



2023 Chignik Regional Climate Resiliency Symposium

Symposium Summary *finalized 8-22-23*

June 4 – 5th, 2023, Chignik Bay, Alaska

Coordinated and hosted by Chignik Bay Tribal Council

Thank you to the following organizations for supporting the Symposium:

Paul G. Allen Foundation/VULCAN

Alaska Department of Environmental Conservation (ADEC) Alaska Clean Water Actions (ACWA)

Alaska Forum on the Environment (AFE)'s Greenstar Program

Bureau of Indian Affairs (BIA) Tribal Climate Resilience (TCR) Program

Chignik Bay Tribal Council

Chignik Intertribal Coalition

Environmental Protection Agency (EPA) Indian Environmental General Assistance Program (IGAP)



THANK YOU

to everyone who participated:

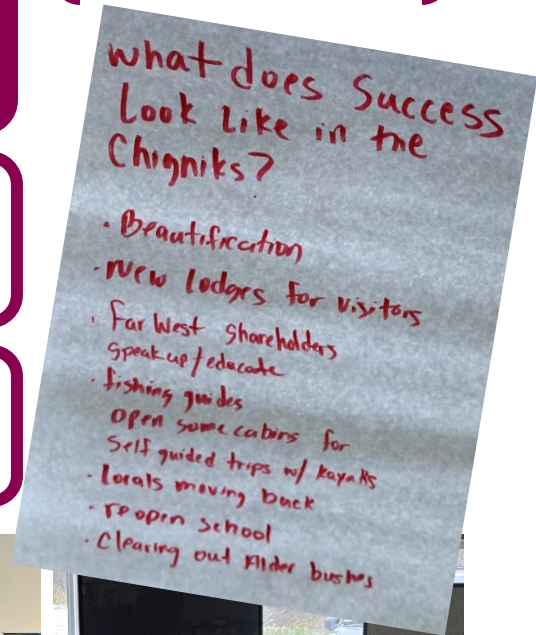
- Chignik subregion residents*
- Chignik Bay Tribal Council*
- Partners & Presenters*
- Our Chignik Bay hosts*

“Last year’s symposium we lay the foundation and this year we’re building on that foundation. This is much bigger than fighting at Board of Game meetings. We are building a path forward around what’s been occurring. For the Chignik region to have a future, we need to collect science that we own ourselves.”

“We’re all here toward the same objective: long term resiliency, having a healthy economy and food security.”

“Everyone is a stakeholder of the watershed and needs to be proud of it, own it, and care for it.”

“We got the ball moving, now let’s not let it stop. We want to keep our communities alive.”



Save the Date for the 2024 Chignik Regional Resiliency Symposium!

Tentatively scheduled for the first week of June, 2024

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Overview

Symposium Purpose

- Share progress and findings from regional research and planning projects.
- Convene researchers and community members to identify missing information and discuss emerging solutions to increase the region’s ability to respond to change.
- Work together to identify what next steps are most important.

Key Takeaways

- Now is a critical time to plan for the future of the region given the uncertainty of the fisheries and population loss.
- The Chignik region has energized leadership who are taking charge of the future, even as state and federal partners are slow to respond to the fisheries disaster.
- Research and data collection must be informed by traditional knowledge. Researchers working in the region should collaborate with one another and with the community, through forums like the Symposium.
- Tourism is a growing opportunity; many cruise ships are visiting Chignik Bay in summer 2023. The community must be ready to host visitors.

Outcomes

Immediately following the symposium, participants took the following actions:

- Conducted multiple major clean up events, including demolishing several old houses.
- Did trail brushing to clear local hiking trails.
- Helped coordinate regional backhaul scheduled for August 2023.
- Worked with research partners to refine data collection efforts to accommodate recommendations identified during the Summit.
- Hosted multiple cruise ships (see photo below).
- Met with Trident to discuss transfer of ownership of facilities in Chignik Bay.

Word cloud based on closing comments (larger words were repeated more frequently)



Themes from the breakout question, “What topics are most important for us to take action on, related to the watershed and climate change??” (see details on pages 20-24)

Solid waste and creek cleanup	Food sovereignty
Communications	Economic development; diversification
Prioritization of local data and traditional knowledge	Hazard mitigation
Stopping population outmigration	Representation

Symposium Flyer



CHIGNIK REGIONAL CLIMATE RESILIENCY SYMPOSIUM

Please join us for presentations and discussions on important topics that affect our region! We'll be serving coffee and refreshments throughout the days, along with sandwiches for lunch, with potlucks to follow in the evenings.

WHERE:

Chignik Bay Community Hall
Sign up for door prizes!

WHEN:

June 4th: 8:30 - 5:30

Ham and Turkey Potluck at 6:00pm

June 5th: 8:30 - 4:00

BBQ Potluck at 6:00 pm

Bring a dish for the potlucks if you wish!

For more info or to request a zoom link, please contact
jeanettecarlson749@gmail.com

***A special thank you to the Paul G. Allen
Family Foundation!***

June 4th

Welcome and overview with **Jeanette "Chickie" Carlson**
- Chignik Bay Tribal Council
Environmental Coordinator

New Chignik Subregion
research projects with **Chris
Maio and team** - UAF Arctic
Coastal Geo Science Lab

Projects update from **George
Anderson** - Chignik
Intertribal Coalition and
Chuck McCallum - Chignik
Regional Aquaculture
Association

Chignik Subregion Map
Project Planning with **Marcus
Geist** - Artesian Knowledge
LLC

June 5th

Green Star Program
Environmental Assessment
with **Joy Britt** – Alaska
Forum on Environmental
Programs Director

Final Draft of Chignik Bay
Climate Resiliency Action
Plan with **Isaac Pearson** –
Bristol Engineering Services



Symposium Agenda

Chignik Regional Climate Resiliency Symposium June 4-5, 2023

Location:	Chignik Bay Community Hall
June 4 (Sunday)	8:30 am – 1:00 pm coffee & refreshments, presenters/sessions below 1:15-2:15 pm lunch 2:30-5:30 pm breakout discussions on Day 1 presentations 6:00 pm barbecue potluck
June 5 (Monday)	8:30am-12:45 pm coffee & refreshments, presenters/sessions below 12:30-1:30 pm lunch 1:30-4:00 pm breakout discussions continued 4:00 pm closing remarks

June 4 (Sunday)

- 8:30-9 am Coffee & Refreshments, Welcome & Agenda Overview (Jeanette Carlson, Chignik Bay Tribal Environmental Coordinator)
- 9:00-10:30 am UAF's Arctic Coastal Geoscience Lab and the Alaska Coastal Cooperative will provide updates on the coastal monitoring work and highlight the new mapping and education project funded by the Paul G. Allen Family Foundation (Chris Maio, Matthew Balazs and others/UAF ACGL and ACC)
- 10:30-11:30 am Chignik Intertribal Coalition and Chignik Regional Aquaculture Association projects (George Anderson/CIC President, Chuck McCallum/CRAA Executive Director)
- 11:45-12:45 pm Chignik Subregion Map Project – conservation planning for subsistence, culturally important areas, etc. (Marcus Geist/Artesian Knowledge LCC)
- 12:45-1:00 pm Chignik Subregion Watershed Plan recently awarded grant (Agnew: Beck contractor and/or Jeanette Carlson/Chignik Bay Tribal Environmental Coordinator)

1:15-2:15 pm	Lunch (sandwiches provided)
2:30-5:30 pm	Breakout discussions on presentations
6:00 pm	BBQ at the Community Hall-bring a dish to share if you wish
<i>June 5 (Monday)</i>	
8:30-10:00 am	Coffee & Refreshments, Breakout discussions on Day 1 topics continued
10:00-11:00 am	Green Star Program Assessment of Chignik Bay (Joy Britt/Alaska Forum on Environment, Environmental Programs Director)
11:15-12:15 pm	Chignik Bay Climate Resiliency Action Plan Final Draft (Isaac Pearson/Bristol Engineering Services Corporation, LLC Senior Civil Engineer)
12:30-1:30 pm	Lunch
1:30-4:00 pm	Breakout discussions continued
4:00 pm	Closing Remarks

Attendee List

In person

Name	Organization	Email	Phone
Carl Burnside	Alaska Dept. of Fish and Game	Carlton.burnside@alaska.gov	
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Over Zoom

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Michelle Anderson	Chignik Lagoon, Village Administrator and 16-year resident	manderson@chigniklagoon.net	907-840-4049
Alvin Pedersen	Chignik Lagoon resident		
Clinton	Chignik Lake resident		
Hazel Nelson	CIC Climate Resilience Action Plan Author	northsider579@gmail.com	907-301-8023
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Acronyms

ACC	Alaska Coastal Cooperative
ACGL	Arctic Coastal Geoscience Lab
ACWA	Alaska Clean Water Actions
ADF&G	Alaska Department of Fish and Game
AFE	Alaska Forum on the Environment
ANTHC	Alaska Native Tribal Health Consortium
BIA	Bureau of Indian Affairs
BBAHC	Bristol Bay Area Health Corporation
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
BLM	Bureau of Land Management
CRAA	Chignik Regional Aquiculture Association
CIC	Chignik Intertribal Coalition
DCRA	Alaska Division of Community and Regional Affairs
DEC	Alaska Department of Environmental Conservation
DoD	U.S. Department of Defense
DOI	U.S. Department of the Interior
DNR	Alaska Department of Natural Resources
DOT&PF	Alaska Department of Transportation and Public Facilities
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information Services
IGAP	Indian Environmental General Assistance Program (EPA program)
NRCS	Natural Resources Conservation Service (USDA division)
PER	Preliminary Engineering Report
STEAM	Science, Technology, Engineering, Art, Math
STEM	Science, Technology, Engineering, Math
TCR	Tribal Climate Resilience (EPA program)
TEK	traditional ecological knowledge
UAA	University of Alaska Anchorage
UAF	University of Alaska Fairbanks
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey



June 4 (Sunday) Presentation Highlights

See presentation slides for details

Welcome & Agenda Overview

(Jeanette Carlson, Chignik Bay Tribal Environmental Coordinator)

- Opening remarks
- Group introductions

UAF's Arctic Coastal Geoscience Lab & the Alaska Coastal Cooperative: Updates on Coastal Monitoring

(Chris Maio, Matthew Balazs and others/UAF ACGL and ACC)

- UAF Arctic Coastal Geoscience Lab (ACGL): documenting coastal baseline conditions data; to be successful, requires close local partnership. Started in Bristol Bay, expanding out into the Aleutians.
- Alaska Coastal Cooperative: objective is to enhance collaboration between lab work, field work, and state and federal agencies to address shared goals. Formed in 2022. Specifically:
 - Enhance communication.
 - Apply science to address community priorities.
 - Develop/enhance workforce development and education.
- New project: Advancing Resiliency in Indigenous Communities through community driven science, technology, and capacity building. Piloted in Chignik region.
 - Goal: map and monitor the landscape and habitat of Chignik area.
 - Example of applied science: drone photography of the reservoir to understand how raising the dam height would impact flooding.
 - Also contributing data to the Borough's Lidar mapping project.
 - Developing baseline data on water levels for waterways throughout the area.
- Developing a field class that will take place locally; 6-8 teachers or teachers in training, run through UAF Bristol Bay campus; Goal is to learn about the area, indigenous knowledge, etc. (launching summer 2024 – see day 2 discussion below for topics).
- Questions, Discussion?
 - Q. What will they learn?
 - A. We have some ideas, such as teaching about community-based monitoring, or how to use a weather station or water gauge. Want to get them on a boat. Ultimately – want to make a strong impression.
 - Q. We would like to better understand the changing flow of West Fork coming off the volcano. That's the source of a lot of change at Black Lake. Is that an opportunity for additional research?



- A. We have some priority areas already but recognize we don't know all the important areas yet. Right now the West Fork is well researched toward the confluences. Hopefully some upcoming work will explore this a bit more.
 - Q. Would field school include kids that live in the Chigniks? With the school closure, many have had to transition to online learning.
 - A. That's a great idea. We could build that in and do some work with local kids.

Gabe Miller, Paul G. Allen Family Foundation

- The Paul G. Allen Family Foundation supports many efforts, including ocean health, climate resilience, and wildlife. A theme that spans all projects: community. Seeks to bridge data and community.
- Have done some dam removals in Oregon and Washington, helped with Pebble Mine resistance.
- It is exciting to be here, getting to see the community and the process.

Casey Ferguson, Alaska Coastal Cooperative

- Casey is the indigenous coordinator for the ACC; he was the first full time staff member.
- Casey is from Chevak, he shared a Cup'ik song with the group about resiliency.
- Coastal hazards are so prevalent in western Alaska; this ACC project is really important in helping understand impacts and plan for the future.

Mike Willis: UAF Graduate Researcher

See slides for details on research methods and research questions.

- Project: High resolution mapping of anadromous streams and salmon habitat in the Chignik watershed.
- Research question: What is the spatial distribution and extent of viable salmon habitat within the Chignik watershed?
- Background:
 - Rural Alaska is behind the rest of the lower 48 when it comes to baseline data.
 - Climate change is having an outsized effect here, e.g., with erosion.
 - Watershed summary: 1,100 km "known" salmon streams; small area but highly productive. Very dynamic system with extensive habitat variability; 5 salmon species.
 - Challenging to document all salmon streams without geospatial data. ADF&G has an incomplete catalog documenting salmon habitat, so this project seeks to expand knowledge of salmon habitat.
- The Lake and Peninsula Borough is conducting a LiDAR survey around its communities; with foundation funding, this study is collecting additional LiDAR in the Chignik region to supplement Borough data.
- Questions? Comments?
 - Q. Looking at the mapping and erosion – has anyone looked at creek erosion? The mouth of Indian Creek seems like it's changing constantly.
 - A. We have done a lot of historical monitoring. There is a time lapse camera collecting information now. Documenting historical change.
 - Q. How can people see results now? Live feed would be challenging, but for people who want to see data – how can they access it?
 - A. Reach out to Chris and other ACC team members. They may be able to explore releasing videos or other highlights on Facebook.

- Comment. Thinking about linkages between this data, and the fish. Have you considered applying intrinsic modeling? This is applying collected data to the full watershed, enhanced with indigenous knowledge.
 - A. Researchers will consider this.
- Comment: another research question to consider would be, what makes certain habitats so important and productive? What characteristics contribute to productivity?
- Comment (From Isaac, Bristol Engineering): We're working with the Tribe to help understand the Indian Creek bridge, since it was identified as one of the priority projects in the Climate Resiliency Action Plan. It would be helpful to understand high water collection and water flows of the creek itself – that data could inform the action plan recommendations.



- Ryan Peterson, Filmmaker
 - Ryan's background: from Eagle (on the Yukon River), grew up in Anchorage. Spent time as a fly fishing guide in Bristol Bay; slowly got into video.
 - In Chignik, documenting what efforts are underway to increase resilience in the region. Exploring the human side of these challenges. Teach viewers to learn about the challenges, which are shared across many other coastal Alaska communities, and some of the research and solutions that are being explored.
 - Shared video example documenting erosion in Dillingham.
 - Working with Andrey; they met while working in St. George.

Matthew Balazs, Alaska Coastal Cooperative

- Ongoing work includes erosion monitoring, GIS shoreline data collection, water level sensors; surveying via drones and other tools. Research is informed by feedback received at last year's symposium.
- Data is live, public, and shareable – contact the team if you'd like to access it.
- Highlighted two reports summarizing recent findings:
 - Chignik Bay Coastal Hazard Analysis
 - Community-Based Monitoring Shoreline Change in Southwest Alaska
- What's Planned
 - Expanded LiDAR collection to supplement Borough data; covering more of the watershed. USGS, Tribes, Chignik Intertribal Coalition, UAF, Borough – exciting connections.
- What's next?
 - Indian Creek

- Landslides
- Historical flood documentation – see day 2 discussion.

Chignik Intertribal Coalition & Chignik Regional Aquaculture Association projects

(George Anderson/CIC President and Steering Committee for Alaska Coastal Cooperative, Chuck McCallum/CRAA Executive Director)

- Chignik Intertribal Coalition (CIC) Overview
 - Originally advocating for commercial and subsistence fisheries; now advocating for resilience
 - Organization was born out of disaster
 - Over the years CIC has partnered with UAF, Fish & Game, CRAA, Borough, BBNA, BBNC, and others
 - Member communities: Chignik Bay, Chignik Lagoon, Chignik Lake, Perryville, Ivanoff Bay.
 - Continues to advocate at Board of Fish for subsistence users.
 - Expressed appreciation for being invited to attend and listen, “We’re here today rafting through the storm.”
- Summary of recent projects
 - Subsistence harvest survey and escapement: funding to keep the Fish and Game weir open later into the season and collect more comprehensive data. All species counts are 10 min counts every hour at the top of the hour. Have done multiple looks at sockeye. Now trying to count every single king salmon, have recordings of every passage; finishing analyzing last summer’s data now.
 - Bathymetric monitoring. Employing the technology on eight vessels from Black Lake through the Lagoon, including some seiners out of Perryville and Ivanoff Bay. Will be used to document their subsistence habits, and record Tribally-owned imagery.
 - Tribal Resiliency Program. Funded through Bureau of Indian Affairs (BIA). Interviewed all five Tribes over two years. Initial scoping summarized in Preliminary Climate Risk Assessment. Includes topics such as infrastructure, subsistence, and commercial fishing. Seeking funding for Phase 2 from BIA. “We’re all here toward the same objective: long term resiliency, having a healthy economy and food security.”
 - With Northern Economics – conducting a study, “Impacts of Fishery Disasters on Chignik Fishery Users.” Includes interviews on socioeconomic impacts of disasters, using funding from 2018 disaster.
 - Subsistence harvest surveys, conducted with USFWS. In season harvest estimates. CIC will hire someone to work part time to make phone calls to figure out who in the Chigniks are interested in participating in surveys, then once a week, CIC will be calling to learn about their catch. From that, developing weekly estimates. To mitigate survey fatigue, try to spread out phone calls between households.
 - Working with University of Washington Fisheries Institute to look at juvenile salmon across the watershed.

- Question and Answer, Comments

- Q. Listening about fish resource monitoring program: has that been looking at rainbow trout and dolly varden, too? Seeing if there is correlating information on how those species are changing and interacting with salmon?

- A. There are a lot of species in our watershed; we have to prioritize which ones to study first when seeking funding. We have one of the most documented sockeye populations on the Peninsula. Despite all the info collected over the years, there's a lot we don't know. It's great to have Chris and his guys asking us new questions that have never been asked before. Hopefully we can start filling the gaps. Answers to questions such as - Where are the sockeye rearing? If they're rearing in the Lagoon, where? What intershore predation is happening? What's happening once they enter the blue water? There is a lot of money coming for research, but with four disasters out of the past five years, it's been challenging. We're doing the groundwork right now.

- Q. Are past year's weir videos fully archived, or only the 10 minute recordings?

- A. Full archive is available from last summer, but previously, only 10 minute counts with short stints of full recordings.

- Q. I read an article about hatchery fish and how they impact wild species of salmon. Has there been research on how hatchery fish are impacting our wild species?

- A. Not equipped to answer this right now. It is a bigger question.
- Comment from Peter Westley: Peter was taught that the ocean did not have capacity limits when he was in school. "A black box and limitless pasture." In the past 25-30 years, that view has changed due to evidence – study after study – that has shown association between growth of certain species (e.g., Asian chum salmon) and changes to other species. It's not just a hatchery issue. Chum and pink and sockeye are struggling in some places like Chignik but overall those species are thriving, doing very well. Correlation is not causation, but when we have a strong understanding of causation – salmon in the ocean tend to eat the same things –these associations are probably linked. Disappointing that it's taken so long for 2018 disaster funding to come through; Peter got final funding two weeks ago to initiate his project. Focus is trying to understand some of the causes of the most recent ups and downs, especially the downward trends. One of the things to test is competition with other species of salmon in the North Pacific. In years when it's really warm, "blob years," competition might be extra high – fish eat more food in warm years. Hatcheries are likely part of the issue but not the whole issue. Competition with both hatchery and wild species.
- Alaska releases around 2 billion salmon each year – mostly pinks and chums. 2nd in the world behind Asia.



- Related Q: Is any research going toward this now? Correlations between our salmon and other species?
 - A. There is so much that needs to be researched. We need to prioritize; the funding is there. To keep the infrastructure going, we need to focus on what keeps the lights on. Exciting to drive through town and see new water lines going in. There is also a new water line going to the port (5 cruise ships landing this year, plus Alaska Marine Highway visits).
- Q. CRAA funded a project to broadcast the video. Would that be possible – to livestream the recordings at the weir?
 - A. Can discuss this possibility but could likely be done now that there is Star Link on site.
- The voices from the Tribes are powerful. We are building on the foundation from last year’s symposium. We want to connect the dots between what has begun to occur in response to the reoccurring disasters. The fisheries disasters are frustrating, but also the lack of response from the State of Alaska in how they could be more effectively responding to the disasters. The communities in Chignik need to move the needle because of how the state is reacting (or not reacting). You’re already doing it by engaging with Universities, USFWS, researchers, holding this symposium. Bringing your ability to make change in not only how research occurs, but also management. It’s much bigger than fighting at the Board of Game meetings. For the Chignik region to have a future, that needs to be continuously built on, including collecting science we own ourselves.
- It’s more than food security – it’s food sovereignty.
- Chignik Regional Aquaculture Association (CRAA)
 - Overview
 - The CRAA board is made up of local stakeholders: commercial, subsistence, processors, government, village corporations. Funded by 2 percent tax on salmon.
 - Primary mission is to increase salmon production. Mostly interested in rehabilitation, not hatcheries.
 - Formed 1991. Not looking at hatcheries, but at changes at Black Lake. Locals noticed the West Fork had shifted where it was entering Black River, closer to Chignik Lake. Concerning – a high interest in investigating whether there needed to be a rehabilitation project.
 - Black Lake Summary of Activities
 - Did different projects over the years to determine if rehabilitation was appropriate, learned a lot about the system. Facilitated a 2012 Defenders study, building on CCRA’s previous studies. Determined that Black Lake has already lost between 1/3 and 1/2 of its volume, but declines had stabilized. Did not recommend rehabilitation but did suggest the community continue to monitor. Highlighted measurements that should be done regularly, to ensure recommendations were correct and there were no more dangerous habitat changes occurring.
 - Most recent monitoring: looked at cross sections of Black River near Black Lake. Stream had been downcutting the area; primary reason the water levels were reducing. That had stabilized, too. River is migrating left to right, it’s no longer downcutting.

- Alec River outlet into Black Lake. There is a North channel (above the spit) and South channel (closer to outlet basin). Concern about more water shifting into South channel, concern about problems with rearing habitat.
 - Most recent monitoring has shown interesting changes. At low volume flow, most of the water flow goes to South channel. This last year, that changed – it was more equal. South channel also moved its outlet by a couple hundred yards south; still learning if that’s a problem or not.
 - Salmon
 - CRAA is developing a comprehensive salmon plan. CRAA has done many projects over the years. Cooperative agreements with ADF&G to do genetic stock analysis, in season management, etc. ADF&G has lost interest in those projects, we were disappointed in both those outcomes. Department has indicated we need to stay focused on rehab, “not act like a fisheries organization.” Still determining what that means for the scope of our projects and underscores the importance of the collaborations being done here. Great to hear about all the work being done.
 - Question and Answer, Comments
 - Q: You have a website? Are the projects summarized on your website?
 - A. Yes, a website for CRAA. Not sure how comprehensive or up to date, though. No website for CIC.
 - Q: How is CRAA adapting to these recent disasters?
 - A. Can recall when CRAA was basically a science symposium for anything salmon related. Now we’re being told that’s not what CRAA should be doing. Should be narrowly focused on salmon hatcheries or rehabilitation. Still grappling with what that means.
 - Q. With changes in Black Lake over the years and changes in the West Fork - what does the monitoring setup look like up there? What exists for implementation monitoring?
 - A. They monitor lake levels and cross sections at specific locations.
 - Comment (Peter): Last time I was in CRAA was as a grad student in around 2003-04. All research was about Black Lake, hyper focused. We’ve arrived at a time where our understanding of that system has advanced so much. We have a good sense of what happens and why now. CRAA is less focused on just Black Lake, and there have been some good discussions about identifying other areas of enhancement projects, spawning channel for new spawning in other areas, etc. – to identify what is happening with the runs and what should be the focus going forward. How to respond to changes and build resilience. Maybe even revisit CRAA’s mission statement. It’s an exciting time for the organization that has historically been so focused. Confident CRAA will play a sustained, important role in the Chigniks.
 - Q. What would a rehabilitation project look like? Dredging? Moving a channel?

Examples:

 - Building a structure near the outlet of Black Lake.
 - Work on Alec River so more water would go into North Channel and help move more salmon into main body of lake.
 - Rerouting the river. That river is hugely dynamic, part of the productivity of Chignik is the diversity and changing nature of the landscape, and that has benefited and created diversity of fish.

- Other ideas: are there sites with good rearing habitat that have current barriers to accessing them, and you can build fish passage? Increase wild production by giving it a nudge; done successfully in Kodiak. Would simply require stakeholder engagement and local input on what feels right.
- Q. Indian Creek is so full, don't know if salmon can travel that far... is there opportunity there? Would CRAA look at more local streams? Would they have to change their mission to do so?
 - A. Wouldn't need to change the mission statement to consider/explore something like Indian Creek. We could look at what have we done in the past that was successful and we could apply it elsewhere. Coho restoration in Perryville was successful.
- Comment: Everyone participating is going to join in the rebuilding and rehabilitation of sockeye and Chinook. This symposium is an important part of that.

Chignik Subregion Map Project

(Marcus Geist/Artesian Knowledge LCC)

- Project Overview
 - Marcus is a geographer; primarily works at UAA but continues with selective mapping projects.
 - Reviewed benefits and limitations of village mapping – gaps between Alaska Division of Community and Regional Affairs (DCRA) community profiles and US Geologic Survey (USGS) /Alaska Department of Natural Resources (DNR) maps.
 - To achieve The Nature Conservancy's conservation goals, needed to invest in projects that were practical, locally accepted, and data driven. Built a simple conservation scoring formula to guide prioritization.
 - Chignik mapping process: visited Chigniks last year and also participated in some Anchorage meetings; had folks mark up paper maps, then digitized that feedback – could document attributes such as where, what, and even when (e.g. seasonal movements of animals or harvesting). Merging traditional knowledge with traditional western tools.
 - See slides for results of the data collection effort, with various visualizations such as distribution of cultural resources, physical resources (e.g., hydrography, elevation, slope, biological resources, land management)
 - Divided the region into sections and for each section, looking at an inventory of all the different inputs. For new infrastructure (e.g., road corridor or new runway) – could look at the proposed sections with development potential, and can view the various features to inform placement and where conservation values are important.
 - Some of the data collection methods work better in more stable systems; the Chigniks include very dynamic waterways.
 - We are learning lessons about the demise of salmon in Europe and the Pacific Northwest; we want to manage fish for not only where they are today, but where they were 100 years ago, and where they will be 100 years from now.
- Conservation Planning Atlas
 - Context: While we are making big leaps in bandwidth now, we were driven from interest in having an atlas/gazetteer as reference for research and those working on landscapes who don't have reliable internet. Context: While we are making big leaps in bandwidth

now, we were driven from interest in having an atlas/gazetteer as reference for research and those working on landscapes who don't have reliable internet.

- We are producing detailed maps for planning sections around the area. One page each, to include imagery background, data summary (including which fish are present), and locator inset. Can see conservation values for the section.
- Map access options:
 - GIS data, Google Earth files, or PDF. Can toggle layers on and off in PDF – “budget GIS.” Making GIS layers accessible even if folks do not have GIS. Can also measure areas or merge coordinates from the field onto the maps.
 - Accessible via USB drive, with index links to files.
- Bristol Bay Heritage Land Trust now has the ability to pursue conservation options for the areas with highest resources (cultural, biological, etc.)
- Questions and Comments
 - Comment (Sue): For Bristol Bay Heritage Land Trust – originally just Nushagak and Mulchatna drainage but now expanded to all of Bristol Bay. Sue is happy to share more about the Bristol Bay Heritage Land Trust. Tries to align their gathering with when BBNC is hosting their annual meeting since folks are already together. Reach out to Tim or Sue if you want to learn more, get involved, attend meetings.
 - Comment (Dannica): excited to be able to use these maps for economic development. Would be so helpful to have a map showing private, public, and undeveloped land. Is there an opportunity in the future to develop a visitor's map? As we build capacity to host cruise ships, wish we had a map to guide visitors. Dannica has a rough version but would love a more sophisticated interactive one (could toggle on/off natural sites, historical and cultural sites, etc.)

Chignik Subregion Watershed Plan

(Shelly Wade, Agnew::Beck and Jeanette Carlson/Chignik Bay Tribal Environmental Coordinator)

- Context
 - Chickie introduced the idea of watershed planning. Sue applied for a Clean Water Grant from Alaska Department of Conservation – that made this possible.
 - Agnew::Beck helped with IGAP environmental training in the Bristol Bay region, working with Sue, Chickie, and Oxenia.
 - Project will be about connecting the dots with all the findings and recommendations from various efforts, do some prioritization and incorporate community input. Owning the science, building the stage for resiliency, helping weather turnover of administrations, leadership, etc.
- Questions and Comments
 - Comment: You have until February 2025 to complete the plan. Want a draft by June 2024, but want some generous time to get feedback.
 - Comment: Where can we set up a page for a data dump for this climate resiliency summit? A Facebook page? Could the City manage a page?

Refuge Visitor Use Monitoring Plan

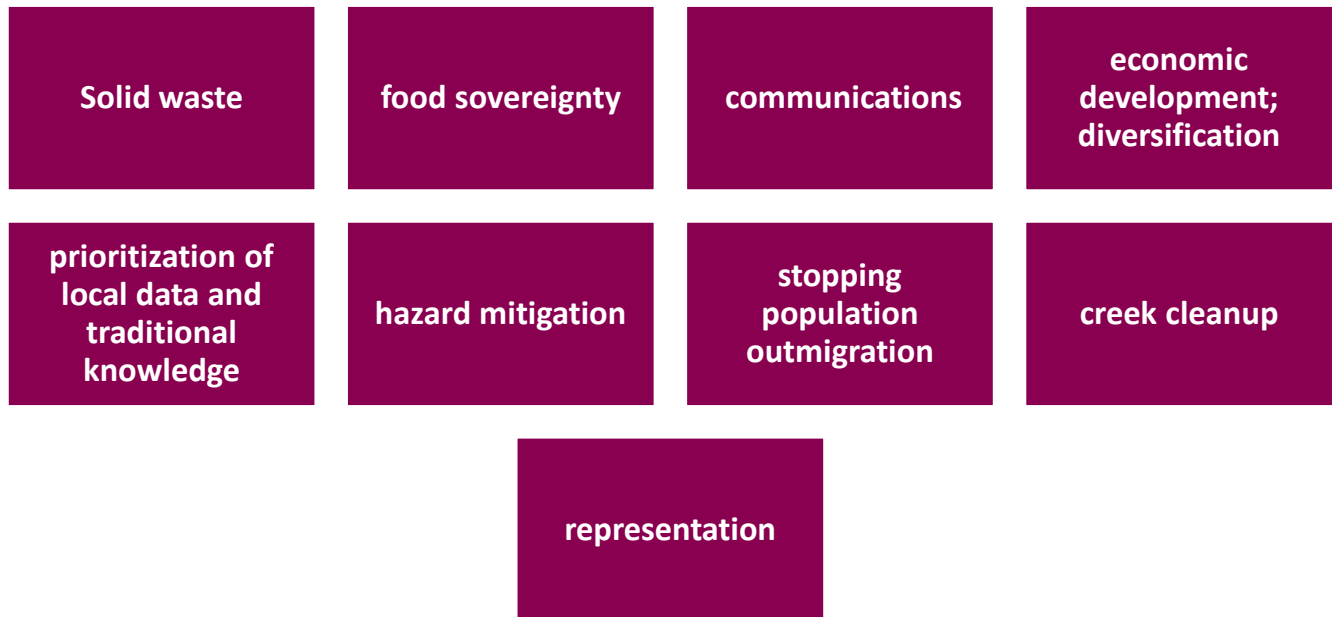
Bo Jenson, USFWS

- Visitor Use Monitoring Plan Overview
 - Conducting visitor survey projects as a contractor.
 - Plan is in early stages; want community input.
 - Developing a plan focused on the region’s refuges – 4 millions acres of federal lands, adjacent to state lands and community and Tribal lands. Want to find out – who are the users? And how are those uses going? Not seeking quantity, but quality. Learning about subsistence uses as part of her role.
 - Guiding research questions: When you hunt, gather, fish, are you finding what you are looking for? In terms of outcomes, what are the quality of harvests and quality of experience you are having?

Breakout Questions

Question 1: What topics are most important, related to the watershed and climate change?

Themes from responses across groups:



Detailed input by group:

- Group 1
 - Food security.
 - Especially relevant to disaster in 2018. Taking that a step further – food sovereignty. The food that was brought in helped tackle insecurity but didn’t empower people to choose how they received food, where it came from. Food sovereignty is empowering, participating in conversations around regulations that impact hunting.
 - Traditional foods – salmon, berries, moose, Bidarki traditions.

- Understanding and participating in regulatory conversations around harvesting of traditional foods.
 - Research.
 - Making research available, accessible – in communities, in Anchorage, in Seattle. Considering how connectivity changes access.
 - Fish.
 - Helping protect our fish in the area. That is our way of life and main food source. I'm in Anchorage now but live in the region seasonally, make smoked and canned fish. Aunt used to joke, "You eat so much fish, you're going to finish the fish." Not sure why the fish are diminishing.
 - Erosion
 - Living in Chignik Lagoon – more erosion in this one year than seen in my entire life. We lost 100-150 ft of shoreline. Chignik Lagoon is prime rearing habitat for all species of fish and game. See a lot of placement of rocks, tanks cut up in the watershed, rubber tires to stop further erosion. How are those mitigation efforts impacting species? Need to start cleaning up our own backyard.
- Group 2
 - Clean up and environmental hazards.
 - Cleaning up contamination; contamination management; e.g., cleaning up Trident properties in Chignik Bay.
 - Safety and environmental hazards. Old oil filters, transmission fluid is seeping into the Bay, could be impacting the fish population and fish is an essential resource.
 - Cleaning up creek. Fence to stop outflow of debris? Beautify surrounding areas, address old buildings, restart school. A community without a school shouldn't happen here – how can we bring population back, year-round?
 - Collaboration.
 - How can everyone come together instead of City, Corporation, Tribe separately navigating these contamination problems?
 - Tree management.
 - Trimming back the alders – they are overgrown, some over 20 feet. Causing harm in multiple ways, need to manage.
 - Some of the abandoned boats have alders growing through them. Impacts cleanup.
 - Makes it harder to see and safely exist with bears.
 - Alders also overgrowing salmonberry bushes. Impacts food security.
 - Seeing growth in other coastal areas, too – like Chevak.
 - Population loss.
 - Population turnover; locals moving out, so having to hire out for roles, which is more expensive.
- Group 3
 - Communication and collaboration.
 - How to communicate effectively with all community members – those in other villages, those who are here seasonally.
 - Networking communities.
 - Economics.

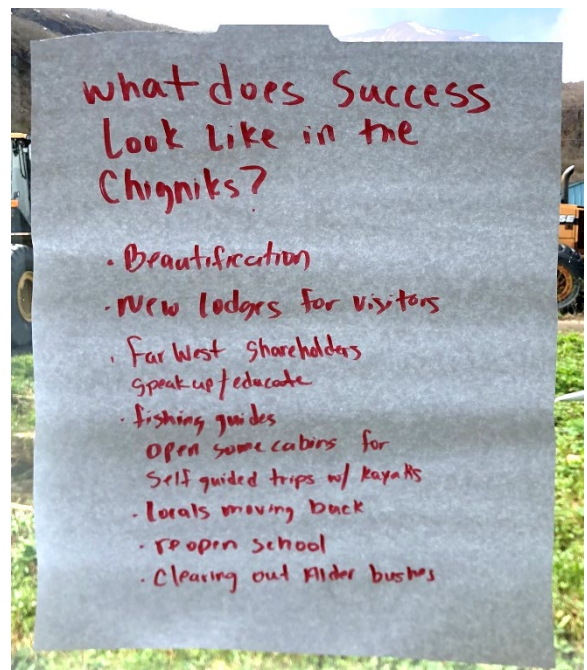
- How to capture and present economic impacts of what is helping? People get it if you make it into numbers and dollars.
 - Criticality of the disaster.
 - Diversify income streams, e.g., with ecotourism and cruise ships visitors; what else is there?
 - Population
 - How to slow outmigration.
 - Subsistence.
 - Building knowledge across generations. Lacking mid generation to provide for Elders, young people who do not know how to practice subsistence. Need to address knowledge gap and culture loss.
- Group 4
 - Fish.
 - All of this seems to stem from the fishery not being here, not being viable. No one is talking about the interception of the fish coming here. Even in '98, when serving on Board of Fisheries, area L is tiny, between K and M; was a concern even then. Those areas have all the political pull. Political problem, too. Also an issue in the Yukon Kuskokwim region; villages that are poor and don't have fish any more. We have newer genetic technologies that could help us identify where fish are coming from but there is obstruction because powerful influences don't want that information. Lessons learned from the Pacific Northwest, "industries can take care of themselves," that was not successful.
 - Local representation – requires government appointment.
 - Tracking conditions to identify trends.
 - Clean up.
 - We need to clean up the towns and have them look better if we want to attract people and become a destination. Most places we've turned into concrete jungles; our communities are in beautiful places but we need to clean them up.
 - Processor purchased the competition, didn't take care of the facilities.
 - Norway as a comparison – scenic, cute, an international destination.
 - Cruise ships as opportunity.
 - Population loss and families.
 - We need to bring young people back. We need people who are having kids, who enroll kids in school. Grandparents want to be near their grandchildren.
 - Diversification.
 - Diversity of job opportunities. Bringing salmon back would help, but either way, need more besides salmon.

Question 2: What does success look like?

- Group 1
 - Food sovereignty.
 - All local Tribes are involved in advocating for any regulatory impacts and involved in the studies themselves.
 - Growing up, all winter long, we always had caribou; always harvesting and processing. My son didn't get his first caribou until he was 17; we were encouraged to give meat back to Elders but we needed it for our freezers.

- Couldn't harvest locally; had to go to Port Heiden. Getting involved and having local decision-makers involved from start to finish on any regulatory decisions – both fish and game. Need to build that capacity to participate.
- Fish.
 - Watching counts and runs – seeing the numbers go back up. It's frustrating to see how they are counting. Researchers say they see the fish, but when you live at the lake and don't see the fish – hard to know what is correct. Frustrating when perceptions of fish don't match the results from the counts.
 - Erosion.
 - Erosion in Chignik Lagoon – not sure what can be done. Shorelines are gone, hillsides are falling in. Talking with surveying staff – it's a statewide issue.
 - Clean up and backhaul.
 - Start by cleaning up our own communities.
 - Backhauls; lots of talk but not a lot of implementation.
 - Oxcenia offered to follow up on this to find out status. Not sure one will be enough; supposedly one this summer.
 - First step will require staging, collection.
 - Drone imagery could help document a baseline of debris/waste around communities; is it growing? Shrinking? Can we estimate volume? Identify areas for cleanup?
 - Some visible on Google maps.
 - Work with agencies to identify areas on their land where there is contamination, and identify the sources and who is responsible for cleanup (e.g., landfill at Rocky Point; all old dumpsites).
 - Reference BLM inventory – not sure whether all were previously documented.
 - Contaminated Lands Partnership Group (led by ANTHC) – includes DoD, DOI, USFWS, Village and Regional Corps, Tribes). Objective is to find existing contaminated sites and making sure they're reflected in inventory.
 - We often know who the responsible parties are, the challenge is getting them to engage in clean up.
 - DEC's inventory – they are point-based sites, may have information available.
 - Oxcenia's office at ANTHC is adjacent to the Contaminated Lands Partnership Group and she can help us get connected.
 - In Chignik Lagoon, there are very little cleanup efforts, aside from annual cleanups through the school; doesn't address soil cleanup needs.
 - Cleaning up wetlands and watershed.
 - Getting stuff back into landfills
 - Accessibility and availability of research.
 - Making it easier to find.
 - Hearing about intertie road, hearing about benefits, but never saw the feasibility study.

- Within communities, is there a central spot for getting information? Library, Tribal Council Hall, City Hall?
 - Establishing something like this in each community – would be great. Oxcenia was previously a Tribal Administrator and finding reports, studies, plans was impossible when she first started.
 - Chignik Lagoon – many spaces under renovation. School, village office both getting a lot of work done.
 - This process is a first step!
- Group 2
 - Local data and planning.
 - Seen as more accurate, and more representative. E.g., federal agencies relying more on local data.
 - Communication plan – including timing, purpose of communication when planning efforts are underway.
 - Importance of community planning – having schools and clinics open, villages working together.
 - Education.
 - About subsistence, language, culture.
- Group 3
 - Local data.
 - Need for locally-owned data
 - Data is collected, analyzed, and served locally. But should be done jointly; using standardized data collection so it can be used by multiple parties.
 - Reliability. Data is used over and over in reports; accuracy is important. Local data collection can help ensure accuracy.
 - Need more and better demographic data. Important for planning, grants, etc. Not accurate data available for this region.
 - Need for economic diversity.
 - Problematic working with Trident
 - Blue economy; aquaculture; smaller fisheries; selling water? What unique opportunities could exist here?
 - Need to update rules; many developed in the 70s, need to reflect current times.
- Group 4
 - School reopens.
 - Boat harbor full of boats.
 - More year-round residents, who can support themselves and families.
 - Presence of local processor. Opportunity for fish co-op? Was one at one point in the area, was ruled unconstitutional and was closed.



June 5 (Monday) Presentation Highlights

See presentation slides for details

Group Discussion: Field School: What topics would be most important to cover in a Chignik-based field school?

Context: want to leverage the resources and knowledge here in the Chigniks to bring teachers in training to the community. Funding for 6-10 teachers (from Paul G Allen Foundation and National Science Foundation). Could include teachers already in the region, and undergraduate students studying to be teaching. Objective is to teach teachers on how to teach about relevant topics, such as climate change, natural resources research, culture, fish, food security, etc. Could start in Dillingham at the UAF Bristol Bay Campus, or could initiate in Homer and arrive via ferry.

- When should the field school take place?
 - Alongside the symposium; it's a busy time of year, nice to have everyone here at once; easier for the community to host the visitors in one go.
 - If students come in early, could meet other local youth, and could do some volunteer activities together such as clean ups.
- Who should participate?
 - Would like to also see young residents invited to participate; even youth up to age 24.
 - More buy in when residents and locals are participating in research. Collaborate with local scientists and researchers.
 - Would like to invite participation from neighboring Chignik communities.
 - Could pilot new lessons at the end of the program with local students – such as a camp on the last day for emerging teachers.
 - Participants could be eligible for an occupational endorsement.
- Resources
 - IGAP grant could support this work, too; each community in the area has IGAP funds.
- What topics would be most important to cover in a Chignik-based field school?
 - History and Culture– learning about culture (e.g., art), community history, guided hike with local teachers, Aleut people. History is not well documented but important to share.
 - Collaborating with school teachers to fill in gaps via summer programming.
 - Learn about the unique histories, heritages of different parts of Alaska, and especially the areas the teachers will ultimately be working.
 - Artists – paint or build something together. Work with ADF&G or FRI. Counter the comment: “we’re not scientists.” Integrating art and science as a powerful learning method. Could do a project together on an older building – a mural.
 - STEAM, not just STEM: Science, Technology, Engineering, Art, Math.
 - Everyone who is aware of the Chignik region knows that there are a lot of great artists from those communities. I like the suggestion of enhancing the attraction based on art, that's what Homer has done, and Halibut Cove, I think there's a lot of art grant funds available to help with growing this. Could collaborate with Homer as a ferry-connected neighbor. Invite a local artist to lead a mural installation with the visiting teachers.

- Cruise ship visitors want to spend money on local art. An opportunity for local artists to sell and showcase their work.
 - Collaborating with scientists who have done research locally – e.g., Peter Westley to learn about their process and what they learned.
 - Tourism opportunities.
 - Leavenworth, WA was a depressed logging community, and has revitalized itself as a Bavarian village. Identify a motif; could collaborate with artists to build out a theme.
 - Birding – another learning opportunity; birding is a major segment of the tourism industry. Could use the book *Birds of Southwest Alaska* as a learning reference. Birders are low impact visitors; “they take only pictures.”
 - Developing local guides.
 - Cruise ships: 350-400 people coming to shore for a 6-10 hour visit. They pay a lot of money to come out here. We should be equipped to greet them, share history, etc. We can plan for it but we also need to be ready for them NOW – they are arriving this summer. How can we keep them safe and ensure they have a positive experience?
 - Don’t want to be overdependent on tourism at the expense of culture. Using Homer as an example – Homer is not a fishing town anymore, it’s a tourist trap. Seward, too – they shut down for the winter, costs have tripled. Need something that will create year-round opportunities for employment. My three kids love coming back; one is a certified diesel mechanic, working on heavy equipment operator certification, then refrigeration; he wants to be able to work here on boats. But we keep shrinking as the fisheries are going away. We don’t have infrastructure for cruise ships; worried about the appearance of the community and impressions of visitors. Worried about the future – keeping the generators on. We need to respond fast. 25 boats fishing last summer, used to have 106, only a few this summer. If you lose the connection with the primary driver of the economy, everyone leaves. “Reality of the situation...we’re a long way down the road toward being extinct.”
 - Recruit local host families – visiting teachers could stay with residents who are willing to mentor and share about their lives and experiences.
 - Could have alternate options for teachers – e.g., could choose to do an art program or visit the fish weir.
 - Flora and fauna – field guides, learning about what is living and growing here.
- General Community Education Needs
 - Continuing education for utility operators to keep their licenses; challenging to access continuing education here.
 - Community is in crisis mode; young people are leaving. We need to keep them here, ensure they have things to do, have them transition into positions of leadership. Need to engage young people in dialogues like the symposium. Starts with conversations at home about the importance of community involvement.
 - BBNC’s new education and workforce development program could help meet some of these needs. Currently planned for Naknek and Dillingham but could expand to additional communities. Establish in one of the Chigniks? Still in evolution; could meet some local needs such as the continuing education for utility operators.

- BBNC does fund various education projects; requests are vetted through Shareholder Relations Committee. BBNC works in partnership to help deliver programs instead of delivering directly. Can also advocate for state programs that can benefit the region. Priority is paying dividends, but other programs are important, too.
 - BBNC Education Foundation is now BBNC Foundation – their mission has expanded to more than just scholarships.

Backhaul Update

Chickie is hoping a backhaul can happen this fall. They have documented what could go out already. Still working on the details. Could be a great win.

Green Star Program Assessment of Chignik Bay

Joy Britt/Alaska Forum on Environment, Environmental Programs Director

- Alaska Forum on the Environment (AFE) has four staff; Joy is focused on Green Star.
- AFE is mostly known for hosting its annual conference, but also hosts this program. Covers waste reduction, landfill operations, etc.
- Green Star was launched in Dillingham in 2017.
- Communities that meet criteria are awarded the Green Star recognition status. Awarded annually at the Alaska Forum on the Environment conference.
- The U.S. Department of Agriculture (USDA) supports this program.
- Chignik Lake become one of the awardees in 2019, one of the first communities. Chignik Bay was just enrolled.
- Lots of challenges and hoops to jump through in our rural communities compared with communities in the lower 48.
- Green Star is non-regulatory; we do not investigate your implementation.
- Green Star members receive five years of technical assistance and support to help communities implement their green star community standards. E.g., identifying or seeking funding for local waste reduction projects, improving drinking water, proposal review, etc.
- How to join? What happens when you join?
 - Show interest, e.g., by being nominated (Chignik Lake and Chignik Lagoon have been nominated).
 - Need confirmation by the community to proceed.
 - Green Star conducts a community visit to talk about standards and do initial documentation of challenges and priorities, including drone photography. Photos, reports are owned by you, can be used in community planning, grant applications, etc.
 - Work with the community to develop a work plan (can be only 2 pages), including short and long term realistic goals. Only used by the community – does not to be submitted or formally approved. Priorities written by community.
 - Green Star can help with implementation of your goals and actions. For example:
 - If you want to do a backhaul, Green Star can help organize a backhaul with Zender.
 - Can help coordinate trainings, e.g., training with Environmental Management. See training list here: <https://emi-alaska.com/training/>
- Pollution Prevention focuses on reducing waste; federal funds are available for these programs.

- Chignik Lake as a case study.
 - 2019 Awardee.
 - Implemented various projects including emission reduction efforts at the power plant; landfill cleanup, reusing waste heat, etc.
- Sue presented on the Chignik Bay IGAP work plan actions related to Greenstar Program.
- Questions, Comments
 - Question: We've talked about debris and clean up. What does the role Green Star play in helping with debris removal?
 - Answer: Can be a long-term goal to remove all derelict vehicles and debris from a community. Once identified in a work plan, AFE can help work on identifying funding and backhaul organizations to do that work. Can also provide trainings on how to do safe dismantling of smaller and environmentally sensitive items such as car batteries.
 - Question: Will this include waste coolant from the power plant? How can we dispose of waste coolant?
 - Answer: Joy can answer this separately via an email.

Chignik Bay Climate Resiliency Action Plan Final Draft

(Isaac Pearson/Bristol Engineering Services Corporation, LLC Senior Civil Engineer)

See slides for details on project objectives, report process and status, summary of past presentations, risk mitigation and community goals, priority projects, and data gap analysis.

- Funded through BIA Tribal Resiliency grant award to the Chignik Bay Tribal Council.
- Bristol is at the tail end of this project, which launched at the symposium last year. Exciting that the watershed plan is now initiating at the symposium.
- Through the planning process, selected three priority projects for additional scoping and cost estimation. Developed proposed scope of work.
 - Project #1: Indian Creek Bridge and Road Rehabilitation
 - Question: What data did you use? Will you use the new LiDAR to inform planning?
 - Answer: We were not aware of the LiDAR data when scoping this. The LiDAR data, if available to the future consultant, will result in significant cost savings for the engineering since they could use that to inform their surveying. Engineers could also benefit from the hydrology reports.
 - Question: You mentioned the community profile maps are outdated. Can you give us some more information on what elements are outdated, and what is most important to update? How do you use the maps?
 - Answer: Two elements that would be most helpful would be recent imagery, and land ownership. While ownership changes and it is just a point in time, it is helpful context. Topographic information can also help with planning and even engineering when budgets do not allow for full surveys.
 - Question: According to your slides, \$281.6 k would be the budget before a bridge is even built. What might bridge alternatives look like?

- Answer: An example could be relocating the bridge to a different spot in the watershed that is easier/safer to build, access, and maintain.
 - Question: Does DOT&PF come out and do assessments of the bridge periodically? How were these assessments used?
 - Answer: Reached out to DOT&PF and reviewed their past inspection reports. The reports help document conditions and will ultimately help the engineers have technical information when they proceed with design.
 - Question: How could this be funded? Would DOT&PF fund the project?
 - Answer: Cannot speak for DOT&PF. One potential contributing funding source would be the Tribal Transportation Program – if the bridge project is identified on the Tribe’s inventory, could use some of that funding for the project. Tribal shares are considered a non-federal match so can be useful leverage for other funding.
 - Question: What is the rough estimate for implementation cost of these projects, recognizing the details are still in development?
 - Answer: there was a 100 ft road and bridge built for \$7 million, 10 years ago in Ekwok. Tribal shares funded planning and design. USDA Rural Development was a major funder because the landfill was accessed by the road and bridge.
 - (added by Sue): NRCS soil survey helped inform design and sighting in Ekwok.
- Project #2: Two Tsunami Shelters Preliminary Engineering Report (PER) – one on each side of the bay.
 - Question: What is the rough estimate for implementation cost of these projects, recognizing the details are still in development?
 - Answer: In this building climate, building costs are \$500-\$900 per square foot. A lot of unknowns because building design is unknown.
 - Question: What happens after the preliminary building report is completed? Is it ready to build?
 - Answer: Would need to seek funding. Funders really like to see these PERs to advance funding.
 - Question: How long is the PER good for?
 - Answer: Can be good for a long time. The elements that would time out: if the channel itself made a major diversion, or moved significantly, then information that was gathered would need to be reevaluated. Project costs also time out the fastest. By the time it goes out the door it’s almost obsolete. Even if it changes you should have a good grasp on what it should cost. After 5 or so years you would need to do a major reevaluation to make sure design assumptions are in the same place.
 - Question: Could local building materials be salvageable and used for the facility?
 - Answer: Estimates it would take more money to take buildings apart and reuse, and a lot of it is in poor shape. The engineers would assess local resources to determine how they could be used; e.g., availability of local gravel can dramatically shift the cost of building a road.
 - Comment: thank you for considering all our input at the last symposium and for sharing these details. Other Chignik communities have similar needs; would

Chickie and Sue consider helping mentor other communities to go through a similar process?

- Answer (Sue): Can't request money from the delegation until you know costs. Talked to BIA to see if they could help, a few other agency representatives assisted with answering questions and developing a competitive funding request. Sue can share details if other communities want to go through.
- Answer: Bristol Engineering is happy to talk through scope and estimated cost to do something similar for other Chignik communities.
- Project #3: East Side Electric Distribution Upgrades PER
 - Untapped opportunity: waste heat at Power Plant.
 - Power Plant in avalanche prone area.
 - Relevance with Green Star – reusing and disposing of power plant waste.
 - Question: With the potential for a larger dam on the upper lake and resulting hydroelectric potential – has that been considered in this project?
 - Answer: Should be considered in the PER.
- Data Gap Analysis
 - Many of the gaps identified on the list are currently being filled by the work of the UAF ACC team.
 - Isaac highlighted inner transit system feasibility study; recognizing the benefits of connectivity for efficiency, sharing resources, etc.
 - Comment (Chickie): there has been discussion between the Chigniks about establishing a small ferry between the Chigniks. When airport is closed (e.g., runway is too soft, or a community is socked in), could fly into a neighboring community. Chignik Lake has a new landing craft barge; could that be repurposed?
 - Comment: Like the idea of a mini highway. Could we reach out to the Alaska Marine Highway System to better support travel between rural coastal communities? Discounted travel, partnering with local operators, etc.?
 - Comment: Looking at Lake and Peninsula Borough Comprehensive Plan. Issue of road connecting communities was a high priority at the time. The Borough will likely be updating the plan in the next year or so.
 - Comment: This is a call to action. Some of these have been identified already in plans; how do we make progress?

Discussion

1. What is the single most important action we can take as a community this summer to make progress on our priorities? Grouped responses by theme

- Solid waste (6 responses)
 - Creek Clean up.
 - Solid waste – plan for and conduct clean up.
 - Start clean up. Pieces of metal, old tv dishes, etc. – easily visible now since alders have not yet branched out. Elements that can be disposed of without heavy equipment.
 - Solid waste beautification.
 - Creek and community cleanup.

- Get beaches and public areas clean; get rid of old metal and plastic waste from cannery.
- Tear down old and abandoned houses. Requires permission from owners
- **Next Step: Set a date and do it! Plan and prioritize one area at a time. The longer we wait the more overgrown it will be. Will need to trim alders in some areas. Prioritize areas most visible to visitors. Scheduled a planning meeting to organize Chignik Bay clean up efforts: TODAY, Monday, June 5th at 4 pm, community hall.**
- Visitor and quality of life improvements (5 responses)
 - Cut and maintain walking trails – James to initiate.
 - Newsletter with historical information, unique features, how to contribute to community success; for sharing with visitors.
 - Fix up the Barabara to show visitors.
 - Set messaging and plan activities for cruise ship visitors.
 - Invite Bristol Bay artists to charter into communities when ships arrive to share their wares to cruise visitors.
 - Invite someone from BBAHC (Robert Clark) to give the story of how the clinics in the region were just a dream 30 years ago and now the community of Chignik has a subregional clinic that is a model for the health aid programs in the state. I think people from the ship would be intrigued to hear the history.
- Data (3 responses)
 - Help fill data gaps and set up equipment for local data collection
 - Finish field surveys and kick off bathy project with George!
 - Identify mapping priorities from community members
- Population retention/growth; new resident planning (3 responses)
 - List and contacts for available properties for sale/rent (outreach to property owners), plus a list of available jobs.
 - Population – try to open the school.
 - Educate Chignik Lake.
- Communication (1 response)
 - Continue having workshops like this so agencies, partners, researchers understand community needs.
- Economic Development diversification (1 response).
- Infrastructure: maintain what we already have. (1 response).

Reminders for tomorrow: (June 6th)

- Discuss bathymetry project for Chignik Bay.
- Historic floods and storms – want longtime residents to help understand recent and historic flood impacts and interpret photos.
- Ryan: will continue with additional documentation and recording of stories from Elders and longtime residents. Participants shared suggestions on who Ryan should talk with: Gene, Roderick, Ernie, Axel, Jim, James’ dad and mom.

Closing Comments

- Looking ahead to next year's symposium.
 - Suggestion: solidify the symposium to be this weekend after Memorial Day weekend so we don't have to figure out a day in the future. When they leave, you can put it on your calendars. June 2, 3, or 4? Consider and try to plan for before or after the minus tides.
 - Suggestion - a new name? Chignik Resiliency Symposium, or Chignik Science Symposium; Chignik Science & TEK Symposium. Could have a specialized focus each year.
- Hazel: enjoyed being with everyone. Appreciated all the comments, took notes. Appreciate the information – it will be good for thinking about the future. The exercises today really helped. Liked the prompt: what can we do next. First step is most important. I will be down for next year's symposium.
- Cindy Roque, DCRA Community Governance Specialist: So great to see today's work. Sorry to miss yesterday, was traveling. Started job in January, Chignik was one of the first trips. Met Dannica, and in discussion, learned about cruise ship visitation this summer. First Cindy had heard. From that conversation, it's been intriguing how this has taken off. Sat around and talked, and today, you already have a plan. That doesn't happen everywhere. Thank you for inviting me, looking forward to visiting later this week. I This group is taking action. Commend everyone. Looking forward to seeing some of you next week.
- Clinton – no comments.
- Melodee Carlson-Forbes: Thank you for inviting me, sorry unable to join yesterday. I love my home village and to see it spruced up is amazing. And thank you to everyone who made this possible.
- Nana: Thank Chickie for inviting us to the symposium. Next year, would like to be there in person. First time we heard about it, was really informative. Enjoy the BBQ later!
- Bo: thanks for letting me be here.
- Magda: statement of gratitude to Chickie and Debbie and everyone taking initiative. Much needed. Thank you is inadequate but thank you.
- Chris: thank you to everyone, it's been another wonderful experience in the bay and looking forward to visiting other areas. Looking forward to serving you with helpful data products.
- Debbie: first step in getting our village back together. We need more meetings like this, we need this kind of help. Thank you.
- Chickie: thank everyone for your participation. Without you all, this wouldn't be a success, and this feels like a success. Sue is my champion. Sandy cleaned up the hall, her son was helpful. Everyone who made this a success and made this happen. Had to borrow an amplifier, Chris for the data, took everyone to make this possible. Thankful for Starlink. We got the ball moving, let's not let it stop. It's so positive and gives us hope in the future. We want to keep our communities alive. We don't have the salmon as a resource and hopefully that will build back up but we have many other resources. Our region is so beautiful, we have opportunities to burst with spurts like tourism. Need to lay foundation, which is starting to get it cleaned up. We are all stakeholders of this watershed, we should all own it and be proud of it. If you see a cigarette butt, pick it up!

- Isaac: thank you for inviting me. there's an excavator working over here at the ANTHC site, if you're able to use it, along with a dump truck, could make short work of the clean up.
- George: please show up! Want other communities to join in greater numbers.
- Chuck: thank you for inviting us to be here. Already thinking about what to include in next year's report.
- Matthew: the leadership here is incredible. Truly inspiring, makes me think about how I can do better in my own community.
- Sue: thought it was a great symposium. The word that comes to mind for me is synergy. Makes me feel motivated, more likely to move forward with things. Also – let's get out a short newsletter! Update on what we're doing.
- Dannica: echo on gratitude. In winter, when it feels like we're wading through the mud and we're on our own and it's dark, it's tough being out here. But then you all come, we see we have a team working for our community who want to see and help us thrive. It is so great and there are so many of you helping us.
- Gabe: very inspirational to see the coordination and the work. I hope to be able to bring some of these stories and resilience back to where I work.
- Molly and Shelly: excited to take all of this, stay connected, not make more plans. Ability to laugh and eat food and spend time together. Thank you to the community leaders who have participated to this success.
- A group thank you to Angela and Lisa on clean up and food.

List of Presentations/Attachments (hyperlinked)

1. UAF's Arctic Coastal Geoscience Lab and the Alaska Coastal Cooperative: Introductory Presentation at the 2nd Chignik Regional Climate Resiliency Symposium (Chris Maio): [Presentation Slides](#)
2. UAF's Arctic Coastal Geoscience Lab and the Alaska Coastal Cooperative: Ongoing and Future Work (Matthew Balazs): [Presentation Slides](#)
3. UAF's Arctic Coastal Geoscience Lab and the Alaska Coastal Cooperative: Very High-Resolution Mapping of Anadromous Streams and Salmon Habitat in the Chignik Watershed (Mike Willis, Matthew Balazs, Chris Maio): [Presentation Slides](#)
4. UAF's Arctic Coastal Geoscience Lab and the Alaska Coastal Cooperative: Chignik Bay Coastal Hazard Assessment (Jessica Christian, Reyce Bogardus, Harper Baldwin, Richard Buzard, Roberta Glenn, Ed Krauss, Jeanette Carlson, Deb Carlson, Chris Maio): [Report](#)
5. Chignik Intertribal Coalition (George Anderson/CIC President): [Chignik Intertribal Coalition Preliminary Climate Risk Assessment Summary](#)
6. Chignik Subregion Map Project (Marcus Geist/Artesian Knowledge LCC): [Presentation Slides](#)
7. Chignik Subregion Watershed Plan: (Shelly Wade and Molly Mylius, Agnew: Beck): [Project Flyer](#)
8. Green Star Program Assessment of Chignik Bay (Joy Britt/Alaska Forum on Environment, Environmental Programs Director): [Presentation Slides](#)
9. Native Village of Chignik Indian Environmental General Assistance Program (IGAP): [Chignik Solid and Hazardous Waste and Marine Debris Collection Work Plan](#)
10. Chignik Bay Climate Resiliency Action Plan Final Draft (Isaac Pearson/Bristol Engineering Services Corporation, LLC Senior Civil Engineer): [Presentation Slides](#), [Action Plan](#)
11. Community-Based Monitoring: Shoreline Change in Southwest Alaska (Jessie Ellen Christian): [UAF Master Thesis](#)