

LAKE CLARK NATIONAL PARK
SUBSISTENCE RESOURCE COMMISSION
Port Alsworth, AK

SRC Minutes - Certified by Chair Warren Hill on 6/29/26

Saturday, April 25, 2026

Meeting held at Nondalton Community Center

Call to order: 2:02 p.m.

Present

SRC Members: Warren Hill, Ned Fowler and Darren Carltikoff

Absent: Tim Anelon, Steve Kahn, Tinny Hedlund, Karla Jensen

NPS: Grant Hilderbrand (Superintendent), Liza Rupp (Subsistence Program Manager); Eva Patton (NPS Regional Subsistence), Buck Mangipane (Natural Resources Team Lead), Dan Young (Fisheries Biologist), Megan Richotte (Acting Regional Associate Director)

Public: five members of the public were present.

Roll Call

The roll call confirmed that three Commissioners were present, and four Commissioners had excused absences. A quorum was not met, and it was only an informational meeting.

Introductions

SRC (Subsistence Resource Commission) members and all those in attendance introduced themselves.

Superintendent's Introduction

Grant Hilderbrand introduced himself and gave a brief history of his 31 years in Alaska and his experience working as a bear biologist for both the State of Alaska and then the Alaska regional office of the National Park Service. Grant also described his hope that park staff and local residents continue to have meaningful dialogue about resources and ways of knowing for many

years to come. He stated that his guiding principles are: salmon, subsistence, stories, sharing, and service.

Approval of Agenda

MOTION by Ned Fowler to approve the agenda.

SECONDED: Warren Hill

MOTION CARRIED

Approval of Meeting Minutes

MOTION by Ned Fowler moved to approve September 27, 2025, and February 7, 2026, SRC minutes.

SECONDED: Warren Hill

MOTION CARRIED

SRC Charter, purpose, and role

Warren Hill: How I understand it was when ANILCA created these parks, it was also determined that there needed to be an advisory board of locals with local experience to help the parks manage the resources, and thus the creation of the SRCs. The park is required to assist us in having these meetings and to inform us of what's going on so that we can help with the decisions park staff make. The park gets to hear about observations of wildlife and whatever else from the locals from our perspective to help with their decision making.

So far, I've seen the process to be quite effective when there is a need seen by the locals and brought then it is brought to the SRC. Through the SRC communicating with the park service, we've been able to make some hefty decisions. It's worked out great.

Commission member reports

Warren Hill: We had a super cold winter. It was great in a lot of ways, but also it was a little bit too cold at times to really be able to get out and do things at some points. Just two weeks ago, we were cutting wood over across the lake and measured 32 inches of ice out in front of Kijik, which is normally one of the thinner spots. As far as I know, that's the most people have recorded in many decades on Lake Clark. The last time we had a really cold winter, which was like 2009 or so, at least in my time on Lake Clark, the following summer was crazy hot and we had lots of wildfires and smoke. Now they're predicting a super El Nino. I'm worried about a hot, hot, dry summer this year. I cut a whole bunch more spruce trees around my house because I was losing sleep about wildfires.

Another interesting observation is I'm seeing a lot of beetle kill around my property. All of the big, old, mature spruce are dying, sadly. I think in a few years, at least around Port Ellsworth, there's going to be a lot fewer big healthy spruce trees.

It's been kind of a late spring arrival. Not a lot of birds moving through that I've noticed yet. I think it's just getting started. Yesterday I was out on my deck and a big bird was flying real low. I was sitting out there listening for geese and a big bird was flying towards me and I thought it was a crane. It went right over my head and I didn't know what the hell I was looking at. I had to look it up and it was a great blue heron. It flew with its neck all kinked up like a stork or something. I was like, that's not a crane. It was bigger than a crane. Then I was telling Ned the story today at Lake and Pen and one of the office gals, piped up and someone else saw it too and got a video. She just sent me the video and I was like, oh yeah. I wasn't the only one that saw it. That's interesting.

Ned Fowler: It seemed like it was a nice cold winter. I was able to get out and do some trapping. It seemed like there were good conditions for that. It was really cold. Not much snow in March for sure. It seemed like I was seeing, I don't know, my perspective and I haven't been out on the lake in a few years because of lake ice up there, but it seemed like I was seeing a few more wolves.

Last summer, I was able to go sheep hunting for a couple of days up in the pass. There were sheep up in there, just not enough time to get it done. Some of good, beautiful country up in there. A pretty great year so far.

Darren Carltikoff: It's been a really cold winter. Lots of ice out there, and we had lots of snow. I've never seen it that cold before. I think we had like 40 days of minus 30. 40 straight days. Lots of houses here froze up in water and sewer. Still frozen.

I went out and did a bunch of snowmobiling. Cruised around places I haven't been able to get to in the last few years because of the warm winters. But this year was a good winter to be out there, checking it out. I was able to see lots of good country. There were some critters out there. I was more like just happy to be out there. Because last year I didn't even get to go on a snow shoot. I got some firewood too.

I'm excited to be on this board here. I'm glad there's somebody from Nondalton that's sitting on this board.

Warren Hill: Did folks get a winter moose at all?

Darren Carltikoff: Yeah, there was a few that got a moose.

Public 1: What is the population of moose and what's happening to them?

Warren Hill: I think Buck, our wildlife biologist, will talk here in a little bit. And probably give you a summary of the surveys that were done.

Status of SRC membership:

Liza Rupp shared that there is one vacant Governor of Alaska appointed seat, which only requires that the applicant be a qualified subsistence user and the application can be filled out online. One of the Regional Advisory Council-appointed seats is open also. If you know anyone who is on the RAC currently or who is on the Lake Iliamna State Advisory Council please have them contact me. We have seven of nine members seated.

Superintendent Report: Grant Hilderbrand

Last year we very much prioritized continuing our wildlife surveys and our fishery surveys even as our personnel numbers changed. All that work is going to continue, so we're really proud of that. We've done a good job of retaining the staff that we've had. I think in terms of our seasonals, we're close to being at full capacity, which is really important for us.

I would just share that a lot of us are spending a tremendous amount of time on the Johnson Tract project over on the other side of Cook Inlet. It just takes up a lot of staff time. We're trying to monitor and manage that entire process and situation as best we can. I'll say it's a heavy lift sometimes.

The part that I wanted to close on that I feel like is really positive in a way, I just want to acknowledge and thank and share appreciation for George Alexie and all the time that he spent with the park. Of course, he was in the film. I know he's a leader here in the local community and worked for us for years. I think it was time for him to focus other places, but I personally will just wildly miss his smile, because it's always so much fun to see him and talk to him at the park, so I just want to say thanks to George.

Old Business

No old business

New BusinessSubsistence Update:

Eva Patton: I work at the National Park Service Regional Office of Alaska. As the film noted, , most of our national parks here in Alaska were created under ANILCA, and Title V of ANILCA is really essential. Most of the parks were created with the express purpose of protecting a subsistence way of life, and if that wasn't the primary purpose for the park, it's the second most important reason, and the park's mandate for both existing and the management mandate to ensure a subsistence way of life and continuation of subsistence and healthy resources for subsistence in the park.

Our regional subsistence team helps support all of our subsistence parks across Alaska. We do have a new regional director. A big part of each regional director's role is serving on the Federal Subsistence Board, and that is a really important part of the process for all of the subsistence regulations for both fish and wildlife in Alaska, and the SRC plays a big role in that.

The subsistence resource commissions were created in Title V of ANILCA as well, so when the subsistence parks were created, there was a subsistence resource commission created in Title VIII. It's an active process for the SRCs to help advise the parks on all matters regarding subsistence, subsistence uses in parks and monument lands, and continued access to subsistence resources. It's a really important role, and the role of communities in advising both the SRC and the park is essential as well. We're fortunate that our new director came from another park in Alaska, so he had worked in Denali National Park and Preserve as a superintendent I think for 7 or 8 years. They also have a subsistence portion of that park that was created under ANILCA, and also a subsistence resource commission, and so I feel fortunate that he's familiar both with subsistence, he's familiar with subsistence resource commissions, so he knows the importance of the work that you all do, and so hopeful that he will be an advocate for subsistence.

We just had a federal subsistence board meeting last week with the recommendations on why we want to make some changes, and I think a lot of positive outcomes from that meeting to increase subsistence opportunities across Alaska, including in our parks. Again, the SRC and your input in this meeting is a really important role. One of the things that we also manage at the regional office is, and hopefully this funding will continue, a small pot of money, about \$400,000 a year to focus on subsistence research and monitoring projects, cultural projects, cultural camps, and that's also a really important input that we get from communities and from the SRC is recommendations for whatever you see in terms of, we're seeing this happening to, maybe it's to moose or to our salmon resources, we'd like to take a look at that. We also want to document our traditional knowledge of the subsistence resources or our subsistence way of life, we'd like to have a culture camp to focus on these things. And Liza's your point of contact for that in the SRC, if you have recommendations for research and monitoring projects, and if you have some projects that are coming up that have been funded, that we're able to put that money towards that each year. So your input on that is really important to be able to focus those funds when you see there's a need for subsistence, and documenting your knowledge of subsistence, or you've done a number of culture camps or place names projects, so it's really comprehensive wherever you see a need.

Public 2: Do we have culture camps at Kijik? We should have one at one of the fish camps, maybe. Alternate years between Kijik and a fish camp. Maybe some people from Anchorage could come.

Eva Patton: That would be wonderful. Now would be the time to start working with Liza to develop a proposal, and then in the fall we have a call for proposals. Then the funding would come in the winter, and maybe by next spring, summer, we'd be ready for a culture camp.

Warren Hill: The tribal council could come up with an idea a work with the park to get the funds.

Public 3: We used to complain about the beavers in the Kijik River and how they dispersed the river and made it hard for spawning in Kijik Lake. Locally, we love that beaver because he's everything to us too. I mean, he was a backup for moose and caribou. If you look at all the Dena'ina names, like doyon, that's just another word for whiskers, beaver whiskers. How he navigates, the beaver uses his whiskers. And we're not as intertwined with our cultural animals as we used to be.

When I was growing up, we used to be accustomed to go up to the mountain to get wild celery. And the tradition was to get it and then bring it back to the village and give it to people. And then they would take the peeling of the celery and throw it in the water. It's our custom to do that, to call the salmon back from wherever they are in the world. They will get the scent of that celery anywhere in the world. The way they described it was almost instant. And the story behind it comes back from our old, old stories. Like we used to say, animals used to speak to us. We used to talk to the animals. Back that far, our tradition is made from those kinds of activities. We learned from the black mother. All these teachings of the wild animals, or our association with them, is really tied to our culture in different ways. Like we don't have much use for a sucker except for a dog food. But my mom used to like to show us how to take the sucker after you boil it for the dogs and you separate the bones of the head. And every animal in Alaska is represented in that sucker's head. Only some part of some animal, they could show you. So, you know, all these things about how we used to exist was tied to way far back. We don't even know some of the way things were observed in our tradition.

I just wanted to mention, our tradition, the use of this land, was granted in 1980, like you said, by the Congress for Nondalton. It was specifically mentioned. And Newhalen and Iliamna people, they never came up to hunt unless they were invited and they were with somebody from here. There was always a connection. It was our land from here.

You go over to Cook Inlet, and in the springtime and you go to the Inlet side for seafood. There's a big cottonwood bay over there, Iliamna Bay, on the east side there. There's a place called Cottonwood Bay on the south side there. But during low tide, there's this rock in Dena'ina, called our breakfast table. They used to go there for, they said, everything: octopus, clams, you name it, all there. All these connections. There used to be all these connections. We used to go through the Inlet, through Tyonek, there were some villages there we used to go to, but they were all tied to seasons, and animals, and how we interacted with each other too. But I could go on with many other related stories, but that's for another time.

I want to thank you guys for knowing that there are people still here, In the last so many years, we've lost our leaders. All these old guys used to be part of what we're learning from. They did

pass it on and they survived. And I wish we could reproduce like the original dictionaries of Nondalton words. God gives us new opportunities in life.

Thank you very much. There's always the learning, the knowledge, and the opportunity to do it. Thank you. We continue the legacy of who we are. And you guys are doing a good job. So, thank you.

Cultural Resources Update:

Liza Rupp: We will be working on the baseline documentation report for the Conservation Easement with Kijik Corporation that was signed in 2024. As part of the requirements for the easement, we need to complete various studies to document the current conditions of the easement lands. Dan Young is working on soundscape monitoring and we're partnering with Kijik Corporation to do water quality monitoring and eDNA sampling. The park is responsible for conducting a cultural resources survey of the parcels that are part of the easement. Since our former park archeologist resigned in January, we'll be getting a group of staff to go out and do the work.

Wildlife Update:

Buck Mangipane: So I heard mention of moose, this year, our moose survey effort focused a little farther north. So if you guys are familiar with the country around the Stony River, Necons, so like Telaquana River, Telaquana Lake Basin, partly the reason we focused on that area is we've been talking with the state about doing a large survey of unit 9 and 17, so pretty much all of this country outside of the park, the preserve and park, next year. And so it'll be a big collaborative effort, so rather than kind of redundantly doing the same area, we decided to transition and do the area to the north. It had been a long time since we had surveyed that country. Actually, Warren Hill, served as the observer on the last survey with Leon Alsworth flying, so it had been a while, and I think prior to that it was Leon and I had done it. That being said, we did it in April, so late winter survey. Numbers were low, so they observed around 40 moose, which when we extrapolate based on the population model we do, puts it right around 100 moose for that area, which is the lowest we've documented for that region and any of the four surveys for that area. So, in 2004, we had 180, 140 in 2008, around 140 when Warren did it in 2013, and around 100 this year. So there's a couple things: one, we've had some pretty significant winters over the last few years that certainly can have impacts on moose numbers. The other thing that we've seen, at least in our knowledge of moose in this area, is the distribution of moose changes. Traditionally, we would do our surveys in the fall because we're wanting to get whole cow numbers, early season calf numbers, but what we've typically ran into is lack of good snow conditions in the early season to allow us to go do surveys. So surveys have started to transition to late winter and as such, moose move around in the landscape a little differently. So, when you survey based on distribution and you set up your surveys based on an understanding where moose are in early winter and then you do a late winter survey, it can bias your results a little bit. I think overall, it's probably a combination of both of those that we've seen some decline in moose numbers as well as probably missing some. Also, late winter, as you

guys were talking about here, you know, there was a fair amount of snow and it's been really cold. That country didn't get a lot of snow later in the season, so they were tracking really old conditions. So you pretty much had to see a moose. You couldn't rely on tracks.

So numbers were pretty low for that region. I had hoped that we would find better, but it's been kind of the story with moose in a lot of areas in the state. You know, numbers have been pretty low. I think people in the basin have been fairly successful hunting. Hopefully this coming year we'll be able to get a survey done and figure out what's going on with the population at kind of a larger scale.

Next, Dall sheep, Ned talked about going sheep hunting. This last fall at the meeting, I reported out we had some preliminary results. We did a park-wide survey, so pretty much the entirety of the park, all sheep range. So pretty much starting Tazimina Lakes, going all the way to the northern boundary from pretty much the west side of the range, because they don't really extend over into the coastal region. And we divvied it up into three big regions. So, we have the southern section, the central section, which is like Telaquana Lakes from Merrill Pass south to about the pass, the Tlikakila, and then from there north. Coming off the last full surveys around 2015-2019, and we had a lot of sheep, right around a thousand sheep. And if we go back historically in the park for surveys of the entire sheep range, the max we've ever seen is a little over a thousand. So 2015-2019, numbers were about as high as they had ever been in the park for sheep. Sheep were doing really well.

We highlight the central region because it is the best sheep habitat we have in the park. It's got the best wintering habitat, it has a highest density of sheep, and so they do really well in that region. And typically, if we're going to have one area we can survey, we usually spend a fair amount of time there, because it's indicative of what's going on with the population. And as you can see, during that same period, there were 700 sheep living in that area. So a robust population. That Tlikakila going up to the Turquoise Lake area is a really, in the scheme of sheep at Lake Clark, that's where the density is really high.

In 2025 we're looking at around 500 sheep, so we've dropped by probably around 50% between 2019 and 2025. And that's throughout, even in the central region where we know we have kind of the most robust sheep populations, even in bad winter conditions, within the park. So driven by these numbers, and this dramatic decline, we made an effort to seek out some of the subsistence funding and got money to do surveys this coming year.

There was one glimmer of hope. So, while numbers were down, when you started looking at the lamb-to-ewe ratios, they were actually not really that low. They were about average, and they were numbers that were adequate to start building a population a little bit. So, there's a chance that this year, if we go out, we might see some of that happening. Hopefully we'll see a rebound in better lamb production, maybe some more yearlings on the landscape, and a really good ratio that'll start getting this population to build back up. We don't have discrete data for the southern area, because the density of sheep is lower, but some of the indicators of sheep loss in

this region were Tanalian Mountain, for instance. In the time I've been at the park, going on almost 23 years now, I've looked at sheep on that mountain a whole lot of times. And I think the fewest we had ever seen were 17 sheep. But typically, around 30 to 40 sheep call that area home. This past year it was 14, but it was 5 lambs and 9 ewes. So, the ratio is pretty good. So even though we may have had this decline over this 5-year period, we might start seeing that increase coming back. Obviously, a lot of that depends on right now. We had a pretty significant winter. We're going to start having lambs come on the landscape here soon. We've seen them as early as the first week of May, which is kind of the exception to the rule. Typically, it's like mid-May. So, the conditions right now, a lot of times, dictate early lamb survival. So, we'll keep our fingers crossed that things go well on that front.

Darren Carltikoff: Any ideas what caused the decrease?

Buck Mangipane: Sheep is almost always weather related. There are certainly instances where predation can have impacts on sheep, but almost always when you're dealing with population levels, it's usually weather. And mostly what it is, is either really heavy snow or really late winters. So like up in the northern country, they had really dramatic declines in Gates of the Arctic. And they just had years where you'd get into May and they just had snow so late that you just get really reduced productivity. Those lambs that are born early don't survive. Sheep have really good reserves. They do a great job of setting themselves up to live through winters. But if that winter extends too long and they don't have the ability to feed as you start getting into May, you start to see that have impacts on adult survival. Typically, if there's a predation related effect, it's usually on lamb survival. And it can be anything from coyotes to golden eagles. It can be wolves. Those are usually the three predators that are most common when it comes to sheep. I think in our case, we know we have had some significant winters. And as you get farther south here, when we had radio collars on sheep, you kind of look at where they go. Sheep actually stay really high on the mountain in the winter. They don't come down. They get windswept ridges that are southern facing. And so that snow gets blown off and so they can access food. So, like Twin Lakes, if you look at the north side of the lake, there's a beautiful area there that will be almost devoid of snow in the dead of winter. And the sheep stay up high. In this part of the world, you don't have the right mountain orientation for that, so you do find sheep getting lower into that alder. I think it makes them a little more susceptible. And I think the food resources are a little more limited in that.

So there's a few factors that make the habitat, as we get farther south within the park and preserve, a little less ideal. But in really good years, there can be a ton of sheep. We've had sheep extending all the way down to the Taziminas. And in this area, from Port Allsworth to the Tazimina Lakes, we've seen 50 to 60 sheep living in that area in some years when they're doing really well. So we'll keep you posted. Hopefully this fall we'll have results on the survey coming up this year. I'm trying to be optimistic and say that we'll maybe see some increases in numbers.

Bears, we're going to continue to do a pretty significant effort, mostly on the coast. So last spring, we did a collaborative survey with the state for all of Game Management Unit 9B,

including areas outside of the park and 9A. We've started to develop a little better working relationship there, doing surveys, looking at these species that don't recognize their boundaries. And as such, it was a huge effort. I want to say they spent the better part of three weeks flying. I think at one point we had six aircraft doing the survey. It was a huge amount of effort and it's a lot of data. We are working right now. We have taken on the responsibility of analyzing that. The individual who was planning to do that work is just about to resign from the Park Service. That's going to make things a little more complicated, but I'm pretty confident we're going to be able to work with him still going into the future. And I expect by the time we have the fall meeting, we'll have those data points for you here. The nice thing about that is we've really done a lot of work on the coast, and I'd say we have a pretty strong understanding of populations there, but we have a lot poorer understanding of populations in this part of the park and the part you guys live and interact in. So hopefully this fall we'll have better data to talk about that.

On the coastal side, we have a project that we're finishing up. It's kind of a brown bear, black bear study that we're doing on the coast. The big driver in this is understanding their diet and how they interact with one another. But the really critical piece is the diet part. We talked about changes. A lot of the movie talks about how things are changing. We know all of wildlife needs food, and as those food resources change, become less available, the seasonality of them changes, and impacts these populations. On the coast with bears, that's a big driver for us. Bear viewing is huge. Hunting in some of the areas adjacent to it is a big factor as well. The study is trying to learn a little bit more about what those resources are, what bears are using, and then we have potential development ongoing along the coast that might change the availability of some of those resources or change how that habitat is available to bears out there. We have a grad student coming up this year, and we'll be flying throughout the park collecting samples of vegetation. We're trying to learn to see if we can actually discern by taking a sample from a bear, tease out what it's eating. We can do that and understand salmon consumption. We can understand the terrestrial piece of the diet, and we know they eat vegetation, but we don't know what that vegetation is. We're hoping to be able to draw some conclusions on what specifically those pieces might be.

Two other projects that we have ongoing that happen most years is USGS Alaska Volcanic Observatory has a ton of instruments that are on Redoubt Volcano and Iliamna Volcano. They do a ton of work that obviously keeps us safe, understanding when things are happening. The warnings we get is dictated by a lot of that instrumentation. They also want to learn more about the history of Iliamna. The eruptive history of Redoubt is well-known, but Iliamna is kind of unknown. There's not a lot of data on that, and so there's been a project in for the last six years they've been trying to get this to happen.

With the Johnson Track Project, the easements that have been conveyed are adjacent to Fossil Point. and they're adjacent to other geological landforms that are really rich in fossils. We are going to go out and do a survey with a regional NPS geologist to understand the distribution of those and try to mitigate potential damage to those resources.

Finally, we are working with Kijik Corp on the Chulitna conservation easement. We are working with them to have waterfowl surveys completed along the river since it's such an important habitat. The surveys will happen this spring every few weeks at the most, or maybe a little more frequently to get an idea of how numbers build over the season, what the distribution is, what species are there. We will share this information with the SRC as the data become available.

Dan Young: You are doing eagle surveys.

Buck Mangipane: Yes, we do eagle surveys every year. We've done it for 40 years. It's really hard to believe that almost as long as the park has existed people have done eagle surveys in the park. There are about 200 known nests. Typically, about 80 to 90 of them are active. The population of eagles here is just what they should be. It's a big, protected area with amazing resources that doesn't change, but it is changing. That's the part that's kind of scary because it will impact fish and that will impact eagles, but at this point it's very stable. The population changes a little bit, but it's kind of at carrying capacity. There isn't a lot of habitat that isn't already filled, so really cool.

Ned Fowler: Are there any surveys on caribou in the park at all?

Buck Mangipane: Caribou obviously get treated at a bigger scale, so we're talking about the Mulchatna herd. There is work being planned for the Mulchatna herd on their eastern side this spring. Last year, Fish and Game folks operated out of Port Alsworth supporting this. The goal of the work is really looking at calf survival. The big thing that's going to drive population growth in any way is calf production, calf survival, and so they have around 80 to 100 calf-collared caribou cows, so they're trying to catch the calves of those and monitor survival. This year, they reached out to us to get a permit to operate in the park. It's been a long time. I think it was probably 2012 or 2014 was the last time that we had a significant portion of the eastern part of the herd come into the Turquoise-Twin Lakes area and calve, but when they did, caribou were everywhere, including a lot of their collared animals, and to be able to do the work they needed to do, they had to be able to do it in the park and preserve, so kind of preemptively, we're going to permit their activities in the park. We should be learning more about the results and they're also looking at is there any disease prevalence in the herd, what the survival of the calves are. I think last year, the survival was actually pretty good in this eastern side, so again, maybe we'll see an uptick.

Public 4: For the aerial view for all the studies you do, is that by plane or do they use drones now and then?

Buck Mangipane: Almost all work is done using planes and occasionally helicopters. Usually if we're catching things we use a helicopter, and we use planes if it's observational.

Public 4: They don't do that during the time when there's hunting, do they?

Buck Mangipane: No, very rarely, so most of our new surveys are later than the hunting season. Sheep surveys, because we have a longer season, sometimes we'll be pretty close to the season, so we'll usually reach out if there are hunters who have tags, we'll usually reach out to you and let you know. The way those surveys work, we fly transects and we don't fly a lot of the country necessarily, but there's always the risk. So, if you know of people getting permits, we'll try to reach out to you and let you know, we'll try to avoid the areas. I hunt, I lived here and did hunt, I would have hated to have some biologist fly over me in a plane and mess up my sheep hunt. But sometimes it's the best time to do the work, so it's challenging.

But for caribou, we should be getting more information. The herd's still really stagnant. It's just, it's been at 10 to 12,000 and it's just kind of staying there. And it's, you know, caribou calves survive really at a good rate. If calf production is getting better, we should start seeing better numbers.

Ned Fowler: I've been seeing more when flying out in my country like last summer by Turquoise and Telaquana. I saw like 30 up there, but just nothing big, just wondering if there's any more.

Buck Mangipane: Yeah, and it kind of happened the year that they ended up in the western part of the Preserve. It was an early spring and the caribou started moving and they don't stop moving and they ended up just farther along in their travels. We were tracking wolves and suddenly there's caribou everywhere. There were thousands of them and it was overnight. We were out the week before that and didn't see any caribou sign. I'm hoping for our sake we get to see that again because it was really cool.

Eva Patton: Ned, where did you see them live last year?

Ned Fowler: Last summer I saw, there's usually 10, maybe five or 10 that hang up just north of Port Alsworth and the Caribou Lakes. I see a handful up in there. I saw them last summer, like up between Twin Lakes and Turquoise. I saw maybe a group of 20 in there one time last summer and there were maybe 30 or 40 between Turquoise and Telaquana. So, I mean, there's handfuls here and there when you're flying around.

Eva Patton: Well, that's great that you're seeing them.

Public 4: How about for this area, have you ever seen any caribou around?

Ned Fowler: I don't fly out here west of here a ton. I mean, I see them occasionally when I'm out here, but I'm not flying west of here a bunch, but I'm up there like every day.

Darren Carltikoff: This winter by the Koktuli River down there, in between the north and south part, there's probably close to about 500. Okay. Yeah.

Buck Mangipane: That's good to hear.

Public 4: So, they may stay longer because of the weather too?

Buck Mangipane: So, caribou are interesting. I don't think anyone gets exactly why they end up where they do. It changes over time. It has seemed over the last 10 years, they spent a lot more time over towards, like, Koliganik in the winter. Sounds like this year, maybe there were some a little closer, like Koktuli, which is not all that far away. So, they could be changing. During the 80s and 90s, there would be a bunch of them calving in the western portion of the park, out by the Bonanza Hills, and we've seen that only one time in the last 20 years. So, you know, I would expect as the herd starts to grow, we'll start seeing them in some of those traditional places more frequently than we have in recent years.

Public 5: I remember when there was caribou all around here. What they eat, it takes a while to grow back.

Buck Mangipane: It does. The lichens, you know, there certainly is some evidence, at least from the physical condition of the caribou when they got to the high point, that they started to see a decline in physical condition and a decline in productivity, and so that certainly means habitat-related impacts. You kind of hope over time, those things take a while to come back, but we hope that starts to occur. Typically, in other herds, you see the rebound happen faster, even though there is kind of these large numbers, but, you know, the western Arctic herd is starting to decline now, and you know, it was at half a million, and I think it's around 200,000. So caribou throughout the world, not just in Alaska, seem to be on, in general, declining, and so it's kind of a big picture thing. It's not one specific place.

You guys see it out on the lands. Things are changing, and it has impacts on wildlife, and we and you are trying to figure that out. You know, we're trying to figure out and understand what those things are, and in some cases, we might not have a good solution, but we can at least understand it. So we'll keep working. The state's doing, I would say, a fair amount of effort really looking deeper into, rather than just predation, some of the, like, ecological diet, nutrition, diseases aspect of it as well. So hopefully, we'll learn more, and, you know, again, I'll do my best to always bring what we learn or hear or get from others here to share.

Public 7: When I was growing up, the biggest population we used to have was down by Fryingpan Lake, you know, in the back hills. The cows would all be in the hills, and the bulls would be way up high. They were there always, and there was bears, and wolves living in the same valley. There was one big house.

Buck Mangipane: The bears are still out there. There are fewer caribou, that's for sure.

Fisheries Update:

Dan Young: Almost everything I'm going over today is about monitoring and looking at things and how they're changing over time,

This is Igiugig, or the outlet of Lake Clark. We went out there early season because we're looking at water level and how that's changing over time, and we have a little pressure transducer that measures water pressure, and with that, we have another pressure level on shore that gives us water level, and by putting it in the water column at this place, we can get a year-round record. This graph shows we've been monitoring this since 2009, and when I say we, it's mostly Southwest Alaska Inventory and Monitoring Network, but we work closely together. My colleague Krista Bartz and I. Initially, this was just done during open water season, and when people can get there, and that would be like May to October, and so that's kind of what was done in 2009 and 2010, but then in 2015, we switched to putting these loggers out deeper in the water year-round.

Public 4: Do you get the temperature in the water, too?

Dan Young: Yes, we do.

Public 4: So would that affect the fish?

Dan Young: Yes, absolutely. We're monitoring the water level, so we're looking at a six to almost 10 feet of water elevation change. You can see year-to-year variation, there's a lot of noise, you can see the low point and the high point, the lowest time, the water is at its lowest, like right now, April. This is generally when it's lowest. In addition to that starting in 1999 we have a takedown measurement that we do in Port Alsworth, off the beach, and we've surveyed that elevation, and it's intermittent, and the data we're collecting now is much better, but we still have this continued time series, and so this is from 99 to present, and this kind of shows a lot of the noise, and what I like is it really captures some of these fall, rainfall events, where it's just spiking way up here, and then come down, so we have sort of a real-time pulse of what the water level's doing, and we can compare it to how it's been in the past. And then, part of the reason coming out now, early season, is to access these water temperature loggers that we have, and we've been looking at.

We've had a project where we're looking at water temperature that salmon are experiencing in the gravel, like where they're incubating, and most of the salmon research, to date, has taken water temperature in the water during the summer, because that's when the biologists are there, and what the salmon experience, what the salmon, the eggs, are experiencing isn't necessarily baseline water temperature, and so we have, so this is by Chulitna Lodge, and in the fall this is all underwater. These are salmon reds, or nests, right here, so they're spawning all in this area, but right now, the water edge is here, and so we have a logger sitting here in the sediment, and then we have one in the water column there, and you can see where the algae is, this was above the surface, so we knew we had it just perfectly in, and the depth that we wanted in is about this deep, because this is about how far down the salmon red would be, and

then buried on top of it. It shows water temperature in the water column, is fluctuating quite a bit, whereas the water temperature here is like 40 degrees, or like four, four and a half, five degrees. That's warm, and because it's warm, the salmon spawn there late, they spawn until October, because it takes like so many thermal units to hatch an egg, and so those fish spawn there quite late, that's why at Kijik, you'll find a lot of really late reds, you can get your fall fish really late there. Now, not every stream, not every spawning area is like this, like some have this, big groundwater fed system, that's indicated here. We have a site on the Tazimina River, and it mirrors almost exactly the water temperature, but it's kind of a little more muted being in the gravel, but it mirrors it quite closely, and you'll see earlier spawning there, because they need to get those thermal units earlier in the year, because then over the winter, it's quite cold.

Public 3: So that affects the spawning salmon?

Dan Young: Yes, this effects of spawning salmon. So in addition to monitoring water, and we have a bunch of these water temperature loggers out and we're even putting more out, we're looking at water temperature and how that's changing over time, and water level, and how that's changing over time.

One of the main things we do is monitor at River Mile 22. We have our counting tower, and if you ever stand on top of the counting tower, we have these substrate panels in the water to help us see the fish as they go by, and as mentioned in the film, we're counting 10 minutes on the hour, every hour, from both sides of the river. It's an index of what's going on. And so this is a noisy graph, kind of like that other one, and these are daily passage, and that's 2025, and it was kind of an average year. I think the big take home, when you look at this, this was done by the University of Washington in 1980 to 1984, and then starting with Carol Ann Woody in 2000, we've been maintaining it since then.

Kind of a big thing, and you hear this from old people like you, like salmon used to come back earlier than they do now, and so you can see these big spikes at the beginning of the end of June, early July, this is when a lot of fish were coming back. That shifted much later now, and then this was, this year, this was 1980, this was when the water was so high in the Newhalen River that they couldn't get up the falls, and so it actually became a barrier of migration, so they were just waiting, waiting, waiting, and finally the water got low enough and they could make it upstream. That year a whole bunch died on the spawning ground because they couldn't actually spawn because they had used up all their reserves.

This shows you the range, so we're looking at basically 200,000 to 800,000 in the last 25 years, and last year was just over 400,000, and that's average. But you know, it's not always average. We have these years in like the 200,000 range, and then we have these up here like in the 600,000 to 800,000 range. In the early 2000s, they were kind of more than 200,000. Last few years, last 10 years, it's been about 400,000 on average within that zone.

Grant Hilderbrand: So, it looks like sometimes you get years where it seems like a lot of the fish spent an extra year in saltwater, maybe they're bigger when you look at mass?

Dan Young: Yes. We go out to your fish camps, and we get an idea of how old the fish are that are coming back. We're looking at anywhere from four to six years old, basically. So, they're four

to six years old, and of that, they spend one year in freshwater or two years in freshwater, and then two to three in the ocean, generally. We've seen this big shift towards them staying just one year in freshwater. There's variation. On average, 42% spent four years, a little more, 50 something percent spent five years, and then we have like the remaining bit spent six years in saltwater.

But that does change, and it matters. We're using the ear bones or otoliths of the fish to age them, and you can see how old they are, and you can see whether it's a freshwater or saltwater mark, and you can tell how old that fish is. And we use that, and we're typically collecting at least 400 fish from this subsistence fishery, and then we go out on those spawning grounds, and we collect another sample to be representative of the aging, size and how that's changing over time. And we are working with a professor at the University of Alaska who does the Bristol Bay forecast, and he's looking at our 25, 30 years of data and kind of looking at all the drivers and

So then, what's coming this year? The Bristol Bay-wide forecast is 45 million, with uncertainty in that 45 million range, 31 to 60 million, but they've been pretty good at estimating how many are coming back. And we've been looking at 20 some odd million to almost 80 million. So, 45 million is pretty good. Their forecast for the Kvichak is four million, which means that their escapement estimate for the Kvichak is two million, and we haven't seen a two million escapement goal in 15 years. That's the bottom. It used to be two to 10 million. Now they've changed that from two to four million. So the last 10, 15 years, they've been shooting for an escapement goal of four million coming up the Kvichak. This year, their escapement goal is two million. And typically, we see about on average 13-14%, but I like to say roughly 10%. And, you know, you need fish that came back four, five, and six years ago. So let's just say that that's 10% of what comes into Iliamna comes here. But four years ago, it was 4%. Five years ago, it was 10%, and you do the math, I'm looking at less than 10% is likely to come back if their sibling survival's all the same in the past. So, we could be looking at less than 200,000 fish coming to Lake Clark this year, potentially. I hope I'm wrong, but they're going to be pretty conservative to make sure at least 2 million come up, so it'll be more than that.

Ned Fowler: We don't know where the fish are going. There's a lot of those that come into Iliamna.

Dan Young: In the film, there are all these great images of bears and salmon. Well, that's all Knutsen Bay. That's all Iliamna. So that's where most of the fish have been going for the last 10 or 15 years.

Public 3: And last year was Bristol Bay with 55 million?

Dan Young: Yes.

Public 3: And this year will be 25? Y

Dan Young: Yes, so it's going to be less. Their forecast is lower than it's been. But you can see here, their forecast was a little lower than that year. They've been exceeding the forecast most years overall.

Ned Fowler: That's a good way to do it.

Dan Young: Yes, that's a better way. Lower expectations.

We have a similar project in the Kuskokwim Drainage, working with the state of Alaska, who actually fund this project. We operate it for them. Chum salmon and king salmon have tanked in the Kuskokwim, and those have been the main subsistence resource for people, so they are relying more heavily on sockeye. And through many years of work, we've found that the Kuskokwim is so different than Bristol Bay because it's just a riverine system. There are no lakes. So, when we're talking about 45 million fish coming back to Bristol Bay, we're talking about a million fish coming back to the Kuskokwim. And in the Kuskokwim, there are no lakes that produce salmon except for Two Lakes and Telaquana. There's a sonar that's run downstream above Bethel, and they're estimating about a million fish. And some years up to 30% of the fish that come up the Kuskokwim are from Telaquana. And when they did some radio tagging back in the mid-2000s, we had almost as many radio tags go to Two Lakes as went to Telaquana. So if you think about that, if we see almost 30% to Telaquana, it's potential more than half of the production in the Kuskokwim is coming from those two lakes.

So Telaquana weir, because it's a weir, we get to see everything that goes by. We're looking at anywhere from 20,000 to 200,000 sockeye each year, but we do get a handful of kings, chum, two pinks, maybe just one pink. In this project, we got a grant for three years, then we got an extra year. So, we had four years. This was the first four years that we ran the project, 2010 to 2013, and there were 20,000 to 30,000 fish. And the next year we were like up here, it's like, holy moly, there's so many fish. But the last 10 years we've been up here, and then two or three years ago, we had almost 300,000 fish. It was a year, where Lake Clark had about 329,000. We almost had the same number of fish go to Telaquana as we had come into Lake Clark.

Another project that I mentioned is water temperature, and we're looking at how that's changing over time. I'm working with Krista Bartz with Southwest Alaska Network, and we have a postdoc student, Lauren Hinton-Lang. And we are going out and mapping the thermal habitat of these streams. We've done over 20 streams in Kenai Fjords, Lake Clark, and Katmai. We used an infrared thermal heat sensing camera. And this is a one-point-in-time thing that we're doing. On this date, what do we see? You can see these cool water areas, the darker is cooler. And so we have this spot here and here, and this is Trail Creek coming in here. You can see it actually flows downstream quite a bit there. We went out and did kind of cursory survey, kind of identified these kind of habitats, and we're still figuring out the metric of what the thermal diversity is of these different streams. This year we're going back to these sites, and we are, putting out temperature loggers in those streams and looking at the persistence of this over time, and then looking at how that distribution, how the shape of it changes over time. Is it the same, or does it get bigger? This is just a close-up of one of those spots. And you can see it was like 3.6 degrees Celsius here, 3.9 there, and then almost 6 degrees, so varied quite a bit. And we're using like the definition of what is a thermal refugia as at least 2 degrees Celsius difference. That's our cutoff. We have installed a temperature logger here, upstream,

downstream, and we're going to monitor these through the year, pull them out, get the data off of them, and kind of look at how this is changing over time.

When we monitor salmon, one of the other things we're looking at is resident fish. How do we monitor resident fish over time? We came up with looking at contaminants and contaminant levels and how that's changing over time. We've done a lot of work on mercury levels in fish. Last year, my crew went out and collected 20 fish from Lake Clark and 20 fish from Kijik Lake. And this year, they're going down to Katmai and doing the same thing at Brooks Lake. Each lake's kind of got its own signal and level of mercury level. And often that's driven by the food web within the lake and the complexity of it and how it can biomagnify. So we have Kijik Lake here, Lake Clark up here. Brooks Lake is really super high. And one of the drivers, we have another study that we did, one of the drivers of that happens to be proximity to volcanoes. And mercury loading is one of the things. But what you can see here, the slope kind of always goes up. As the fish gets older, it biomagnifies in the fish. And so the older the fish, the bigger the fish, the heavier load in the fish.

We have a new paper that is not published yet. The lead author from USGS and then a couple other people at USGS, and Krista Bartz. And it's just talking about mercury contamination in fish. And we looked at four different park units, ten different lakes across Alaska. And we're looking at potential drivers for what's driving that. And we're looking at the food web specifically. When you don't have any information on what the mercury might level might be, what other things can you look at to choose a fish with lower contaminants. We tried to categorize the fish by size and shape but it wasn't a very good correlation. The better way is to know the mercury levels in the lake you're fishing in and try to harvest fish from a lake with lower levels, such as Kijik Lake versus Lake Clark.

And like I showed before, this is looking at, so we looked at these indicators. So where you fish, if you know, happen to have data on what the levels are in that lake, that's a really good indicator. Like I can tell you, if you're going to catch a fish, catch it from Kijik Lake rather than Lake Clark. Also, harvest smaller fish less than 28 inches. Salmon are not a concern because they eat zooplankton and they're very young. So the bottom line, just eat smaller fish. If you're going to fish in deep water, make sure you get ones with a small head. If you have a small child and you're feeding that small child fish every day, give them small fish.

I'm talking trout. Talking trout, salmon, eat anything you want. Salmon, grayling, whitefish, I mean like, there are only a couple of few species that would, if you want to reduce your exposure, just like some people eat organic food versus non-organic food, you know.

We've been doing this Parkwide Acoustic Inventory with David Bechkel, out of Denali. This Parkwide Acoustic Inventory is going to be written up probably in 2027, just based on the backlog of data being collected. But a subset of those were analyzed this winter and a report was written.

The station is made up of a microphone and an anemometer here, so getting some weather data with that. And then the microphone goes down to a sound level meter. It measures pressure and it gives a signal in decibels. It's coupled with that is a little MP3 recorder that gives you an audio recording of what's there. We've gone out to each one of those locations and we've put it out for roughly a month.

On the coast, because we were looking at working on a coastal management plan, we did a whole summer. And so at each one of those places it was a season long thing and it's comparable kind of to the other one.

Basically, what happens is you end up with this thing that looks like this. Okay. And it's like, oh these are sound events. That's what these little white things are on. They have some grad students or undergrad student at Colorado State University who listens to that audio and says, oh that's a plane. Oh, that's a boat. Oh, that is a rockfall. It's not just anthropogenic sounds; it's also natural sounds. The biggest noise, no surprise, is the planes. At all sites. 10% of the time is filled with noise from airplanes.

It's interesting, there's more watercraft that's going to Chinitna Bay lately because people are getting transported there by boat from the Cook Inlet side to go bear viewing. And then Crescent Lake is just another beast. It can be a really busy place. A lot of planes, but not only the planes, but you see the difference if you look at this one here. You can see the boats. So you see the difference in the boat traffic because they have pontoon boats, they have jet boats. I mean, there are probably like 15 jet boats parked on the beach there. It's a noisier place. They also have a lodge there has a helicopter.

Also relating to mercury levels in the environment, we have been collecting dragonfly samples. We're looking at these little dragonfly nymphs that we find in the water. They spend about five years in the water before they become adults and fly around. A grad student from the University of Maine started this project forever ago. By this point, there are over 500 sites in the country. So, our data set is within this larger national context. And I would say our levels in our water bodies are kind of low. Low to moderate. But it's just another kind of way to monitor the ecosystem and where things are.

We've also been going out the last couple years and we've collected some data on bumblebees. So we've set out these bowls. You set them out as a trap and you just put some dish soap water in them and they come in here and then you collect them. We're sending them off to University of Alaska Anchorage and it's part of a larger project. This is showing where places have been sampled. And the state and those different colors represent different years. With I think red being 2025. And then they have a grid of their high priority areas.

And so the dark red would be high priority areas. So we're going to probably try and hit some of these spots like over on the coast. Like Silver Salmon Creek would hit a couple of those.

I think the greatest threat to this environment right now is invasives. Aquatic, terrestrial invasives. There's a team from the regional office that's focused just on looking at terrestrial and aquatic invasive plants. One of the things we are doing is looking to make sure hopefully that we don't have any aquatic invasive plants. And so we have a crew that will be going out and focusing on places where float planes land. So if you see us throwing some rakes over by here by Newhalen Lodge that's probably why. We're looking for some of the aquatic vegetation just making sure because if we get in early then you can remove that early. So early detection and rapid response. We've been doing it the last 5 to 10 years. As of now, we have not found Elodea in the lakes here, just native plants.

Public and Agency Comments:

None

Set time and place of next SRC meeting:

The next meeting will be held in Port Alsworth. Dates are Saturday, August 22, or October 3, 2026.

Meeting Adjourned:

MOTION by Ned Fowler moved to adjourn the meeting at 3:55 pm.

SECONDED: Darren Carltikoff

MOTION CARRIED