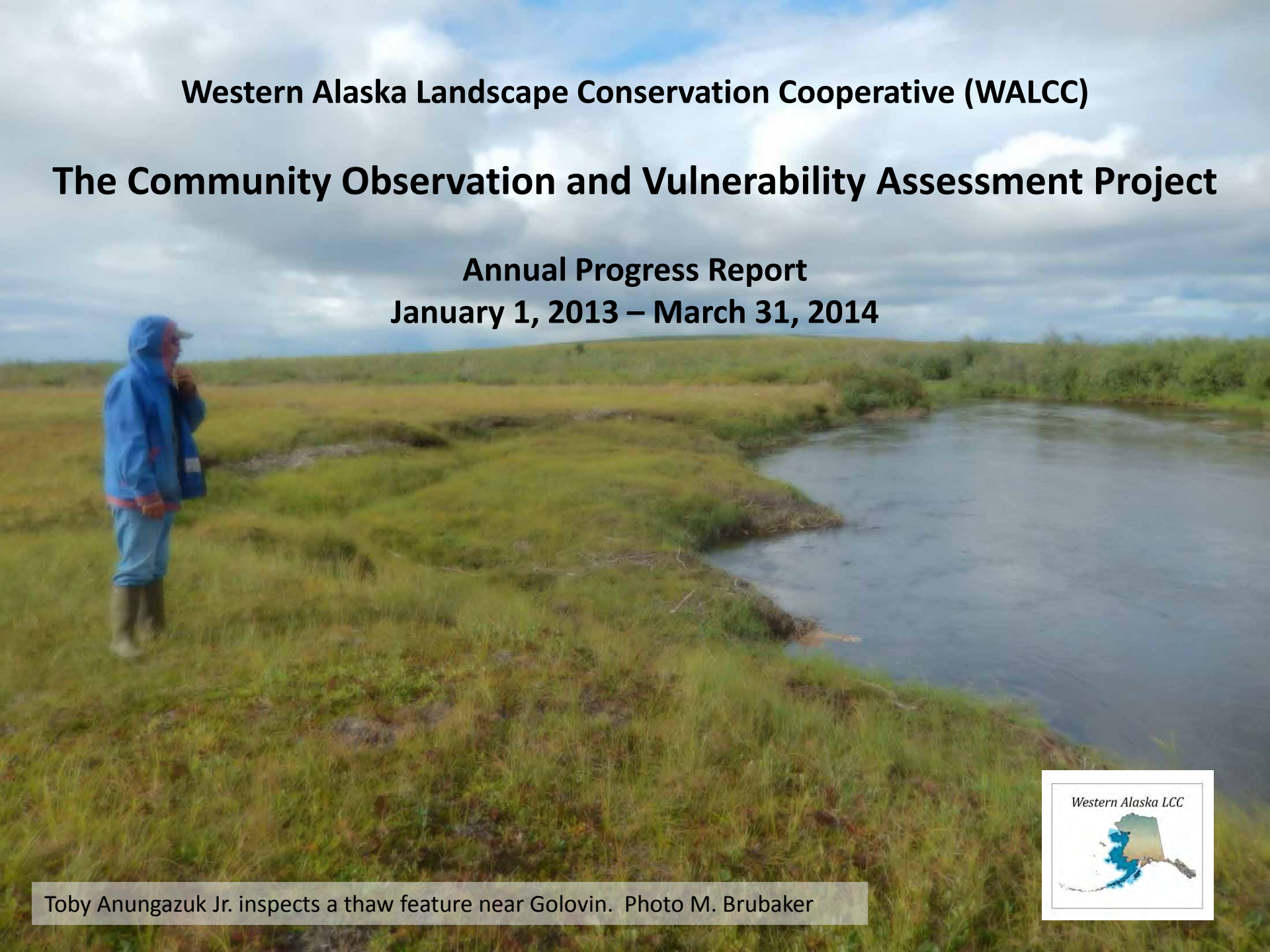
Western Alaska Landscape Conservation Cooperative (WALCC)

The Community Observation and Vulnerability Assessment Project

Annual Progress Report
January 1, 2013 – March 31, 2014



Toby Anungazuk Jr. inspects a thaw feature near Golovin. Photo M. Brubaker

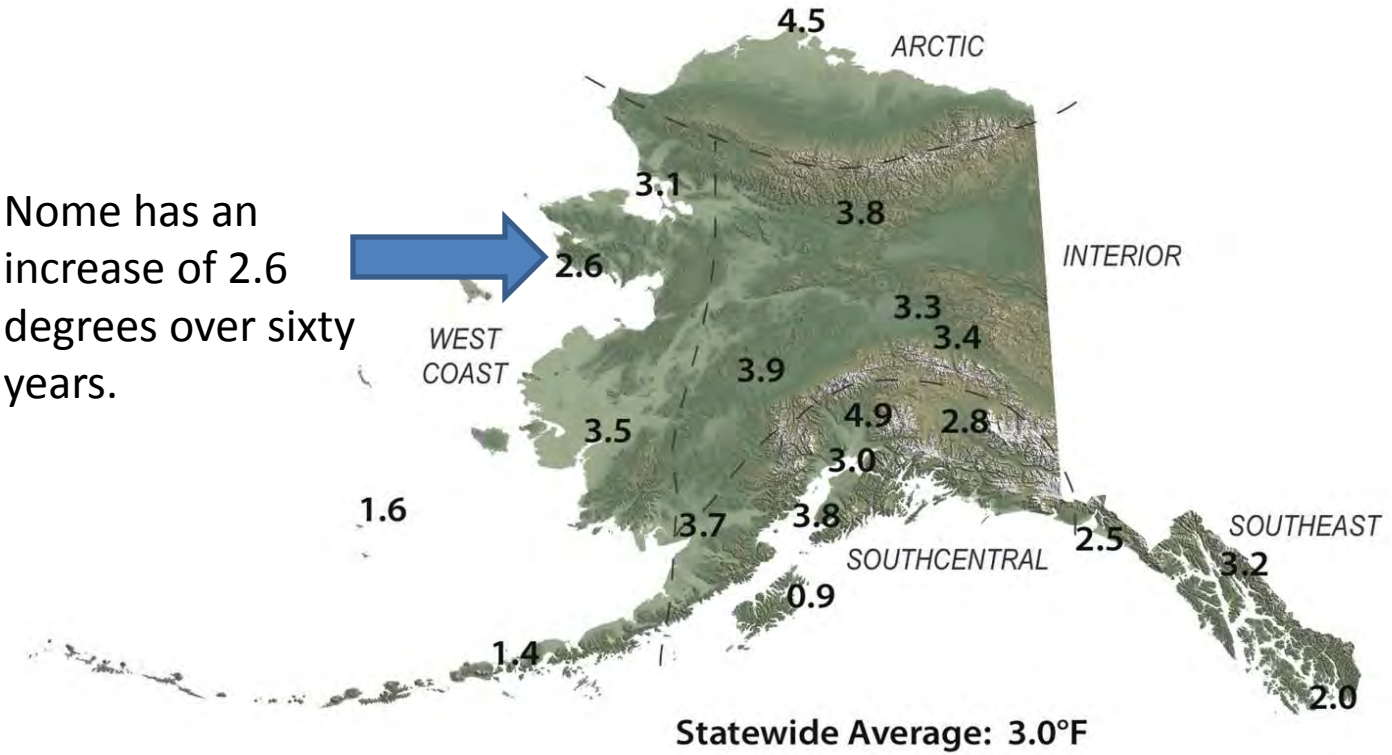
Principal Investigator:
Mike Brubaker – Alaska Native Tribal Health Consortium
Co- Principal Investigators:
James Berner M.D. – Alaska Native Tribal Health Consortium
Kevin Zweifel - Norton Sound Health Corporation
Anahma Shannon - Kawerak Association, Inc.

Technical Advisors:
Jennifer Demir - Norton Sound Health Corporation
Amos Brown -White Mountain Tribal Council
Carol Oliver – Chinik Eskimo Community, Golovin
Michelle Snowball – Native Village of St. Michael
Victoria Kotongan – Native Village of Unalakleet
Robert Tokeinna – Native Village of Wales
Richard Kuzuguk – Native Village of Shishmaref
Karen Murphy – U.S. Fish and Wildlife Service
Lori Verbrugge – U.S. Fish and Wildlife Service
Jacob Bell – Alaska Native Tribal Health Consortium
Jennifer Williamson – Alaska Native Tribal Health Consortium

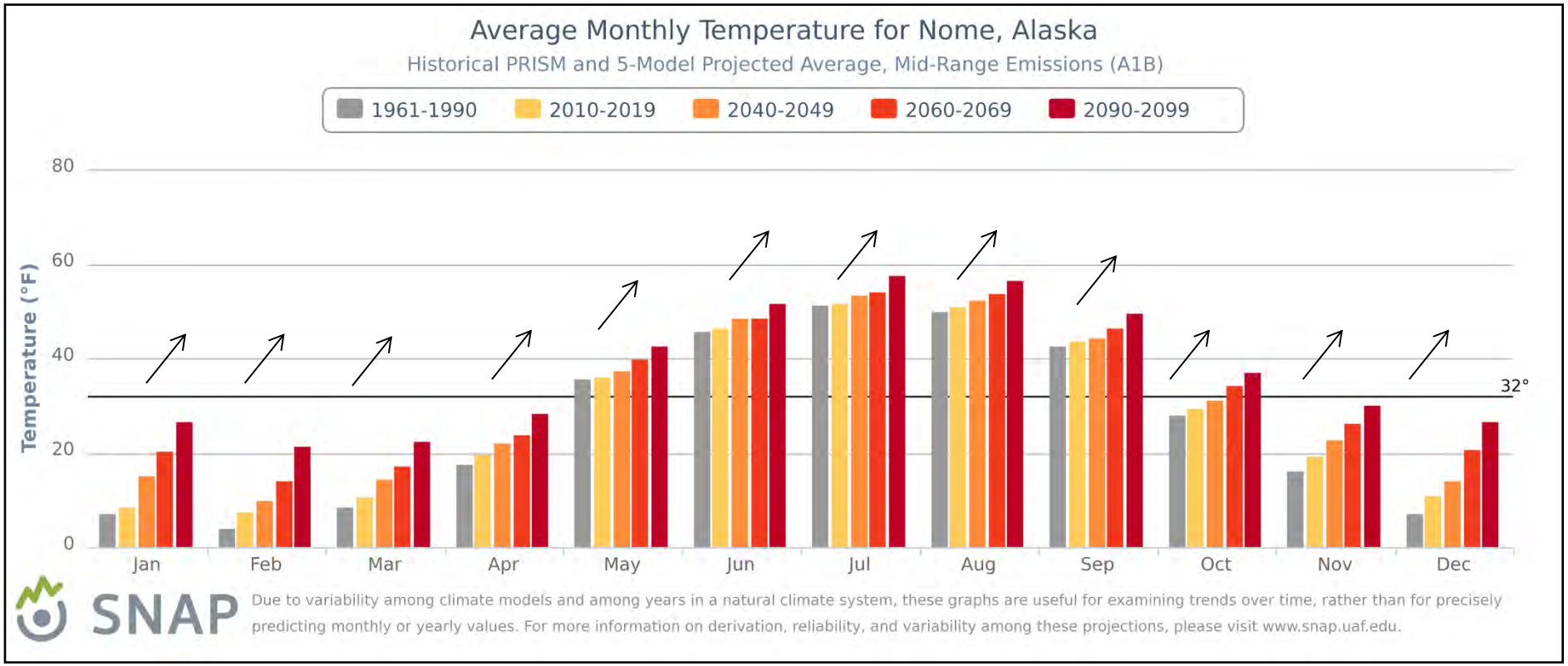
Spruce bark beetle infestation near White Mountain. Photo. M. Brubaker

Background – evidence of climate change in the Bering Strait Region:

Nome has an increase of 2.6 degrees over sixty years.

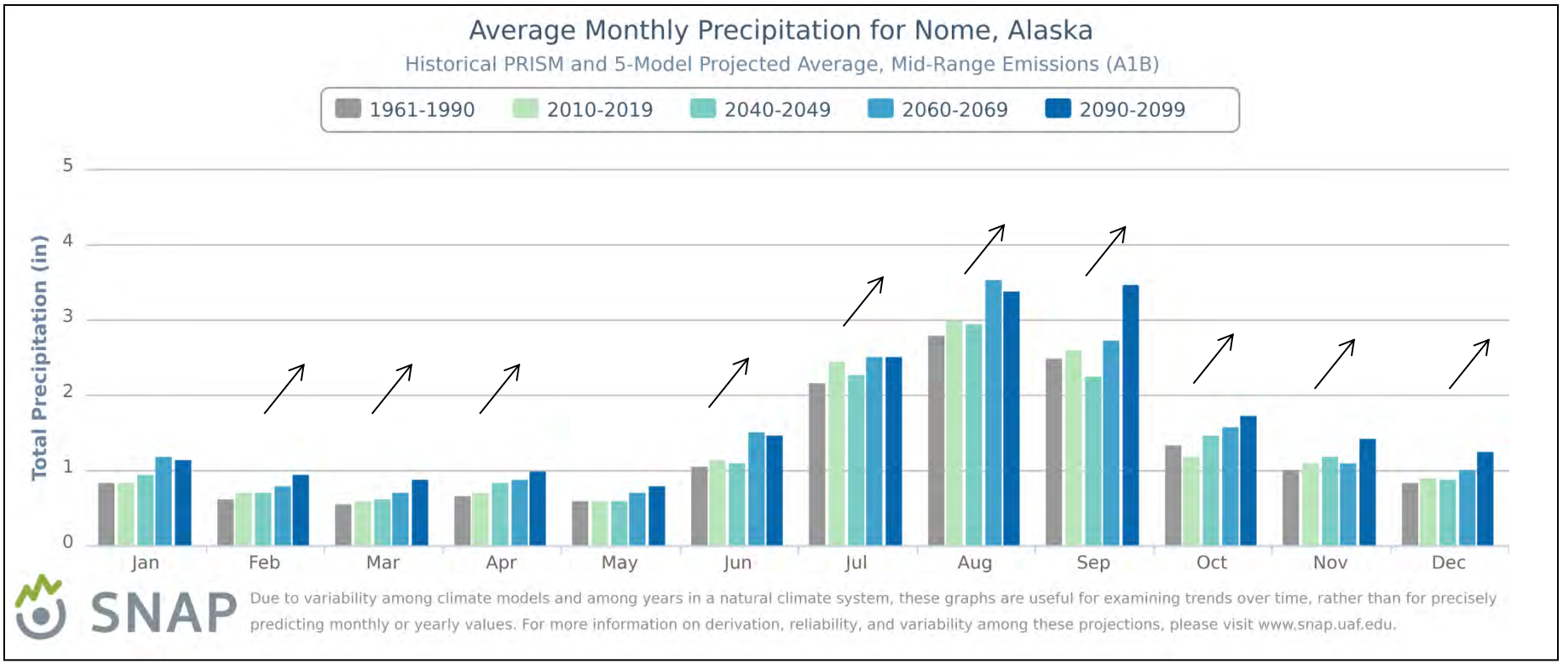


About climate change: the region is becoming warmer.



Comparing these two periods, 1961 – 1990, and 2010 – 2012, temperature has increased in every month.

About climate change: the region is becoming wetter.



Comparing these two periods, 1961 – 1990, and 2010 – 2012, precipitation has increased in ten of twelve months.

About the impacts: Increases in extreme weather and unseasonable weather has also been reported including extreme cold. Failures in community water systems can impact community health.

Cold wreaks havoc with regional water and sewer systems

By Diana Haecker

Bitter cold temperatures hovering around the -30°F mark and colder caused Savoonga water lines to freeze up between the well and the city's water tank. The problem started on January 2, but was fixed by press time on January 10, when temperatures in Savoonga were at -52°F windchill.

Before water and sewer plant operators could thaw out the main waterline, residents were asked to conserve their water usage.

In St.Michael, the water lines were working but the sewer drainage was out of order. The cold caused the vacuum system to break down on January 4. While homes still had running water, drainage from toilets, sinks and bathtubs didn't work. The system was restored on January 10.

The villages of Kobuk and Noatak are experiencing a heating fuel shortage as temperatures dip below -45°F. In Noatak, the store ran out of fuel. In Kobuk, fuel delivery by air was delayed because of inclement weather conditions that didn't allow planes to land at the village airstrip.

All Around the Sound

New Arrivals

Octaivia Wilson and Robert Tokienna, Jr. announce the birth of their son Dezmond Andrew Rodney Tokeinna. He weighed 7 lbs 2. 8 oz and was 20" long. He was born December 20, 2011 at 1:55 p.m. at Nome are pleased to announce the birth of their daughter Natalie Lorene Head. Natalie was born at 9:07 a.m., on December 12, 2011, weighing a petite 6 lbs 4.6 ounces, and measuring 19.25 inches in length. She enjoys spending time in

Nome Nugget January 12, 2012

Extreme cold can also interrupt the delivery of critical supplies, resulting in economic hardships and jeopardizing critical services.

Heavy Bering Sea ice slows delivery of fuel to Nome

Published: January 9, 2012

2 MPH: Icebreaker, tanker are sometimes forced to stop.

By MARY PEMBERTON — Associated Press

Shifting ice in the Bering Sea is dramatically slowing a Russian tanker's mission to deliver fuel to the iced-in community of Nome.

A Coast Guard spokesman said Monday that an icebreaker and a fuel tanker are encountering "some really dynamic ice" that is slowing the mission and sometimes forcing both vessels to come to a complete stop.

But, "As long as we're making progress, we're going to Nome," said Anchorage Coast Guard Petty Officer 1st Class David Mosley.

Associated Press: January 09, 2012

Key Questions:

1. What are the impacts of climate change?

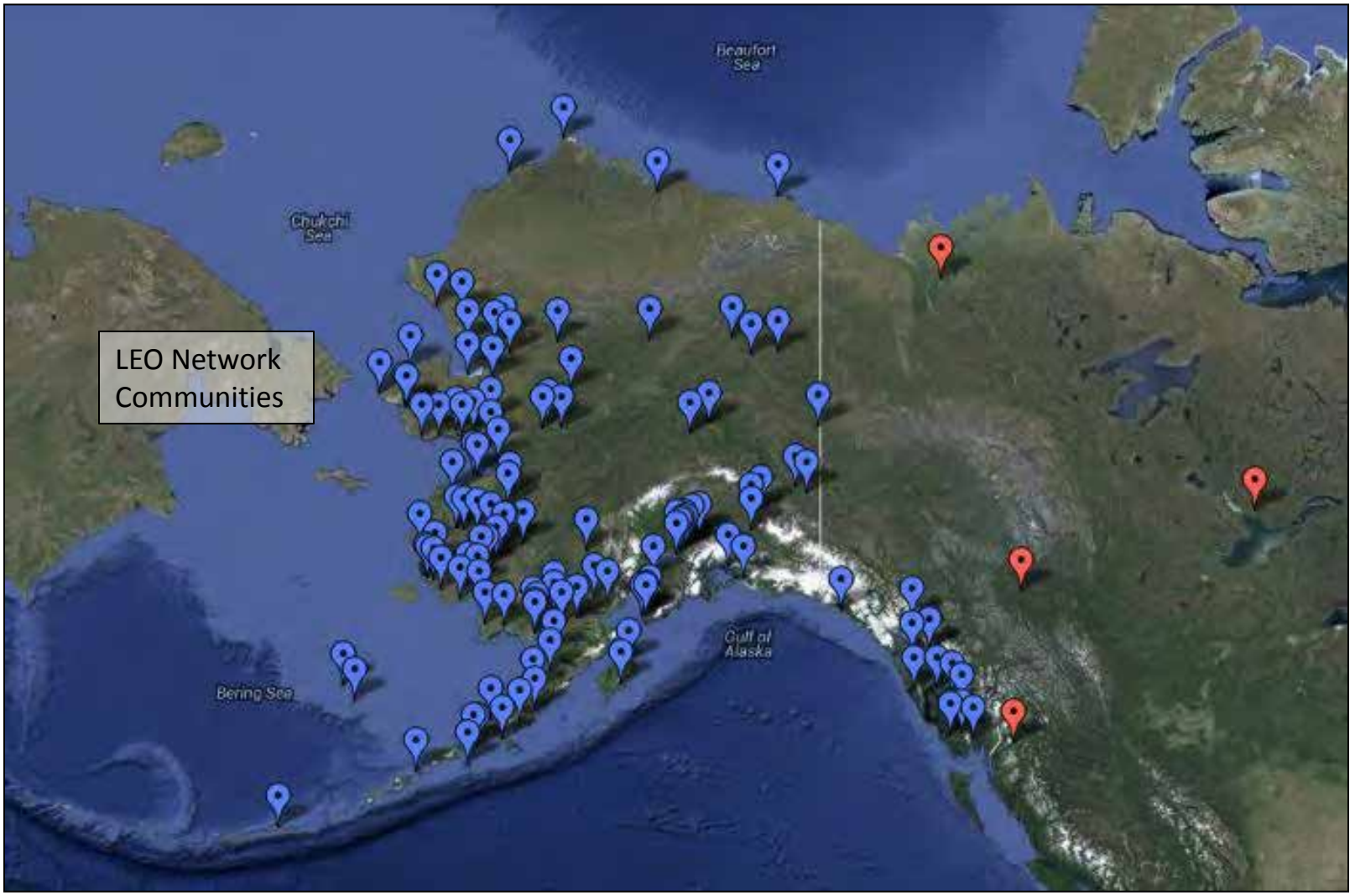
2. How do they effect community health?

3. How can communities adapt in ways that encourage wellness?

Project Description: the project includes two objectives. 1) conduct vulnerability assessments for Norton Sound communities.

Aida Cheemuk and Michelle Snowball inspect a coastal erosion feature in St. Michael. Photo by M. Brubaker

Project Description: 2) provide training for the network of Local Environmental Observers (LEOs), to improve capacity for coastal observations.



Objective 1 Details - Vulnerability Assessment

a. Compile community vulnerability data (CVI) for Bering Strait region
b. Organize advisory and guidance committee
c. Gather community scale information on climate change impacts
d. Conduct three on-site community surveys
e. Summarize information and findings in report for region.

Golovin beach sand. Photo by M. Brubaker

1a. Climate Vulnerability Index (CVI) - A review of available data was performed and communities were scored based on existing data about economic health, water and sanitation system vulnerability, flood history, and erosion conditions.

BERING STRAIT REGION CLIMATE CHANGE VULNERABILITY INDEX (CVI), Alaska Native Tribal Health Consortium, Center for Climate and Health, Updated (Jan 25th, 2013)												
	Background Data							Vulnerability Scoring Data				
COMMUNITY	CONTACT	LEO	POP	BIOME	WATERSHED	FOOD	WATER	ECONOMIC	WATER	FLOOD	EROSION	
Reference -->	A. Shannon		Census	A. Shannon	A. Shannon	ADF&G	B. Reed	Denali C.	ADEC/BB	T. Boothby	C. Borash	
COMMUNITY	SPREADSHEET		DCCED	DCCED (Lake/Coast/River)	DCCED (Major Rivers, Lakes, Bays)	Harvest Survey	Source R/L/GW	Distressed +1	Imperiled +1	Historical +1	Baseline +1 to +3	Total
Brevig Mission	SEE SHEET	Ben Andrew Attatayuk	414	C	Sits at mouth of Shelman Creek on Port Clarence	84, 89, 95, 00, 05	GW (near Sherman Creek)	1	1	1	2	5
Council	SEE SHEET		(0) fish camp	R	Niukluk River	-	-	0	0	0	1	1
Diomede	Francis Ozenna		107	C	Bering Straits Waters	95	R (creek)	1	1	1	2	5
Elim	Judith Daniels	Emily Murray, Warren Daniels, Judith Daniels	332	C	Norton Bay	93, 99, 05, 10	GW	0	0	1	2	3
Gambell	Eddie Ungott, President		677	C	Bering Sea Waters	95	GW/L	1	0	1	1	3
Savoonga	Sylvia Toolie		704	C	Bering Sea Waters	95	GW	1	0	0	2	3
Golovin	Toby Anungazuk, Jr.	Carol Oliver, Toby Anungazuk Jr.	171	C	Golovin Bay and Golovin Lagoon	82, 89, 01, 10	R (creek)	0	1	1	3	5
King Island	Janice Knowlton		0	C	Bering Sea waters	-	-	0	0	1		1
Koyuk	Wayne Nassuk	Freida Moon Kimoktoak, Morris Nassuk, Michelle Douglas	347	C	Sits at mouth of Koyuk River on Norton Bay	95, 98, 04, 10	Has piped water	1	0	1	1	3
Mary's Igloo			(0) fish camp for	R	Bank of Kuzitrin River	-	-	0	0	-	1	

The Climate Vulnerability Index (CVI) is a used to score relative vulnerability to impacts such as flooding and erosion. The CVI is separated into two columns, background data (blue) and scoring data (gray). The background data helps the assessment team begin to organize information about the communities and the region. The scoring data is used to develop a vulnerability prioritization for communities in the region. The scores are limited by the quality of the available data sources, and the scope of the categories that are included.

Background Data Columns

1. Population: number of people that may be impacted.
2. Contact: name of the point of contact at the tribal council.
3. Biome: as defined either river, lake or coastal.
4. Drainage: river drainages that the community is a part of (if any)
5. Source Water: community source water type (river, lake, groundwater)
6. Harvest Survey: Years surveys were performed by Alaska Department of Fish and Game.

Scoring Data Columns

1. Economic Vulnerability: communities classified by Denali Commission as economically distressed. Score + 1 if community meets criteria.
2. Water Vulnerability: ADEC has classified of water systems that are vulnerable to climate change. Score +1 if community is on the list.
3. Flood Vulnerability: USACE flood hazard system. Score +1 if community has experienced previous flooding.
4. Erosion - The Army Corp of Engineers performed an Alaska Baseline Erosion Assessment in 2010. “Priority Action” communities are scored +3, “Monitor Conditions” are scored +2, and Minimal Erosion” are scored +1.

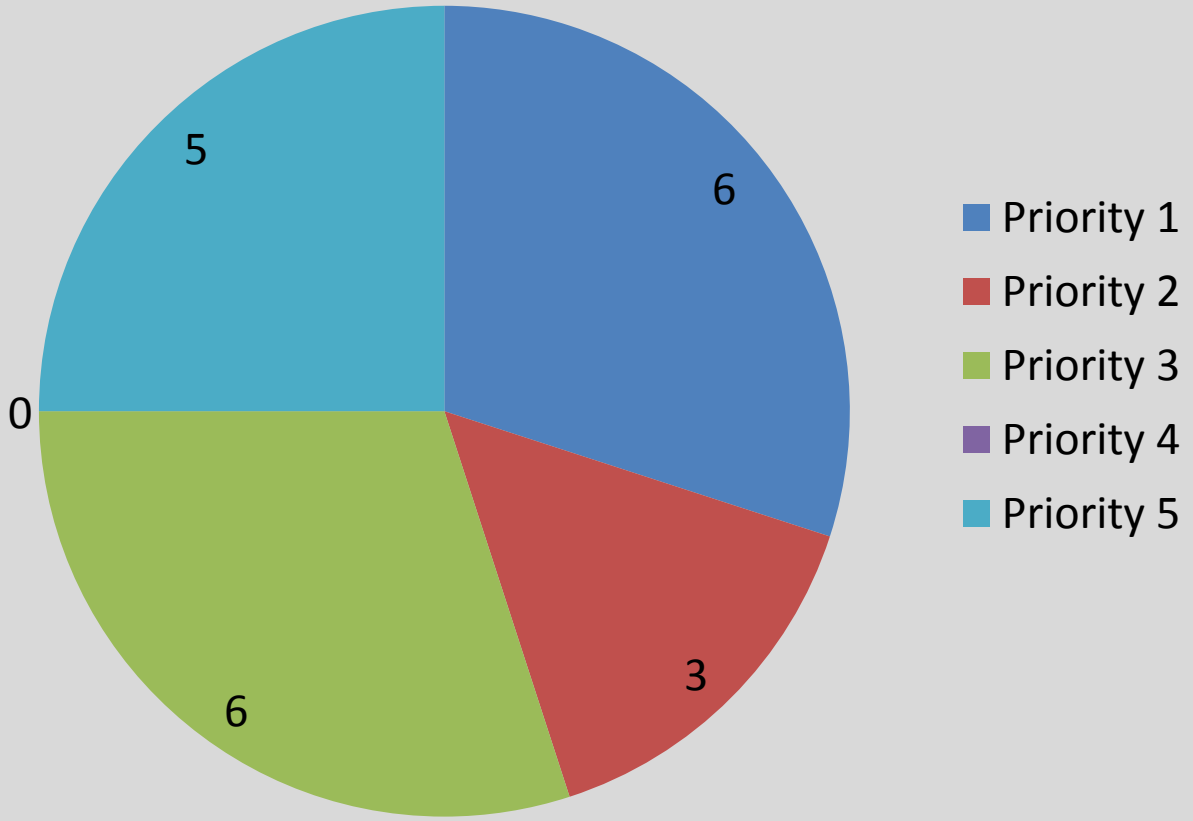
1a. Climate Vulnerability Index (CVI) - Here are the scoring outcomes by level of vulnerability, 1 highest to 5 lowest.

Community	Priority Level 1 Highest	Priority Level 2	Priority Level 3	Priority Level 4	Priority Level 5 Lowest
Brevig Mission	x				
Council					x
Diomede	x				
Elim			x		
Gambell			x		
Savoonga			x		
Golovin	x				
King Island					x
Koyuk			x		
Mary's Igloo					x

1a. community scores continued:

Community	Priority Level 1 Highest	Priority Level 2	Priority Level 3	Priority Level 4	Priority Level 5 Lowest
Nome			x		
Shaktoolik		x			
Shishmaref	x				
Solomon					x
Stebbins		x			
St. Michael	x				
Teller			x		
Unalakleet		x			
Wales	x				
White Mountain					x

Distribution of Community Vulnerability Levels

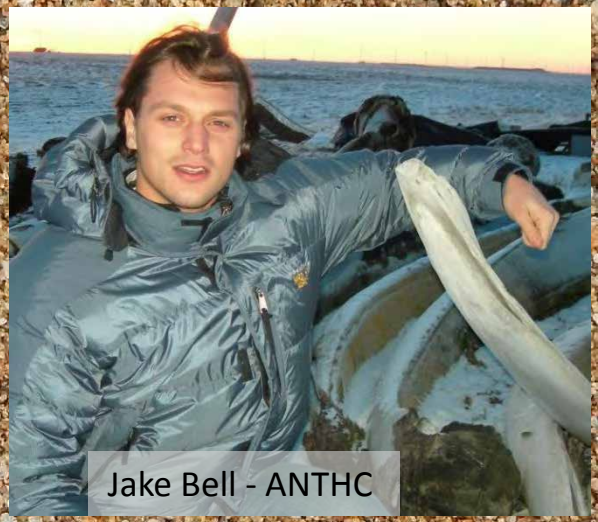


a. Climate Vulnerability Index (CVI) – The following map is based on economic, water and sanitation, flood, and erosion data available from state and federal surveys. The CVI is limited to available information for the region and does not consider other climate change driven mechanisms such as sea level rise, wildfire or drought.

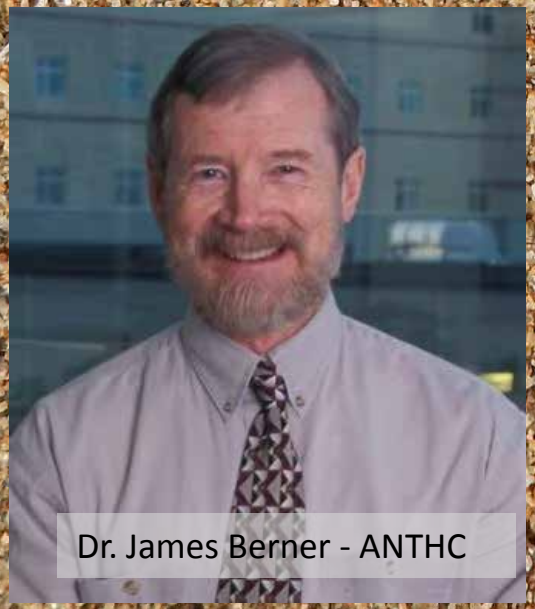
1b. Organize advisory and guidance committee


Kevin Zweifel - NSHC


Mike Brubaker - ANTHC


Jake Bell - ANTHC

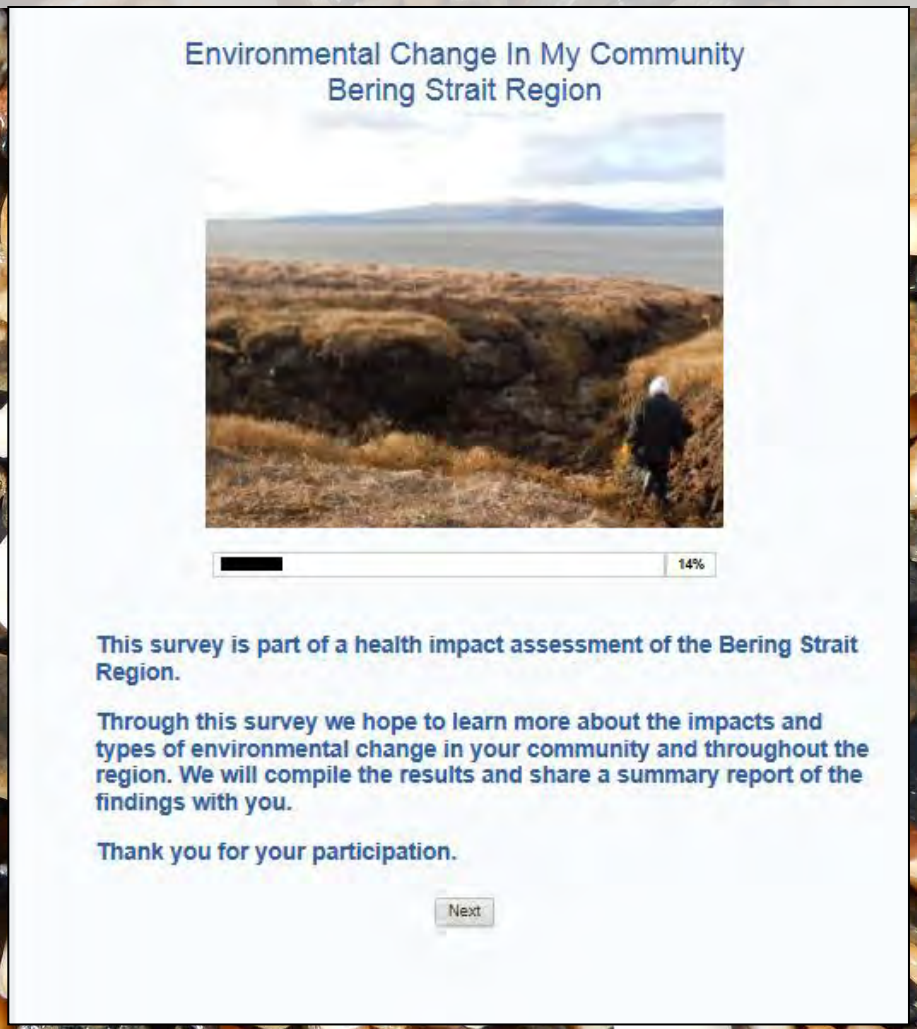

Jennifer Demir - NSHC


Dr. James Berner - ANTHC


Anahma Shannon - Kawerak

1c. In addition to the CVI, and survey was distributed to environmental staff at tribal governments. The purpose was to help inform the project team on local perception about environmental change, and to identify climate change related concerns Completed surveys were received from nine communities.

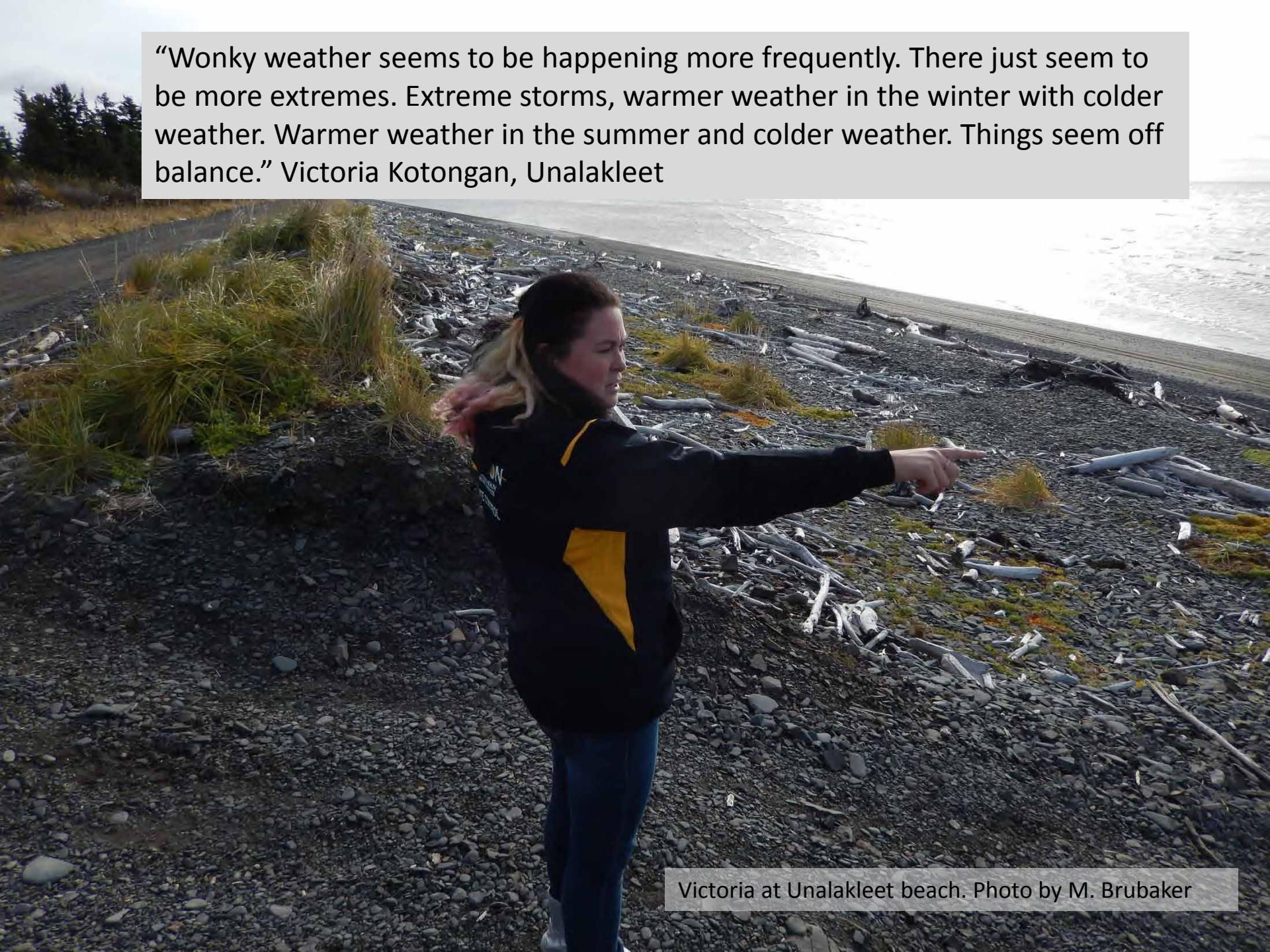
1. St. Michael
2. Shishmaref
3. Solomon
4. Koyuk
5. Golovin
6. Brevig Mission
7. Teller
8. Nome
9. Unalakleet



See survey results here.

Nome beach gravel. Photo by M. Brubaker

“Wonky weather seems to be happening more frequently. There just seem to be more extremes. Extreme storms, warmer weather in the winter with colder weather. Warmer weather in the summer and colder weather. Things seem off balance.” Victoria Kotongan, Unalakleet



Victoria at Unalakleet beach. Photo by M. Brubaker

Responses: environmental conditions that are “Very Changed”.

Town	Weather	Storms	Erosion	Floods	Permafrost	Ice	Seasons
St. Michael			x		x		
Shishmaref	x		x	x	x	x	
Solomon			x				
Koyuk			x				
Golovin	x		x	x	x	x	x
Brevig Mission							
Teller	x						
Nome							
Unalakleet		x					

Nome beach gravel. Photo by M. Brubaker

"Population levels dropping, climate change and sick seal mortality issues."
Richard Kuzuguk - Shishmaref

Sick seal. Photo by Richard Kuzuguk

Responses: biological conditions that are “Very Affected”.

Town	Birds	Sea Mammals	Fish	Trees	Tundra Plants
St. Michael					
Shishmaref	x	x			
Solomon			x	x	
Koyuk		x			
Golovin	x	x	x	x	x
Brevig Mission					
Teller		x	x		x
Nome					
Unalakleet					

Nome beach gravel. Photo by M. Brubaker

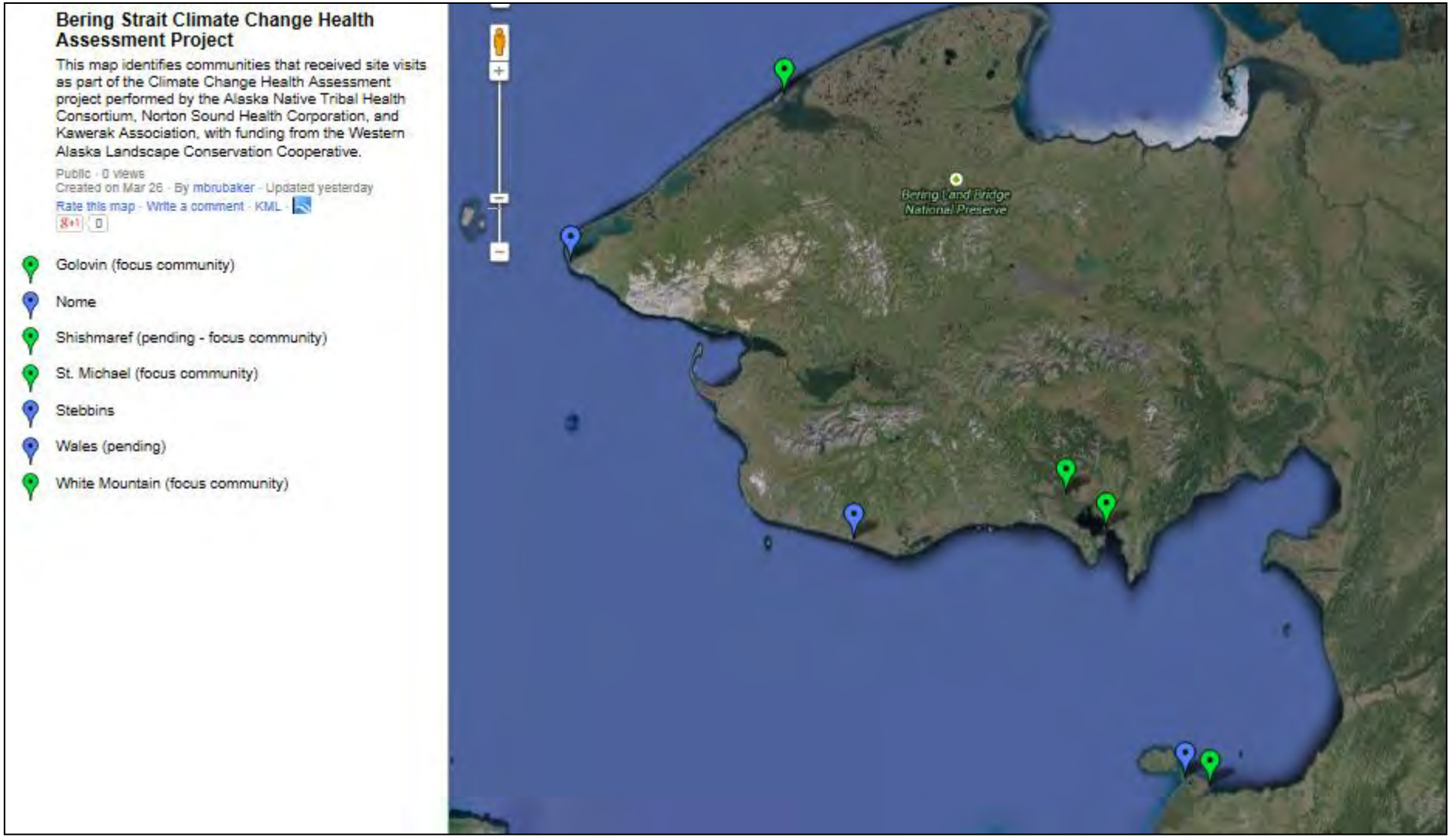

Some lakes have dried up, where others have filled with more water.
Shirley Martin – St Michael
Photo by M. Brubaker

Responses: community health conditions that are “Very Affected”.

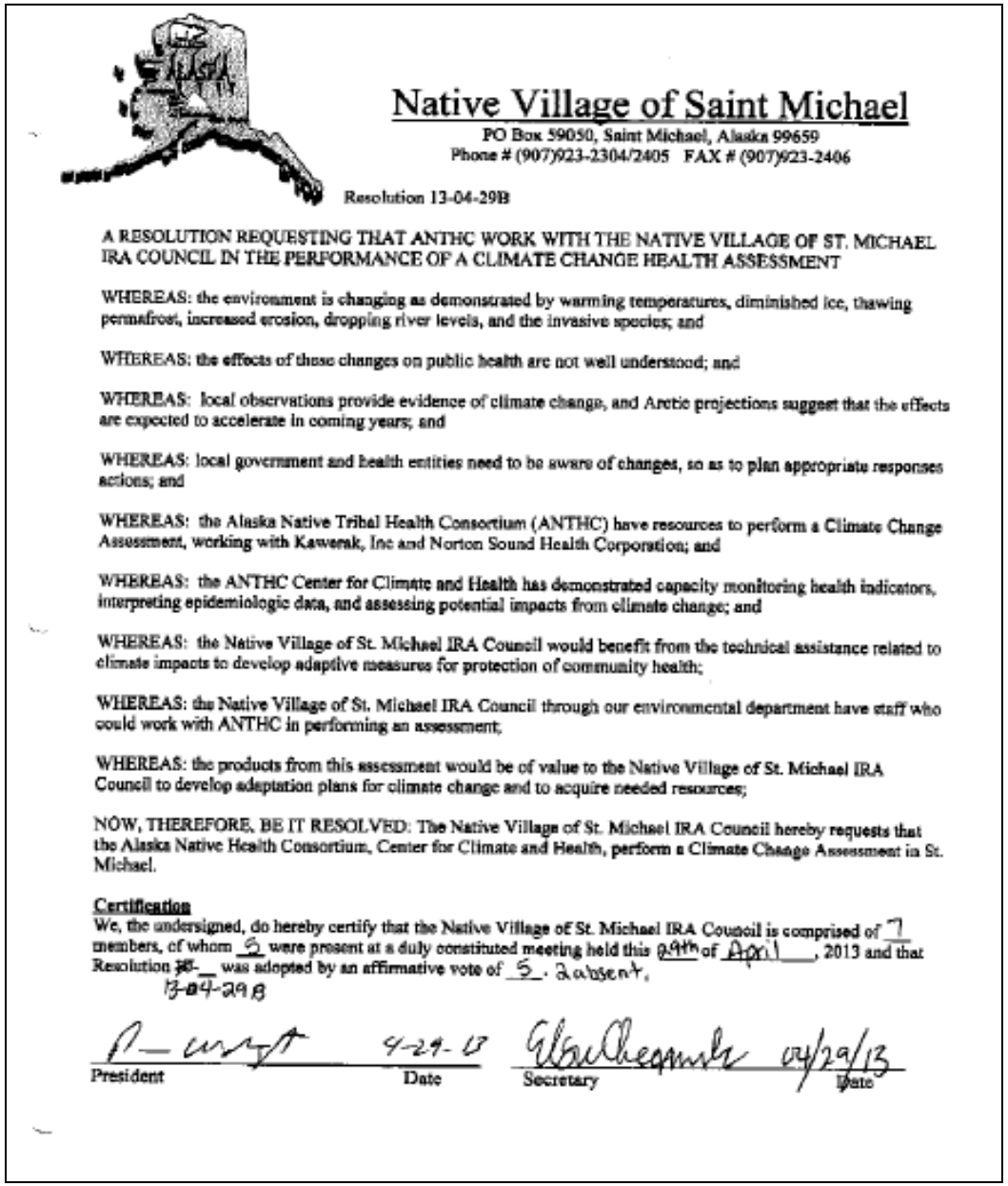
Town	Water	Air	Housing	Food	Injuries	Travel
St. Michael						x
Shishmaref	x				x	x
Solomon			x	x		x
Koyuk	x	x		x		
Golovin			x	x		
Brevig Mission						x
Teller				x		
Nome						
Unalakleet						

Nome beach gravel. Photo by M. Brubaker

1d. On-Site Community Surveys: based on the outcome from the CVI, the "Environmental Change In My Community" survey, and the level of interest and support expressed by tribal councils, the Advisory Committee invited communities to participate and receive site visits. Due to the level of interest, the number of 'focus communities', was increased from three to seven. Shishmaref and Wales are scheduled for June 2014.



Focus communities demonstrated their support of the project through the signing of a resolution by the traditional council. Example: Native Village of St. Michael



Native Village of Saint Michael

PO Box 59050, Saint Michael, Alaska 99659
Phone # (907)923-2304/2405 FAX # (907)923-2406

Resolution 13-04-29B

A RESOLUTION REQUESTING THAT ANTHC WORK WITH THE NATIVE VILLAGE OF ST. MICHAEL IRA COUNCIL IN THE PERFORMANCE OF A CLIMATE CHANGE HEALTH ASSESSMENT

WHEREAS: the environment is changing as demonstrated by warming temperatures, diminished ice, thawing permafrost, increased erosion, dropping river levels, and the invasive species; and

WHEREAS: the effects of those changes on public health are not well understood; and

WHEREAS: local observations provide evidence of climate change, and Arctic projections suggest that the effects are expected to accelerate in coming years; and

WHEREAS: local government and health entities need to be aware of changes, so as to plan appropriate responses actions; and

WHEREAS: the Alaska Native Tribal Health Consortium (ANTHC) have resources to perform a Climate Change Assessment, working with Kawerak, Inc and Norton Sound Health Corporation; and

WHEREAS: the ANTHC Center for Climate and Health has demonstrated capacity monitoring health indicators, interpreting epidemiologic data, and assessing potential impacts from climate change; and

WHEREAS: the Native Village of St. Michael IRA Council would benefit from the technical assistance related to climate impacts to develop adaptive measures for protection of community health;

WHEREAS: the Native Village of St. Michael IRA Council through our environmental department have staff who could work with ANTHC in performing an assessment;

WHEREAS: the products from this assessment would be of value to the Native Village of St. Michael IRA Council to develop adaptation plans for climate change and to acquire needed resources;

NOW, THEREFORE, BE IT RESOLVED: The Native Village of St. Michael IRA Council hereby requests that the Alaska Native Health Consortium, Center for Climate and Health, perform a Climate Change Assessment in St. Michael.

Certification

We, the undersigned, do hereby certify that the Native Village of St. Michael IRA Council is comprised of 7 members, of whom 5 were present at a duly constituted meeting held this 29th of April, 2013 and that Resolution ~~#~~ 13-04-29B was adopted by an affirmative vote of 5. 2 absent.

4-29-13 — President — Date

04/29/13 — Secretary — Date

Focus Community Site-visit Components:

- Tribal council staff meeting and training (LEO, Community Camera Project)
- Public scoping meeting
- Community gathering event
- Community inspection – vulnerable sites and impacted areas
- Key contact interviews – environment / emergency managers, health aides etc.
- Time lapse camera installation.
- In-kind contributions – meeting space, office space, vehicles, staff time etc.

Site –visit Outputs

- Training of tribal staff
- Power point presentation
- Meeting minutes
- Photographs
- Time lapse video

Nome beach gravel. Photo by M. Brubaker

CLIMATE CHANGE & HEALTH

Have you noticed any changes in your environment?

The Chinik Eskimo Community, Norton Sound Health Corporation Alaska Native Tribal Health Consortium, & Kawerak are partnering to conduct *climate change health assessments* in Golovin.

Please join us for an evening of discussion about climate change effects, snacks, & *music* (bring your instruments & songbooks!)

Thursday August 8, 7:30pm
EDA building

For more information please contact:
Chinik IGAP
Toby or Oxie
779-2005

KAWERAK, INC.

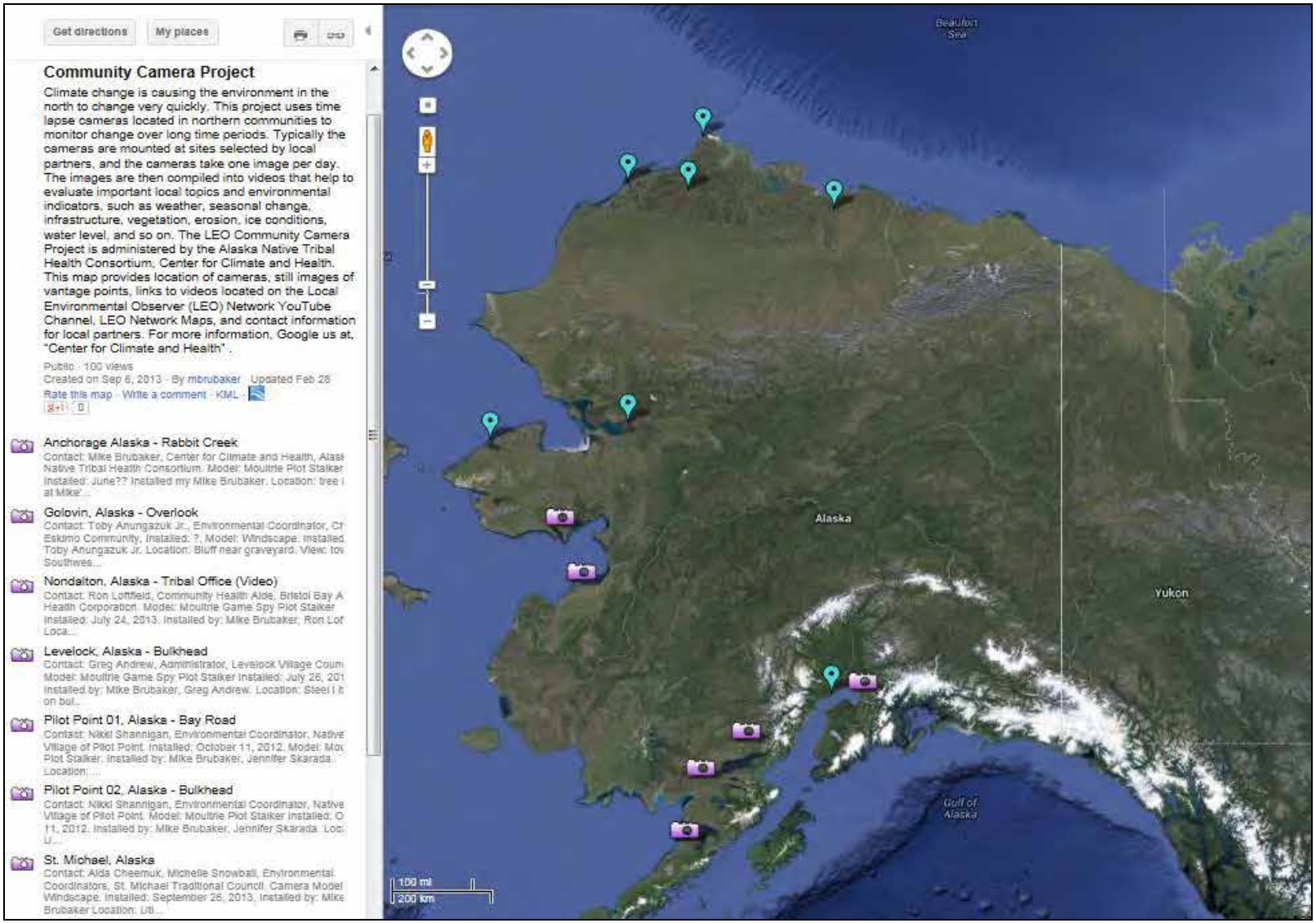

A public scoping meeting in White Mountain.
Photo by M. Brubaker


Recording testimonies at the public meeting in Golovin.
Photo by C. Brubaker

Michelle Snowball and Aida Cheemuk show the time – lapse camera they installed in St. Michael

Photo by M. Brubaker

Training, installation of time lapse cameras and enrollment in the LEO Community Camera Project were outcomes of this project. See St. Michaels first time lapse video here.



Mike Brubaker and Carol Oliver inspecting flood zone in Golovin.

Heading out to inspect the ice storm damage to the subsistence camps near Golovin.

Photo by M. Brubaker

Key Topics – White Mountain

- River erosion
- Spruce bark beetle infestation proximity
- Food security
- New species (birds)
- Winter rain and extreme rain events
- Higher temperatures

Photo by C. Brubaker

Key Topics – Golovin

- Storm surge and flooding
- Sea level rise
- Erosion
- Sea ice conditions
- Food security
- Water security
- Temperature change
- Snow conditions

Photo by M. Brubaker

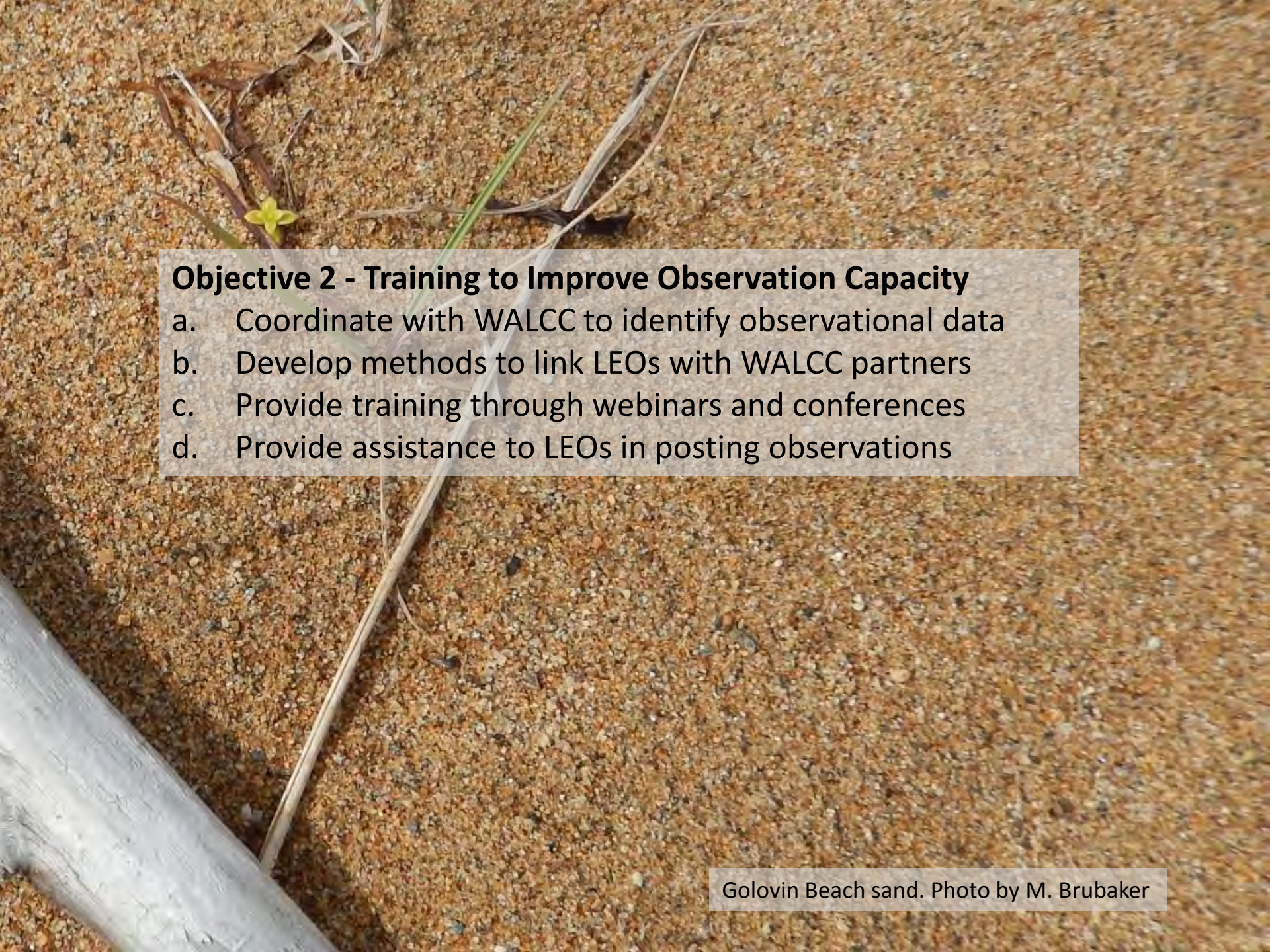
Key Topics – St. Michael

- Storm surge and flooding
- Sea level rise
- Erosion
- Sea ice conditions
- Food security
- Temperature change
- Snow conditions

Key Topics – Stebbins

- Storm surge and flooding
- Sea level rise
- Erosion
- Sea ice conditions
- Food security
- Temperature change
- Snow conditions

Stebbins Alaska. Photo by M. Brubaker



Objective 2 - Training to Improve Observation Capacity

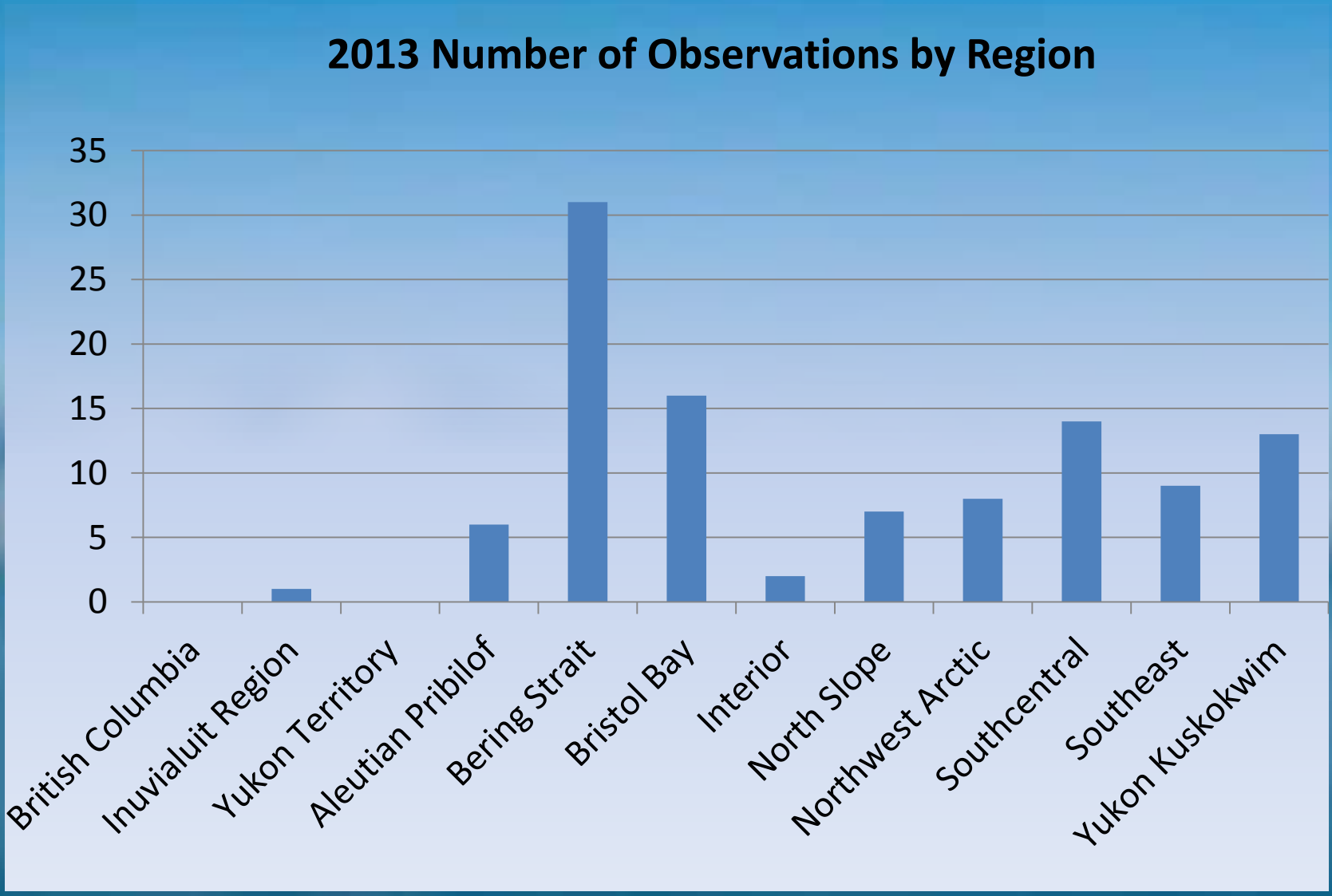
a. Coordinate with WALCC to identify observational data
b. Develop methods to link LEOs with WALCC partners
c. Provide training through webinars and conferences
d. Provide assistance to LEOs in posting observations

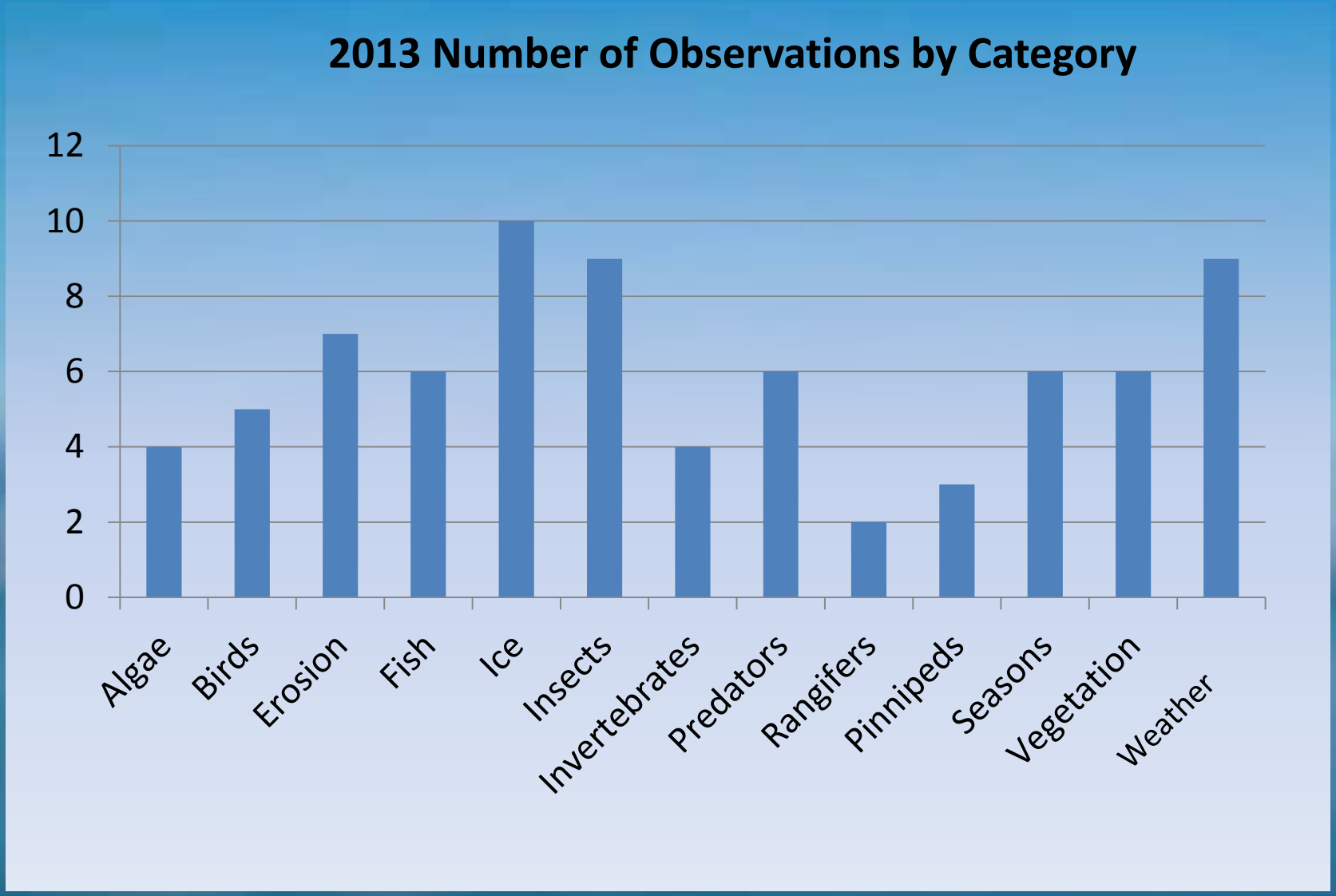
Golovin Beach sand. Photo by M. Brubaker

2a - ANTHC is coordinating with WALCC to have participation of U.S. Fish and Wildlife Refuge Information Technicians in the LEO Network. There is a standing invitation for RITs to enroll with and participate actively in LEO. Any RIT posts would be shared WALCC staff to encourage technical assistance opportunities.

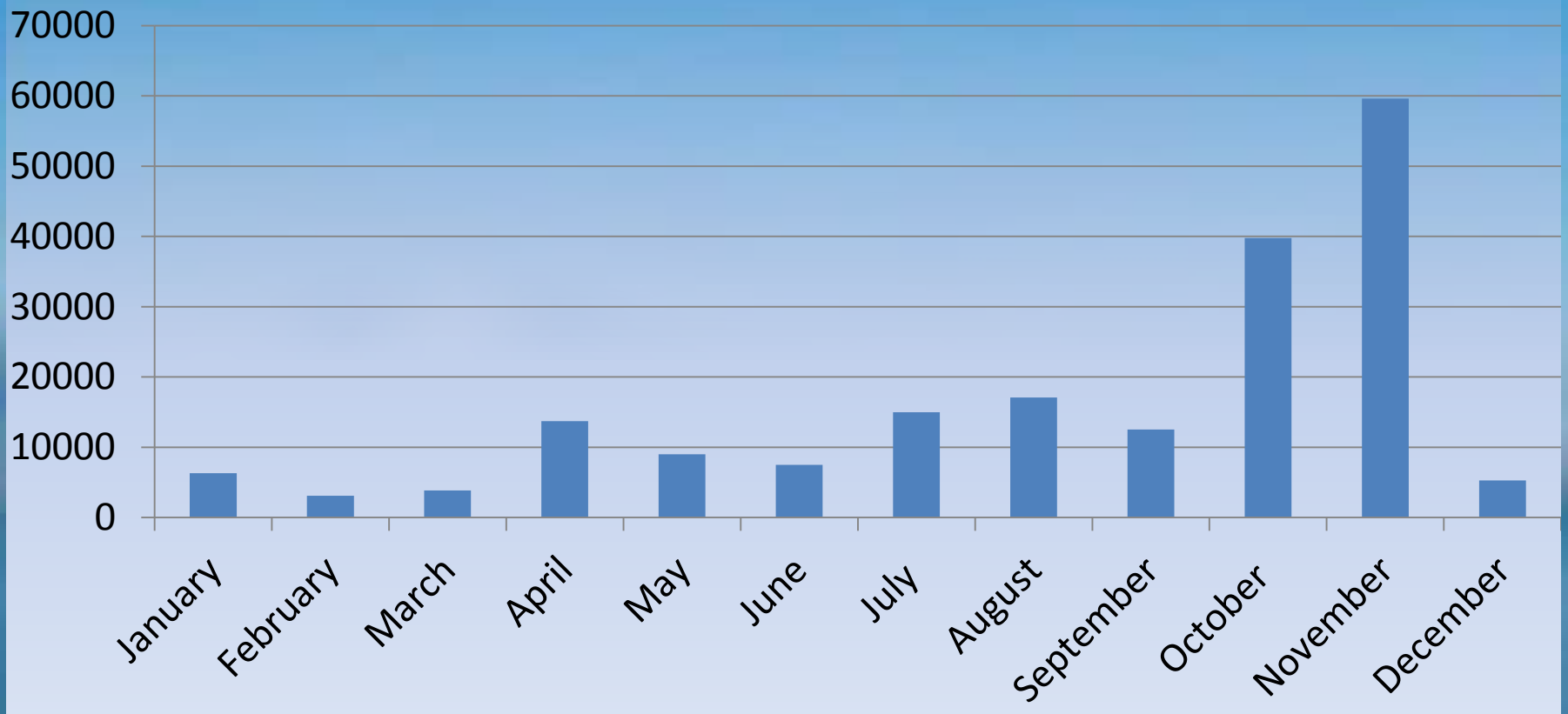
2b - In 2013 eighty-eight posts were made statewide. During the report period 32 posts were made just by Bering Strait LEO members, the highest for any region statewide for this measure. These posts are now available on the Bering Strait Region LEO Map.

All posts were shared with members of the weekly Climate and Health E-News, including interested WALCC grantees. A review of some of the LEO outreach results during 2013 are provided in the following slides.


2013 Number of Observations by Region
35
30
25
20
15
10
5
0
British Columbia
Inuvialuit Region
Yukon Territory
Aleutian Pribilof
Bering Strait
Bristol Bay
Interior
North Slope
Northwest Arctic
Southcentral
Southeast
Yukon Kuskokwim


2013 Number of Observations by Category
12
10
8
6
4
2
0
Algae
Birds
Erosion
Fish
Ice
Insects
Invertebrates
Predators
Rangifers
Pinnipeds
Seasons
Vegetation
Weather

2013 Number of Google Map Views By Month



2013 Total Site Visits = 192,725

2c - Training of LEOs has been performed at each focus community during site visits. There are now 33 LEOs registered in the Bering Strait Region, representing 12 communities.

Time lapse cameras were installed in St. Michael and Golovin. Additional cameras are planned for Nome, Shishmaref and Wales.

A total of 14 statewide LEO Webinars were hosted during the project period. Presentations were made by representative from various universities, the Nature Conservancy, the Alaska Department of Health, USFWS, National Forest Service, USGS, Homeland Security, and SeaGrant among others. The webinars are archived on the LEO website.

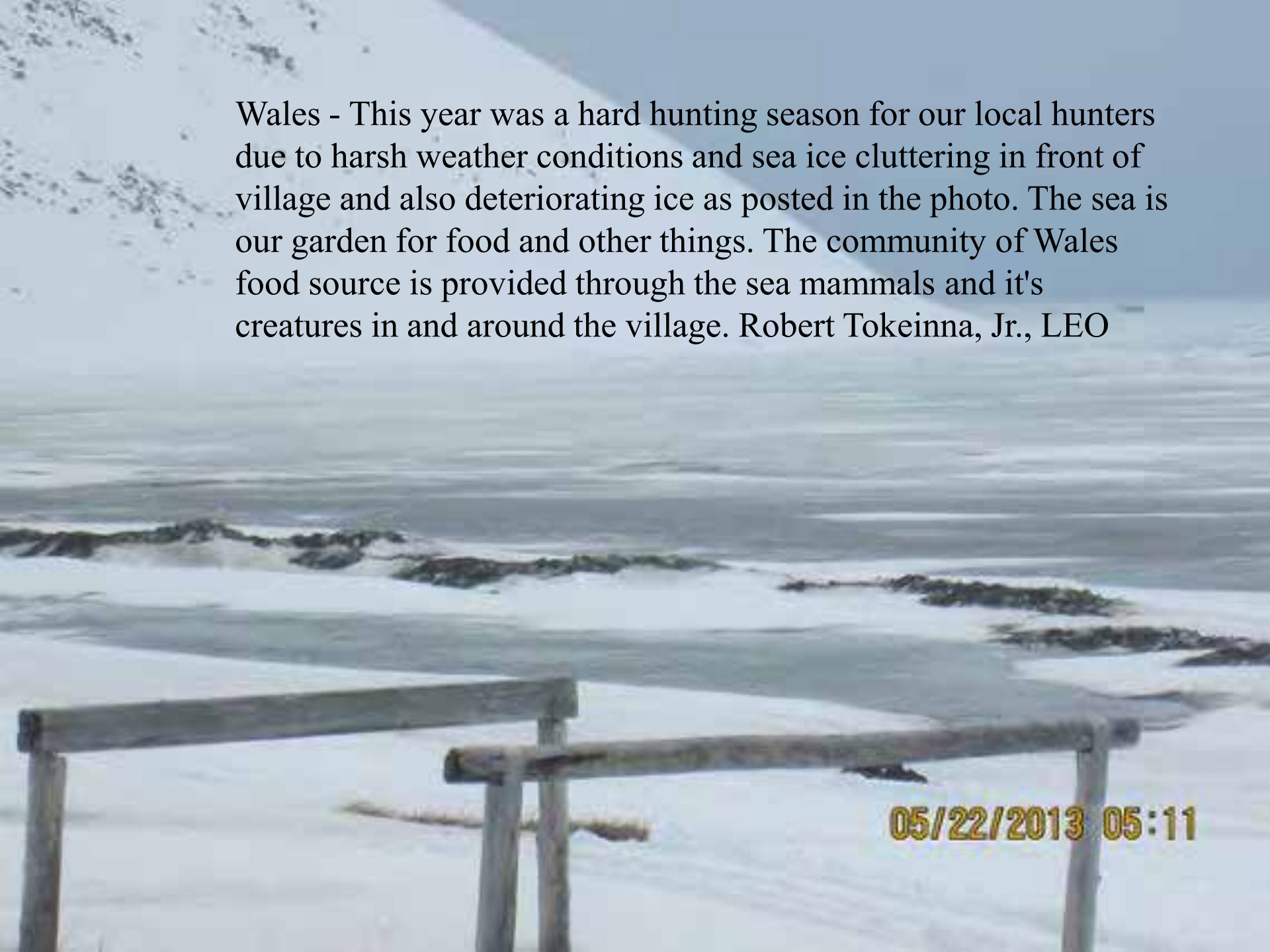
LEO outreach was performed at the Alaska Conference on Environmental Management, the Alaska Forum on the Environment, the Western Alaska Inter-disciplinary Science Conference in Nome, the Health Canada Tribal Climate Change Conference in Whitehorse, and at more then a dozen other conferences and workshops.

2d - The following slides provide a sample of LEO Observations posted during the report period. All posts received technical assistance from ANTHC and partner organizations.

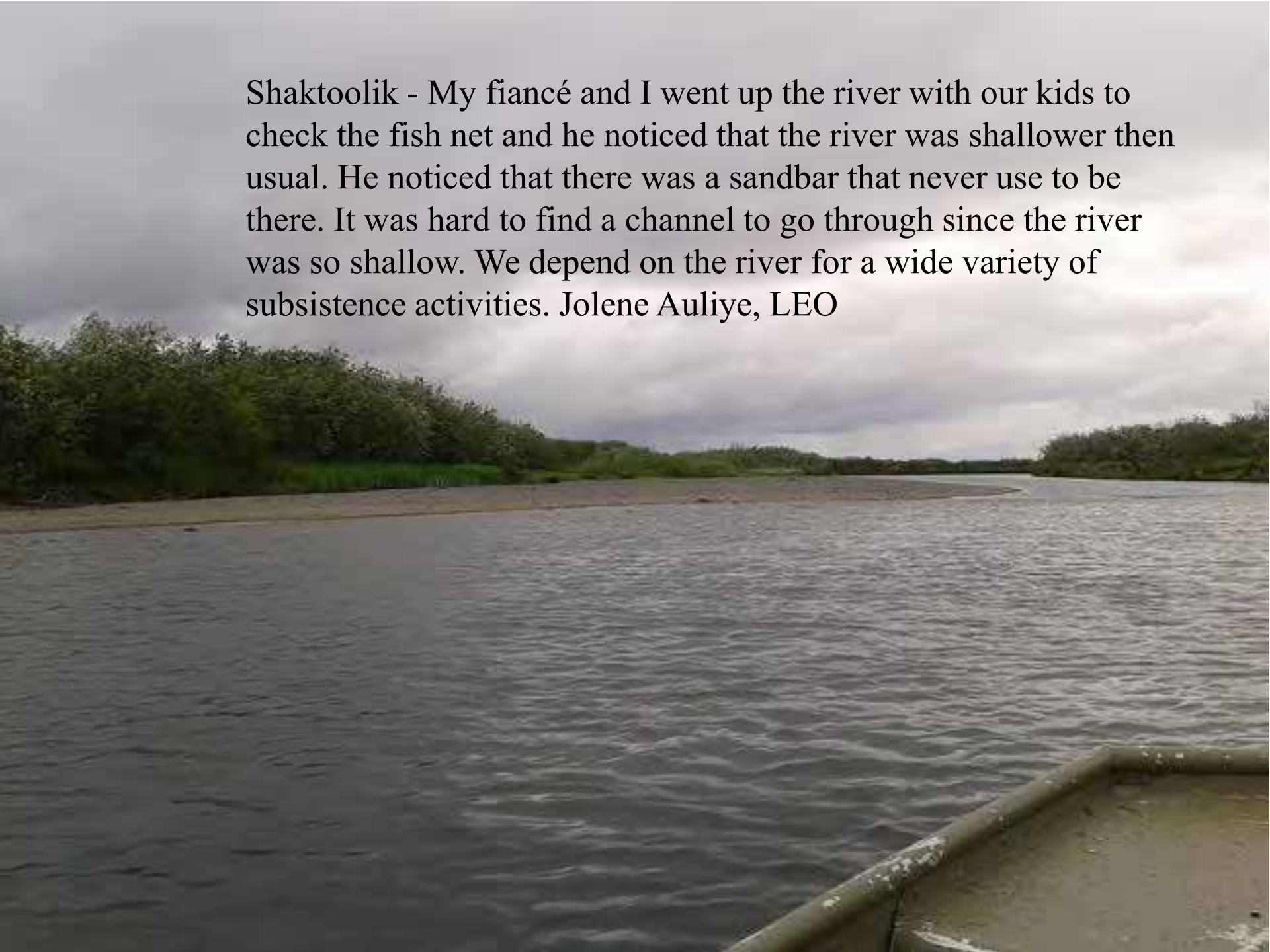
WALCC coastal observer topics

1. March 2014 - Beak Deformities among Wild Birds in Alaska
   Caroline Van Hemert, Research Wildlife Biologist, U.S. Geological Survey
2. February 2014 - Community Based Monitoring Observing Alaska's Coasts and Oceans *Ellen Parry Tyler*, Alaska Sea Grant
3. January 2014 - Modeling Change: Collaborative climate research from the Scenarios Network for Alaska and Arctic Planning (SNAP) *Nancy Fresco*, University of Alaska Fairbanks
4. December 2013 - Sea Star Wasting Syndrome: detecting, tracking, and following the progression *Melissa Miner*, Ecology and Evolutionary Biology, UC Santa Cruz
5. November 2013 Tools to Navigate the LEO Network Website
   Moses Tcheripanoff, Center for Climate and Health
6. November 2013 Ice, Tide, and Wave Dynamics on Storm Surge *Bob (Robert) Grumbine*, NCEP/EMC/Marine Modeling and Analysis Branch, National Oceanic & Atmospheric Administration
7. September 2013 Introduction to ShoreZone Imaging and Mapping Alaska's Coast
   Darren Stewart, Alaska ShoreZone Coordinator, The Nature Conservancy
8. August 2013 Webinar Observing local permafrost change
   Vladimir Romanovsky, Geophysical Institute, University of Alaska Fairbanks
9. July 2013 National Weather Service, Alaska Weather Spotters
   Dave Snider, National Weather Service, Anchorage
10. June 2013 Taking a tern for the worsed? When do we raise a red flag for *O. aleuticus*? *Heather Renner*, US Fishing Wildlife Service, Bering Sea Unit of the Alaska Maritime National Wildlife Refuge.
11. May 2013 Observing Coastal Erosion in Alaska and the Alaska Corps of Coastal Observers (AkCCO)
    Howard Ferren, Alaska SeaLife Center
12. April 2013 BioMap Alaska: Citizen Science for Alaska's Oceans
    Philip A. Loring, University of Alaska Fairbanks
13. March 2013: Identifying thaw-refreeze events in Alaska by remote sensing
    Ryan Wilson, U.S. Fish & Wildlife Service, Marine Mammals Management
14. February 2013 Wildlife Toxicology Laboratory (UAF): Reach Out
    Todd O'Hara, Wildlife Institute of Arctic Biology, University of Alaska Fairbanks
15. January 2013. Cold Weather Survival, Personal Protection *Edward (Ted) Smith*, Community Environment and Safety, Alaska Native Tribal Health Consortium

Golovin - The huge November storm that struck Western Alaska caused damage to several subsistence camps at the mouth of the Kitchavik River north of Golovin. Sea ice went up on the shore several hundred feet and destroyed four of eight subsistence fishing camps. The other four were damaged. The ice also scraped the closest berry picking and beach greens harvesting areas. Toby Anungazuk Jr., LEO



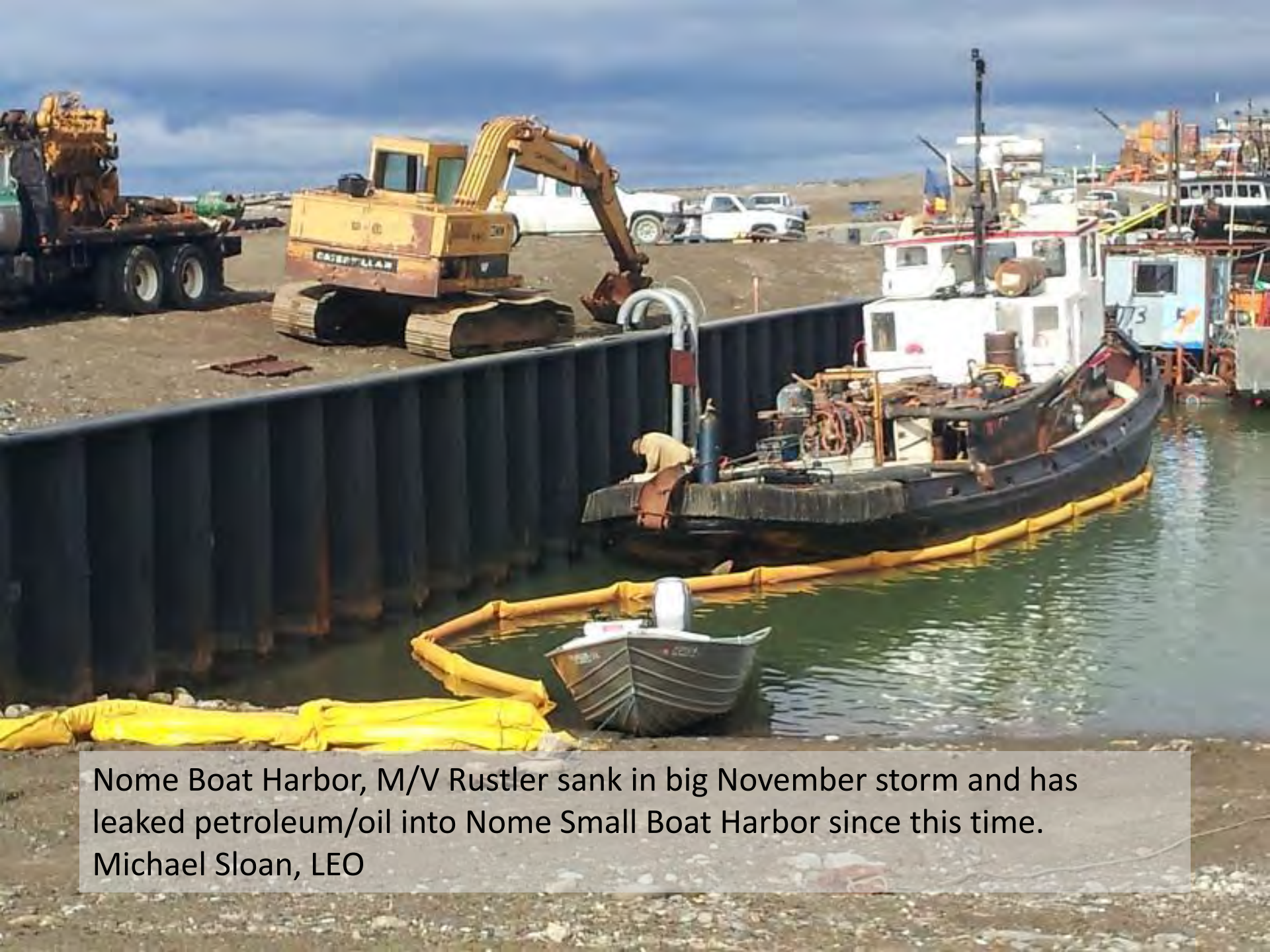
Wales - This year was a hard hunting season for our local hunters due to harsh weather conditions and sea ice cluttering in front of village and also deteriorating ice as posted in the photo. The sea is our garden for food and other things. The community of Wales food source is provided through the sea mammals and it's creatures in and around the village. Robert Tokeinna, Jr., LEO



Shaktoolik - My fiancé and I went up the river with our kids to check the fish net and he noticed that the river was shallower then usual. He noticed that there was a sandbar that never use to be there. It was hard to find a channel to go through since the river was so shallow. We depend on the river for a wide variety of subsistence activities. Jolene Auliye, LEO

Shishmaref - This ringed seal was taken in Shishmaref Inlet, approximately 3 miles up the staked trail to 7 mile ice pond. There was no breathing hole present, the seal had traveled from the east of the stakes heading westward. There seems to be a BB size lump on one of the forearms, and showing evidence of sores on one side (of the) flipper. Richard Kuzuguk LEO

Unalakleet - On Saturday I shot 6 spruce grouse and 2 ptarmigan. When I was cleaning the first grouse I ripped open the breast and there were worms squiggling around on top of the breast meat.
Victoria Kotogan, LEO



Nome Boat Harbor, M/V Rustler sank in big November storm and has leaked petroleum/oil into Nome Small Boat Harbor since this time.
Michael Sloan, LEO

Golovin - It appears to be getting larger and is along the trail to Camp Kitchavik. There is an odor of noxious gases being released, smells like sulfur, and is it coming from the clay? Carol Oliver, LEO

Preliminary Results

- Evidence of climate change impacts have been recorded in every community that has participated in the project.
- Site visits confirm impacts from erosion, flooding, seasonal change, extreme weather and food security among other topics.
- Phased relocation to higher ground and on-going erosion protection is a priority for low lying areas in coastal communities, such as Golovin, St. Michael and Stebbins, Nome and Unalakleet.
- For interior communities like Council and White Mountain, river change is an important issues including water conditions based on snow pack and erosion. Forest change is another concerns with potential for infestation and wildfires to increase.

Blueberries in Council. Photo by M. Brubaker

Other products:

- Four additional communities will receive site visits due to in-kind assistance provided by partner organizations.
- Time lapse cameras are being installed as part of the LEO Community Camera Project.
- A regional Climate and Health Measure (CAHM) spreadsheet will be prepared to assist with organization of local observations and knowledge and tracking climate change over time.
- A presentation to the Arctic Council, Arctic Monitoring Assessment Program (AMAP) Work Group will be provided at the annual meeting in Reykjavik Iceland in May.

Community waterline – St. Michael. Photo by M. Brubaker

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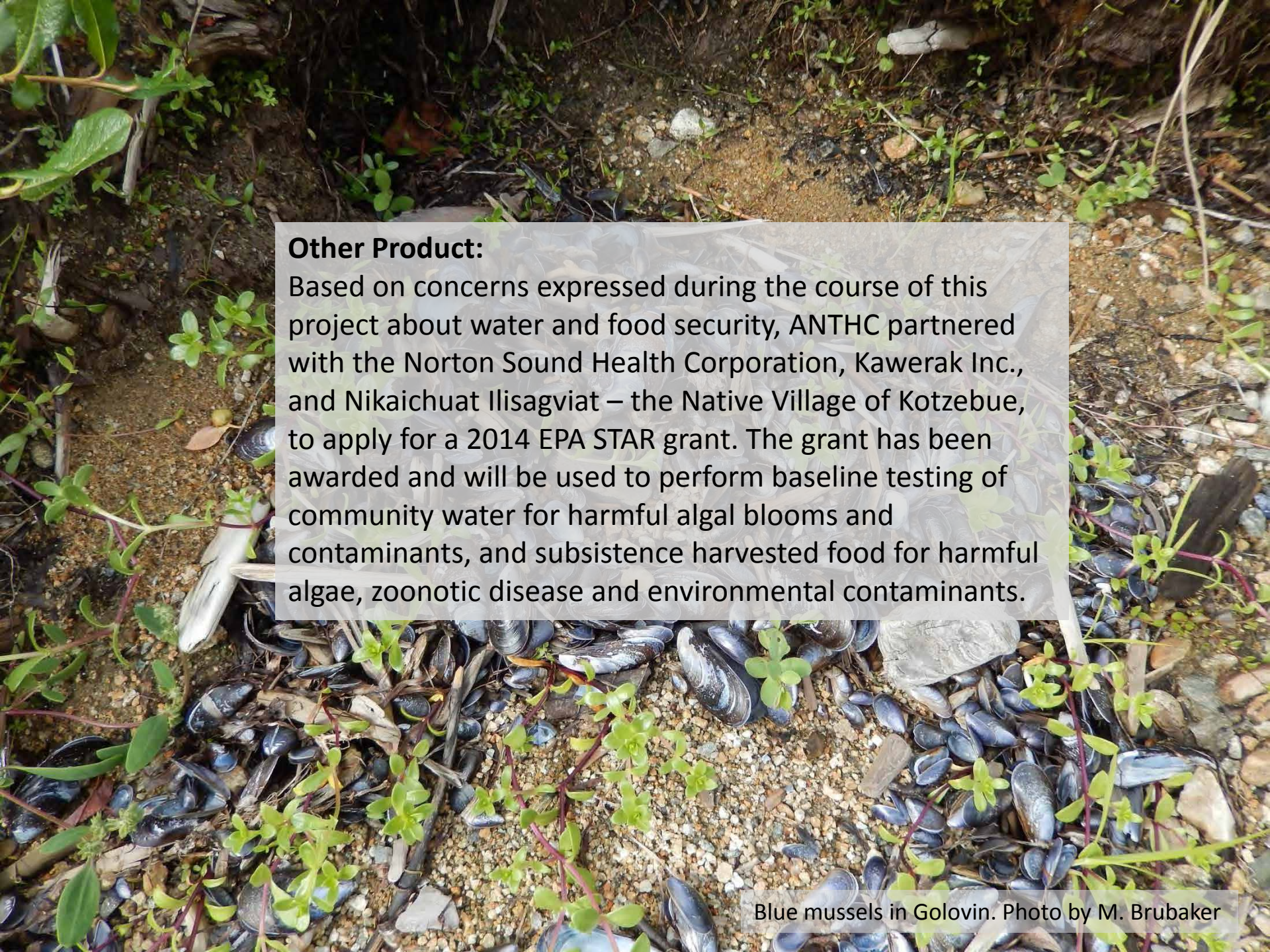
- A presentation to the Arctic Council, Arctic Monitoring Assessment Program (AMAP) Work Group will be provided at the annual meeting in Reykjavik Iceland in May.
- The Native Village of St. Michael Traditional Council is currently applying for a BIA Climate Grant to acquire additional training for tribal staff to address climate change.



Other Product:

Based on concerns expressed during the course of this project about water and food security, ANTHC partnered with the Norton Sound Health Corporation, Kawerak Inc., and Nikaichuat Ilisagviat – the Native Village of Kotzebue, to apply for a 2014 EPA STAR grant. The grant has been awarded and will be used to perform baseline testing of community water for harmful algal blooms and contaminants, and subsistence harvested food for harmful algae, zoonotic disease and environmental contaminants.

Blue mussels in Golovin. Photo by M. Brubaker

Needs –

- ANTHC requests an extension for: Complete CAHM for each community to 06-30-14.
- ANTHC requests an extension to: Submit draft regional report for review to 08-31-14.

Deliverables	Progress (% completed)
Contact partners and LEO Members regarding WALCC Projects (7-1-12)	100%
Contact other LCC relevant grant recipients (7-30-12)	100%
Submit data management plan (9-15-12)	100%
Develop regional climate vulnerability index (10-30-12)	100%
Hold second LEO webinar (12-31-12)	100%
Submit annual interim financial SF-425 and progress report (3-31-13)	100%
Fourth LEO Webinar (June 30, 2010)	100%
Perform Site Visit to communities (June 30, 2013)	100%
Hold fifth LEO webinar (09-30-13)	100%
Complete CAHM for each community (06-30-14)	10%
Submit interim financial and progress report (03-31-14)	100%
Hold sixth LEO webinar (04-30-13)	100%
Submit draft regional report for review (08-31-14)	0%
Submit final to designer (09-30-14)	0%
Final LEO Webinar (10-30-14)	0%
Submit final report (12-31-14)	0%

Community water source - Unalakleet. Photo by M. Brubaker

ANTHC would like to express its appreciation to Western Alaska Landscape Conservation Cooperative for their support. We would also like to thank our partners in the tribal governments and tribal organizations in the Bering Strait Region for making this project possible.

For more information please contact:

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