This is Eva speaking.

(No comments)

CHAIRMAN BROWER: Continue, Gordon.

MR. G. BROWER: I always wonder about these things and from old stories again from use of lakes around Teshekpuk. Going a little bit south of those there's a bunch of lakes that are interconnected, kind of like landlocked. The presence of a fish called pakaluk (ph) and he said they're abundant there and he would describe them and to the point where he was frustrated, he wanted to show me. So.....

(Teleconference interruption)

MR. G. BROWER: Okay. Well, anyway, out of curiosity, my dad, he went to go put nets. We were always going back and forth hauling fish anyway from our main fish camp. So we happened to put nets there and he caught that type of a fish. That was the only one of that type of fish that was caught. This is the old-timers, that it was pakaluk. It was like a -- it was a trout, but very, very, very colorful little trout. They don't get very big. They're only about that big. Just out of curiosity and wanting to know they were there. The stories they talk about and he said, yeah, they've got that type of a fish only in

those lakes.

Anyway, out of those things it's always sometimes a fishery that goes unnoticed, but they used in the past. It was a learning experience for me and a resource that's not -- I don't think nobody fishes that anymore in those areas, but they were from Paul Kalmik (ph) and others that knew those areas as their primary fishing areas. They would talk about them.

Anyway, I just wanted to mention these things because you don't see anybody utilizing those resources but they're there and the status of them to me was just a question, do they come out, do those types stay there all the time.

Anyway, with that, I don't know where I was going with this, but there needs -- to me, I always wanted to think what about the ilhuagnik that are there, the smelt, and what they do there. The little know -- I think it's unknown or just little tidbits of information about why they're present over there. Just leave it at that.

CHAIRMAN BROWER: Two of those resources are still there, Gordon. My brother Charlie and I and Wyatt -- I think a year before Wyatt passed away we were over there to Admiralty Bay and straight out of Oarlock Island there was a aiawuk (ph), a crack in the Admiralty Bay, and we followed it to where it narrowed and it was near the Oarlock Island. We started out from near Cooper Island with my big track vehicle. We were out on the Admiralty Bay and we were driving and Wyatt was the one that was interested in finding those smelts, so we started following that aiawuk (ph) from Cooper Island and made it all the way up near Oarlock Island and that's where we found the smelt in the narrowest part of that crack, jigging. Man, you couldn't even put the hook down before -- before it even touched the water the fish would be jumping out, biting the hook. He had so much fun and he never forgot it. He said we should go back there. We never did. I told your dad about that and he just started smiling. At least you guys did some fishing. I've been trying to find them for how many years.

The way I learned about it was from Max, Max Uneruk (ph). When he was a young boy, he was the one following his parents, going down near that Pittalukruak area in front of Oarlock Island fishing

for those smelts. So I know they're still in there. It's just that people don't have a reason for fishing for them. A long time ago there wasn't that many jobs and people needed to go find fresh food and that was one area they went for finding fish and the lake fish. Some of those -- the real arctic char, the ones that are landlocked, are right across from Paul's house and in that area. There's a couple of lakes by Chipp 2 where there's other types of trout.

I remember we went over there behind Chipp 2, we were in that area and got some pretty good-sized trout. What the heck did they say. That fish was like 49 years old when they took the otolith and aged that fish. Gee whiz, we're eating an old fish, but it sure tastes good. So that's the kind of information I know about those areas. It's just that people don't access them. There's a few people, like you, Gordon, that continue to do the fishing and using the area that have that knowledge, but it's not passed on to where other folks are able to do the fishing for those fish.

It's pretty interesting when you get to find them because it took us a while. It took us like five hours of drilling holes and making holes along that aiawuk (ph) looking for the fish. We thought we were fishing too deep. We'd try in the mid water, you know, dropping the line all the way to the bottom trying to find them, trying near the surface of the -- right close to the bottom of the ice and that's when we found them, right near the surface of that ice. And burbot fishing. That should be happening right now. That's where we go up by PK13 in that area.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: It's just the important stuff, you know. People should talk about these once in a while. I hear it from -- you know, our folks are passed on and there's a few people that they -- you know, they had few people that were talking with them back them. Basically it's almost handed down to -- from a person that knew a little bit about it to somebody that didn't know nothing about it and then you continue to talk about it. Like Harry said, those cracks, the fissures that form, I've heard my dad fishing in there and getting them, but he always

mentioned that it was an area where it would be a spawning area for these smelts. That's why they hang out so much in these areas.

Anyway, it's just good to just talk about. When you're talking about fish, other fish stories start to pop up because they're interesting because I love fishing. I fish quite a bit.

CHAIRMAN BROWER: Thank you, Gordon and James.

MS. PATTON: Mr. Chair.

CHAIRMAN BROWER: Yes, Eva.

MS. PATTON: Sorry to interrupt. We lost our phone connection here again. If we could just have a moment to make sure we can bring Rosemary back online.

CHAIRMAN BROWER: Okay. Go ahead.

MS. PATTON: Apologies for the interruption.

(Connecting to teleconference)

CHAIRMAN BROWER: We're still on the discussion on the Partners for Fisheries Monitoring and which partners can be eligible for seeking assistance from the Office of Subsistence Management in regards to fisheries monitoring. If there's no other comments or questions. James, did you answer your question already? Gordon started talking about fish and I got sidetracked.

(Laughter)

CHAIRMAN BROWER: If you did, Karen, we can continue wherever we left off.

MS. HYER: Mr. Chairman. Council members. That's all I had. Next you'll be hearing from Brendan about his proposed research. He has a PowerPoint presentation.

CHAIRMAN BROWER: Okay, Brendan, I'll give you the floor.

MS. AHTUANGARUAK: Harry, one more comment from Rosemary.

CHAIRMAN BROWER: Okay, Rosemary, go ahead.

MS. AHTUANGARUAK: There's been discussions related to Alaska Native Tribal Health Consortium and the local observer project and that's also another area that we need to make sure that we loop in to our process so that we're aware of comments that are being put in that process as well as maybe a source to consider partnering with in this concern that we have over fisheries. Thank you.

CHAIRMAN BROWER: So Karen's heard what your comments were and then trying to get that Alaska Native Health Consortium involved in part of the situation regarding that fish situation in the Nuiqsut area. I think that's one where we could seek their assistance or involvement in terms of the health, state, edibility and that kind of communications in monitoring that broad whitefish in the Colville River is the one, I think, Rosemary is referring to. Thank you, Rosemary. Like I said, Karen's heard and we'll get something identified and working on that portion.

Again, we're moving along with our agenda. We have Brendan Scanlon with Alaska Department of Fish and Game that's going to be giving us a presentation on dispersal patterns and ocean distribution of Dolly Varden in the Beaufort Sea using telephone telemetry. I'm joking. Not telephone, it's satellite telemetry.

MR. NAGEAK: Hello, Dolly.

(Laughter)

CHAIRMAN BROWER: Okay, Brendan, James is saying you've got to sing like B.B. King.

MR. SCANLON: I need Lucille with me. Thank you, Mr. Chairman, and members of the Council.

CHAIRMAN BROWER: So what did you say about Lucille?

(Laughter)

MR. SCANLON: Once again, my name is Brendan Scanlon. I'm the sport fish area biologist for Northwest and North Slope for the Alaska Department of Fish and Game. I live in Fairbanks. My area includes Norton Sound, Kotzebue Sound and all the North Slope. Most of the action these days has been in Unalakleet, Nome and Kotzebue. I haven't been to Barrow before. I've only been on the North Slope just a little bit, so I'm really glad to be here and talk about a new project we'll be starting this summer in Kaktovik.

For this project I'll talk a little bit about the life history of Dolly Varden first, what we know about the harvest and life history based on old research. What we want to do in this project and then I have an example of a similar project that we did the last two years over on the Wulik River.

At Fish and Game we've known for a long time that Dolly Varden are an important subsistence resource. We don't have a lot of recent data on harvest, but what we do have suggests that villages in Nuiqsut, Anaktuvuk Pass and Kaktovik harvest about 10-20,000 pounds a year of Dolly Varden. A lot of those fish when they're fished on in marine waters are composed of mixed stocks. They anadromous. They go back out to sea. So when you're gillnetting fish off the coast, you could be catching fish that may have come from as far away as the Sag (Sagavanirktok) or Canadian rivers.

Dolly Varden is anadromous, like a salmon. They spawn in the fall and they emerge from the gravel in the spring. They live in fresh water typically two to four years before they start their annual migrations out to sea. They feed in the ocean, but they have to come back into fresh water to overwinter. Once they become sexually mature at about seven or eight years old they spawn, but only every other year, but they do go out to the ocean every year to feed. We know from other studies that they can travel long distances in saltwater. On the North Slope, probably the most important drainages are the Ivashak, Hulahula and Kongakut Rivers.

This is a map -- this is based on what we know from telemetry studies, subsistence surveys and genetic stock identification of the most important rivers on the North Slope. What we don't know is to what degree they mix here on the coast in the

summertime and that's what we're going to try to do with this project.

So based on research that Fish and Wildlife Service, Fish and Game, University has done in the past, we believe that there's about 50-100,000 Dolly Varden that go out to sea every summer from North Slope rivers. Most fish overwinter and spawn in the same river, which is a little bit different than what they do in the Kotzebue area where there's quite a bit of interchange between say the Kivalina, the Wulik, the Noatak, the Kobuk and the Buckland Rivers and some rivers in Russia.

We know that some Dolly Varden from Canadian rivers such as the Babbage and the Firth have been caught as far east as the Colville in the summertime and there's almost no Dolly Varden between Barrow and Point Hope. There's not much for big water that is good suitable spawning or rearing habitat for Dolly Varden.

What we don't know is where the summer feeding areas are exactly in the Beaufort Sea, what kind of summer migration patterns they make, if Dolly Varden from Alaska move into Canadian waters. That's not true. I just read last night that there is some evidence that they do go over there. But we'd like to find out if summer feeding occurs in the oil and gas lease areas off the coast.

So this map, the blue oval shows where the oil and gas leases are between Nuiqsut and Canadian border. I'm sure you're all familiar with those. Undoubtedly the Dolly Varden go into these areas, but we'd like to find out if they actually stay there and feed or if they just transition through these areas on the way to other summer feeding grounds.

So originally we thought that Dolly Varden -- well, we knew they were anadromous. We thought they stayed close to the coast, but tagging studies done in the Kotzebue Sound area back in the late '80s we learned that they can travel quite long distances. In fact, fish that were tagged in the Wulik River near Kivalina, most of them stayed in the Kotzebue Sound area and the Noatak and Kobuk and Buckland Rivers, but some tagged fish were recovered down by Brevig Mission in the Port Clarence area, one was caught near Unalakleet and again two fish went to

St. Lawrence Island and three fish went into Russian fresh waters, including these two in the Anadyr River that went quite a ways up, a distance about 1,000 miles from where they were tagged originally.

MS. HEPA: Did you say that was Dolly Varden?

MR. SCANLON: Yes. So on this project we prophesized that Dolly Varden that overwinter in North Slope rivers occupy offshore Beaufort Sea in the summer. We want to describe the dispersal of Dollies during the summer feeding season.

CHAIRMAN BROWER: Taqulik has a question for you.

MS. HEPA: Can you explain again why you thought there was no good -- it was a good habitat in the Chukchi Sea coast.

MR. SCANLON: There's not much for large rivers with deep water that Dollies would prefer for spawning and overwintering. A lot of those smaller systems can run dry for periods in the summer and also the saltwater intrusion can go pretty far up some of these rivers, such as the Kuk River by Wainwright.

So we'd like to use some pop-up satellite archival tags. These tags go on the outside. They measure an archive temperature depth and ambient light intensity every 10 minutes. The ambient light intensity is for us to get an idea based on sunrise and sunset, where the fish travels in the summer. You know, its path while it's out in the ocean.

What we can do is program the day that we want these tags released from the fish and float to the surface because they're buoyant and an antenna will pop out of the water, shoot that data to satellites. When that tag comes off the fish, we'll know where the fish was in the ocean when the tag came off within about 100 meters.

It's fisheries independent, meaning we don't rely on these fish to get caught later in subsistence or commercial or sport fishermen, and we don't need to go find these fish with antennas in airplanes.

The tags we're going to use, originally these tags were really big and were put on whales and sharks and tunas, but the technology has gotten better and the tags we're going to use are made by a company in Maryland. They're about 12 inches long and they weigh 40 grams. The weight is really not an issue because they're buoyant. What we can do is program the dates we want the tag to release from the fish. This is a two-year project. For the first year we're going to stagger some pop-up dates and see how well we do with getting this information. In year two, we'll use this information to fine tune our pop-up dates.

These tags are great, but they do have some setbacks. One is they cost about $4,000 a pop, so we can't buy a lot. These tags are still pretty big and we need to tag pretty large Dolly Varden because while weight is not an issue, we don't want the antenna hitting the tail of the fish. The release mechanism only works when it's in saltwater or brackish water. How that works is the battery that's inside the transmitter will send a charge up to the thin wire that holds the tag to the fish. It starts electrolysis and essentially rusts off in about 20 minutes, but it doesn't work if it's in freshwater.

So what we'd like to do is -- and we haven't finalized this, but we thought we'd start around the Kaktovik Lagoon area using large mesh gillnets since we need to catch large fish. We'd probably start with some chum gear. We'd also bring a beach seine and hook and line.

We don't want to interfere with subsistence activities going on, so we plan to make at least one trip this spring to Kaktovik to explain the project to people and get some ideas and maybe we can get some people that would want to work with us. We plan to hire a local technician for the time that we're there. But we're still looking for good ideas, when and where to catch fish, particularly big fish, say that are 24 inches or bigger, to put these tags on.

So we've done this a couple times before and how it works is after we catch the fish we do kind of an initial health assessment to make sure it doesn't have any Saprolegnia or any seal bites or it looks like it's in good health. We'll hold them in a holding pen for a short time and to put the tag on them we put them in this fancy cradle made of ABS pipe that

covers the fish's eyes while it's in the cradle and we use these sponges in the water to hold them still and they seem to settle right down.

The tags going outside of the fish, how we do that is we have this kind of a backpack harness system that gets held to the fish. We use stainless steel wires, two of them, to go to the back of the fish under the dorsal fin that we crimp down and it holds the tag to the fish. There's not much red muscle there. These fish don't hardly bleed at all. Every fish we've tagged we've held into holding pens for one to four hours and they've all looked really good. The tag looks really big and obnoxious, but it seems to work pretty well.

As you can see, these tags are slightly buoyant, so a lot of the time they'll ride up off the fish, but if the fish is swimming really fast, these tags may lay down and that's why we want to catch large fish to keep the antenna off the tail.

So to make some assumptions about their movement while they're in saltwater, we're going to look at the pop-up locations. That will tell us where the fish was on a particular day and we'll look at the temperature and depth profiles that the data logger on the fish will transmit to satellites.

Quickly, I'll just show how this project has worked for us over on the Wulik River near Kivalina. We did a two-year project over there. The Wulik River is probably the most important overwintering area for Dolly Varden in the Kotzebue Sound area. There's sometimes well over 100,000 fish that go in there to overwinter. Many of those from other river systems. There's only about 3-5,000 fish that spawn there every year, so most of these are overwintering, non-spawning fish.

People in Kivalina are really concerned about them. They depend on them much more than they do salmon. Of course, Red Dog Mine is in the headwaters and they're always really conscious about water quality there.

CHAIRMAN BROWER: Can you help explain that picture back there.

MR. SCANLON: Yeah. I took this from a

helicopter a few years ago leaning out the door. We were doing our surveys in the fall.

CHAIRMAN BROWER: I was trying to think if those were mosquitos stuck into a helicopter window or something.

MR. SCANLON: There's about 4,000 fish there. I figured out -- I circled groups of 10 and 50 and then try to -- it's not an exact count. Conditions are like this quite often in the fall right before freeze-up. With a helicopter we can do a pretty good job at counting the overwintering fish.

CHAIRMAN BROWER: Thank you.

MR. SCANLON: Uh-huh. So for that project we were funded by the Coastal Marine Institute and specifically they wanted to know if the Dolly Varden spent time out in the Chukchi Sea in the summer, particularly if they went to the oil and gas lease areas between Point Hope and Wainwright.

So over two years we tagged 52 fish with these tags ranging from 30 to 38 inches long. I'll just quickly go over the results based on pop-up locations. This is where we tagged them in the Wulik River and over the next two years this is where these fish ended up. Now the tags don't come off the fish while they're in freshwater, but in the case of these Upper Noatak fish and Upper Wulik fish, they were probably spawners that were in shallow enough water that the antenna popped up out of the water long enough for us to get a location. We didn't get very much in terms of temperature and depth data, but we did get some information even though they were in freshwater.

A couple fish were caught near Kotzebue in commercial and subsistence fisheries. One ended up in the Buckland River, but the real interesting fish are these over here that went over to the Russian Chukchi side. I'll just talk about them just briefly. So the temperature and depth data looks like this. What we found was there was basically three patterns of movement in these fish.

First is the river residency. This is the period of time from when we tagged the fish to when it actually went out to the ocean. You can see just during that brief period the depth creeps down just a

tiny bit as it's moving downriver and so does the temperature.

Right here we believe this is the ocean entry period where it went under the shore-fast ice right there in Kivalina Lagoon. It didn't like it. It's water that's slightly below zero. It's a lethal temperature for them, so this fish in particular swam out of here really fast.

We call this marine transit where the fish's depth doesn't oscillate very much and then marine feeding where it appears to do a lot of diving. This is a little finer scale of what we call marine transit. You can see it came out of the river, it swam down, grabbed a shrimp, and then just stayed real close to the surface for several days. This is more of a fine scale of marine feeding. This is just one day in 15-minute intervals and you could see the fish dove from the surface down to about 15 meters almost constantly and spent a couple hours in the afternoon on the surface and continued to do this again. This fish did this for 50 days.

MS. HEPA: You mean at the surface of the water?

MR. SCANLON: Yeah, it came right up close to the surface and dove and came back up and went back down. You can see the line below it is the temperature that corresponds to when it dove into cooler waters.

So the fish that went out to the Russian Chukchi Sea typically spent most their time in the top 15 meters of water. Some fish dove down to almost 30 meters pushing 90 feet of water. So they didn't go to the bottom. It's pretty uniform 150 to 200 feet deep out there, so they dove but they didn't go all the way to the bottom. So they probably weren't eating things that live on the bottom.

This is a map of the currents that happen in the North Pacific and those Russian Chukchi fish ended up really close to this location where the Siberian Coastal Current runs into the current that comes up through the Bering Sea, so warm water and cold water hit each other and mix together and a lot of primary production probably happens there with zooplankton and isopods and amphipods. This is also an

important feeding area for beluga -- I'm sorry, bowhead whales in the summer.

So on this project we used temperature that went just below zero as a proxy for ocean entry. This Kaktovik project we're going to tag them in saltwater so we won't have that to deal with.

So all four of those fish I just described that went to the Chukchi Sea stayed in the river for about two more weeks after we tagged them and they got to this area in the Russian Chukchi pretty quickly. One fish got there in five days. It's 70 kilometers a day to get to where the pop-up location was. If you think about swimming speed of a fish, when they're traveling, they're moving about one body length per second, so this fish swam at that speed almost constantly for five days until it got there and then it knew right where to go. Once it got there it knew what to do.

So hopefully the information we get from this Kaktovik project is important to subsistence fishers and managers and energy developers since they spend a lot of time near the surface. You know, oil floats so that's something we want to be aware of in case of accidents that potentially Dolly Varden could be impacted. Also there's increased chance of shipping that's going to go through the Northwest Passage in the future.

So hopefully we find out where the critical feeding habitats are for Dolly Varden that overwinter in the North Slope. If these fish move into these oil and gas lease areas to feed or if they just transition through them to get to other feeding areas and potentially how much they travel into Canadian waters. We only have 15 tags a year because they cost so much, but we'll be able to make broad inferences, but we'll learn a whole lot. The ocean life cycle has always been the black box for Dolly Varden. We haven't been able to learn too much, but with these tags hopefully we will.

That's all I have. I'll take some questions if you've got some.

CHAIRMAN BROWER: I've got my notepad and I've been writing lots of questions. And we thank you for your presentation. I'll ask the Council

members to see if they have any questions regarding the presentation you just heard. James.

MR. NAGEAK: Yeah, I notice on the presentation that you wanted to know where the location of the fish are and as I learned the Western culture, that's one of the things that you try not to tell anybody is where the fish are.

(Laughter)

MR. NAGEAK: That's my traditional knowledge where the fish are so I can sustain myself. The other thing that I wanted to make known is that we have a place at Anaktuvuk River at the very end of the -- pretty much at the very end of the river is what we call the Pittaluich. That's a place name. It's Pittaluich. In the wintertime, you could get your fishing line and catch one and go home and eat it, you know, and they're Dolly Varden and they winter there. We usually see them because there's a really shallow creek that they call Pittaluich. I won't tell you where it is because of my knowledge of where the fish are. So they do winter up there.

MR. SCANLON: You're absolutely right. I can't pronounce that, but I think I've heard of that location. We call it the Anaktuvuk char hole. We've had some radio-tagged fish go up there.

MR. NAGEAK: You're giving out personal data, you know.

(Laughter)

MR. SCANLON: I'm working on it. But your first question is, it's not my money, we don't have any secrets. I'm going to do the best I can to let you know how the project is going, what the results are. This will be published in a couple different ways. It will be available any time.

In the study we did on the Wulik River, we worked and lived in Kivalina for several days and that was a great experience. They were really interested and helpful. They learned a lot. I learned a lot about some really nice Native art as well. I'm hoping for a similar experience in Kaktovik with the people there. We get to work with them and they get to work with us.

CHAIRMAN BROWER: James.

MR. NAGEAK: Follow through. Maybe you ought to get a piece of paper to tell the people that you will not disclose the information to anybody outside of your study area.

(Laughter)

CHAIRMAN BROWER: You know, James, that kind of brings out a similar concern I'm having in regard to how does this data get used by others in the interpretation of the amount of fishing, where they're going. I'm trying to be careful, but I can t help it. There's this North Pacific Fisheries Management that deals with the ocean and international waters and commercial fishing and they learn about this type of fishing and their movements and their interest piques to move into the Arctic Ocean. Are you looking into maybe trying to minimize or maximize the interest of these potential fisheries that could occur besides subsistence fishing?

MR. SCANLON: Mr. Chairman. We don't anticipate any management action coming out of the results of this study. We don't think there's a problem with the stock. They are just unknowns in their life history that we'd like to know. Office of Subsistence Management is funding this study, so obviously that's our number one priority. There's already a commercial quota on the books for Dolly Varden on the North Slope. There's never been much interest or a market. It's very small. There was a whitefish commercial fishery for a while on the Colville. I'm sure you're familiar with that one. I don't foresee any rush to come up here to fish for Dollies commercially. There's not that many. I mean it's not like pink salmon in Southeast or anything like that.

These kind of studies -- I heard earlier you were concerned that we would use results of these projects to make it harder to subsistence fish and provide more regulations. That's not the purpose of these studies. We do the best job and we get the best information and this helps us learn a whole lot more about the ecology of the Dolly Varden in the summer.

CHAIRMAN BROWER: I think you're going

to find them out there because I've seen them out there in large scales conducting another type of hunting, oogruk hunting out in the ocean following the ice edge and seeing large pods of fish in the ocean. Wish we had a net, but didn't. You know, they're near the surface in three to ten feet deep. It's full of fish out there and we seen them at different stages and distances offshore. So they're out there.

I just never really liked to speak about them because other folks looking for commercialized products could just come and start interrupting with our activities, doing our subsistence here for other resources. There's information out there. You know, we've had our different observations over time.

The folks from Barrow, when they were doing the dredging out here, they created a big hole over here in front of the gravel pit, what we call our gravel pit, for access to that dredge to be able to come back to shore to refurbish the dredge materials and move back out. These fish were coming into that hole and there were people fishing out of that hole like they've never done any fishing before. It really was funny to watch all these people. They were all banked up in this little area. Hey, get your line off my fish. That kind of stuff was happening around that little hole down there. There was hardly any parking.

Once the dredging quit and that little slough or that access for that dredge got closed up, the fishing basically ceased again. There's been a question if that area is going to get dredged again or not. I have no idea, but these are the things that we know about and what happens when you open up an inlet or a little area for fish to swim in and it becomes a big fishing hole.

These other sites at Admiralty Bay and going down to Smith Bay and Harrison Bay, we see them inside those bays. When you get into the transition zone is that very turbulent brown, murky water and then you get into the ocean there's this real clear water, just like what you're seeing in your picture, but it's not that shallow. The thing is, it's like 100 feet deep and you can't see the bottom, but you could see fairly well maybe 35, 40 feet. I seen fish swimming of different types and I always thought, man, we should

have brought a gillnet here. But, you know, I still haven't and we get the fish that we need in terms of our subsistence fish, subsistence species.

But it's interesting in terms of the movement, you know. The ones that you tagged down in the Wulik area and moving into the Russian coast, it kind of reminds me of some of our patterns of what learned on the seal tagging and the beluga tagging. It gives an indication there's going to be some surprising for these fish. The ones from the Wulik area are going to have this certain range and then once you learn from your tagging about the fish that get taken in the Kaktovik into the Beaufort Sea and maybe into Canada.

That's the kind of information you're probably going to learn about in terms of how these things are moving. I'm not going to say I knew about this stuff, but I think that's what's going to happen because we seen and learn from the different resources that movement patterns in the arctic going to our neighboring countries, Russia and Canadian, so we know about the movements and the use of those fish.

I mean I could share with you some more about fish stories like Gordon. We get into fish discussions and these are the things that we are very interested in. Dolly Varden, we don't have the dog teams anymore, and it was one of the fish along with the salmon, dog salmon and other salmon species that got taken for dog food. The other types of fish like the broad whitefish we used for subsistence food basically.

These are the things that I learned from my father and my uncles that we communicated about where to go fishing and how much fishing to do. He'd say I don't have to catch as many as I used to. Because it was a lot of work when you had the dog teams and they had to get different resources for dog food. So regulations changed things and they had to resort to other resources to provide for the means that they had at the time. With that means of access changing and our mode of transportation change, it's a little bit less, but those species and fisheries are still there. You know, it's just the shifting to burning more gasoline and using snowmachines and broken parts.

Anyway, I thought I'd share that. These are very interesting. Again, I'd like to see the

results once you learn more about your tagging project in the Kaktovik area. I'm not sure if you're looking to provide some of this information to the North Slope Borough Fish and Game Management Committee. They're another group that we deal with with all our resources there on the North Slope. I think it would be a good opportunity. And get some input from the folks from Kaktovik. We have representation in these groups that could help communicate with you and identify potential candidates to work with when you're in Kaktovik.

MR. SCANLON: Thank you. We plan to do that with people in Kaktovik and share results with you. Hopefully next spring I can come back to this meeting and let you know how we did this summer and what we want to do next summer.

CHAIRMAN BROWER: Any other questions to Brandon from the Council members or others.

MR. G. BROWER: Maybe one.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: In terms of getting started for a study like that, was it a request from communities that had expressed a concern or was it something you wanted to understand more of this particular resource in itself, whether or not it was connected to different countries other than just this Alaska area and what are your plans going forward with the same types of studies but with different species?

I was always wondering about what was going on with salmon in the Chipp River. There's a period of time on that river where there's a lot of salmon. You know, those humpies. Whether they're actually spawning there or if it's just a -- it happens every year, so I think they do come in there to find a place to put eggs down, but it's like in July and June. And then the spawning for the whitefish is late September and the first week in October.

MR. SCANLON: Thank you. The idea behind this project had to do with how successful we were on the Wulik River project. While Dolly Varden were not a priority information need for this round of proposals with OSM, we've known for a long time it's been an important subsistence fish. It's probably the one fish large enough to handle these tags up here, so

that's part of it. The technology hasn't caught up to where they're small enough to put on a broad whitefish. We hopefully can do that someday as well.

There is Canadians -- the Department of Fisheries and Oceans and Northwest Territories are going to try this same study with the Dolly Varden there. Hopefully we'll get together and be able to show where there fish went, our fish went and how small a world it is and, you know, share the same pot of fish between two different countries.

The salmon projects and whitefish projects, there is some work going on right now within Fish and Game, specifically Habitat Division has been trying to do some telemetry on the Colville and maybe not the Chipp, but I think maybe the Meade River to get an idea of the timing and spawning locations for some of these salmon. They're not having great luck. It seems to be kind of real hit or miss. Some years there's zero and some years there's several hundred pinks.

There's a very large project going on near Wainwright right now, Mr. Shears. The telemetry of grayling, burbots, broad whitefish. They're learning a whole lot about how these seasonally connected lakes and streams, how important they are to summer feeding and rearing. If that's something you would like some more information on, I could get that to you.

CHAIRMAN BROWER: I think that would be of interest to our Council members. They're not currently present. They've got other prior commitments that keep them from walking in and walking out of these meetings. I think Bob and his constituents will probably show interest in terms of what you learn from the Wainwright area. Not just from Wainwright. Point Lay and Point Hope as well.

I kind of feel sorry for these guys that miss out on this information because there's things that we just can't control, like a death in the village, to keep our members from arriving. They could have showed some interest in terms of how -- from the information you provide. Just the luck of the draw in terms of how we proceed.

Any other questions or comments. One

came up and I started talking and I lost my train of thought again. Anyway, I'll stop here and ask Council members or others if they may have any questions to Brendan in regards to the presentation.

MS. AHTUANGARUAK: Harry, this is Rosemary.

CHAIRMAN BROWER: Yes, Rosemary.

MS. AHTUANGARUAK: I got an email today from the Native Village of Nuiqsut and they just passed a resolution calling for halt of all scientific studies due to their continued impacts on subsistence. I've got a copy in my email. I can forward it to you guys if you -- actually I could send it up to Eva. But that's important on all of our topics that we've discussed yesterday and today on these issues. Thank you.

CHAIRMAN BROWER: I think if you could share that that would be helpful. If we don't know anything about these types of things we may be working against our own constituents as to what they're wanting to stop or understand more of the type of research that's occurring.

Gordon.

MR. G. BROWER: Mr. Chair. I was a recipient of two different letters, one that was just being described. I think it was primarily because of aircraft use. It wasn't about studies in general, but the interference with subsistence activities and the aircraft activities associated with them. So it might be very interesting to look at that to minimize the impacts. I kind of read through it as much as I could and I got the perception it was an impact-driven letter.

CHAIRMAN BROWER: Thank you for sharing that, Gordon. Again, not knowing the full contents of the concerns within the letter itself, it's a little bit hard to perceive things and try to continue moving forward with the concerns.

Anyway, Brandon, did you have a response you wanted to provide.

BRENDAN SCANLON: Just briefly

regarding the aircraft. Right now our plan is to come in on a regularly scheduled commercial flight to Kaktovik and use small rubber boats. We only need 15 fish. We don't plan to be there any longer than we need to be. The results of this project, if they're successful, can only help subsistence we believe. My experience with the Kivalina folks was great and I think we taught them things and they taught me things. I'm hoping for the same experience in Kaktovik.

CHAIRMAN BROWER: Communication is always the key. Once you get the footing into the door and communicating basically the best approach you could take in getting the community involved. Taqulik, did you have a comment. If you could come up to the mic, please. Sorry.

MS. HEPA: This is Taqulik Hepa. I just had one question on your earlier slide. You said between 10-15,000 pounds of fish. How many fish would that be? You were showing numbers of 50-100,000. Just curious.

MR. SCANLON: The subsistence harvest, I don't have that in front of me. I believe it's four pounds. In that study they considered the average size of the fish. So 15,000 pounds at four pounds a fish is 3,500 or 4,000 fish a year. It's not a huge number.

MS. HEPA: Just curious.

MR. SCANLON: That's a good question.

CHAIRMAN BROWER: Good luck for you in communicating. Like I said, I hope you get communicating with the North Slope Fish and Game Management Committee and there's representation from the village as well. Communicating with them would probably be a good thing in gaining the support of your research.

MR. SCANLON: Thank you very much, Mr. Brower. I'll do my best and please contact me any time if you have questions or concerns or suggestions. Just one quick thing. We'd really like to get these tags back, so there's going to be a reward for it. It will be substantial. It will be 20 gallons of gas or something like that. If we refurbish them, it's only $900 as opposed to $4,000. We'll get the word out on the tag recovery as well.

CHAIRMAN BROWER: I was going to say that if there's going to be a reward, I would like to see about the equal amount of the reward being given for how much you spend for the tag.

(Laughter)

CHAIRMAN BROWER: Thank you, Brandon. Thank you, everyone. Eva, you have to help me read your handwriting. Can you help me identify what next one we're on. How's the Council members feeling? Continue with our agenda item or do we need a break?

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: I think we should continue. Just try to get things done, I think.

CHAIRMAN BROWER: Okay. Our next agenda item is under new business. Review and approve draft 2013 annual report. I think this is an action item. Eva.

MS. PATTON: Mr. Chair and Council. You have before you the Council's annual report to the Federal Subsistence Board. The intention of this annual report is to bring subsistence concerns and knowledge and any programmatic or regulatory concerns to the awareness of the Federal Subsistence Board. This is the annual report based on the Council's feedback at meetings and discussions that was sent to you via email and the same one that we reviewed on Tuesday when we gathered here. So if there are any edits or additional information, any changes the Council would like to see to this annual report, at this time is the opportunity to make any of those recommended changes and then final approval of the report to be drafted, which will come back to you in its final form for one last review before being sent on to the Board. Thank you.

Rosemary, this is the same annual report that was sent to you via email and also the same copy that we reviewed on Tuesday if you have that available or would you like me to touch on some of the topics?

MS. AHTUANGARUAK: I have it, Eva.

MS. PATTON: Okay. Thank you.

MS. AHTUANGARUAK: Do we need a motion to consider it for approval or open it for discussion or to discuss an addition?

CHAIRMAN BROWER: Yes. It's an action item. Yes, put it in the form of a motion, please.

MS. AHTUANGARUAK: Yes, I'd like to make a motion to approve the annual report for discussion.

MR. G. BROWER: Second.

CHAIRMAN BROWER: Seconded by Gordon. Any further discussion.

MS. AHTUANGARUAK: I just want to make sure that we characterize the concerns of the fisheries issues into the report so we can have all of this information in there. Thank you.

CHAIRMAN BROWER: Okay. We got the nod from our staff. She's indicating that we'll get that into the report.

MS. PATTON: Uh-huh.

CHAIRMAN BROWER: Any further discussion on the annual report.

MR. NAGEAK: Mr. Chair.

CHAIRMAN BROWER: Yes, James.

MR. NAGEAK: Are we on the discussion part?

CHAIRMAN BROWER: Yes.

MR. NAGEAK: I just looked up the word for apprised. I couldn't find it in my dictionary. One day meetings are completely inadequate for the Council to be able to convene, share information with each other to be apprised of subsistence knowledge. Shouldn't that be appraised?

MS. PATTON: Mr. Chair, James. I can change the wording on that to be informed or another

word that would work better there.

MR. NAGEAK: The correct word then is apprised on the letter?

MS. PATTON: Yes, or we can use informed. It's to be informed. You're my professor, so whatever recommendation you have on the edits I'll make those changes.

MR. NAGEAK: I thought maybe appraised might have been -- the definition for appraised is one who estimates officially the worth or value or quality of things. I thought maybe that's the -- I don't know. I'm just curious. I might be wrong. Okay.

MS. PATTON: Mr. Chair. Sure, I can make that change and the letter will come back to you after your recommended edits for final review again.

CHAIRMAN BROWER: Any further discussion.

(No comments)

MR. NAGEAK: I call for the question.

CHAIRMAN BROWER: The question has been called on the motion to approve the 2013 annual report. All in favor of the motion signify by saying aye.

IN UNISON: Aye.

CHAIRMAN BROWER: Opposed say nay.

(No opposing votes)

CHAIRMAN BROWER: None noted. Thank you. The 2013 annual report has been approved. The next agenda item is the tribal consultation implementation and ANCSA consultation policy.

MS. PATTON: Mr. Chair and Council. Do we have Jack Lorrigan on the line.

CHAIRMAN BROWER: Jeff?

MS. PATTON: Jack Lorrigan is the Native liaison for the Office of Subsistence Management. He's been one of the lead people in working with the tribal

consultation working group to draft these implementation guidelines. Are you online, Jack?

MR. LORRIGAN: Yes, I am.

MS. PATTON: You're a little warbled, but we can hear you. Jack can give a brief overview of the timeline and, of course, Rosemary Ahtuangaruak has been one of the working group members. You'll find in your meeting book starting on Page 56 is the brief ANCSA Consultation Policy and then 58 are the implementation guidelines. Again, tribal consultation has long since been in place for government-to-government consultation and these implementation guidelines are to help facilitate tribal consultation in connection with the Regional Advisory Council process.

CHAIRMAN BROWER: We'll give you the floor, Jack.

MR. LORRIGAN: Can you hear me, Mr. Chairman? Hello?

CHAIRMAN BROWER: Yeah, go ahead, Jack.

MR. LORRIGAN: Thank you, Mr. Chairman. Eva covered a lot of the introduction. The implementation guidelines draft before you on Page 58 is the result of a group (indiscernible) and several others were on it. So we're going to send it out to the RACs and we're sending it to the tribes and also the draft ANCSA Corporation Policy that starts on Page 67. The RAC and tribal corporation review are due March 21st. We'd like to have feedback from that part of the process with the target audience be done so we can have the edits ready and done before we go to the Board in April for their Board meeting. So this is an action item for all the RACs. We hope you guys can take a look at it, read through it and give us any changes you feel should be made or additions. It's before you now.

CHAIRMAN BROWER: Thank you, Jack. Rosemary, would you like to chime in in regards to the discussion of the tribal consultation draft implementation guidelines.

MS. AHTUANGARUAK: This process has been gone over the last many months. We've had

teleconferences with a number of tribal and corporate participants discussing this process. We presented some of the progress to the Federal Subsistence Board in January and there's still additional work to do. We didn't want to rush the process. We have a lot of tribes and corporations that are depending on this to turn out to be a good document. So we allowed ourselves some additional time to make sure that we have time to get the responses back and we'll take that process and continue on with our attempts to complete this document.

CHAIRMAN BROWER: Council members, comments. We don't have to take any action -- take it as an action item at this time. It's just informational material for you to review and get involved in terms of the progression on the tribal consultation.

MS. PATTON: Mr. Chair. That's correct. Unless any of the Council members have ideas or recommendations that you see. It's an update on the process and the timeline and this goes back to the Board. As Rosemary indicated, the tribes continue to work on this document as well, but the Council is welcome to make any comments or recommendations if you wish.

MR. NAGEAK: Mr. Chair.

CHAIRMAN BROWER: Yes, James.

MR. NAGEAK: There's a lot of information here. This is the first time I've seen this. How much time -- when is this going to be implemented by the Federal Subsistence Board?

MR. LORRIGAN: Mr. Chairman.

CHAIRMAN BROWER: Yes, go ahead, Jack.

MR. LORRIGAN: We are asking for a March 21st deadline for the tribes. We could also leave that up to you as well. We'd like to have feedback back in time to incorporate the edits and get it before the Board at the April meeting. If you wish to you're welcome to do that to. It's information for you to help us act on this.

CHAIRMAN BROWER: So Jack indicated

March 21, 2014 is basically the last date. A month away.

MR. NAGEAK: Our representative, Rosemary, is -- you know, we work on representation and she is, I guess, representing us in this particular. So, with that knowledge -- I would read it, but I think if Rosemary feels it's adequate or needs to be apprised, then I'm good with it.

CHAIRMAN BROWER: All right. Any other comments.

(No comments)

CHAIRMAN BROWER: If not, thank you, Council members. Eva, we can move on to our next agenda item.

MS. PATTON: Mr. Chair. Thank you, Jack, for your presentation.

CHAIRMAN BROWER: Yes, thank you, Jack.

MR. LORRIGAN: Thank you, Mr. Chair.

MS. PATTON: The tribal councils too that you are a part of and the public tribal members from your community do have an opportunity to review and weigh in on this as well, so that's open as well.

Next on the agenda is the Council nominations process and outreach. We have a couple updates on the current nominations process. As we had discussed on Tuesday and yesterday, the Secretary's Office is delayed in making final vetting and final appointments for nearly all of the Councils at this time, so we are still waiting on a final word for an appointment to this Council. As soon as we are aware, we'll let the Council know.

We do have a letter from the Western Interior Regional Advisory Council addressing the Secretary of the Interior, making some requests and recommendations for changes to the process. Currently the seats expire on December 3rd, so appointments are supposed to be made by December 2nd so that there isn't a lapse in the seats. Most of the appointments are staggered. There was a recommendation, and I'll pass this letter out, from the Western Interior Council if

perhaps that could be changed so that seated members continue to be a representation on the Council until a new appointment is made. So it would prevent this sort of lapse in membership if the Secretary's Office was delayed again in the future.

CHAIRMAN BROWER: Comment. So, do we get double time for -- double in pay for doing dual work because other members are not here?

(Laughter)

MR. NAGEAK: Mr. Chair.

CHAIRMAN BROWER: Yes, James.

MR. NAGEAK: I have a question. Some of the appointments I get into are community sanctioned and I'm wondering whether my community of Anaktuvuk Pass would have to be apprised of my intention to apply again for this Rural Advisory Council.

MS. PATTON: Mr. Chair and Council. Definitely -- I mean part of the process and part of the recommendation is those references from your community. In many cases, the Council has been helpful -- one of the Council's concerns is lack of representation from Nuiqsut, from Atqasuk, from Point Lay. That sort of networking and the recommendations made by those communities to nominate people within their community who would be good representation for the community and for the region and are knowledgeable subsistence hunters and fishers and good elders in leadership in their community or younger folks as well who are engaged in subsistence and learning.

So it's up to your community. Certainly the recommendations you were asking about earlier either from your village council or your tribal council, other elders, subsistence fishers. So those come in to play in the references and the application process. Certainly your own engagement in the community is really important for your representation on this Council.

MR. NAGEAK: Mr. Chair.

CHAIRMAN BROWER: Yes, James.

MR. NAGEAK: There's a modification on

my part because I'm also on the Subsistence Resource Commission for the National Park Service and that particular position is sanctioned by the Regional Advisory Council. So with those things in mind, I'm asking this question.

CHAIRMAN BROWER: Eva.

MS. PATTON: Mr. Chair. Yes, absolutely, James. That's a very important part of your representation on this Council and the overlapping roles of the National Park Service representation as well. So you serve both those roles and they're interconnected. It is this Regional Advisory Council that makes that recommendation for representation on the Park Service SRC. So your continuation on both of those is interconnected.

Marcy Okada was online as well. As you know, she works with the subsistence SRC. It's the next year because your appointment in that SRC is continuing on, but this is the juncture that you would reapply for the Regional Advisory Council.

MR. NAGEAK: So the person that needs to be my reference would be from the SRC then because I'm a representative from here to be to that one. I better say to Doug that if you want me on this part of the SRC for the National Park Service, then you better make a good reference for me then.

(Laughter)

MS. PATTON: Yes. Mr. Chair. Sure. Yes, they are interconnected and it is a lot of responsibility. But absolutely. And that falls into the application process, as you're familiar with the other boards and commissions and involvement in subsistence. So it's recognized that you fulfill this role on the SRC when you put that in your application. If you would like to have a reference from the people that oversee
that SRC, that would be great as well. Thank you.

MR. NAGEAK: I understand now.

CHAIRMAN BROWER: So, James, they need to develop a hat with multiple brims.

(Laughter)

MR. NAGEAK: And a luxurious position too.

CHAIRMAN BROWER: Thank you, James. Gordon.

MS. AHTUANGARUAK: (Indiscernible) in this role. Thanks.

CHAIRMAN BROWER: Thank you, Rosemary. Gordon.

MR. G. BROWER: Mr. Chair. In the same light of -- I think I sit in the same position with James. My seat is expiring this coming December 2014. I am to reapply. I often have those same types of concerns because I'm reapplying. Should somebody be nominating me to reapply? When I first got on the Regional Subsistence Advisory Council, maybe 1998 or somewhere in that timeframe, I was nominated to go on. Somebody highly recommended that you serve in this capacity for your community. Sometimes I get tired. Should I reapply. I'm going on 15-plus years of serving.

There should be some younger hunters that are seeing different things and interacting out there that should be more encouraged to be on these kind of things. Often I get concerned when you get so many Barrow people and the Council is not differentiating from where you're really from. You're just from Region 10. In the past, it seems like to me we had a representative from each community.

You live in Nuiqsut, you're going to serve as Nuiqsut's concerns and hear from them. You live in Kaktovik, you're going to hear from Kaktovik and their concerns or from Point Hope. I often thought when we didn't have that type of representation from those communities that have more insight into what problems they're seeing over there that we should go sometimes to these villages and convene this meeting in that village and make them nominate from the floor. I don't know why it's never -- either you don't have money to do it or it's just an afterthought at that point.

Those were always my remaining concerns. Some of us, we can't -- I like to be on here and express the concerns and what we see out there, but

some of the younger folks, I think, that are very, very active should -- people need to nominate those folks as well.

CHAIRMAN BROWER: Thank you, Gordon. You're right. We did work a lot through our coordinator Barb at the time to try and get to our outlying villages to fill those positions and it was working for a few years, but then the interest of community members seemed to dwindle a bit because of situations we were dealing with. I think that shouldn't slow us down. I keep thinking, you know, conduct more outreach.

I'm starting to think if we should maybe get the Federal OSM to start thinking about working with the school system about getting educational material into the school system regarding the Federal Subsistence Management Program or even the state management program to be fair and honest with educating our younger children in growing up in this lifestyle, which we really don't know about the programs themselves. Even Title VIII of ANILCA. They don't even know what we're talking about when we mention Title VIII. What is Title VIII or what is ANILCA? Those kinds of things are not presented in the school system.

They're more educated into the Western concept of conducting science, mathematical problems, engineering degrees and that sort of stuff. And into the science field, basic science is introduced. Not so much of what it takes to develop proposals for regulations or reviewing regulations, learning about ANILCA or going through this nomination process. You know, it's something that they could probably learn if there's some kind of outline to be used in the school system educating our own about what it is, this Federal subsistence management program.

It's not a small book. These things take forever. I mean I still continue to learn after 20 years, you know. I have to say it's not one individual. It's multiple agencies with thousands of employees that know all these things and trying to understand it all is very cumbersome and time consuming and continuously learning about different situations because of how our resources are managed by our Federal government.

When we talk about just the title, Federal Subsistence, it's misleading in the sense that you have to understand what Federal subsistence really means to one of the Federal agencies because they have different mandates, different criteria that they have to adhere to within the Federal program. U.S. Fish and Wildlife Service has one set of criteria. National Park Service has one set of criteria. Arctic National Wildlife Refuge has another set of criteria.

So those kind of things and they mix and sometimes they want to keep separated. That's the other thing. Why is it that residents of the whole North Slope, why do we have multiple agencies running all these different parks and preserves and refuges and NPR-A? Where did BIA go in all that mix? Bureau of Indian Affairs. They should bring that back on and get a little more vocal in terms of getting the BIA schools back on board maybe in pursuing higher education in that sense.

Anyway, I'm just shooting off and just sharing some of my thoughts. I think these thoughts need to be shared in ways that elevate the interest of others. We have a lot of outside influence to our state and to the North Slope. There's a lot of come from outside and yet our children just know it by -- hear it by name and don't know what's behind all that kind of scene. It's a little bit embarrassing sometimes even to make mention of these things, but these are the facts.

If there's means through your position, Eva, indicating that there needs to be an outreach, maybe educational outreach indicating going through the school systems in that sense, not educating other people, but through the school system educating the students of how this process really works, you know. I think you'll see the benefits in the long run once you see one or two schoolchildren become interested in science or regulations and regulatory processes and that kind of stuff.

I mean I think we have one of our own over here, Nicole, political science and that field. So you know that kind of perks up from the interest of individuals in terms of what things are of interest to the individual person. So I've been here in this Regional Advisory Council because I care about how my people are being affected by regulations, which they

don't really know or comprehend or even begin to want to follow regulations. I don't. Even though I'm a subsistence hunter and there's regulations, I'm supposed to have hunting licenses. I don't go do that stuff because I'm not the type of person that wants to be doing -- trying to be a law abiding citizen. I even break the own laws for some reason, unknowingly.

(Laughter)

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: Yeah, I think it's very important. I actually talk about these things and nominations and outreach. Outreach is something that I think is lacking. If they knew a little bit more about what goes on from here, you could make recommendations to change regulation that affects your hunting around here.

I mean I see one here that we made a recommendation on about 156-something.00 west longitude excluding Colville River drainage be changed. Proponents changing the latitude from 156 west to 155 west for moose. I look at the folks that are really wanting to follow the law and have to go extraordinary circumstances to harvest a single moose by changing a little bit. The moose really don't come down that often from those areas over there, but one might come down and I might -- not just only me, others, you know, might be struggling for the last three years that I have with caribou in my area and say it's time to take this darn moose, man, and eat it.

We need to make things, as we see the dynamics change, to try to work. I really don't like when it says the Council recommendation is to support it, contrary to OSM's preliminary recommendation to oppose. Didn't we make the case and talk about it enough that these concerns are real, they're not just something pulling out of a hat, that OSM should support. It's like them versus us and it's their regulation to wield.

We make the recommendation because we're the boots on the ground. We're the ones impacted to try to make things right, but our conversation is -- you know, sending that to the Federal Board of Game to

review it in this way with that kind of language, the Council say support it, but contrary to OSM's preliminary recommendation to oppose. Something is wrong right there. We should have convinced OSM. Say, you know, these guys know what they're talking about. We know that the moose was struggling for some time and they're on the rebound and their main habitat they really enjoy is way the heck up there. Once in a great while they come down, one or two.

By the way, my dad had to go to court a long time ago, it was like 1950-something. He was on the State Board of Game or something like that and he broke his own law and turned himself in and then his sister judged him, Sadie.

(Laughter)

MR. G. BROWER: It was a funny story.

CHAIRMAN BROWER: At least you know how big the families are around here when you have the magistrate and the hunter in one room. Eva, did we have anything else that we're going to cover while we're under this agenda item?

MS. PATTON: Mr. Chair. No, those are all very, very important points and one that I take very seriously and we have support from OSM. Our new director is very supportive of outreach. Karen Hyer, who is here, and myself do hope to spend some time in the schools. We were also hoping to meet with you, Harry. There was a recommendation from Harry and the Council in terms of trying to help foster a mentorship seat on the Council to bring up younger subsistence hunters and fishers into this process. Rosemary has been very involved in that as well. So that is something we would like to explore further, is your ideas and recommendations for how we might be able to help support that.

I know many of you have been very involved in helping new outreach or make nominations for people to the Council. I've spend a lot of time talking with tribal representatives and others from the communities that are not represented right now. As you've indicated, Harry, many people wear many, many hats, are very busy. The Council has asked repeatedly to hold these meetings in the villages, in the communities that have specific subsistence concerns

that have come before this Council and also those communities that are not currently represented so they have an opportunity to participate and to be engaged. That's in the Council's annual report for this year.

I think it's a very, very important part of the outreach that you're asking for. Budgets are an issue, but if the Council brings these requests forward, the Subsistence Management Program is established to support the Councils, so these recommendations are very important and we'll bring them back to the office and try to do the best we can in outreach and I'll be talking with all of you as we work through our outreach right now for getting representation from some of these communities that are not here and the younger representation too. So, thank you.

CHAIRMAN BROWER: Any other comments or questions regarding our nominations. Rosemary, go ahead.

MS. AHTUANGARUAK: I was in the middle school here in Barrow last week knowing what our village went through and how things can be hard to deal with. It's really good to have us in the schools after things like this for school kids and have it in the things as well as to help support understanding some of the things we're getting.

So I did an outreach where I offered sweaters, but I went into classrooms and asked them questions like what is the Federal designation to the lands that we live in, what happened in 1989 that led to us having a better process at local community meetings with oil and gas industry. Different questions that helped them understand about the issues that we have and things like that, but it went really well.

I've been doing this over eight years and it's important for us to be engaged in our future generation's future because people who come here from other areas may have their educational degrees, but without the understanding of our local community and issues that we're facing, it's a different education process. I'll be going back into the schools and doing presentations as well as working with the various processes that are interested in some of these issues as the year goes on and hopefully be able to do a small

type of process in the villages this year.

This type of stuff is what helps to grow our future generations and help in understanding the importance of our process to encourage them to further their education and to bring their education back into our local communities. It's really important for us to be engaged in this process because we bring a different process than it is from someone within the agency that has a different background and a different education about what the Federal Subsistence Program does.

So I hope that you'll partner with us in the process to do outreach with the schools so that we can also be able to help with this process and to give insight from our perspective on what we're doing. Also, it's very important that we get a process to allow us to grow the next Harry, the next Gordon and the next James as we go through all these different issues. The depth of knowledge that you guys hold is really a vessel of information that does not get brought out if you're not there and it's important that we get the exposure for the generations to be able to understand the knowledge that you have.

And the generations of participation that have led to where we're at right now with the regulations that we're dealing with because it's a lot of us giving up our traditional ways and our lands and waters as this process goes forward and as increased competition comes to these areas affecting our resources and it's really difficult when you watch that progressive change throughout our state and the increased micro-management of the agencies engaged in these processes.

Thank you.

CHAIRMAN BROWER: Thank you, Rosemary. Doreen.

MS. LAMPE: Yes, thank you, Mr. Chairman. Just in terms of outreach I really appreciate you guys having this meeting here in Barrow. I got really confused with all the different other meetings going on this week. In terms of outreach, if you could share your minutes with me via email, I could share them with our regional tribal office and I could kind of follow what your guys' proposed remedy is to

shooting on a moving all-terrain vehicle. I enjoyed listening to your guys' discussion today. Thanks for coming to Barrow. Thank you.

CHAIRMAN BROWER: Thank you, Doreen. James.

MR. NAGEAK: Thank you, Mr. Chair. I want to thank you for having me as an opportunity to be part of this particular group because it's such an awesome thing to be talking about these things and things that we don't hear from the other agencies. You know, we touched upon the spirituality of the relationship between Inupiaq and -- I read what Patrick saying when he mentioned that there are three groups in this world, the Inupiaq, the white people and the animals. You know, it's a whole together mentality that makes us unique. I'm thankful that we can begin to be cognitive of who we are. So it's always important that we have that dialogue.

The thing that we have, you know the representation, I think that some of us need to be more active in going back to our villages and make it known why I was here in Barrow this week. A lot of us don't do that. We don't get a chance to talk to the whole community about our very important participation in being advisory to the Federal Subsistence Board, which is -- you know. And I always promise myself, well, I try to do that.

We have a unique situation I think in Anaktuvuk Pass that we have a chance for the three agencies that we have in Anaktuvuk to get together and hash all the things that are important for the community. The corporation, the tribal council, which is trying to get on its feet again in Anaktuvuk Pass, and also the City of Anaktuvuk Pass Council. So we get together. We call that a leadership meeting and we hash all of these things that we have.

We had a good meeting last week where the school principal was there and Petro Star and asked us what are your priorities, what are your needs here in Anaktuvuk Pass and we were able to, as a leadership group, including the school system, the public safety person was there and all these other -- and have that conversation and what the needs are for Anaktuvuk Pass. Of course we're always concerned about our subsistence lifestyle and how our subsistence would be affected by

the development around us.

The road to Umiat was one of the really big ones that we really fought against. But we get into what I read in the book called Catch-22 situation where, you know, I'll be damned if I do this, I'll be damned if I do that, you know. That's where we're at, you know. We opposed the road, but when I have to pay $1.08 a pound for 100 pound dog food, it becomes really expensive for me to get something out of Fairbanks to Anaktuvuk Pass because we don't have that road.

Where in the same store there somebody from Nuiqsut was loading up this big cart with all of these things and she said, man, I'm glad I'm getting all of these because I'm putting them on my truck and taking them home to Nuiqsut. Man, I should have had a V-8 that time. It really touched my heart because I couldn't do that. I bought a $164 door at the same place with a frame. Took it to the airport freight department $465.

CHAIRMAN BROWER: For the freight?

MR. NAGEAK: For the same thing. So that -- I'm always thankful that I have an opportunity to be part of the conversation because of all the problems we have in the small villages too. Thank you.

CHAIRMAN BROWER: Thank you, James, for sharing that information. It's always good to hear different views on how we perceive things and take advantage of some of the situations that we're in. Getting a real perspective of what we're having to go through to accomplish some of our tasks.

I look to you, Eva. I could make a whole bunch of more comments, but I think we have an agenda that's getting shorter and our time is moving by fairly quickly as we continue to communicate. So Eva.

MS. PATTON: Mr. Chair. The other important items on the agenda the Council did want to hear under special actions we actually gave Lincoln and Geoff to speak to the caribou updates. In particular, there's some focus on the Teshekpuk Caribou Herd. They were actually going to be up next so that they could address the Council briefly on Board of Game actions for caribou and all the caribou herds.

Then we do have Marcy Okada on the line and James does need to leave at about 5:00 o'clock to catch his flight. Marcy was going to give an update for Gates of the Arctic National Park and James is, of course, the Subsistence Resource Commission representative for this Council with that Park. And a brief update on the road to Ambler access route. And we have Dave Yokel, BLM/NPR-A, and the Council had asked for some information on ice roads and just a brief update on the Central Yukon planning and NPR-A updates. Vince, I believe, had just a brief update for the Council as well. So that's what's on the agenda yet for today. Thank you.

CHAIRMAN BROWER: I was counting three items, you listed 10.

(Laughter)

CHAIRMAN BROWER: Anyway, thank you, Eva. So we'll go on. Should we take a five-minute recess? So I'll ask for a five-minute recess at this time.

(Off record)

(On record)

CHAIRMAN BROWER: Five minutes has lapsed again fairly quickly. Lincoln Parrett is patiently waiting and seated here and I'd like to give him his opportunity to present our presentation -- his presentation. Our presentation. His presentation this afternoon. So President Lincoln, you have the floor.

MR. PARRETT: Four score and seven years ago. Okay. So what you guys asked for was an overview of caribou on the North Slope. Eva said I could only talk for 15 minutes, so I'm going to try to keep it to 25, but I've got lots more slides for questions if people want, but I am going to try to keep it fairly short because you guys are time limited.

I'm going to do all four herds like I said, starting west, going east. One thing I should mention is that the work that goes into monitoring these four herds is a lot of work. It's basically five people that put most of their time into doing this. In addition to, you know, people like Brian Person, Dave Yokel, some of the other agencies, I mean there's a lot

of time and money that goes into all this work, so all that needs to be acknowledged. This is multi-agency work that we just happen to be presenting on today.

Just a reminder of general ranges for these four herds. Again, west to east, Western Arctic, Teshekpuk, Central Arctic and Porcupine, plus all these other herds in Alaska. There's 30-some herds that are named, but these just happen to be the four big ones.

I put this map in here, this was last fall, October 2013, just to show where the collars were from all four different herds. A couple interesting things I would show you here. Down on the Seward Peninsula you have a collar from the Central Arctic Herd, two collars from the Teshekpuk Herd and then a whole bunch of Western Arctic collars. That's kind of a new thing for us, especially the Central Arctic Herd, to see one of those caribou go all the way over there.

The other thing you can see here is that Wainwright in October had a bunch of caribou. A lot of those caribou ended up drifting east and north, which is, of course, we have caribou all over the place around town right now. Then a bunch of these caribou from Nuiqsut ended up going south. These caribou that were kind of in the foothills drifted further south into the mountains to another place here that has a lot of mixing. That's basically right around the Haul Road there. Either side of the Haul Road has caribou from three herds as well. A lot of mixing going on there.

Then, if you keep going to the east to these other yellow ones, a bunch of the Porcupine Caribou on the south side of the foothills around Venetie, Arctic Village, but a bunch of the Porcupine are in Canada over by Dawson. What you don't see on this map with those yellow dots should be another color of dots and that's the Hart River Herd, which you guys probably never heard of because they don't really come to Alaska. The Forty Mile Herd, which you may or may not have heard of because it's a big herd around Fairbanks, and then the Nelchina Herd, which is another herd. So this mixing just goes. It goes from one herd to the next herd to its next neighbor to its next neighbor to it's next neighbor.

You know, I mean that's caribou, right. I mean caribou go all over the place. From a person's perception on the ground, I think it's pretty easy to

just go, well, caribou are caribou, you know. It's just some guy like Lincoln that wants to give them a name and say they belong in a certain place. You know, the thing of it is, they do go to certain places pretty frequently. It's not 100 percent all the time especially in winter, but the other part of that is that there's a lot of mixing and that mixing causes some difficulty in both studying it, counting them and when you're trying to figure out harvest, you know.

If you go to a place around the Haul Road there around Wiseman, a guy shoots 10 caribou. Who are they? Well, I don't know. They're just caribou, you know. We could estimate what proportion of those. Maybe three of them were one, four were the other. You're wrong, but maybe it's kind of right. That's going to cause us maybe some problems in the future if we start trying to regulate things a little bit. We're going to also have to try to figure out, you know, which caribou we're killing and that's going to be difficult in the future.

One positive side to that maybe is that they won't mix as much maybe when the herds get smaller. Maybe it will be easier from that perspective and they're going to contract their ranges. I have a feeling, and this is just my gut feeling, that a lot of this mixing we're seeing right now is just because these herds have been so big for so long they're searching. They're searching for something new. They go east or they go west because they've never been there before and they didn't know that there was somebody else already there and there's caribou all over the place.

CHAIRMAN BROWER: Lincoln, I have to say something about that mixing that you're talking about. Within our own Barrow area our families are getting so big and large and what's hard for our relatives to find wives, so they start moving across the mountain range and beyond to find that lineage that wasn't so close to each other. So that's the kind of similarity that even humans have to go through.

(Laughter)

MR. NAGEAK: That s why I'm living in Anaktuvuk Pass.

MR. PARRETT: There may be an element

to that. One thing I'd say is that these dots here, they don't differentiate between the sexes, but on the North Slope there's almost no bull collars and that usually happens. The bulls almost always go to the mountains every year. Almost all of them. Not all of them, but almost all of them every year and I don't really know why that is, but that's a big difference and maybe those bulls are looking for some strange.

CHAIRMAN BROWER: The other girlfriend. So, Lincoln, in regard to -- this is again just traditional knowledge. When you talk about resources from different areas, they just take a bite of that resource and they know where it came from. Fish, for example. Fish from the Meade River, fish from the Topagoruk River, fish from the Colville area. Without even telling them where they got the fish, they just take a bite of it and they know exactly where it came from. My grandmother was like that.

So I learned over time after the families got separated, you know, with that land selection and Nuiqsut got established, Atqasuk got established, later on I heard about -- when I went to visit my grandparents at Nuiqsut, we were at a dinner at the other relatives there in Nuiqsut, indicating, yeah, this caribou came from this herd. I don't know why they try to tell us and separate these different herds when they're all caribou, but I can tell you this one came from this side of the river and the other portion then was cooked and he'd say this one came from this side of the river.

I was trying to figure that out in my head, how the heck do you know all this stuff. Just from the taste of the meat or the food that they're eating. These are the kind of things that traditional knowledge has passed on in the sense that you're able to identify resources as to where they originated from. I just wanted to share that with you in terms of traditional knowledge and information that we continue to use today. Thank you.

MR. PARRETT: I agree. I think other people -- I mean I can't do that. I couldn't probably taste the caribou. I think I can tell the difference between one that's shot in the winter and the fall, they taste a lot different, but I don't know if I've ever been able to say, well, I think this comes from somewhere different, but people can do that. People

can do that with sheep. They can look at a sheep and tell you exactly where it came from.

MR. G. BROWER: Let me interrupt.....

CHAIRMAN BROWER: Turn your mic on, Gordon.

MR. G. BROWER: Yeah, I just wanted to add a little bit here too. You know, about caribou and reindeer, you know, Harry's father, my dad, many other folks on the North Slope back in the '30s, '20s, '40s, engaged in lots of reindeer husbandry activities up here, reindeer work. This was before there was pipelines, roads. I've even heard there was not a Teshekpuk resident herd at the time and listening to those old-timers talk about where they were ranging from, you know, the Colville River to the other part of the Colville and back and moving them around.

They would become very, very alert certain times because big herds would come. Herds from the east, herds from the west would come and they would have to be very alert because the reindeer is just a follower. If you're not careful, the reindeer would go along with the big herds and disappear. But these guys watch what's going on in their surroundings. Big herds would collide in the thousands and move around together and then they would separate again and they did that.

I don't know if there's information nowadays that you can use other than traditional knowledge about this type of activity for caribou. They did this meshing and then sometimes another herd could lose 30,000 animals in one shot.

If you look at some of these little dots, one caribou satellite and the size of the herd it represents, you could be looking at 4,000 of those animals represented by that dot from different herds. It's not unusual to me to see that because I've heard about it. It's traditional knowledge stuff and they would intermix, but I think science is finally catching up to be able to effectively see some of that going on through radio telemetry, satellite and all that kind of stuff. To me, it's just saying, yeah, that's correct. They do that.

MR. PARRETT: In our experience, they didn't do it for a little while, but it's probably

because they were smaller, the herds were smaller, and they weren't doing it as much. Plus, like you said, we have way more satellite collars than we used to.

Okay. I should jump to each of the herds here. This is just population sizes since the late '60s. The red acts as our minimum counts and then the black dots with the arrow bars around them are estimates. So we adopted this technique to statistically estimate abundance. You can see that especially recently from a management perspective there's no difference, you know. I mean these caribou aggregate so tightly that you're basically counting them all anyway. So we feel pretty good about what we've done for at least the last 30 years or so.

Western Arctic you can see since the early 2000s when they were basically at their peak have been on a decline. It's been a fairly gentle decline, 4-6 percent per year. That's been going on now, like I said, for almost 15 years. What we think is happening now is maybe it's steepening a little bit. We got two photo censuses done on the Western Arctic this summer. The first one is just nearing completion and then they'll start counting the second one. Certainly, at any rate, that's not going to show that that's changed. If anything, it's probably going to show that it's steepened a little bit. That's where we're at with the Western Arctic. Probably getting below 325 at a minimum and probably below 300 as well, but time will tell. The next few months will tell what that is in reality.

This is just modeling that decline. Jim Dau put together a pretty basic population model. You can see 265,000, that's the number that the Western Arctic Working Group recommends that you start thinking about changing things basically. That there's enough pressure on that herd that you might want to start changing some of your regulations and stuff. So you can see that we're not very far away from that. In fact, we may even be there if this population model is correct.

CHAIRMAN BROWER: Question, Lincoln. Western Arctic Caribou Working Group is suggesting that regulations be drafted to change the number of animals being removed from that population?

MR. PARRETT: That's right. They make

no recommendation yet on how that would take place. They just recommend that that's the point at which you change things.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: If we're getting close to thinking about reaching a threshold, maybe we're there already like you said. It's going to be very prudent that we work with you and work together. I was recently in Anaktuvuk listening to the assembly meetings going on over there. Been there on a roundtable meeting. Caribou is a central issue in Anaktuvuk. There's different things that have been done, I think, that have been unsuccessful to date.

There's ways of doing some of these things that we need to work together on. Maybe one of these things is based on decline, based on competing uses in an area to use the C&T determination as a critical resource for the community to have access during a defined window of opportunity between August and October needs to really be talked about seriously until the harvest is met as a critical nutritional need for a community. There's already large concerns in availability of these resources. Availability is different than the amount of resources there are. That needs to be very clearly defined.

MR. PARRETT: Some of the reasons behind this decline, you can see for adult cows that are collared the proportion that have died every year has not been steady. It's increased over time. The reasons for this may be fairly complicated but, nevertheless, this is what we're observing. It's just getting worse and some of these years were tremendous. I think some of these very tremendous years are associated with bad weather that is compounded by their vulnerability to predation and those things are sort of a double whammy.

A third of the adult cows died in that year. I mean how could you not have decline if a third of the adult females who are supposed to be basically your most robust age class. They're supposed to be doing well and they're not. Last winter turned out to be a fairly easy winter for them. You can tell, compared to the early '90s when that herd was really

growing, it's still pretty high. As far as why that's happening, maybe we don't know perfectly, but we think it is happening. This is not something strange going on in the data that's causing this to rise.

At the same time, this is the proportion of calves in the population in April/May basically when they should have a pretty good chance of -- you know, they made it all the way through almost all the winter and they're probably going to survive at a rate similar to adults from here on out. That's been decreasing, so they're not surviving through the winter. I can say they're not surviving through the winter because recruitment, how many are there at the end of the spring, is both a product of how many were born and then how many survived. You multiply those two and you get to there. The productivity for the Western Arctic Herd has been steady, if not increasing a little bit in recent years. So they're producing calves, they're just not making it to the spring.

I put this in there. This is at Onion Portage when we collar caribou on the Kobuk River when we drive up to them. All the animals we handle -- and this is the other cool thing about this, is from 1995 to 2013, this is one person evaluating this so he can get calibrated. It's Jim Dau looking at these animals and saying that's an average animal, that's a skinny animal, that's a very skinny animal. The percentage of skinny animals, skinny or very skinny animals -- there's basically five categories; very fat, fat, average, skinny or very skinny -- that really has not jumped up. That goes along with the idea that calves are still being produced in this herd because you get pregnant in October and so to get pregnant you've got to be in pretty good shape come fall and that sort of agrees with that.

We're not seeing a bunch of skinny caribou come through in the fall. They're doing all right in the summer apparently at least in terms of nutrition. To us, that's what that means anyway; high productivity and not seeing very many skinny animals. That must mean that summer nutrition is not a huge problem for them. When I say summer nutrition, it's not just vegetation and everything, it's also their ability to eat.

CHAIRMAN BROWER: The graph shows there's no red.

MR. PARRETT: Yeah, so we have not observed a skinny or very skinny animal in three years, a bull.

CHAIRMAN BROWER: So it's indicating they're healthy.

MR. PARRETT: That's what that means to us. No skinny bulls and not a whole lot of skinny cows either.

CHAIRMAN BROWER: I'm jealous.

MR. PARRETT: I've said a couple times to you guys before, I say it to the Fish and Game Management Committee meeting, Dau has done a great job of putting together this jaw collection program. I wish I could do the same. I wish Geoff and I had been able to put the same thing together. What he's seeing here, he's also got the benefit of some really old data. I think this '59-'61 might have been associated with Project Chariot or something like that. Anyway, they've got jaws from a long time ago, from the late '80s and also from the last 10 years.

What he's seeing there basically is in the late '50s, early '60s when that herd probably was just about to crash jaw lengths were small. They were smaller jaws, smaller animals basically. When that period from '85 to '90 when they were growing at a pretty good clip, they were bigger and now it's pretty marginal, but it looks like they're getting smaller again too. Another indication that at some level, maybe the season is not clear, nutrition is not as good as it used to be. So this is all bulls that were at least five years old basically, so these are mature bulls.

I mentioned previously the Western Arctic Management Plan that the Western Arctic Working Group put together. It's kind of modeled after something they did for the Porcupine Herd and I think -- there's certainly nothing hard and fast about this. This is just to kind of put you in the frame of mind, you know. Green is good and when you're in the green, you're good. Two elements of that, of course, is how big the population is and then what it's doing.

I think that if a caribou herd is on the increase like they were in the '80s and '90s, you

can harvest them really hard because lots of animals are still going to make it besides the ones that you're hunting. On the decline, I think things could be pretty different, so this sort of incorporates elements of that, whether the population is increasing, decreasing or stable if you want to apply a different harvest rate. Again, these harvest rates are not hard and fast. They're sort of a starting point to talk about.

In the State system, what these colors mean is that the green and the orange are in general hunts. That means basically any person can hunt that wants to. Tier I in the State system means that it's limited to Alaska residents and there may be some jockeying in there for who gets what when. Tier II you're differentiating between Alaska residents, so it's really focused on subsistence hunters at that point. You can see the harvest is very small there, 8-12,000. Basically we've been above that for quite a long time. People generally kill more than that every year. When we get into that Tier II, we're in that situation where we have less available than people would really like to hunt. How the Federal system and the State system is going to interact on this, that's a question for you guys to deal with in some ways.

MR. G. BROWER: I've got a question.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: If you go back to the other slide. General hunts, Tier I, Tier II and your characterization of anyone can hunt, they're abundant and no conservation measures are in place. I think there needs to be from the Federal side and the State side redefining general hunts whether they're abundant or not. You put everybody in the mix together, fly-in hunters, sport hunters, subsistence, in the same way that I feel we're impacted by these conexes, these dome tents, even if it's in the time of abundance, the ability to reroute animals. There s no scientific proof about it. Caribou will go anywhere they want to go and they will. They will reroute themselves and who knows who did it.

If you consider communities that have a critical need for these resources in the same way we made that case for bowhead whales for our communities, even in times of abundance and general hunt you need to

have a mechanism in place so that those first animals come through. It may mean that you identify an area, maybe a plume between August and early October. That plume is a subsistence hunt from the residents of this community expecting the normal availability of those resources, but allowing hunts maybe to occur outside of that plume.

That kind of perception, there needs to be some mechanism in place. I think it's been tried with a controlled use area. This is a little bit different type of a concept probably based on customary and traditional determination.

MR. PARRETT: Yeah, that's something available to you guys, I think. Like you're saying, there's a subtle difference, but yeah. I mean I would have said a controlled use area is very similar to what you're talking about. It basically limits access. Certainly those kinds of options and things like that certainly exist. That's a way to allocate even though a resource is relatively abundant.

This slide is about how many and who is harvesting. We basically feel like the black bars, which are based on household survey data, which is what people up here are pretty used to, and then the red, which is harvest tickets, they just generally represent different people. So what you can see here is that the red part, which is residents that live outside of the Western Arctic range, as well as non-residents. So those two people combine people from Fairbanks, Anchorage, plus people from Cleveland and Timbuktu are in the red. Most local people are in the black.

What you can see here is that that allocation issue that you're talking about in terms of preferential uses, you don't have a lot to play with here. That red part is really pretty small compared to the black part. If you're excluding certain users, that's one year basically. I mean that herd could drop enough so that all of a sudden you go from those people being allowed to hunt Tier I basically to Tier II in an instant. So there's not a lot of room here to work with in terms of limiting people. It happens pretty quickly where you go from everybody to -- I mean not nobody, but.....

CHAIRMAN BROWER: I mean we've had resources that we've had to go through that there's

nobody hunting.

MR. PARRETT: Yeah, exactly. Muskox, for example. Yeah, that's a good example. This is where harvest is occurring in the Western Arctic Herd and so you can see the bulk of it we estimate are coming from Unit 23, Kotzebue, Kobuk, Noatak, Ambler. 26A is a little chunk of it. It's especially Anaktuvuk, Wainwright, Point Lay and then Point Hope, to the extent that they're included in that. So 26A is divided between Western Arctic and Teshekpuk, so this is one of those places where we're going to be concerned about mixing and who's killing what.

I guess this is as good a time as any to mention that at the Board of Game meeting in January -- the Teshekpuk Herd is pretty interesting in that a customary and traditional use finding had never been made for that herd, which is really odd because it's a very real subsistence resource.

CHAIRMAN BROWER: They were stopped from making those determinations. Now it's an indication of there's no data on that. These sort of things occur when the resource manager indicates that there shouldn't be any more customary and traditional use determinations be made on these resources when there should have been. Now the indication is now we don't have that data.

MR. PARRETT: Well, I think in '92 when that happened, that's part of the argument was that we don't have enough data, so we don't know what's going on, so we're not going to do it. The record is not completely clear on what exactly happened there, but as far as we know it wasn't listed there. The argument that the Board made when we presented the data was that, well, clearly they were thinking about Wainwright, Barrow, Atqasuk, Nuiqsut, so they were already including the Teshekpuk. So what happened is they basically said that the Western Arctic and the Teshekpuk are combined now and that amount that had been set before, which is 8-12,000, that's the amount necessary for subsistence, didn't change. They kept that level the same under the assumption that the Teshekpuk was already included in that number that they established in '92. That's for the State system. That's the range in which -- and below when action happens in terms of limiting who and how many.

CHAIRMAN BROWER: Lincoln, amounts necessary for subsistence is putting limitation to a user group for the availability of -- or to remove caribou.

MR. PARRETT: Yes.

CHAIRMAN BROWER: I mean that's a very poor term to use for when there's a need and population declining for a community that's had historical use for these resources. I'll stop there.

MR. PARRETT: That's one way to look at it. There's a positive way to look at it too. The positive way to look at it is that we need at least this many, so everybody else -- you know, we're dividing the cake amongst ourselves now and that's another way to look at it. You can view it as a protective device or you can view it as a quota which has a negative connotation. Nevertheless, the number is the same thing.

So what levels are sustainable. That's a difficult question for managers to answer. I mean how many can you take. You get into this question of additive versus compensatory mortality. If you guys don't know what that is, additive is basically if you shoot it, it's an animal that wasn't ever going to die anyway. The analogy I made on the radio this morning was a fat cow out here, she doesn't have a calf, she's in good shape, nothing wrong with her, she's probably going to survive the rest of the winter, she's probably pregnant. If you shoot that animal, that's an animal that was more than likely going to live. That's additive mortality.

Compensatory mortality would be something like a seven year old bull. You shoot it in August. It never got to breed or anything like that, but that animal had a really good chance of dying over the winter whether it's from just starvation or getting poked in the gut by another bull or getting killed by a wolf because it was weak.

Anyway, that's sort of the difference between those two things and that's what you're trying to understand when you're figuring out what's available, what the harvestable surplus is. A big part of that is when you're in a decline, the harvestable surplus, the compensatory additive question on cows

almost starts to become irrelevant and that's why you tend to want to pull back on cows right away, is you want to save them.

That's the point that Jim has here is that most cow harvest is probably non-compensatory, especially if people are being selective. If you're going to just shoot a cow and you don't care what it is, maybe you are going to shoot a calf who might not have made it or you're going to shoot a really old cow that's limping, but most people aren't going to do that.

The other thing about this is that bulls die at a much faster rate than cows, so if we're not adding calves back into the population, but we're still losing cows and bulls, that bull:cow ratio is going to shrink pretty fast because bulls die at a faster rate than those cows. We're already seeing a decline in that. That's going to become an issue because if you lose all those bulls, it's not like you can start moving the cows because you need cows to make babies.

So the summary that Jim put together -- and obviously this presentation he put together was like 70 slides, so I really skimmed through here. They've observed some long-term changes in the winter range. The abundance of lichen on some of their winter range has gone down, so they are impacting their range. The extent to which they're impacting it that's hurting them is unknown, but at any rate they're observing that things are changing.

Like I pointed out, there's some long-term trends in calf survival. The bull:cow ratio is starting to decline. There's some suggestion that body size is decreasing. We're starting to see a lot of these whether events over the last decade or so, even earlier. All those things may have been affecting them at some level. Lately they've sort of seemed like they've been exacerbated. Things have gotten quite a bit worse.

Jim thinks that predators are influencing things a little bit more than they did 10 or 20 years ago. That's maybe a function of two things. We don't have very good data on it. The limited data that we do have suggests that bear populations are much higher. That would corroborate

what everybody is seeing on the landscape. People think that there's a lot more wolves. Again, we don't have a lot of data on it, but that would certainly corroborate what people are seeing on the ground.

Then this point that weather conditions and the overall change in range may be causing some malnutrition, which causes them to be more vulnerable, which causes wolves to kill even more. So those two things together may be really what's getting us right now.

The other part is that for a long time, for 30 years -- I mean regulations right now, even though there's numbers, 10 per day, 5 per day, really that's unlimited essentially still, but it didn't matter for a long time what we did. I'm sure we were affecting the growth rate to some extent. Maybe it just meant that we were growing at 11 percent instead of 13 percent or 13 instead of 15, but that's going to change probably soon. We are going to have an impact. What we do is going to matter a lot instead of hardly any at all.

Then the last point that Jim would make here is that future harvests are going to drive that number down, the abundance, if demand remains stable. We've seen that. Demand doesn't really fluctuate. Access fluctuates. People want the same amount. It's just whether or not they can get it or not. There's no reason to think that that's going to change.

Especially in Unit 23 migration is getting later and later and later and starting to get to the point that bulls don't show up until they're in rut, so nobody wants to shoot them, so they shoot cows instead, so it's sort of a double whammy. How many cows does it take to make a bull in terms of meat? I don't know what the ratio really is, but it's more animals and their cows. If that keeps going, that could be a real issue in the future.

CHAIRMAN BROWER: Add on to that is the health condition of the animal as well.

MR. PARRETT: Yeah.

CHAIRMAN BROWER: I mean the prime time for the bull is in the fall season when they're at their prime good health condition, fat, and weigh quite

a bit. If that's the case, you start removing the females, you basically want to find the ones that are in the same condition as the bulls. That gets to make a hunter more selective.

MR. PARRETT: Yeah.

CHAIRMAN BROWER: I mean you want the animals in fairly good shape or in condition to be taken for food.

MR. PARRETT: Yeah. Let's just keep going, I guess. We'll start moving east. Teshekpuk Herd. This is just the general range. You guys have seen maps like this a lot in the past. This is kind of everywhere we've ever seen them go and that's a big chunk of the state. You can see in that map that I put up before where they were this fall and it's kind of the same this year. There's a bunch of them kind of in the foothills, maybe a little bit more in the south here than they have been in the past. There's a bunch by Wainwright, Barrow, then a bunch by Nuiqsut. Maybe some years aren't as many as others, but this year they're kind of using all three of those places pretty heavily, so it's in some ways a pretty typical year.

The yellow part is the summer range. The green is kind of the cabin grounds with the core calving grounds or what used to be the core calving grounds in red there.

So this is one thing I guess I should point out here. This is why we think that -- this range differentiation is what gives us some idea, for example, that people in Barrow are mostly killing Teshekpuk animals. People in Wainwright are killing a mix. People in Atqasuk are killing mostly Teshekpuk animals. People in Nuiqsut, because they have a tendency to hunt on the west side of the river rather than the east side of the river are hunting mostly Teshekpuk animals. In Anaktuvuk, if you kill something in August/September, it's probably Western Arctic, but the later you get in the winter, they more likely they've gone south and Teshekpuk animals have come in and that's what you're hunting and I think that was pretty typical what happened this year from what I heard.

CHAIRMAN BROWER: James.

MR. NAGEAK: Thank you, Mr. Chairman. So the caribou that are staying in Anaktuvuk, they're Teshekpuk?

MR. PARRETT: That's what we would think that they're pretty much Teshekpuk.

MR. NAGEAK: Just a couple, two or three weeks ago I went out and looked at the caribou and there was one with a collar on it.

MR. PARRETT: Joseph. His name is Joseph. No, I'm just kidding.

(Laughter)

MR. NAGEAK: I didn't shoot at it. I knew it was giving us good important information to you guys. And they're fat. Is there a correlation on the decline of the caribou and that they have more range of food?

MR. PARRETT: I mean if they get into fresh range, that's always good for them, especially if they can access it. I'll give you an example of the upper Kobuk. If you fly over it in the fall, it looks like phenomenal range, thick lichen, but if you go there in April, you realize that's a horrible place to be. The snow is super-duper deep, it's no good and I think it tricks a lot of caribou actually. You go and look and they go, oh, my gosh, this is great and they show up and then they get snowed on and snowed on and snowed on and they can hardly walk around and then a wolf comes or they just starve or whatever.

I think to some extent it's good for them to find new range, but these caribou have been so abundant for so long that I don't think there's a lot of fresh range around anymore these days.

In terms of caribou being fat this year, I think they may have had a good summer this year. Maybe they'll do pretty well over this winter. I'm not sure yet. The calves I've been monitoring -- you know, we've been collaring about 70 calves every summer -- and they did pretty well this summer. I think they did the best this summer than they have in the last three years. Maybe they're having a good summer, good winter.

MR. NAGEAK: Mr. Chairman. An observation again. I think that because they were staying north longer than they usually do and they have more leisure time to not have to rush through the pass, maybe there's a correlation on how fat they are this winter.

MR. PARRETT: Maybe that's true. Maybe a nice long fall is really good for them. I don't know. That's getting into a fairly fine analysis of time and that kind of thing where we don't really know.

This is winter range for the past -- for five specific years. We were looking pretty intensely. This is also when we had a lot of satellite collars out, so we were wanting to get basically a better analysis of who was harvesting what when, so this is part of why we did this. This is just sort of replicating what we saw on the hatch line before in terms of these three main wintering areas in the Brooks Range near Nuiqsut and then between Wainwright and Atqasuk. Those have always been pretty reliable places for Teshekpuk Caribou to winter.

This slide, I had to put this up at the Board of Game. This is like the only slide that you have to have at the Board of Game. Basically telling what your population size is, what your harvestable surplus is. When I put this together at the time, this is what the 2011 population was, 55,000. My model, I have a population model that uses birth rates, death rates, survival rates that are specific to different age classes and sexes and stuff. It would predict that there would be about 38,000 animals in 2013. At that time I had not finalized my photo census estimate.

Available harvest based on a harvestable surplus of 1.5 percent of the females and 15 percent of the males was almost 3,000 if the population was 55,000. I knew it wasn't going to be that high, more like 2,000 if the population is 38,000. Again, at that time there was no herd finding for the Teshekpuk for amount necessary for subsistence, but the Western Arctic was 8 to 12 and, of course, that's what the Western Arctic plus the Teshekpuk is, is 8-12,000.

There's intensive management law that says that once a herd gets to a certain level you have to do something about it. You have to try and help them. That range for this herd is 15-28,000. That's

still a ways off for this herd, although it may come quicker than we realize. And then a harvest objective of 900 to 2,800. So those are a specific thing to State law in terms of what they expect you to be able to harvest out of that herd.

CHAIRMAN BROWER: In regard to the amounts necessary for subsistence, you combined the Teshekpuk and Western Arctic. If they were kept separate, how would those numbers be representative then?

MR. PARRETT: That's exclusively under the purview of the Board of Game. That is what they call an allocation issue. So not something that a biologist gets to decide. However, if they would have done things like they frequently have done in the past, it would have been similar to historic harvests that we've seen, so something around the range of plus or minus 2,800 is what they might have done. The Western Arctic, if you assume that the Teshekpuk wasn't included in that 8 to 12 for the Western Arctic and maybe 2-3,000 for the Teshekpuk is maybe a value that they might have come to. Again, that's 100 percent speculation on my part.

CHAIRMAN BROWER: The follow-up question is would that be well under what we're currently taking or is that way above what we're currently removing from just the Teshekpuk Herd.

MR. PARRETT: Again, that's based on historic stuff. The stuff that you have done, Taqulik has done, some of the consulting companies, all that kind of got put together in a report and I can definitely tell you guys where to find that or make sure that Eva can share that with you. The subsistence division put a report together that basically said that the communities in 26A harvest about 4,500 caribou a year and we think that about 2,800 of those come from the Teshekpuk, so that's what the number would have been. It would have been basically what you guys have been doing. That's normally how they do that. What you have been doing or a little below.

CHAIRMAN BROWER: Thank you. Gordon.

MR. G. BROWER: Just a little maybe understanding more of resource allocation. We're basically just hunting under a resource allocation of

the larger herd. Not recognizing the Teshekpuk Herd, right?

MR. PARRETT: Yeah.

MR. G. BROWER: That's what I'm understanding.

MR. PARRETT: That's a way to interpret that for sure.

MR. G. BROWER: Who makes those decisions?

MR. PARRETT: For the State? The Board of Game. Based on recommendations. I'll be honest with you. One thing that they saw is that the North Slope Borough Fish and Game Management Committee didn't want to do it at all and as a result they basically took that information and said if they don't want to do it at all, we'll just assume that it was always part of this other thing and leave it at that.

MR. G. BROWER: I'm just thinking here because we fight over three moose. We're literally duking it out over three moose sometimes when maybe it's a resource allocation problem.

MR. PARRETT: It is.

MR. G. BROWER: We should be able to revisit these things. I mean why make it so difficult. In this case, we're swallowed up by the Western Arctic Herd. It sounds like a good thing because we get to harvest a big chunk, more than what maybe was allowable if it was only a Teshekpuk Herd. You look at those three moose in the Kaktovik area and you're trying to conserve them. We've talked about their transient nature, biologists attest to these things. They come and go. Even though you kill them, maybe next year three more will come. It seems to me we play games. We play games with communities is what I think in terms of duking it out over resources.

Just from looking at that analogy and what's really going on here, it almost makes me maybe put my hair on fire by itself and smoke coming out my ears. Thank you.

(Laughter)

CHAIRMAN BROWER: Thank you, Gordon.

MR. PARRETT: I think there's two ways to look at that resource allocation. When they talk about allocation, really they're talking about allocation between people, but there's another level of allocation that's allocation between people and nature. Really that's what you're talking about in that example that you brought up, that Ikpikpuk/Chipp moose regulation, should it be 156 or 155 because one protects the moose on the river and one doesn't. Well, do you want moose on the river or not. There's not very many obviously, but sometimes there are. Do you care about that. That's sort of an allocation decision. The contrast is west of 156 if a moose shows up here you can kill it because I don't think anybody has an expectation that we're going to have a lot of moose out here someday, at least any time in the future. So there's two levels to that. I'm digressing a little bit here, but that allocation issue is within humans and then it's between humans and nature I think is the distinction you're making there.

CHAIRMAN BROWER: It could be viewed as a different concept as well, whether to be legal or illegal hunters.

(Laughter)

CHAIRMAN BROWER: You know, if you keep it at 155, keep everything over to the east and keep it for sport hunting and other types of hunting, but it's going to be allowed over here in 156, I'm going to take the moose regardless of that regulation being there. I'm going to subsist. That's the kind of attitude I'd have in terms of the interpretation of some of these regulations and how they get imposed on our types of hunting that occurs. Thank you.

James.

MR. NAGEAK: Yeah, I missed it a while ago, but there's another scenario than the moose. The muskox. You know, there's no allegation for muskox anymore, I don't think. They come to Anaktuvuk. Just one of them come to Anaktuvuk and we can't harvest it because we're law abiding. Right next to us are the grizzly bear. He doesn't know anything about the allocation process and the rules and regulations of the Fish and Wildlife and Fish and Game, so they kill the

sucker.

(Laughter)

MR. NAGEAK: I can't shoot it and have it for subsistence meat, but the bear just eats the choice parts and leave it. So I'm saying to myself here if the bear is going to get it, we know that they will. Two or three bears against a muskox, it's not going to take them very long to kill that. I'm law abiding enough not to harvest that one muskox that happened to come to my camp outside of Anaktuvuk Pass and watch it being wasted, you know. I'm just bringing out, you know.....

CHAIRMAN BROWER: I have a comment as well in regards -- maybe I'll just wait for my comments and let Lincoln continue.

MR. PARRETT: All right. So this is what we're seeing for the abundance of the Teshekpuk Herd. The peak we saw was in 2008 of 68,000. A 5 percent annual decline from 2008 to 2011 and then an average of 17 percent per year from 2011 to 2013. That number there is 38,000 plus or minus 10,000. This is actually not a super high-quality estimate for us. They were not very well aggregated and there were quite a few collars missing, so we have to add those collars in through our statistical technique, so that's what gives you the error there. You don't know exactly what's going on because you didn't actually count them. You're just estimating that each of those collars represents a bunch of animals that you didn't count.

MR. NAGEAK: Is it because they moved down to the other side of the world down there?

MR. PARRETT: That's some of them. Some of them are certainly those animals that were down there with those Western Arctic animals. That's part of it.

MR. NAGEAK: Do you count those too?

MR. PARRETT: Somebody counted them.

MR. NAGEAK: Has it declined?

MR. PARRETT: No. So those are included in that. Statistically included. They

weren't counted by me. That's the difference between the red X and the blue there. The red X is what we counted and the blue is what we think there are on the landscape.

CHAIRMAN BROWER: So you counted the red X, not the blue one.

MR. NAGEAK: I'm color blind, I don't know.

(Laughter)

MR. PARRETT: So that's what we counted and that's what we think there are on the landscape.

CHAIRMAN BROWER: I just can't see the differences in what you're talking about. Gordon.

MR. G. BROWER: So there is a major decline in Teshekpuk Herd in your count.

MR. PARRETT: Yeah.

MR. G. BROWER: Down to 38,000 at this point.

MR. PARRETT: Yeah.

MR. G. BROWER: Including those over on the Brooks Range taking a siesta on the other side.

MR. PARRETT: Yes.

MR. G. BROWER: It seems to be representative of all major herds that are on the -- like the Western Arctic Herd and the Teshekpuk Herd.

MR. PARRETT: We'll get some good news right at the end of the talk.

MR. G. BROWER: But looking at this model makes me happy that our allocation is through the Western Arctic Herd at this point.

MR. PARRETT: Again, that's State stuff, but yeah. State stuff does apply, like for example right out here. On private land, that's where State stuff applies. It also applies elsewhere, but we don't need to get into that. I mean I think you're

right. I mean that was one of the arguments I made actually is that if you include them, that means that people here who hunt in the summer who have the first access can take a big chunk of that, which means that people in Unit 23 have a smaller part of the pie potentially and that's again not a decision for me to make, but that's a real issue. You're right, in some ways it is potentially beneficial to you to be acknowledged as having a part of that bigger pie.

I just put this line through here just in case people like Harry couldn't see the dots, you could see the line, and that's basically where we're at. We kind of came through the hump there and we're on our way down.

One thing I should say is that, you know, that big trend in adult mortality where the Western Arctic was climbing and climbing and climbing, we haven't seen this. It's been real subtle for us until last year. Last year was devastating. We lost over 30 percent of the adult females, so we're finally in some ways catching up to that kind of dynamic there where females really took it hard last winter and the calves took it very hard too. Of the 70 calves that I collared or a little more than 70 last year, less than 20 percent made it all the way through the year, so times were hard for adults and for calves.

That's one thing I should say, that population model from 2013 to '14 would have estimated a very, very slight decline, but then what really hit us there was this big mortality that probably changed things between 2013 and now.

Unlike the Western Arctic Herd that has had pretty good calf production, the Teshekpuk has seen a real slip in calf production. What that means again is that we think summer conditions are not awesome for this herd. They are not getting pregnant at a very high rate and these numbers here, these 40 to 50 percent pregnancy rates, that's very poor. That's as poor as you see anywhere. Some of those Interior herds that have longer summers, a lot of times it's 80-90 percent of the adult females are pregnant, so this is very unproductive for a caribou herd. That's obviously kind of part of their problem here is that their summer range or maybe the bugs are too bad or the combination of both. They're not very productive.

CHAIRMAN BROWER: Lincoln. Go ahead, Gordon.

MR. G. BROWER: Yeah, I think they were just harassed by too many airplanes studying going on, too many of those because I was watching them scaring all the caribou away during when they're going to rut. That's what I think. Anyway, I think there's an alarming trend here that you're talking about and I think this is going to have to convey these types of dialogue. The communities now have to start to be more aware of what's going on because I think there's going to be impending regulation and people need to think about this.

MR. PARRETT: Yeah. That's obviously why I'm here. It's just a starting point.

CHAIRMAN BROWER: Thank you, Gordon. Lincoln, I was going to say in regard to the chart there it starts from 1990 to 2015 or '13.

MR. PARRETT: Well, the dot is for '13.

CHAIRMAN BROWER: I was going to say in the 1990s there was communications about this Western Arctic Caribou Herd at its maximum peak and it's going to start declining at some point in time, but it just kept stable for several more years.

MR. PARRETT: Yeah.

CHAIRMAN BROWER: Then comes 2000 you start seeing indicators, stressors, slowly acknowledging what the predictions were at that time. With the global climate change impacts combined with large predation from brown bears and wolves numbers increasing, I have to agree to that. That's what I see when I'm out on the tundra in the winter, this time of year. I see large numbers, 30 animals in a pack. The removal of brown bears through our subsistence, we've addressed those regulations to one bear every year trying to help the removal of brown bears with other situations that we have to deal with in regards to destruction of property and cabins and stuff like that because of the increase of brown bears.

The other situation was the fencing of the landfill in the Prudhoe Bay area, which was not fenced for many, many years and a large number of bears

increased and basically moved out. As soon as that happened, we seen the last of our muskox within Arctic National Wildlife Refuge because of being predated on by the brown bear.

That's what I was kind of smiling earlier about. We couldn't even take anymore muskox because the brown bear killed them.

MR. PARRETT: Yeah.

CHAIRMAN BROWER: There's a small population still coming, transient, back and forth between Canada and ANWR, which indicates there's a few more muskox in there. I think one brown bear got killed or something. I think that did occur. I mean these are the things that we were made aware of some time ago and now you're going through your census and analysis again and it's giving you additional information that this is really happening now.

MR. PARRETT: Yeah.

CHAIRMAN BROWER: So it's something that's been in momentum along with the research that goes on through the collared caribou information, the kind of research that you do, Lincoln, monitoring the health state of the cow calf.

MR. PARRETT: I think that's a good analogy, that sort of freight train kind of analogy. I mean when they get really big, they've got momentum and even when things start getting bad on them, they're huge and they still go for a while until finally the bottom starts to drop out under them.

This is the same slide that I showed for the Western Arctic. It's the proportion of the population in the spring that's calves and same story there. That line is almost identical. It's just keeping fewer and fewer calves over the winter. That's been happening over the long term.

I just put this in there for reference for right now. Right now, like I said before, the State regulations are five caribou per day with basically no closed season for bulls and a very short closed season for cows. The really only difference with Federal regulations is 10 per day.

There's always been this registration requirement for residents north of the Yukon River. What the regulations say is you're supposed to go to Fish and Game, sign up and say, hey, my name is Harry Brower, Jr., I'm going to hunt some caribou. If you live south of the Yukon River, you're supposed to use this pink or orange, depending upon what color you think it is, then you're supposed to punch out with a sharp object. That's sort of the system. I guess I put that in there partly just for reference to say this is what's going on now and that's basically the starting point where we go from in the future as we kind of talk about this over the next year or so and we develop regulations or proposals for regulations.

The harvest, like I mentioned before, is about 4,500 caribou total in 26A. From the limited data that we have, it looks like it's about a 80:20 ratio of bulls to cows. I think that's changed. I think people have better access in the summer as four-wheelers got better, so people hunt more bulls. They have better access in the summer than they used to on the tundra. Less hunting in the winter than there used to be a long time ago, so that means that the ratio of bulls is a little higher, I think, than what it used to be. Then again, about 70 percent of that total harvest is from Teshekpuk and the rest is from Western Arctic and the Central Arctic, especially from Nuiqsut on the Central Arctic.

Similar to that graph I showed you before you can imagine 4,500 caribou per year in 26A and then only an additional 49 caribou per year being hunted by residents and an additional 40 on average for non-residents. They are taking a very, very tiny piece of the pie. People hunting the Teshekpuk in particular hardly get up this far north. If they hunt on the North Slope, they're hunting more around the Killik or Anaktuvuk or whatever, on the Colville, so they don't even hunt the Teshekpuk. They're hunting Western Arctic animals.

The total annual harvest is high for this herd. Right now it's probably somewhere between 3 and 6 percent of the population. Barrow is a big part of that. The access they have really drives the total number. Then of course the ratio, how much Western Arctic are kind of in the area also influences that. The Teshekpuk Herd has probably sustained the highest harvest of any caribou herd in Alaska for a long time.

There's just a heavy subsistence demand on this herd and it's sustained that for quite a long time.

In the past decade or so we've been harvesting bulls at about 11-15 percent and cows at 1-2 percent, so that jives with basically the numbers I was using to estimate the current harvestable surplus of about 2,000 animals, which is probably a little bit below what's going to happen this year. Access is really good this year. I'm pretty sure over 2,000 animals are going to get harvested. So we're probably going to eat a little bit of an overharvest for a couple years here. That's just the way it is.

CHAIRMAN BROWER: In regard to those regulations, they're currently in place, but there's consideration for proposing changes. Changes to which portion of the regulation, sport hunting regulation or is it clear across the board all types of hunting?

MS. PARRETT: Well, again, those ANS values are what tell you who you're regulating. I guess what I would say there is, like I said, the piece of the pie that non-residents, sport hunters, whatever you want to call them, take is so small that they -- and the harvest on this herd is so high, that those people run the risk, I'll just say, of being excluded pretty quickly. So all of a sudden it goes from fairly liberal regulations to limiting subsistence hunters. That's just the way it's going to play out just because there isn't a lot of non-subsistence use of this herd.

CHAIRMAN BROWER: Thank you.

MR. PARRETT: Conclusions. Obviously we think this herd is declining. I think it's due to a combination of a lot of things. Low and declining productivity. They're very unproductive, like I said. The ones that they are producing are not surviving at a very good rate. Then adult mortality rates, especially recently, have made a big jump.

The underlying mechanisms again are not totally clear, but we think that for the Teshekpuk there's both poor summer and possibly poor winter nutrition. We think there's poor winter nutrition because when we go out and weigh newborn calves, they're very small. They're the smallest of anywhere we've ever seen in North America.

Then that last thing I mentioned both for the Western Arctic and this herd is that we think there's a nutritionally risk of predation. When I looked at why calves were dying last spring, a few starved, a lot were killed by wolves and quite a few were killed by wolverines. That really accelerated through the winter. They kind of made it into the fall, survived through October and November, but then come March, April is when they really started dropping like flies and a lot of them were killed by predators. I don't think it was just because predators all of a sudden were five times as abundant in April. I think they were just getting easier and easier to kill. That is largely speculation on my part though.

Then that last point, just like Jim was making, for the Western Arctic harvest, it's going to play an increasing role in herd dynamics. It used to not matter a whole lot and now it's probably going to start mattering pretty soon.

These population dynamics where you have for a long time sort of stable mortality rates on adult females, but you're not keeping as many calves, so your average age of animals is just getting older and older and older. Eventually they have to die and that's what happens when you get that crash and that may be part of why we went along at 14 or 15 percent adult mortality and then jumped to 35 last year. It was a hard winter and there's a lot of old animals out there, I suspect. That's what I'm talking about when I talk about a crash susceptible age structure. There's probably a lot of old animals out there. That's another thing I would love to verify through getting ages on jaws. If I could get teeth from jaws, it would help me understand if that's really the case or not.

I've just got a couple slides for the Central Arctic herd. Just like the Western Arctic Herd they've got two photo censuses last year on subsequent days. They photographed them twice, so they're in the midst of counting those right now. They also peaked in -- well, I shouldn't say they peaked. They were at 70,000 in 2010, but we think that they're probably also decreased. There's really no reason to think they haven't actually because they suffered a very similar mortality rate last winter. They also had a mortality rate in the 30 percent range for the Central Arctic Herd.

This herd for a long time was doing very well. The population dynamics for this herd, as you can see, it climbed rapidly. They were probably the strongest in Alaska and probably in North America. They were really doing well. Their calf survival rates over a whole year were like 80 percent. Like 80 or 90 percent of the cows would give birth and 80 percent of those calves would survive, so it's no surprise that they grew very, very rapidly for a little while, but they may finally be going through something here too. It may have just been a one-time event for them or a short-term sort of weather thing that caused that really high mortality last year.

She's still counting those, so we don't really know where that's going to be at. That question mark I have up there is just.....

UNIDENTIFIED VOICE: Can you show the range of the Central Arctic Herd on a map just so we can understand.

MR. PARRETT: Yeah. Especially lately in the summer they get way far east over by Kaktovik. A lot of times the people hunting caribou in July, those are a lot of times Central Arctic Caribou. They used to be Porcupine. They're getting way far east here. Sort of the road is kind of there. If that's a landmark there, the Haul Road is kind of right there.

I've just got a few more slides. I know we're really short on time here. Porcupine Herd. 2010 they estimated 170,000 and this last estimate that we -- we did all four herds last summer, which is the first time we've ever done all four the same year. This number is just about to come out and it's going to be 200,000 plus or minus 30 on either side, so they're still doing pretty well and still on the increase it looks like. So that's the one bit of good news I have here.

That's my last slide and I only took 22 minutes, I think.

CHAIRMAN BROWER: Very good, Lincoln. Taqulik, use the mic, please.

MS. HEPA: I was just asking, the Porcupine still goes to ANWR to calve?

MR. PARRETT: Not really.

MS. HEPA: That's what I thought.

MR. PARRETT: Mostly not. Mostly in Canada these days. Some still use a little bit of the coastal plain in Alaska, but for the last decade the vast majority of calving caribou are calving in Canada.

CHAIRMAN BROWER: Thank you, Lincoln. I know we're getting kind of short on time and I really appreciate you providing all this information from the Alaska Department of Fish and Game to our Regional Advisory Council. It's again something we've been trying to keep up with all the information we have to deal with in terms of the animals that are being regulated and monitored. To be effective managers I think these are the kind of information that's needed so we're able to address the needs. Thank you.

James.

MR. NAGEAK: One quick question. Which herd is the Arctic Village?

MR. PARRETT: So this year it's mixed Central Arctic and Porcupine that people from Arctic Village. I would say 10 years ago it would have been all Porcupine and lately it's a mixture of both. Right around Arctic it's still mostly Porcupine this year.

CHAIRMAN BROWER: Any other questions from the listening audience within the teleconference.

(No comments)

CHAIRMAN BROWER: If not, again, thank you, Lincoln. Billy, come up to the mic.

MR. ADAMS: Thank you, Mr. Chairman and the Council here. Lincoln, you know, just to give everybody a chance to know, Lincoln used to go to high school here. You know Geoff has been working here many years. If you go back to the picture where it is snow, that was in early '80s, maybe late '80s. It was in early October. We used to have a lot of snow back then. Now, these days, there's hardly any snow in October.

When you talked about the poor calving

a couple years ago there was a lot of die-off in the caribou. We had some meetings with people from Kotzebue area. That whole month of August and September we got rained on, you know. It was really wet and all the caribou moved to the high country. Even around here, you know, it flooded everywhere. The caribou just didn't like that, so they moved into the hills. So they had a lot of stress going on with them.

You don't have to be a rocket scientist or 10-year biologist to know it. People have lived here for thousands of years and I like to talk about the Inupiat people being the true conservationists. You know, they're stewards of the land. They know what's going on. Now we've got biologists that have been here for a couple hundred years or a hundred years and they think they know everything, you know.

(Laughter)

MR. ADAMS: But, you know, we have to work with you, like Gordon says. I hope we'll be here for a few more thousand years to make you understand what we know. So even though the President's term is coming up, right, the U.S. President, is that right?

UNIDENTIFIED VOICE: Two more years.

MR. ADAMS: A couple more years. But that's getting close to the end. It seems like when the president's term is getting close to the end, it seems like they want to list everything. Then now you come here and say, well, let's say these caribou are in a crash. That kind of seems to me that kind of stuff goes on and now we have to give you a few more thousand years to educate what goes on.

Honestly, our Inupiat people have been here for thousands of years and they know what to hunt and when to hunt. You know, it come through seasons. I thank this Council here for inviting many of the public and bringing the State here to give a good presentation. That was very educational for me. Thank you.

CHAIRMAN BROWER: Lincoln, are you going to be the one presenting something on the regulation?

MR. PARRETT: Well, you know, I guess that's the last thing I'd say is that, you know, there s a lot of different ways to go about that. There's a lot of different regulatory groups. The Fish and Game Management Committee, this group, the Western Arctic Working Group. And three of those groups are groups that can try to present their own version of the regulations. If nobody did anything, the State would probably present something for consideration. Obviously we'd like it to come from you guys, you know. That's why I'm here today. It's not because we're going to make regulations today, but because we're going to want to talk about it a lot over the next year or so.

CHAIRMAN BROWER: So just to think about regulations for.....

MR. PARRETT: Yeah. How to do it, how to play it out, what kind of seasons would work for people and work for caribou and all those things. I mean there's nothing -- I'm not saying I'm making decisions, that's for sure.

CHAIRMAN BROWER: All right. Thank you, Lincoln. Taqulik.

MS. HEPA: Thank you, Mr. Chair. We did have a discussion recently with Brian and Michael and others and Billy. Because these caribou are so important to our people, to all of our communities. If there are going to be quota restrictions, there needs to be education and outreach right now to let the people know what is going on.

I really do appreciate your last comment about if the local people working together come up with solutions on their own, I think that's the best way to do it instead of someone else telling us how things are going to be changed. So we need to be proactive.

Two things that we talked about recently is we have our Fish and Game Management Committee meeting coming up in early April, so we wanted to dedicate much of that meeting to talk about the caribou situation.

Also James brought up that at the last assembly meeting there was many concerns that came up

in Anaktuvuk Pass regarding caribou. I know that Mayor Brower had made a recommendation that in the near future we need to have a workshop to talk about some of these issues related to subsistence. So I was going to ask you what days you might be available, either in March or in April, to address the assembly and/or Fish and Game Management Committee, but we'll talk about that.

It's so important that we get out there and talk to our people, let them know what's going on, bring the community members and hunters together to talk about how can we address this as a community. Thank you.

CHAIRMAN BROWER: Thank you, Taqulik. I'm not sure if you wish to respond, Lincoln, but if you don't, you don't have to. I'm not going to force that on you.

(Laughter)

CHAIRMAN BROWER: We'll have other opportunities to communicate. I think that communication line is open. We know Geoff's office is just down the road from our main Borough building. Just reach out the window and you can knock on the building basically. Anyway, thank you, Lincoln.

MR. PARRETT: I certainly will make myself available. Jim Dau and Geoff in their long, lustrous careers have never had to deal with a single regulation change to caribou. Obviously this is the most important thing I will have ever done in my career.

CHAIRMAN BROWER: Thank you. My arm is being twisted far back. I have to stop here and recognize one of our guests that's been patiently waiting on the telephone. Marcy, I'd like to give you this opportunity to provide your presentation while James is still here. He's supposed to be leaving at 5:00.

MS. OKADA: Okay. Thank you, Mr. Chair. I gave Eva a handout to be distributed.

CHAIRMAN BROWER: We've got them in front of us.

MS. OKADA: I'll quickly go through the handout. The Western Arctic Caribou Herd is continuing to decline, as we heard from Lincoln's presentation. The 2013 census results are due out this spring. Adult cow mortality has been higher than expected and high human harvest of cows could possibly deepen this decline. The very cold spring observed in 2013 did not delay the spring migration substantially. I listed contact information about caribou.

Dall sheep. Last winter and spring appear to have been hard on Dall sheep in the rugged mountains of the Itkillik or subarea of the northeastern parts of Gates. The numbers from 2005 to 2012 are stable and not different from counts in the early 1980s; however, preliminary estimates from the 2013 survey show as much as a 50 percent decline in total numbers in ewe-like sheep. There's very little ram productivity.

The numbers of rams with greater than half curl horns show a change from 2009 to 2013. We presented these results last September at a community meeting in Anaktuvuk Pass. It was a long winter and very cold May that were considered to be contributing factors to the low ram productivity across the state and higher winter mortality of adult ewes and yearlings in the Itkillik. We have plans to survey the Itkillik subarea in 2014.

I'll share a little bit of Yellow-Billed Loon information primarily because the species can also be found in your region. Last summer the Arctic Inventory and Monitoring Program, a branch of the National Park Service, completed its fifth year of breeding population surveys and contaminate sampling for Yellow-Billed Loons on the Seward Peninsula and Bering Land Bridge National Preserve. This project was assisted by the U.S. Fish and Wildlife Service.

Results from the aerial surveys and contaminates sampling will be considered with data from other breeding populations occurring mostly in the National Petroleum Reserve. There's an upcoming decision for listing the bird under the Endangered Species Act.

Also related to the Yellow-Billed Loon project, two students, one from Anchorage and one from Shishmaref participated in Yellow-Billed Loon filming.

Unfortunately there was poor weather in Kotzebue and there's limited footage that was collected. I think they're going to try and do the project again. There's a YouTube video and also another video online regarding this project.

I'll quickly wrap up. Gates of the Arctic Subsistence Resource Commission had a meeting in November in Fairbanks. There was also discussion on the Ambler Mining District access project. An SRC member shared their concerns about the potential negative impacts to subsistence resources. Park Service staff provided natural and cultural resource update and also relayed this information on the Park Service Native Affairs Program.

Lastly, Gates of the Arctic recently hired Maria Burger, environmental education specialist. She worked for U.S. Fish and Wildlife Service in Barrow as an environmental education specialist. She's going to be helping Gates with rural school education programs primarily related to wilderness, outdoor activities and conservation.

That's quickly our Park update.

CHAIRMAN BROWER: Thank you, Marcy. That's very helpful and informative. I'm not sure if James has any comments he'd like to share with Marcy at the time, but I'll give you the opportunity first, James, before anything else.

MR. NAGEAK: Mr. Chairman.

MR. OKADA: I know you've got about five minutes, James.

MR. NAGEAK: Thank you, Marcy. I'm always thankful for the help that you always give us, especially at our SRC meetings. The thing that gets me is these Yellow-Billed Loon. It's kind of disheartening to see them get in -- well, maybe not disheartening now that I think about it. If we have it causing the preservation of Yellow-Billed Loons, if we put them on an Endangered Species list, that there should be a clause in which -- for traditional headbands for dancing and stuff like that would be something that we could maybe put in there so that the people that have dance groups uses the Yellow-Billed Loon headbands for the ceremonies.

Other than that, I'm thankful that the SRC can be a useful conduit for the Federal Subsistence Board that we can coordinate a lot of the stuff that we need to -- that needs to be addressed to the Federal Board. With that, I thank you for an opportunity to be a part of this.

MS. OKADA: Thanks, James. We appreciate both you and Taqulik's membership on our SRC for Gates of the Arctic.

CHAIRMAN BROWER: Thank you, Marcy. Do we have somebody else online?

MS. AHTUANGARUAK: I really appreciate all this discussion. It's so important that we really work on education and communication and outreach very effectively. We also have to do some coordination with prevention and preparation for the responses that some of our people may be going through with some of this information that's coming out. I hope that we have some time to really work on a good process that really helps people prepare for what we're seeing in these discussions.

CHAIRMAN BROWER: Thank you, Rosemary. We'll continue to communicate with you if there's any further concerns through our coordinator, Marcy, in regards to the contents of the presentation. James is already up and his ride is here, so just to let you know that he is basically walking out the door at this time.

MS. OKADA: Okay. The second part of our presentation, I'd just quickly like to share information on the Ambler Mining District. This information has been shared with James at our SRC meeting in November. The reason I want to share information for a project that's outside of your region is that it could potentially have an effect on migrating herds. There should be a second handout. I'll just quickly go over it.

CHAIRMAN BROWER: Ambler Mining.

MS. OKADA: Just to give you background information, before ANILCA created Gates of the Arctic, the likelihood of rich mineral deposits in the Ambler Mining District to the west of the Park had already been identified. Congress, in considering the

establishment of Gates, recognized that a transportation corridor to the Ambler Mining District might become desirable and might connect with the Dalton Highway to the east of the Park. The Upper Kobuk River area was included in Gates of the Arctic National Park as a Preserve. However, Congress made allowances for a transportation corridor across the new Preserve in order to provide access for future development of mineral resources in the Ambler area.

Some legislative background. ANILCA 201(4)(d) directs the Department of Interior and the Department of Transportation to provide a response to a right-of-way application that would go through Gates of the Arctic National Preserve. Secretaries of Interior and Transportation, upon receipt of an application, are to prepare an environmental and economic analysis for determining the most desirable route for the right-of-way and for determining terms and conditions which may be required. This analysis is to be done in lieu of an environmental impact statement -- it's going to be instead of an environmental impact statement -- which would otherwise be required under Section 102(2)(c) of NEPA, National Environmental Policy Act.

The analysis is going to consider alternative routes across the Preserve which would result in fewer or less severe impacts on the Preserve and also consider environmental, social and economic impacts of the right-of-way on wildlife, fish, their habitat and rural and traditional lifestyles, including subsistence, and measures which should be taken to minimize negative impacts and then have positive impacts.

Current status. November 2010, the Alaska Department of Transportation and Public Facilities notified the Park Service of its intention to submit an application for access across the Kobuk River area and Gates of the Arctic. The Alaska legislature has funded DOT to study the feasibility of constructing a road from the Dalton Highway to the mining district. Those studies have begun and overland routes to the mining district, including two potential route corridors through the Gates Preserve have been identified.

Last year, in 2013, the State of Alaska assigned the lead for the Ambler Mining District Access Project to the Alaska Industrial Development and Expert

Authority, also known as AIDEA, a public corporation of the state of Alaska. AIDEA is working with DOWL to acquire environmental and economic data to inform road feasibility and route decisions. The studies are independent of an environmental and economic evaluation that are required of the Park Service.

In 2013, the Park Service issued research permits for the State sponsored research activities in the Park and Preserve related to resources which may impact or be impacted by a road. The research projects are centered in the southern portion of Gates and includes the snow survey, fishery survey, and wetland vegetation survey, hydrologic and hydraulic surveys of the Kobuk and the Reed Rivers and cultural resource reconnaissance surveys.

A National Park Service team of Park and Regional staff was formed in May 2013 to address Park Service responsibilities in responding to a right-of-way application and the Park Service team will be working with the Federal Highway Administration, which is the agent for the Secretary of Transportation.

That was a quick briefing in a nutshell. That's basically what's happening to the southern portion of Gates. My apologies for speeding through this.

CHAIRMAN BROWER: No problem. At least the information gets presented, Marcy. Again, we'll be able to communicate with our staff and our remaining Council members regarding the Ambler Mining District even though it's on the south side of the Brooks Range and how it may impact Anaktuvuk Pass to the north of the proposed road. We'll definitely keep in touch with James and see how his community feels regarding this proposed road through this Council.

I think we have a question to you from Doreen Lampe, who is the executive director for Inupiat Community of the Arctic Slope.

MS. OKADA: Okay. Thank you.

MS. LAMPE: Thank you, Mr. Chair. In regards to the Yellow-Billed Loon listing, ICAS has joined the lawsuit to recommend not to list them. I just wanted to comment that we don't eat them, we don't hunt them to eat them, but like James said, we support

our member s use of the customary and traditional Eskimo dancing for the dance groups here that need to make an occasional loon head or mask.

I don t necessarily know if they re Yellow-Billed or not, but we still are grappling over the issue of the authority of Fish and Wildlife to go and take a loon out of a personal net that was used to go fishing and incidently had a trapped loon in his net and some unforeseen or unreported -- not even consulted with the local tribes, their reasoning to demolish that net to take that incidental take of that Yellow-Billed Loon.

I just wanted to make some comments that we don't eat them, we don't consume them, but just for the benefit of our dance groups to protect themselves we are joining the lawsuit to fight against the listing of these species. We'd hope that these agencies that have the authority to propose threatened or actually endangered species listing become listed that they actually do come and consult with the tribes. It's an executive order by the President and we're not seeing that at all. It's our comments. Thank you very much.

CHAIRMAN BROWER: Thank you, Doreen.

MS. OKADA: Thank you, Doreen. I know in regards to Anaktuvuk Pass we have asked whether people have been seeing Yellow-Billed Loons and our understanding is that they're not finding any Yellow-Billed Loons in their lakes or the community. Our jurisdiction is strictly over Gates of the Arctic. We do recognize the need for government-to-government consultation though on this issue.

CHAIRMAN BROWER: Thank you, Marcy. Eva, I'm trying to think back in terms of what the communication was on this next agenda item. So we have three more items. We'll go with Geoff Carroll, Board of Game update.

MR. CARROLL: All right. I can make this very quick. I'll skip all my slides and everything. This is Geoff Carroll, Alaska Department of Fish and Game.

Basically one of your primary functions is to recommend proposals on the Federal regulatory

side of things and in order to -- it's good for everybody to kind of keep State things and Federal things, regulations in alignment. Anyway, I'm just going to very quickly tell you what actions were taken by the Alaska Board of Game in January.

There was a proposal to extend the moose season on the Colville River. That was done at the request of the Nuiqsut hunters primarily from the North Slope Advisory Committee that was passed, so the season was extended until the end of September. That was Proposal 20.

We have a handout that Eva gave you. If you want any more detail on any of these, you can look at those.

Proposal 21 was a proposal to allow the use of aircraft to hunt moose in the Anaktuvuk Pass controlled use area and they voted that down, so that was not allowed. That was definitely opposed by the people from Anaktuvuk Pass.

Proposal 22 was to reauthorize the antlerless moose hunts. We have kind of a summer hunt for any moose that might wander out to one of the villages in the west and then we have a winter hunt that's for the upper part of the Colville River. There are very few cow moose harvested in either one of those. They passed that. That was at the request of the North Slope Advisory Committee.

Proposal 23 had to do with the Teshekpuk Herd customary and traditional ranking and amount necessary for subsistence and Lincoln has already run you through that pretty thoroughly.

Then there's kind of a weird one, Proposal 24, which proposed no limit and no closed season for the hunting of coyotes, which, as far as I know we don't really have any on the North Slope except maybe a couple very rare sightings, but they did pass that.

Then there was a proposal to reauthorize a no-tag fee for grizzly bears. They passed that, so that basically means that you don't need to go in and buy a $25 tag. You don't need any special permit. If you have a hunting license, you can harvest a grizzly bear 12 months a year in GMU 26A.

You just need to bring it in and get it sealed after you harvest the bear.

That's what was dealt with at the Board of Game meeting.

CHAIRMAN BROWER: Thank you, Geoff. We did have information about that situation that came through our North Slope Borough Assembly and a report from one of the assemblymen about Game Management Unit 23 and use of a motorized vehicle.

MR. CARROLL: Okay. Yeah.

CHAIRMAN BROWER: That's something that we discussed a little bit yesterday and we're going to take action and asked the motioner and the second to rescind that motion to hear more information on what's being proposed from our North Slope Borough Fish and Game Management Committee as a local advisory committee to address that concern. Taqulik is here and I had asked either her or Mike to help in communicating what direction the Fish and Game Management Committee might be taking as their local advisory committee.

MR. CARROLL: Yeah. Okay. Like I say, there was a Board-generated proposal as a result of a proposal that the Kotzebue Advisory Committee wrote up which would allow the pursuit of caribou, wolves and wolverines with snowmachines. Then other advisory committees were invited to join in on that proposal because the word went out to the other advisory committees and I think you were handed yesterday a letter that was written by the North Slope Advisory Committee people. The Wildlife Department created it and then it was sent to the advisory committee members to kind of vote yes or no on whether the North Slope Advisory Committee wanted to be included -- wanted Unit 26A or North Slope to be included in that regulation or in that proposal.

I don't know if you still have it in front of you there, but again that gives you -- there's the cover letter and then the next two pages are the Board-generated proposal.

CHAIRMAN BROWER: Taqulik, did you want to elaborate a bit on where we are with the North Slope Advisory Committee.

MS. HEPA: Yeah. We're still waiting on three more responses from our membership to see, but right now the members are in favor of supporting to include Unit 26 in that statewide proposal for the March meeting. What I understand is that the language that was drafted and that was included in the handout initiated the Board to do a proposal at the statewide meeting. Is that correct?

MR. CARROLL: Yeah. That meeting will be in March.

MS. HEPA: Then just in addition what we are planning to do from the North Slope Borough Wildlife Department and the Fish and Game Management Committee is we want to get a good group of hunters to go down and be able to provide testimony on their experiences, so we're planning on bringing maybe three or four people down to provide testimony at that meeting.

CHAIRMAN BROWER: Thank you.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: Maybe as long as you provide immunity for their testimony as well.

(Laughter)

MR. G. BROWER: But I do have a concern. I read a little earlier about language on harassing, molesting with caribou. I think that's, to me, inappropriate language to use. Just the plain language of taking caribou or wolf or wolverine from a snowmachine is sufficient. It seems to create some negative connotations when you start to add additional language that seems we're doing other than hunting.

MR. CARROLL: I think the idea is -- well, you know, we'll see how it evolves, but I think we still want it to be against the law for people to harass or molest caribou with snowmachines. Unfortunately we've seen some of that around here this year. Kids getting out and chasing caribou with snowmachines, you know, exhausting them. None of us approve of that and that should be against the law. What this will allow is a legitimate hunter to pursue.

I don't know. I think different people look at it differently. Somebody might say, well, yeah, I think that you should be able to use a snowmachine to pursue and shoot and everything else a wolf, but we're kind of heading into tough times with the caribou, so maybe we need to take it a little easier on them. I'm just saying that there are different options with this. Some animals could be included and some not. Anyway, that's for people to discuss and decide what's appropriate.

MR. G. BROWER: Mr. Chairman.

CHAIRMAN BROWER: Yes, Gordon.

MR. G. BROWER: I wasn't trying to point out species. I was just using animals in general as a term. The words themself for the taking of wolves by the use of snowmachine is allowed. But I had seen some language that I read in here that said you should be able to harass, molest all these animals with a snowmachine and I beg to differ. I think it should be totally disallowed to do all of that except the only thing allowed is to be able to -- you're able to pursue and track. What we're doing is tracking. We find the tracks for a wolverine. He might be 50 miles in front of us, but we're tracking it and going to pursuit and then take it. It's a fully intentional take. We're not out there to harass and molest it and make it all tired and then go away from it after that. That language I thought I read somewhere in one of these things.

MS. HEPA: It's existing language.

MR. G. BROWER: We should take all of that out.

MS. HEPA: If I may, Mr. Chair.

CHAIRMAN BROWER: Yes.

MS. HEPA: Gordon, those words and the way that it's referenced in this document, is that is the existing language, the prohibition of all of those listed. So with the Board-generated proposal it wouldn't say that we're going to allow those. What we're hoping will come out of it is something to say that the use of a snowmachine to pursue or to what not and those types of discussions will happen at the

statewide Board of Game meeting. Right?

MR. CARROLL: That's correct, yeah.

CHAIRMAN BROWER: Thank you, Taqulik and Geoff for sharing that. I think we'll get something in a written format so we could share it with our Council members when it gets generated and approved for dissemination and work as a Council to support an action by the local advisory committee in that sense. Thank you again.

MR. G. BROWER: I've got one question before Mr. Carroll takes off.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: I still see this big straight line and I really don't like that line that's west of 156 and I know maybe it's because maybe the upper Ikpikpuk area had some moose in there that were habitating year round maybe in the Valley of the Willows area and to see if that evolves into a -- you know, it's like a natural little sanctuary anyway. There's other rivers here going to the west that might have the same kind of habitats and stuff. I just want to be able to -- I think that extending the moose season is good, but availability of those resources too is -- jumping over a line is -- the intent is maybe to protect the upper Ikpikpuk way up there. Maybe that s the intent of west 156 and the occasional stray that comes down to the lower part. Being able to harvest that moose is a big issue. I don't know all the history behind that, but you ought to take that line out of there or move it.

CHAIRMAN BROWER: Go ahead, Geoff.

MR. CARROLL: Well, the reason that 156 line was originally chosen is exactly what you're saying is because there is a very small but somewhat persistent moose population on the Upper Ikpikpuk and we're trying to -- you know, if we don't put anymore pressure on it, it can slowly build up to the point where we have kind of a more huntable population number up there. But it's real low numbers. You know, it's like there's maybe eight moose up there. Even taking one or two cows out of that is going to have a -- you know, maybe make that impossible for that small group of moose to ever grow and that's the reason that it was

put there and that's kind of the reason we've been sticking with it.

Population-wise it's no big deal either way. Even if we wipe out the whole Ikpikpuk moose population, you know, it's a pretty small number of moose compared to the whole Colville population, but it's just the idea. I mean we'd like to see that little population persist and grow to where it will be able to provide more moose for more people to hunt in future years.

MR. G. BROWER: I think those are good ideas. I still see that almost in comparison to what is going on around Barter Island and conserving a very small number and looking at allocation, things that were talked about earlier. Those are just my concerns. I don't want to argue. I just don't like the line. I think we should be able to harvest a moose. If they were going to go extinct, we wouldn't do it. Nature would do it by itself probably in that area.

It's very hard to get up that far. I just want the one that escapes from there maybe because it finally grew plenty enough that they don't want to all stay bunched up in there anymore that they start to come down that river a little bit, which they do once in a while. We ought to take that line off. It's not a good line.

CHAIRMAN BROWER: Thank you, Gordon, Geoff, Taqulik. Again, there's always time for more discussion. It's not going away. It's there. We'll see how this one works and see if there needs to be another change. We'll definitely work with the Council and include that at some other point in time for another change. Again, thank you.

Dr. Yokel, is he up? Is he awake?

DR. YOKEL: Yes.

CHAIRMAN BROWER: I'm glad you're up because it's going to be hard for me to stand up from sitting here so long.

(Laughter)

CHAIRMAN BROWER: So, Dr. Yokel, you have the floor.

DR. YOKEL: Thank you, Mr. Chairman. As soon as Eva gets her password on the computer, I can start my little presentation. Most of the information that I brought is stuff that you've requested of me through Eva. However, if you think I'm spending too much time on it, just holler at me and I'll speed up, okay.

Again, for the record, my name is Dave Yokel. I work for the Bureau of Land Management's Arctic Field Office in Fairbanks and we manage the National Petroleum Reserve in Alaska among some other small parcels on the North Slope.

At the last couple meetings of yours I spoke about the results of our most recent land use plan and I said I didn't know yet what affect this was going to have on industry interest in NPR-A because we had not had a subsequent lease sale yet, but now we have. Here's the results of our last lease sale, which was November 6th, 2013 and there was not much industry interest.

In this picture, in case you don't recognize the colors, all the blue tracts were the ones we offered for sale and the magenta ones were ones that were sold in previous years. The other three colors, the green, a red one and the yellow, were sold. They were offered also last November and they were sold. So those were the only tracts that were sold out of this lease sale. It was a total of 22 tracts and it only brought in $2.9 million. Relative to other lease sales, that's a low amount of interest.

Now this area inside this parameter here is a unitization of several existing lease tracts purchased by ConocoPhillips and its predecessors. They call it the Greater Moose's Tooth Unit. We are currently developing an environmental impact statement to build a road and a drill pad. This section right here. Now there's a lot in this.

Here's the village of Nuiqsut. Here's an existing pipeline to CD-4. Here's a new road being built by ConocoPhillips right now out to CD-5, a new drill pad that's on Kuukpik lands. Here's a new road being built right now by Kuukpik on their own lands in their hopes to increase some of their commercial activity with ConocoPhillips.

The proposal by ConocoPhillips that we're currently developing an EIS for is to build a road from CD5 out here to a drill pad that would be called GMT-1. Now this figure also shows a road out to another drill pad called GMT-2 and that's not in the current proposal, but it's expected that if ConocoPhillips builds this much, they will go on out to this because they've expressed that interest in the past.

So we're currently -- we've written a draft EIS. I think it's going to be released to the public tomorrow. That's the latest schedule that I heard. We're going to tour the North Slope to have public comment meetings on this draft EIS in the second and third week of March. So I'll be back up here pretty soon.

In fact, this trip that you heard mention of Pat Pourchot and Tom Beaudreaux, the Assistant Secretary, that was supposed to happen yesterday, the BLM's director from Washington, DC, Neil Kornze, was also supposed to be on that trip. They were going to Nuiqsut to talk to the people about this potential development.

This is also stuff that's going on in the same area right now. This represents ConocoPhillips' current exploration and drilling plan for this winter. So these blue lines are ice roads out here and they plan to drill two exploration wells at Flat Top #1 and Rendevous #3. All these side roads are ice roads out to lakes, which are water sources. Here's Nuiqsut. Just for reference, here's CD-5 and the potential locations of GMT-1 and GMT-2.

Eva said you were interested in other ice roads, so of course every winter ConocoPhillips builds an ice road out to Alpine, which has no permanent roads to it. So there is this ice road system in the NPR-A that's connected to an ice road system outside of the NPR-A, which is connected to the Spine Road in Prudhoe Bay and Kuparuk oil fields. Please stop me at any time if you have any questions, otherwise I'm going to keep cruising.

Now I feel weird because I've got my back to you.

CHAIRMAN BROWER: Just keep going, Dr. Yokel. We have the mics. You can hear us definitely with them.

DR. YOKEL: Okay. This is Umiat. Linc Energy owns leases around Umiat and they originally applied to drill three wells this winter and then they reduced their expectations and said they were only going to drill this 23-H up here in the hills. I'm not sure how far they've progressed on that this winter. They too have a trail coming over from the Dalton Highway. You can see this red route here, which represents a snow trail that they bring equipment out across State lands from the Dalton Highway. So there's an ice road and a snow trail coming towards NPR-A from the east this winter.

This rather large block here, which is about 3,700 square miles with Nuiqsut right here, represents a proposal we have from SA Exploration for a three-year seismic program wherein they would acquire 2 to 400 square miles of 3D seismic each of the next three winters. They don't intend to do any in the NPR-A this winter. So that's up to 1,200 square miles out of this total, which is a little bit more than three times that size.

This is what they call the public box because their plans are confidential and we're not allowed to release it to the public, but this is as much as I can show you where they would potentially be doing seismic over the next three years.

You wanted to hear some more about the Central Yukon Resource Management Plan. This is BLM's land use plan for BLM lands within the area surrounded by red. Those lands that are actually BLM are only the ones in yellow on the North Slope. That's very little. There's some right around the Dalton Highway here up as far north as Slope Mountain and a few scattered parcels elsewhere.

I talked to you about this one last August. Since then the only thing that's happened is the scoping period, which is before we start writing the EIS, has ended and they're analyzing those comments now and the scope of report is not even ready yet, so there's very little I can tell you about this plan except that compared to the NPR-A plans that you're pretty used to, this one is going to be on a rather relaxed schedule. They're not in a big hurry.

They think the draft EIS will be made available to the public sometime in 2015, so probably

over a year from now. The final EIS will be out sometime in 2016. If you're interested in following the progress, here's the URL for the website on this plan.

Here are some more snow trails that are being used in the NPR-A this winter. Peak, with the Rologons, is going to be working on these trails this winter. They're going to be running from two to six Rologons for each of their freight and fuel hauls along these routes. Right now I've seen these guys in here at Sam and Lee's the last two mornings getting breakfast before they drive down to Atqasuk and back, so that's where they re working right now anyway. These are Rologon snow trails. These are not ice roads.

This very briefly is a listing of some of the studies that the BLM will be involved in right now or this summer. The first three are on the Teshekpuk Herd. You're already aware of all of these there in cooperation with either the North Slope Borough or ADF&G or both. Some fish work, some anthropological work with subsistence users. We're cooperating with the USGS on work with the polar bears in the Beaufort Sea and some various bird studies; snow goose monitoring, monitoring raptors along the Colville River and lake bluffs in the NPR-A.

Finally -- that was quick. There's a line in your minutes from the last meeting in August that said the Council requested information on hydrates research in the NPR-A North Slope region. In fact, that request did not come from the Council. It came from the audience and I said at the time there was no hydrates research going on in the NPR-A, but afterwards I thought maybe he was asking about the coalbed natural gas exploration going on in Wainwright. So I put together a little information on that, but I'll just skip it if you're not interested.

MR. G. BROWER: Mr. Chair.

CHAIRMAN BROWER: Gordon.

MR. G. BROWER: Yeah, I'm pretty much interested in hearing this part.

DR. YOKEL: Okay. Well, it will take two or three minutes anyway. So there's a cooperative

program between the Bureau of Land Management and U.S. Geological Survey called the Alaska Rural Energy program that studies the feasibility of using local energy resources, such as coalbed natural gas, as alternative energy sources for some of the more remote Alaskan villages.

These two agencies cooperated with State of Alaska, the North Slope Borough and ASRC to test for coalbed natural gas at Wainwright beginning in 2007. Sometimes you hear it referred to as coalbed methane, sometimes coalbed natural gas. It's mostly methane and the results from Wainwright say it's about 99 percent methane, so they're pretty much one in the same.

The reason it's not hydrates is because -- it's the same gas, but it's attached to different things. In hydrates, the gas is attached to water molecules that appear in a frozen state in the permafrost, whereas in coalbed natural gas the gas is physically attached inside rock, that rock being coal.

So, anyway, this program, over the course of four summers, drilled nine wells to discover, delineate and test gas-bearing coal strata at Wainwright. The drilling identified good potential in a 7.6 foot thick bed of coal out of a depth -- this stratum of coal ran at a depth between 1,160 and 1,310 feet depending on where the wells were because that stratum dips at about 30 to 40 feet per mile.

The data obtained suggests that this coalbed natural gas from this stratum has the potential to provide a long-term source of energy to Wainwright. However, gas production proved difficult due, first, to well bore freezing in the permafrost layer, which goes down about 1,000 feet. This was resolved by installing two well bore heat traces, but they had a second problem due to an unstable and sloughing layer of silt stone, which introduced large amounts of extremely fine silt into the production system and was clogging things up. It significantly impeded the flow of both water and gas from the coalbed.

To resolve this, the geologist suggested that a new well should be drilled with casing all the way down and into the top of the coalbed stratum. That would prevent any of these other layers up above from messing up the deal. However, I think at

this point the North Slope Borough would have been funding any additional drilling and they rejected that recommendation, so that project has been abandoned for the time being.

And that's it.

CHAIRMAN BROWER: Thank you.

DR. YOKEL: Thank you.

CHAIRMAN BROWER: I'm almost falling asleep. Thank you, Dave, for your presentation on the BLM activities.

DR. YOKEL: You're welcome.

MS. PATTON: Vince is the very last.

CHAIRMAN BROWER: We have one more presentation. Vincent. Vince. Why did I say Vincent? It says quick Vince.

(Laughter)

MR. MATHEWS: Well, you guys talked about spirits. I think my mother's spirit was here because she always called me Vincent. I'll just hand out the last report. Three things to cover. One is I'm regearing the three Refuges I work for to target their Refuge summary for this meeting since you don't have a lot of action items. In the future, you'll have to work your agenda so we can have a little bit more time, but this is basically what you had in fall again.

The other item I wanted to bring up is I'm more than willing to go to your school classes. I used to be the person who trained new staff on ANILCA and ANCSA. I was the one that developed the first video for Senator Stevens, who demanded that new staff. So I'm more than encouraged to help out with youth understanding ANILCA and ANCSA. Last week I was in classrooms of Fort Yukon on fisheries, so I'm more than willing to do that with staff because I think that is key on that.

Finally, you've already talked about it, but Dr. Yokel and I are on the panels for nominations. It would be good if we would get more people applying. Not hundreds, but good

representatives so when we analyze those we can do that. That pretty much starts from your end of the table. I mean you know through your contacts who and what village or Barrow that might be a good person to serve on this Council. So I highly encourage you to get the word out that it is important. I applaud you to say -- I think it was Gordon or James saying to encourage youth to be more involved. That is your future.

If you look around the room since it's late, most of us have gray hair. That generally means that we're some of those old bulls that we're talking about. The biologist was saying we kind of disappear. I'm joking, but, seriously, all the Councils I go to, all the Advisory Committees I go to, there's a lot of gray hair. So there needs to be some black hair, red hair and yellow hair on these groups because they're going to carry the future.

With that, I'll just give this to Eva and she can pass it around again. If there's any questions, I can answer it at this time.

CHAIRMAN BROWER: Thank you, Vincent. Here I go again. Vince.

MR. MATHEWS: Just don't call me Vinnie. That's where the line is drawn.

(Laughter)

CHAIRMAN BROWER: Okay. I'm within your parameters then. Again, thank you for taking your time to provide this information. I'll definitely review it. I think your recommendation about getting more time on the agenda, maybe we need to restructure the agenda where we're not holding our agencies at the bottom of our agenda. Maybe they need to be up in the front where we can get them to provide -- not just Fish and Wildlife Service, but all of them -- get them to provide the information so it could help steer some decisions to be made in the meeting.

MR. MATHEWS: Another suggestion, because I used to be a coordinator, is -- another suggestion would be that you'd have a focus for this meeting since this meeting is a little bit less action items, so it might be -- this is a wild idea. The one meeting might be caribou, the next time around might be

some other species and then the agencies then would focus and build a thing there. There's some limitations with that, but that is one.

Most of the agencies here, they're not afraid to get up to this mic. I applaud you to think about moving the agency reports, but don't think they're waiting to jump in on an issue that you need more information on. I'm pretty sure they would get up to the mic. If they aren't, then I would encourage them to get up to the mic, but I don't think that's the case, but it is something to think about. You guys have put in very long hours here.

Lastly, I want to thank you for your discussions on passion and spirits. We had a fairly good discussion during lunch about that. I think that is key to Staff to hear those, to understand, because at least they'll get the idea of passion as well as traditional ecological knowledge. That is needed because when the Board has to make a decision, sometimes it is that additional understanding of passion that may sway the Board.

That's all. Thank you.

CHAIRMAN BROWER: Thank you for sharing that. Gordon, do you have any closing comments in regards to what you've heard.

MR. G. BROWER: Mr. Chair. I'd just like to thank everybody, all the agencies that participated. Sometimes I feel like I was almost starting to rant a little bit. In any event, I do my best for the communities up here in the Arctic and I want everybody to succeed, to have food on the table, to have done things on the side of the law and where we can compromise and work together for the betterment of things around here. Thank you.

CHAIRMAN BROWER: Thank you, Gordon. So I think it's right to close the meeting at this time. I'm not sure if Rosemary is on, but thank you for.....

MS. AHTUANGARUAK: Yeah, I'm on. I just want to thank everyone too.

CHAIRMAN BROWER: I was just trying to say thank you all for taking the time to be with us

over the teleconference. I know you're the invisible ones and I keep forgetting that we have other participants as well. So Rosemary and the others, thank you.

MS. AHTUANGARUAK: I really want to thank everyone for really participating in this. We did get pushed for time, but it is something that happens with all of our meetings. It is a lot of information that we'll putting together and presenting. There's layers of thoughts that need to go into this process, especially with some of the last couple items that we had discussions on. It's just so very important that we do things in a good way. That we work as best we can to help us continue to be traditional and cultural uses in our lands and to help us to follow the changes that are coming. Education and communication are going to be key and it has to be done and mark the ways and mark the layers. We really have to grow the next process in a strong way to better prepare them for depth of what we've dealt with and what we're going to be doing with the changes that others are projecting.

Thank you.

CHAIRMAN BROWER: Thank you, Rosemary. At this time we'll adjourn the meeting and thank everybody again.

MS. PATTON: Thank you, Gordon and Harry, for your wisdom and time. There's just one follow-up thing. We'll email everyone about meeting dates since we're missing so many of our Council members and we're still waiting on new ones. Right now for August 19, 20 and 21st and the Council had made some recommendations for the communities to meet in. So I'll email everyone so we can get feedback and what dates work best for the whole Council.

There are fisheries proposals. The Council didn't have any, but if the public has any fisheries proposals, Staff at OSM are available for that if you get any inquiries.

Thank you.

(Off record)

(END OFF PROCEEDINGS)

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