

# Socioeconomic Impacts of Fire Disasters on Chignik Region Subsistence Users & Pathways to Resilience

*Presented by:*

Melissa Errendo  
Tom Sanborn

*CoAuthors:*

George Anderson (CIC)  
Mike Downs (WRA)



CHIGNIK INTERTRIBAL COALITION  
427 AIRPORT ROAD  
CHIGNIK LAGOON, ALASKA 99565

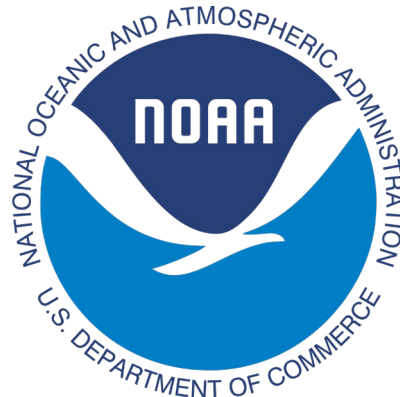


# Scope and purpose of project

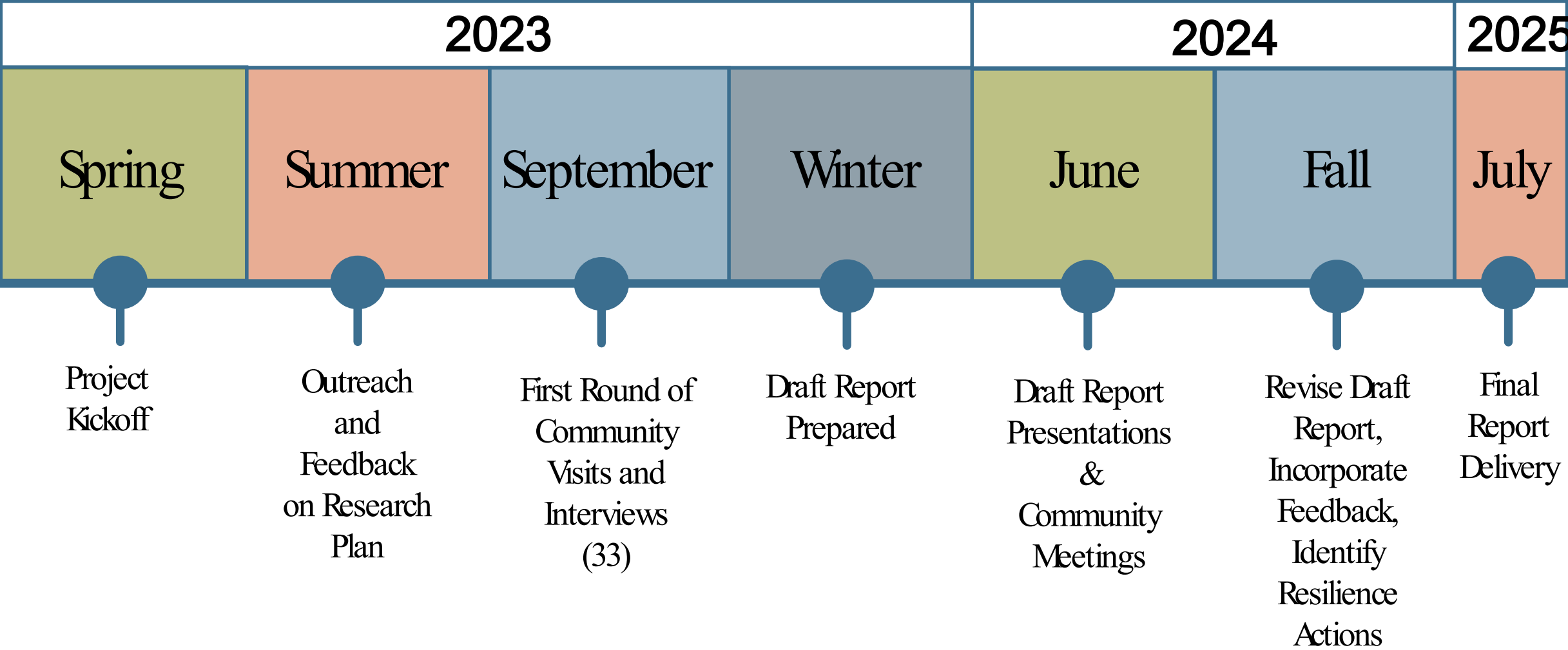
- Our work focuses on the socioeconomic impacts of the 2018 Chignik sockeye fishery disaster on subsistence users
- Does not address causes of the disaster
- **Primary questions**
  1. How did recent Chignik sockeye fishery disasters impact subsistence users and communities in the Chignik region?
  2. How can Chignik communities prepare for, withstand, and recover from future changes in sockeye fishery resources?

# Funding and project partners

Funding for this project is provided by the Pacific States Marine Fisheries Commission, provided in cooperation with the National Oceanic and Atmospheric Administration and the Alaska Department of Fish and Game. Funding comes from the 2018 Chignik federal fishery disaster declaration spend plan, where research to better understand the socioeconomic impacts of the disaster on subsistence users was identified as a priority



# Timeline



# Plan for Today

- Summary of report (25 mins)
- Q&A about report & findings, opportunity to add information (10 mins)
- Discuss lessons learned and ideas about what would be helpful to prepare for and withstand future disasters
  - Brief summary of ideas gathered so far (10 mins)
  - Discussion about lessons learned, resilience actions (15 minutes)





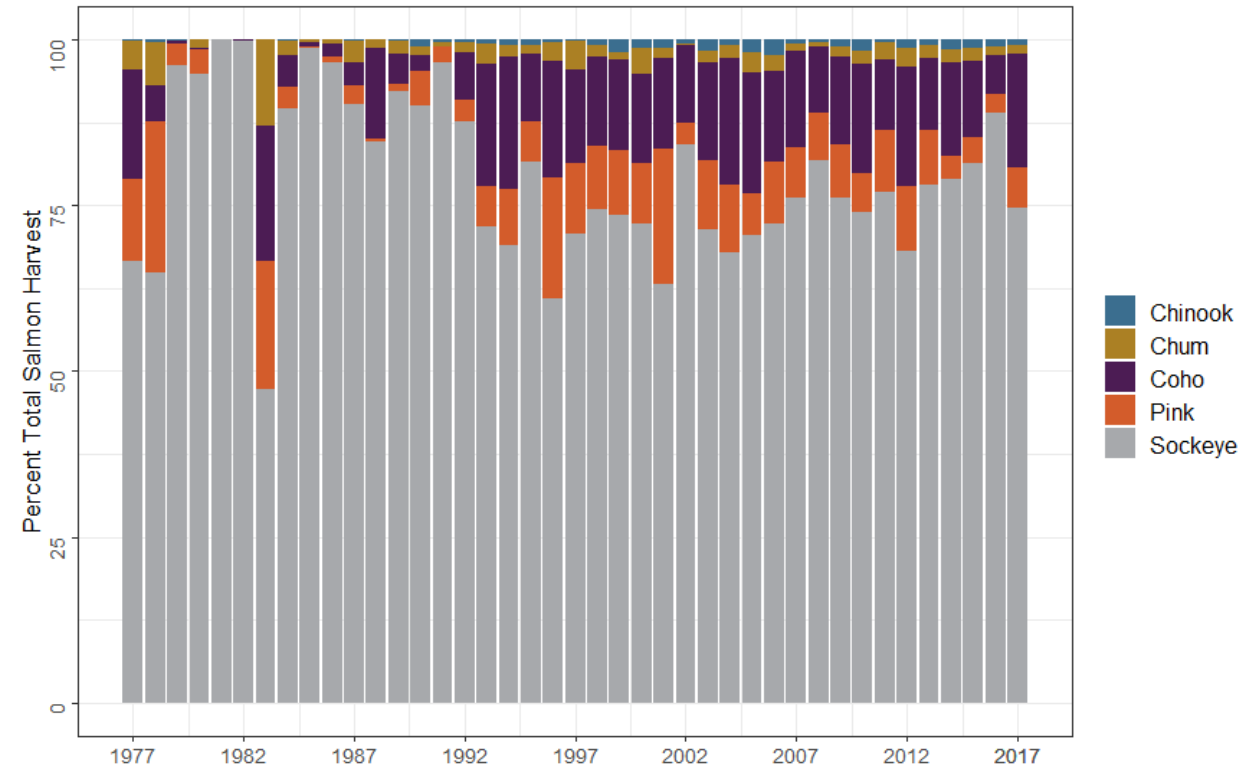


# Report Summary



# PreDisaster Conditions

- Chignik region communities are reliant on sockeye salmon for subsistence
  - 100% of households use salmon
  - Sockeye composes ~75% of subsistence harvests
  - Salmon is roughly half of all subsistence harvests across species



Source: Brown et al. 2023, Northern Economics, Inc.



# Subsistence Impacts

- Negative impacts to subsistence described in 93%(31 of 33) of interviews

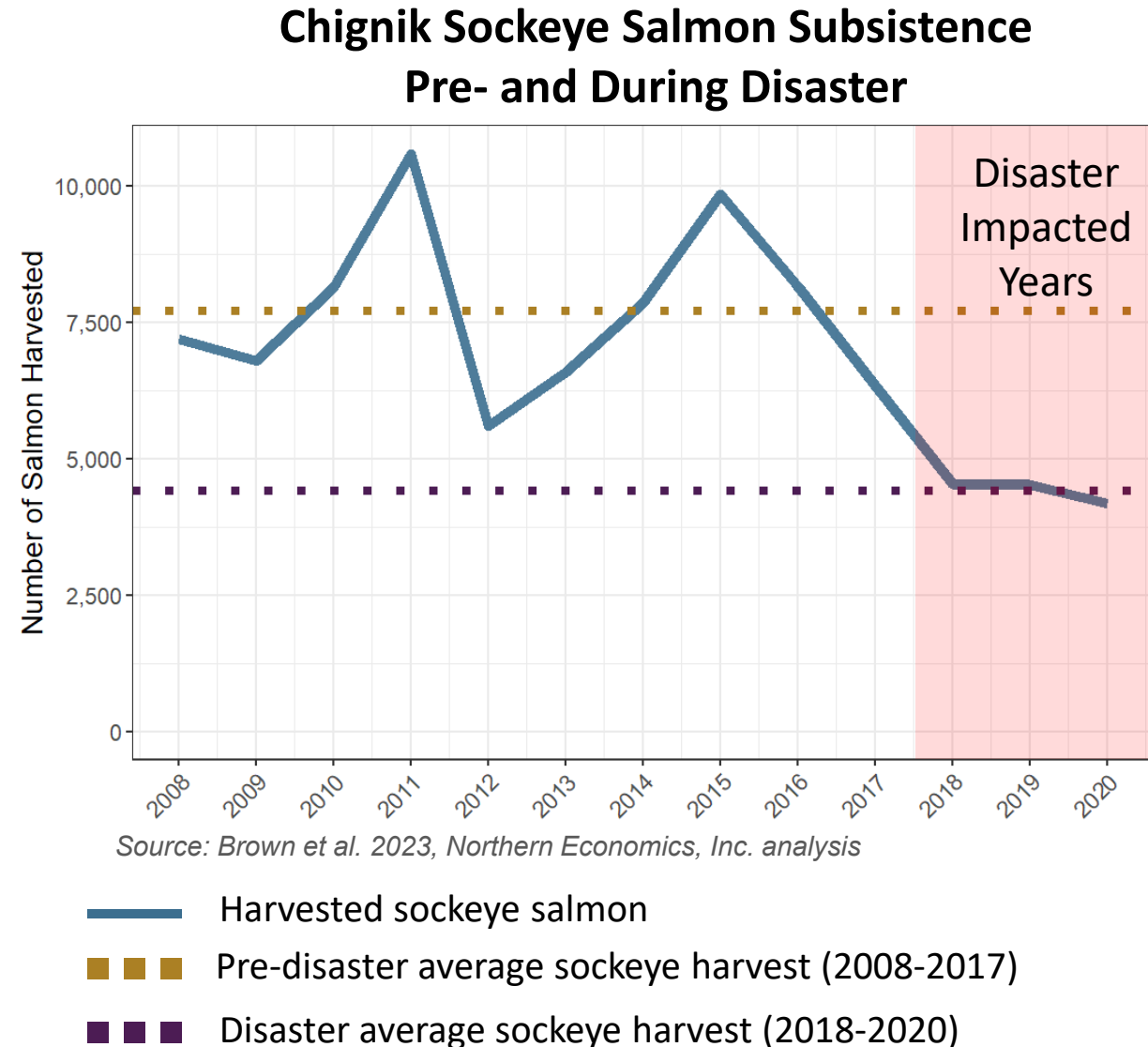
*“The decline in fish is just unbelievable. I don’t understand why it’s happening” – Chignik Bay resident*





# Subsistence: Impacts to Harvest

- Between 2018 and 2020, estimated sockeye subsistence harvests declined by 38% compared to previous 10 years
- 90% (28 of 31) described not being able to harvest enough
- 64% (21 of 33) harvested other species to make up for low availability of red salmon
  - Many discussed how this was challenging



# Subsistence: Impacts to Harvest

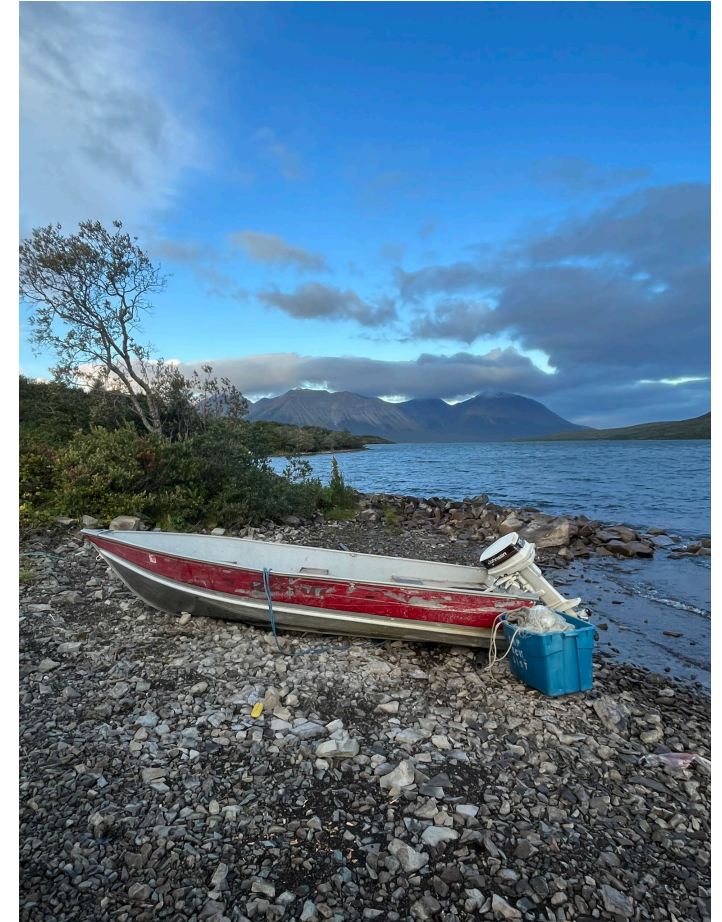
- Commercial fishery closures also impacted subsistence harvests
  - Loss of opportunity to take subsistence from commercial catch (homepack)
  - Inability to use vessels to gather other subsistence
  - Less income to afford subsistence gear/equipment

*“We would go out there and make one set and get enough for the whole family to stay busy all day long putting away fish in the smoker, canning, and salting. You could do it in one set. You can’t do that anymore.”*  
– Chignik Lagoon resident

# Subsistence Impacts: Impacts to Use

- 46%(12 of 26) said not able to store enough for winter
  - Additional 23%(6 of 26) said stored enough but less
- 78%(18 of 23) said they needed to purchase more storebought food to make up for lack of subsistence

*“There was not enough fish. We were not able to put enough away for the winter. It was scary” – Chignik Bay resident*





# Subsistence: Impacts to Sharing

- Sharing widely discussed in 82% of interviews (27 of 33), but impacts varied between communities and individuals
  - Sharing still common, just less to go around
  - Some less able to share after providing for themselves/family
  - Some sharing providers no longer around
  - Some shared more, particularly with elders/other family members

*“We usually got enough to get by but the kids didn’t get any. We weren’t able to share like we used to.” – Chignik Lagoon resident*

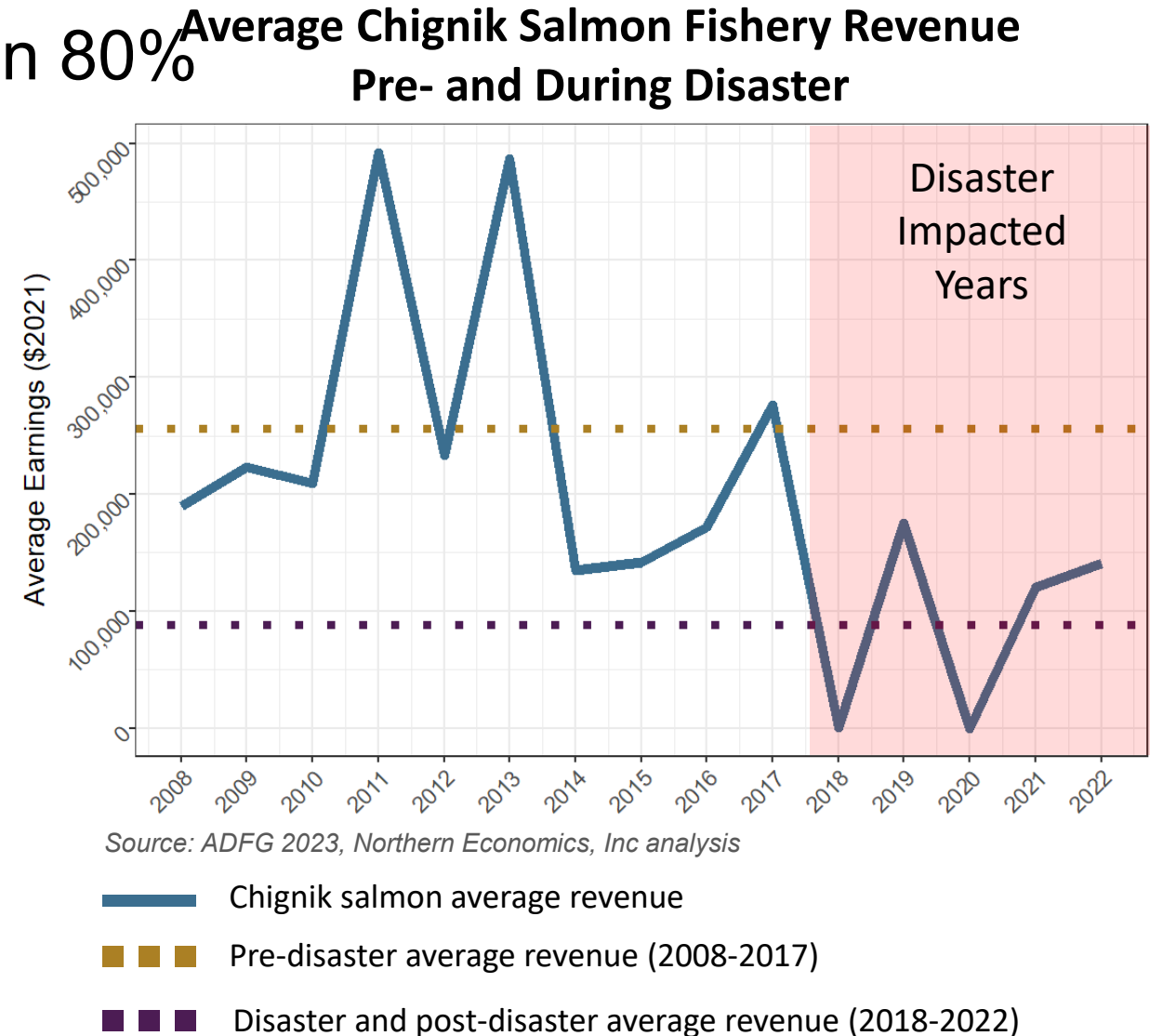
# Economic Impacts

- Many of the negative economic impacts were the result of the community reliance on commercial fishing for income and subsistence
  - Loss of fishery income
  - Loss of employment
  - Increased costs to harvest subsistence
  - Increased food replacement costs
  - Broad community-level impacts

*“I’m sure there was a lot of people struggling with income since they rely on the salmon season and they use some of that money to get what they need for subsistence.” – Perryville resident*

# Economic Impacts: Income

- Negative impacts were described in 80% (16 of 20) of interviews that discussed income
- 65.8% loss of individual earnings for Chignik fishermen between 2018 and 2020





# Economic Impacts: Employment

- Negative impacts to employment described in 85% of interviews (17 of 20) who discussed employment
  - Low availability of non-fishing employment locally
  - Limited ability to fish in other local fisheries, like crab
  - Reduced ability to find fishing crew
  - Chignik Bay School closure eliminated some jobs

*“[Since] 2017, 2018, for 4 years there was hardly no good fishing. It got to the point where none of the crew wanted go fishing because there was no fish... I didn’t go fishing that year because there was no fish.” – Chignik Lake resident*

# Economic Impacts: Broader Community Impacts

- Loss of city tax revenue: Chignik Bay lost 50% of city tax revenue between 2018 and 2021
- Processing facility closures, loss of local store



*“The ones that are commercial fishing this year, are still trying to get out of the hole from the last 3-4 years where they couldn’t fish. They’re having to sell their boats and permits now... we’re still being impacted” – Chignik Lake resident*

# Social, Cultural, and Community Impacts: Popul

- 92% (22 of 24) of those who discussed population saw population decreases in their community
- Chignik region experienced at least 11% regional population decrease during disaster years
- Population changes in small communities can have cascading effects
  - Chignik Bay school closure

*“With the decline of the fishery, everybody kind of moves away.” – Chignik Lagoon resident*

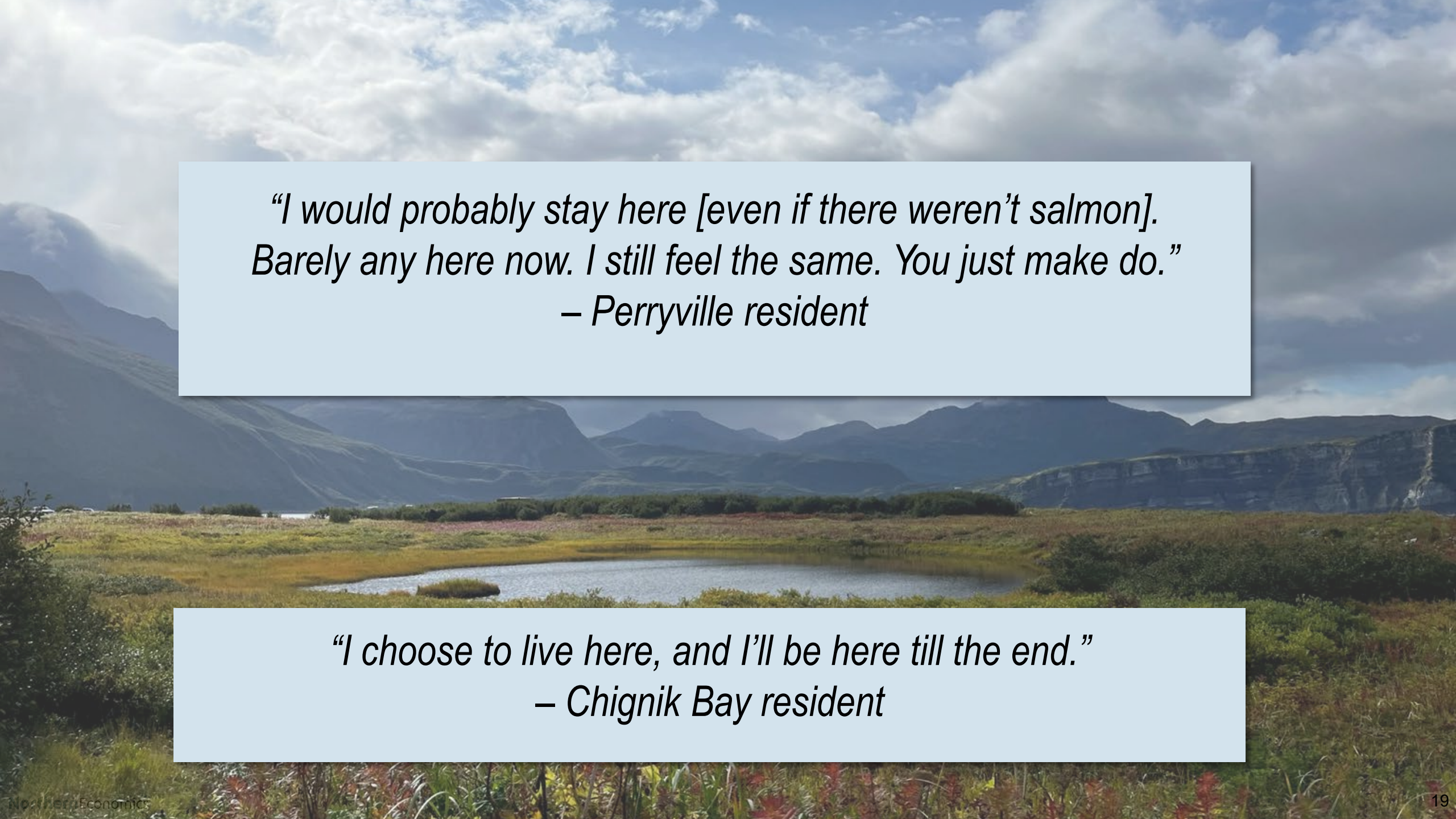




# Social, Cultural, and Community Impacts: General Impacts

- Fewer subsistence opportunities made it more difficult to pursue community-oriented subsistence processing activities
- Some community members described how the disaster impacted their ability to be self-reliant and mental health
- However, many interviewees remained hopeful for the future

*“It hasn’t impacted us like we’re starving to death. But, traditionally, it’s been a disaster. You know, what we’re used to.” – Chignik Lagoon resident*



*“I would probably stay here [even if there weren’t salmon].  
Barely any here now. I still feel the same. You just make do.”  
– Perryville resident*

*“I choose to live here, and I’ll be here till the end.”  
– Chignik Bay resident*

# Individual Responses to the Disaster

## ■ Subsistence Responses

- More time spent gathering subsistence
- Harvesting different subsistence species
- Purchasing more subsistence gear
- Spending time/money traveling for subsistence
- Purchasing more store-bought food

*“It cost us a lot of money to get these fish. Cause I was going on a lot more trips” – Chignik Lagoon resident*

## ■ Fishermen Responses and Options

- Investing in permits and gear for other fisheries
- Tendering in other fisheries
- Guiding and supporting hunting outfitters
- Guiding for sportfishing operations
- Seeking alternative employment

*“I’m looking into other industries, because I’m not going to depend on salmon fishing commercially. I’m gonna go sport fishing next year instead of salmon fishing.” – Chignik Bay resident*

# Community Responses to the Disaster

- Bristol Bay Seafood Distribution Network helped with lack of subsistence, majority of those interviewed accepted fish (27 of 30)
- COVID payments and PPP loans helped with expenses
- Food donation programs and community food orders helped with the cost of food
- Disaster relief funds had limited utility

*“I think that was about a 3-year period from disaster until we actually saw any relief funds. Some people would have to fold between the disaster and getting funds. That would be my biggest complaint about the whole process.”*  
*-Ivanof Bay community member*



# Conclusions

- The Chignik salmon fishery disaster had wide-ranging negative impacts for Chignik region subsistence users and communities
- Many people reported not being able to get enough subsistence and needing to buy more store food
- Some negative impacts, like population changes and inability to find crew, may prolong negative impacts beyond the fishery disaster period
- Individual responses, including diversifying fisheries and local economies, may be helpful to prepare for future disasters
- Food donation and other support programs helped mitigate impacts

# Next Steps

- Incorporate feedback from this meeting to draft report
  - Next: Q&A on report, other feedback
- Begin looking at options and ideas for bolstering community resilience
  - Have discussion about ideas heard so far and gather additional ideas





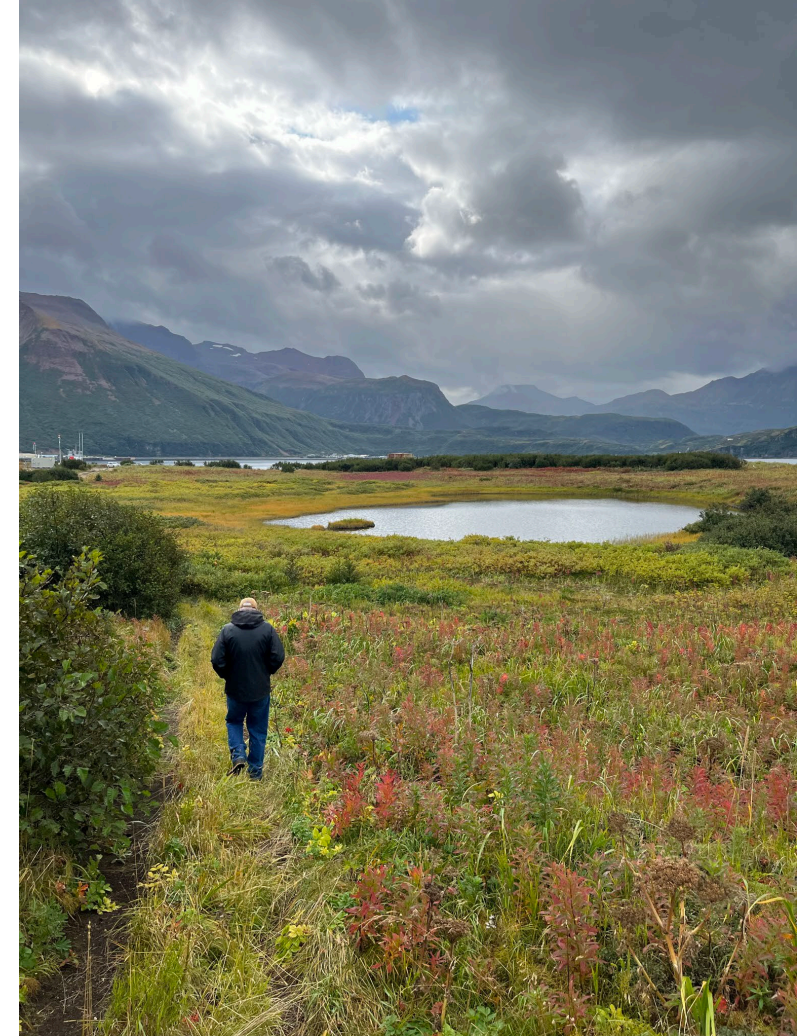
# Draft Report Q&A





# Draft Report Discussion Questions

- Do you have any questions about the report?
- Are there any impacts you think are important that we did not discuss today?
- Are there any actions you or the community took in response to the disaster that we did not discuss today?







# Future Disasters Discussion



# Preparing for future disasters

- Our next phase of work focuses on ideas and actions that may help prepare for or recover for future disasters
- Today we want to present ideas and actions gathered so far and gather additional ideas



# Ideas Gathered So Far Preparing for Future Disa

- Expand subsistence opportunities
  - Expand availability of hunting permits and access
  - Support king salmon and other species recovery
  - Facilitate testing of shellfish for PSP (paralytic shellfish poisoning) toxins
  - Grow subsistence sharing networks for salmon, moose, and/or caribou





# Ideas Gathered So Far Preparing for Future Disa



- Diversify fisheries and economies
  - Support and expand additional local fishery opportunities, such as through halibut Community Quota Entities, crab, and pacific cod
  - Explore options for local ownership of processing facilities
  - Support tourism through sportfish fisheries, hunting, and cruise ship traffic
  - Develop and support remote work opportunities and training



# Ideas Gathered So Far Preparing for Future Disasters



- Build on successful programs
  - Timing of COVID-19 relief was beneficial, provided funds for groceries and utilities
  - Salmon distribution network filled critical gaps, helpful to many
  
- Provide technical support
  - Before and during disasters ensure resources are available for applying for aid

# Summary Ideas List

## ■ Diversify fisheries and economies

- Support and expand additional local fishery opportunities, such as through halibut Community Quota Entities, crab, and pacific cod
- Explore options for local ownership of processing facilities
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## ■ Provide technical support

- Before and during disasters ensure resources are available for applying for aid

## ■ Expand subsistence opportunities

- Expand availability of hunting permits and access
- Support king salmon and other species recovery
- Grow subsistence sharing networks for salmon, moose, and/or caribou
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## ■ Build on successful programs

- Timing of COVID-19 relief was beneficial, provided funds for groceries and utilities
- Salmon distribution network filled critical gaps, helpful to many

# Discussion Questions

- Which of the ideas discussed seem most practical or effective?
- What steps are first needed before the idea can be acted on?
- Are there any issues or barriers for any of the ideas? What would help overcome these barriers?
- How could your community expand to better support subsistence practices before or during disasters? What resources are needed? (i.e., infrastructure, financial support, technical capacity/training, etc.)?
- Are there any other specific programs or support networks that could be expanded to support your community or subsistence users during similar disasters?
- Are there any other opportunities you think your community should examine or pursue?

## Melissa Errend

Economist  
Northern Economics, Inc.

Melissa.errend@norecon.com  
9072645411



## Tom Sanborn

Fisheries Analyst  
Northern Economics, Inc.

Tom.Sanborn@norecon.com  
9072645414

