





An online platform for collecting local
observations of environmental change

Mike Brubaker, Director LEO Network

www.leonetwork.org



An online platform for collecting local
observations of **weird stuff** about
environmental change

Mike Brubaker, Director
Local Environmental Observer (LEO) Network
www.leonetwork.org



Local Environmental Observer



**CENTER FOR
CLIMATE AND HEALTH**



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ALASKA NATIVE
TRIBAL HEALTH
CONSORTIUM

CENTER FOR
CLIMATE AND HEALTH















SEPTEMBER 6, 2019

Shearwater (genus *Puffinus*) Bird Die-off

Unalaska, Alaska, United States



10 km

10 mi

Mapbox

Table Top
MountainMount Ballyhoo
Unalaska

Sedanka Island

+
-
i

Eighteen dead shearwaters (genus *Puffinus*) have washed ashore at Humpy Cove. Additional birds were observed by other community members at Wide Bay and Morris Cove.

Observation by Shayla Shaishnikoff:

Environmental staff of the Qawalangin Tribe of Unalaska investigated reports of a bird die-off at Humpy Cove on August 28, 2019. Upon arrival and inspection of approximately 1/4 mile stretch of beach, we identified and counted 18 dead shearwater birds that seem to have washed ashore. Other tribal members also reported finding dead shearwaters at Wide Bay and Morris Cove.

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Contributing Members

**Shayla Shaishnikoff** Observer

Unalaska Alaska, United States

Lead Intern Environmental Department

Qawalangin Tribe of Unalaska

[Send Message](#)**Hillary Burgess** Consultant

Seattle Washington, United States

Science Coordinator

Coastal Observation & Seabird Survey Team (COASST)

[Send Message](#)**Kathy Kuletz** Consultant

Anchorage Alaska, United States

Seabird Coordinator

U.S. Fish and Wildlife Service

[Send Message](#)

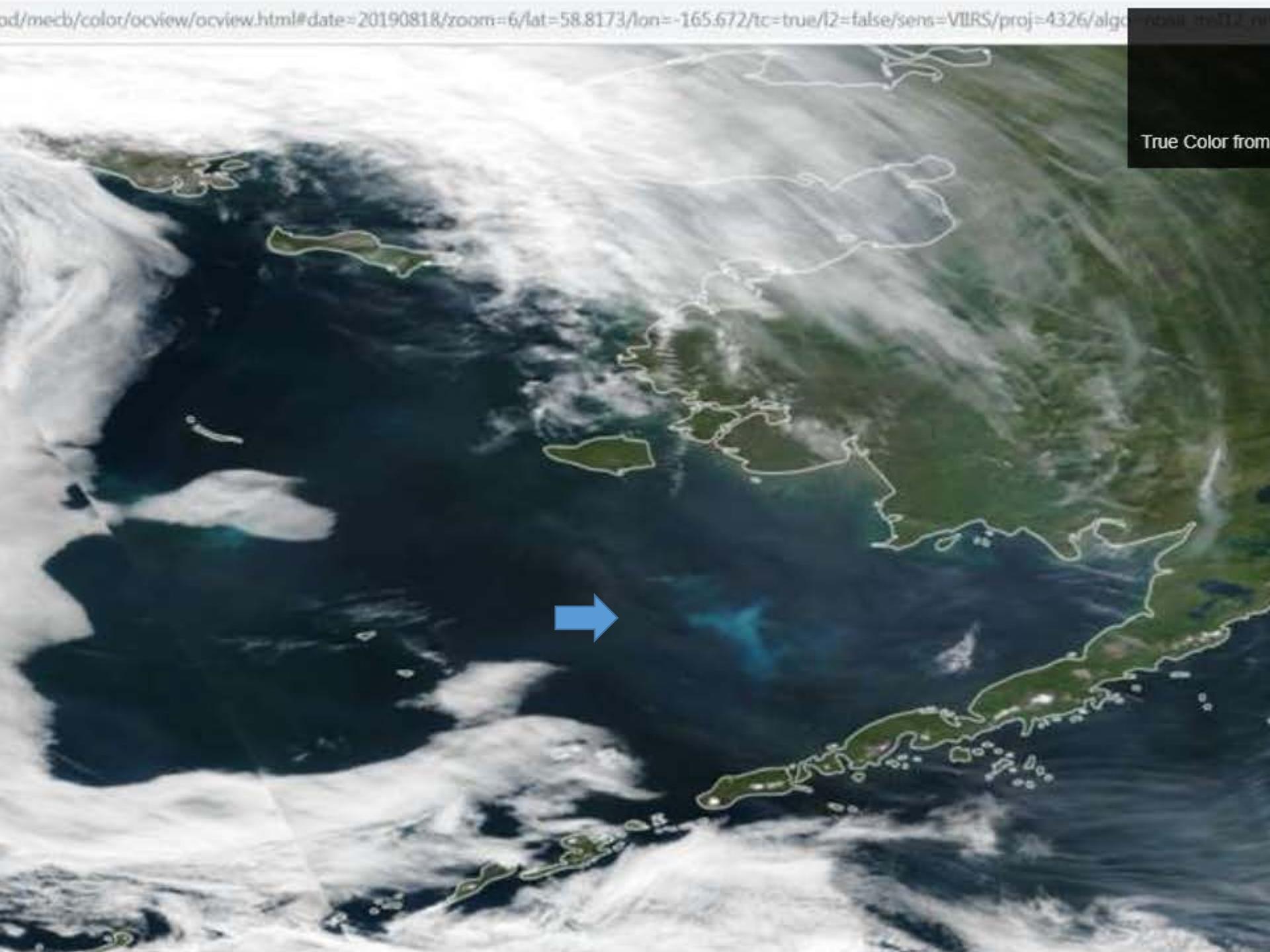
See Also

**Mass Die-off of Shearwaters (genus *Ardenna*)**

Egegik, Alaska, United States

JUL 30, 2019

[+ My Map](#)**Dead Birds, Including Short-tailed**



True Color from
VIIRS





Near Shishmaref

Within 100

KM

Go 

Enter Search Terms



View Options 



Topics: All  Date: Any  Region: Near Shishmaref  Type: Observations 

1 - 31 of 31



More dead marine mammals, birds found on region's beaches

Shishmaref, Alaska, United States

12 JUL 2019

 The Nome Nugget

 My Maps



Add krill and mussels to the list of unusual marine deaths in Northwest Alaska

Shishmaref, Alaska, United States

7 JUL 2019

 Anchorage Daily News

 My Maps



Dead Krill and Sea Birds, Stranded Ice Seals

Shishmaref, Alaska, United States

25 JUN 2019

 My Maps

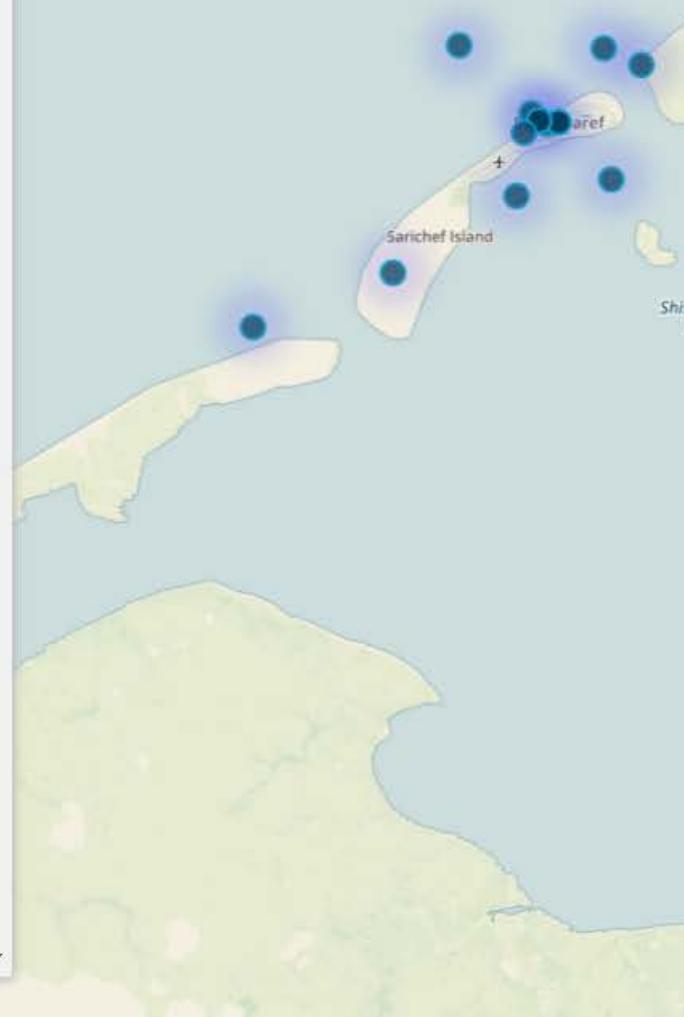


Rainbow Smelt (*Osmerus mordax*) With Bad Odor and Taste

Shishmaref, Alaska, United States

7 FEB 2019

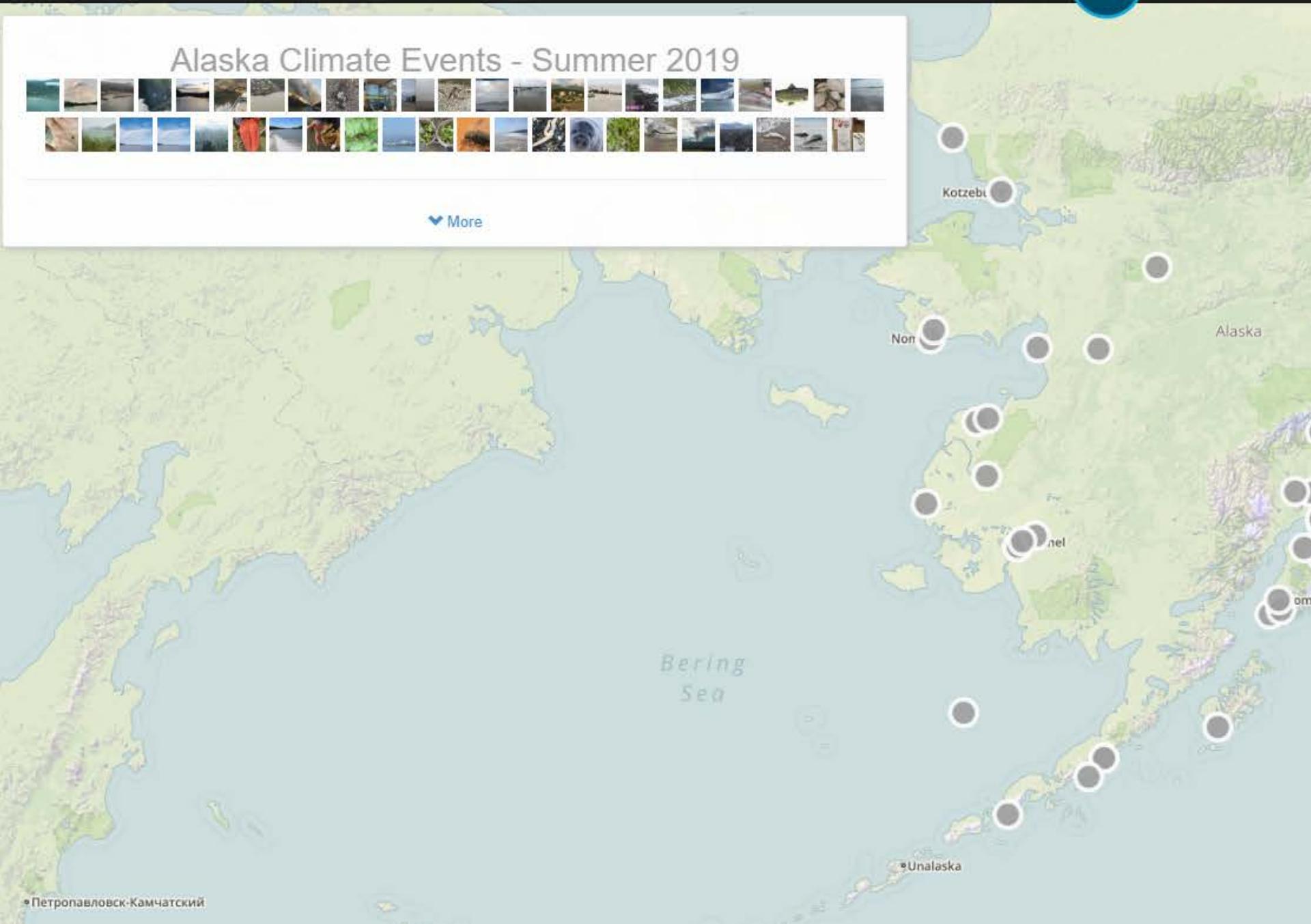
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Alaska Climate Events - Summer 2019



▼ More



Identifying health effects of climate change in Alaska

Mental Health



Allergic Reactions



Travel Safety



Waterborne Disease



Respiratory Health

Food Spoilage



Ice Hazards



Harmful Algae



Food Confidence



Nutrition



Allergies



Infrastructure Damage



Food Security

What is LEO Network and how does it work?

How is it being applied to address concerns about environmental change?



LEO Network was developed by the Alaska Tribal Health System beginning in 2012 as a strategy for gathering and sharing information about climate and other drivers of environmental change.

- Primary goal is to share knowledge
- Secondary to help answer questions and connect with resources
- Content is observational, not structured monitoring
- Takes holistic rather than topic specific approach
- Based on a social media (member owner) model
- Welcomes different knowledge systems
- Multi-lingual including indigenous languages
- User driven and user friendly

How do people use LEO?



Community Members – As a platform for sharing observations about significant environmental change, as witnessed by specific events. A way to raise awareness about pressing concerns and to connect with topic experts to receive technical support.



Public Health - A communication tool for engaging with communities, staying informed about emerging priorities and providing environmental health consultations.



Researchers and Agencies - a surveillance system for receiving local updates on emerging issues, for identifying experts and research partners, for learning about local change and vulnerabilities, and for providing event specific consultations.

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Researchers and Agencies - a surveillance system for receiving local updates on emerging issues, and priorities, for identifying experts and research partners, for learning about local change and vulnerabilities, and for providing event specific consultations.



Terry Chapin

Fairbanks Alaska United States
Institute of Arctic Biology
 UAF, University of Alaska Fairbanks



Adrienne Christensen

Anchorage Alaska United States
Native Village of Chenega



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 Aroostook Band of Micmacs



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Diomede Alaska United States
Environmental Coordinator DIO IGAP
 Native Village of Diomede



Anne-Marie Albrecht

Wendlingen am Neckar Baden-Württemberg Germany
M.Sc. Flood risk management (flash flood)
 Regierungspräsidium Tübingen

Interests and Expertise

■ Waters	1338
■ Weather	1274
■ Land	1265
■ Fish	1228
■ Ocean/Sea	1188
■ Plants	1164
■ Seasons	1109
■ Land Mammals	1086
■ Birds	1061
■ Ice and Snow	921
■ Sea Mammals	914
■ Human Health	770
■ Air	744
■ Energy	664
■ Invertebrates	620
■ Insects	599
■ Infrastructure	545
■ Fungi	491
■ Sanitation	483
■ Amphibians	467
■ Microbes	467
■ Transportation	425
■ Agriculture	421
■ Pets	404
■ Reptiles	381
■ Arachnids	354
■ Livestock	322
■ Other	198
■ Plants / Kelp	5
■ Surface Waters	5
■ Health	1

 **Apply Filter**

3359 Members

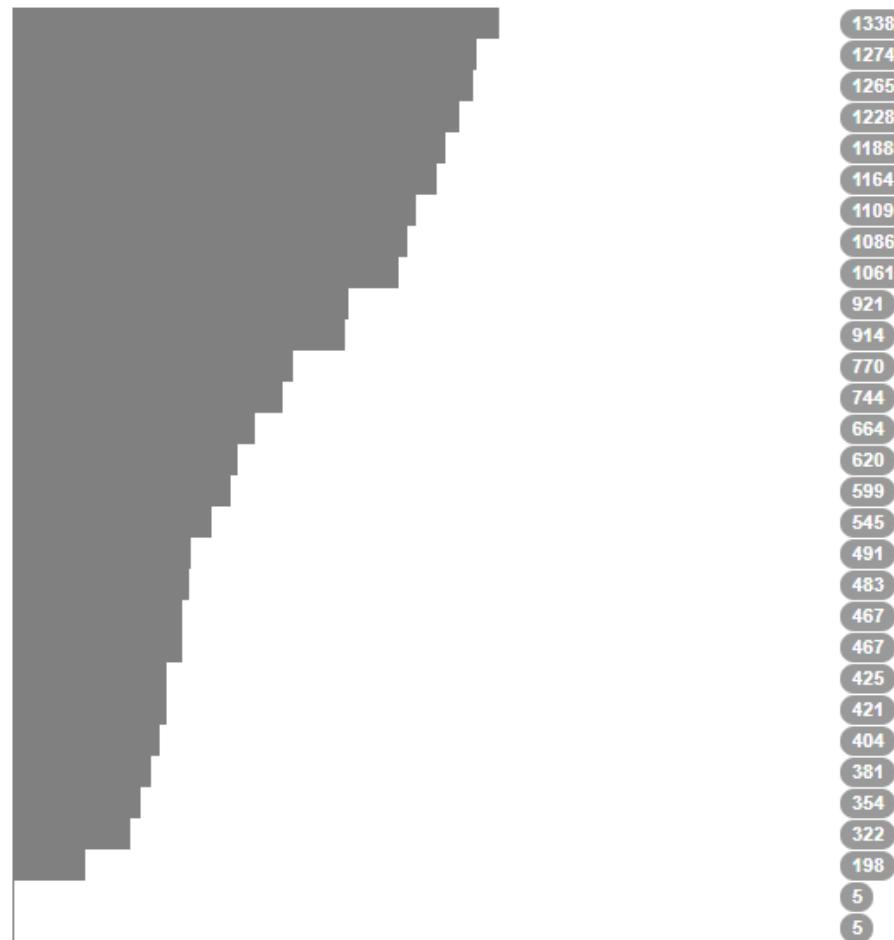
Basis of Knowledge

Local Knowledge
Scientific Knowledge
Indigenous Knowledge

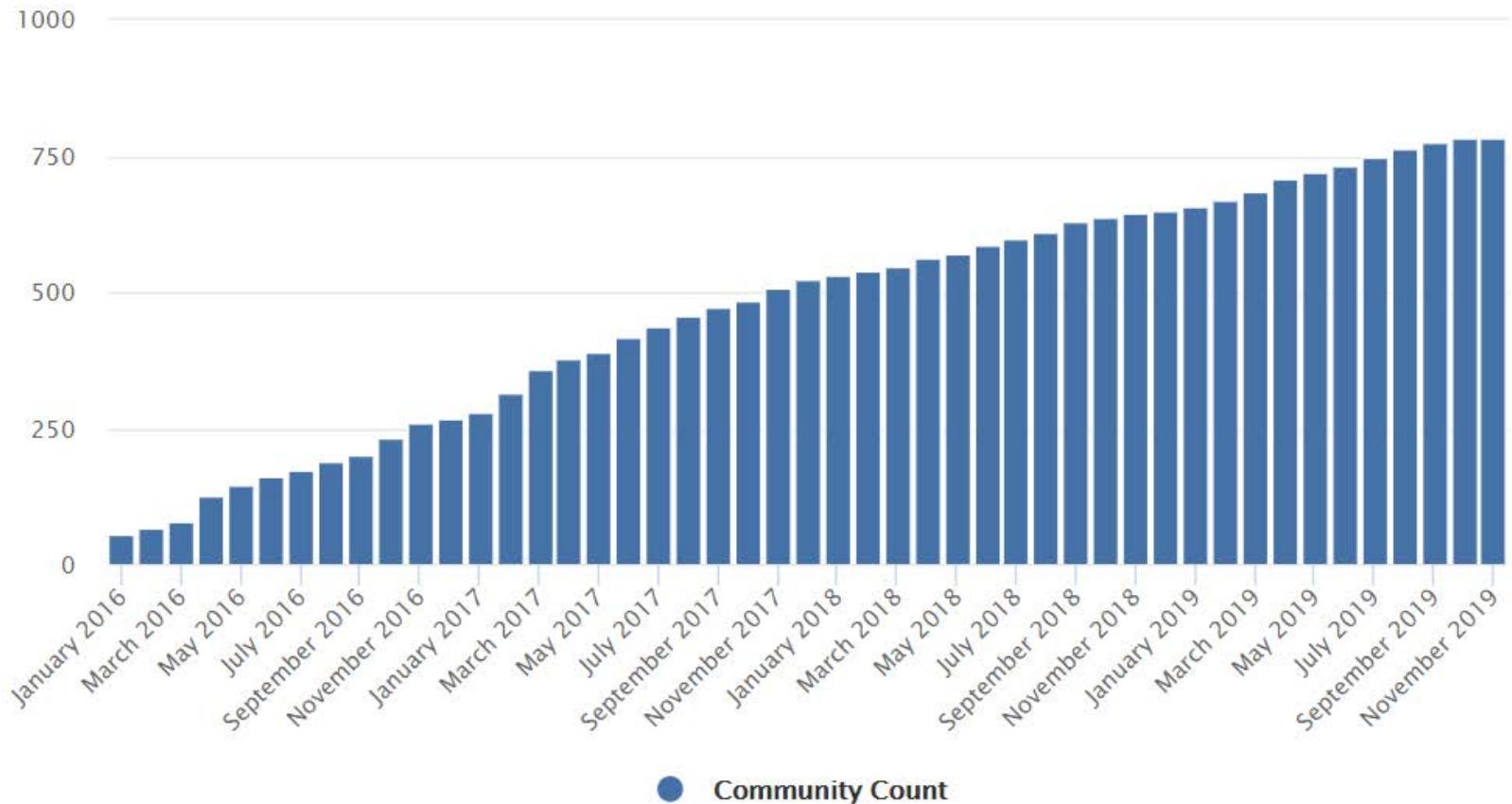


Interests and Expertise

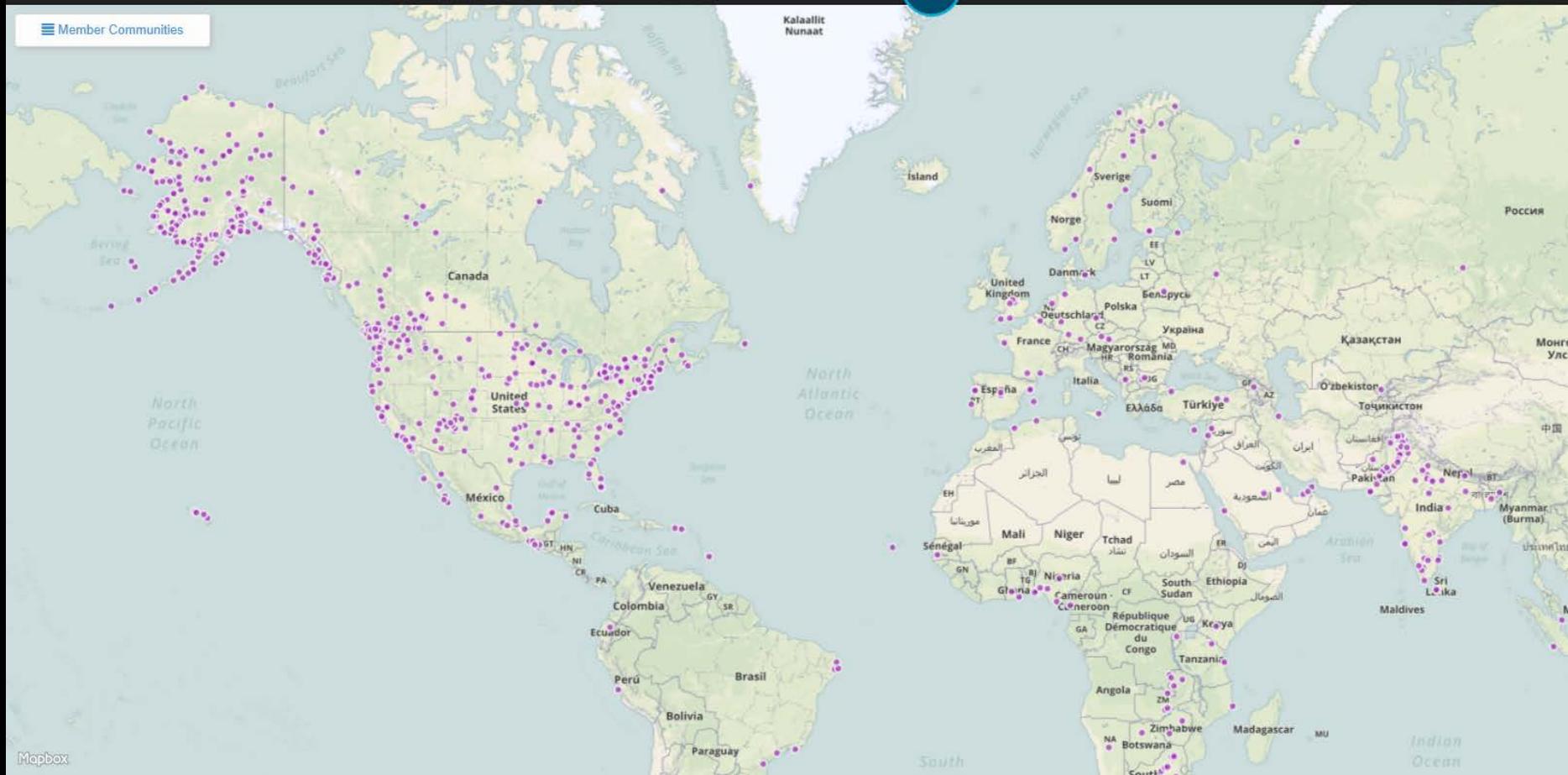
Surface Waters
Weather
Land
Fish
Ocean / Sea
Plants / Kelp
Seasons
Land Mammals
Birds
Ice and Snow
Sea Mammals
Human Health
Air
Energy
Invertebrates
Insects
Infrastructure
Fungi
Sanitation
Amphibians
Microbes
Transportation
Agriculture
Pets
Reptiles
Arachnids
Livestock
Other
Plants / Kelp
Surface Waters



Communities by Month

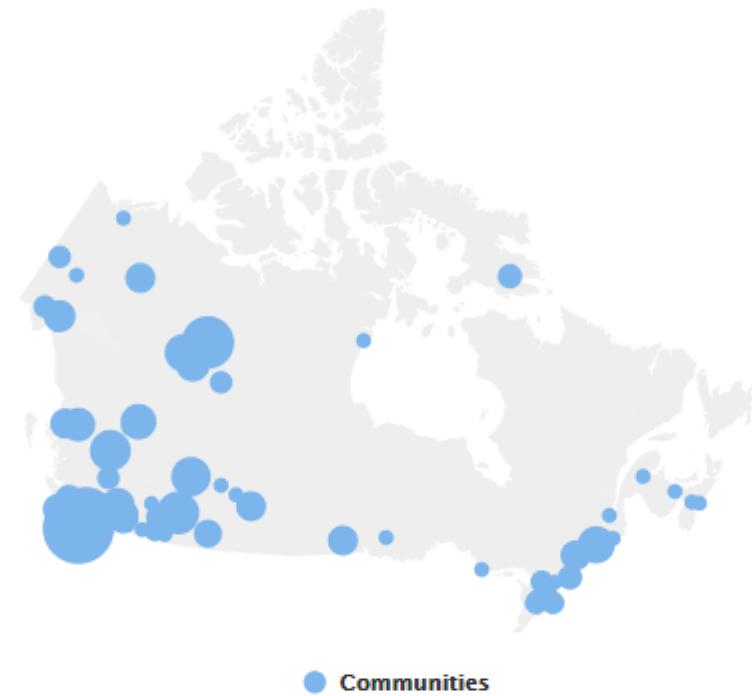
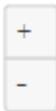


Member Communities

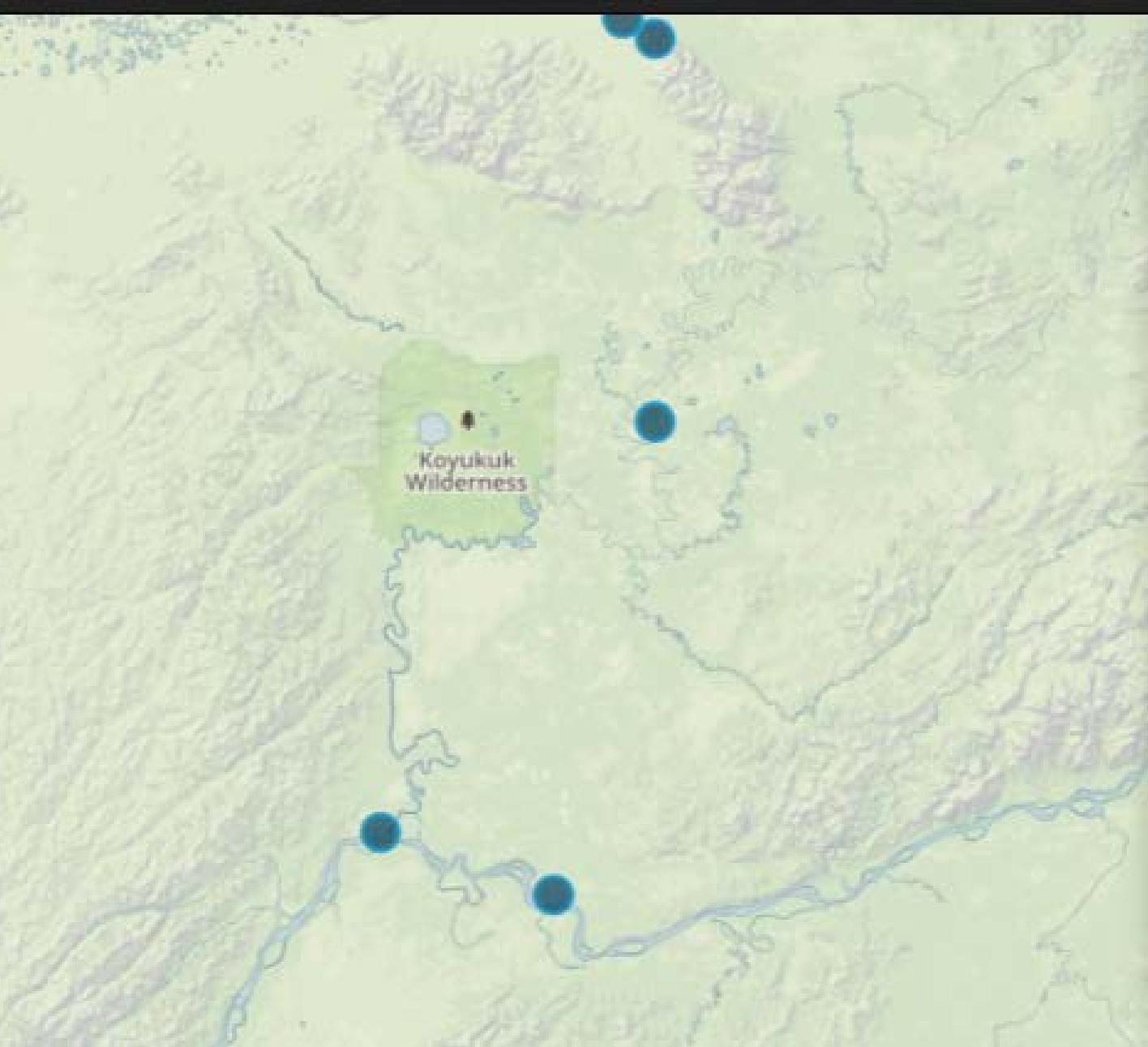


LEO Communities in Canada

⚙ Options



Name	Members
Victoria, British Columbia	72
Vancouver, British Columbia	44
Yellowknife, Northwest Territories	31
Calgary, Alberta	19
Prince George, British Columbia	15



English

Español

Français

Deutsch

Русский

Norsk

Svenska

Suomi

Dansk

Yup'ik

Portuguese

Монгол хэл

العربية

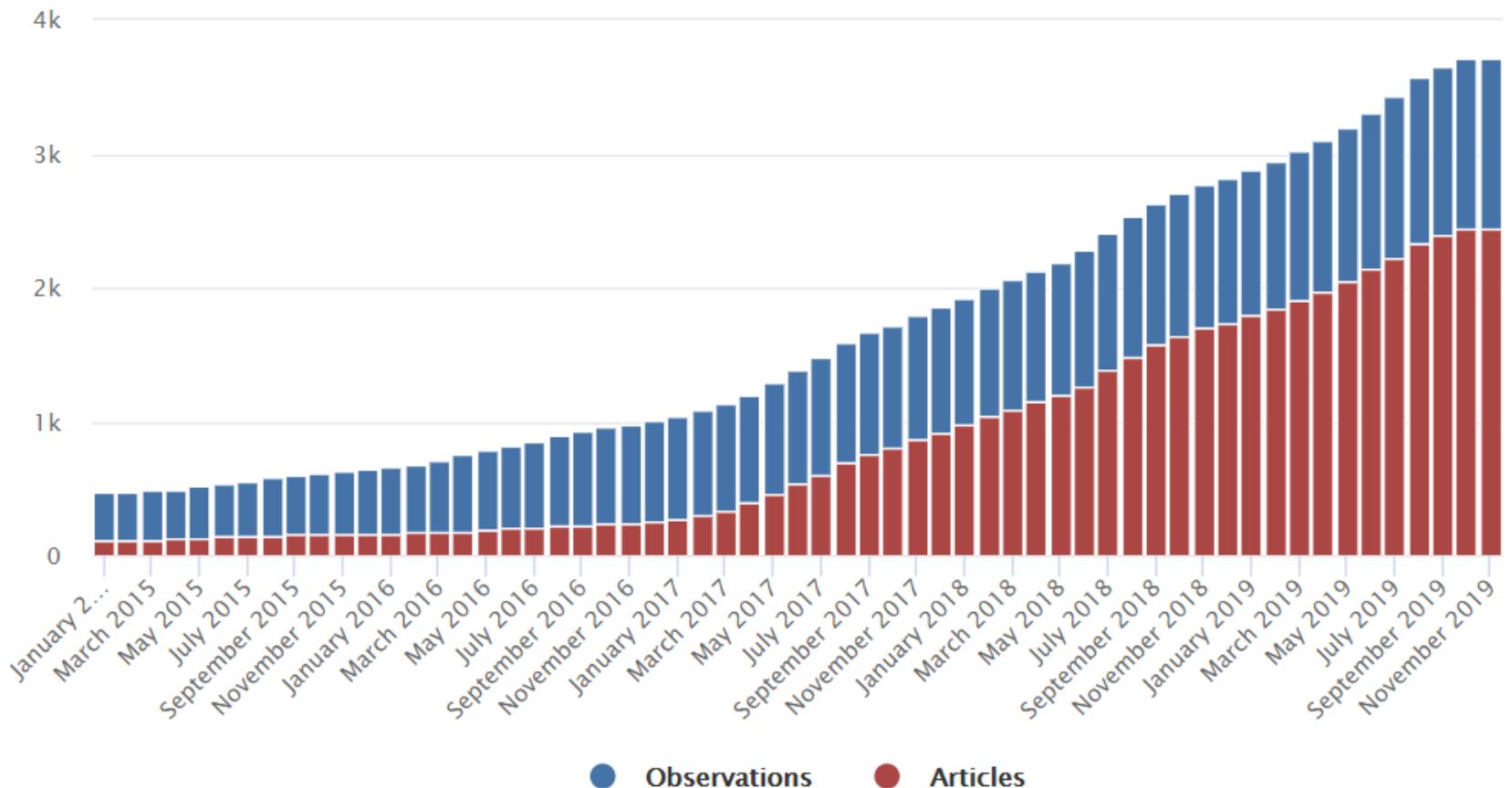
Davvisámegiella

Skolt Sámi

Íslenska

Українська

Observations/Articles by Month (Cumulative)





Flu Season is Approaching
We have flu shots available for 6 months and older.
Make your appointment now.

Barrow's eroding coastline reveals human bones

Author: [Kamala Kelkar](#) Updated: September 28, 2016 Published October 4, 2015

As Arctic Ocean waves from summer and fall storms eat away at Barrow's bluffs, they take land from the living -- and sometimes they expose the dead.

Last month, local archaeologist Anne Jensen anchored herself to two firefighters and rappelled down a mound being eroded by those waves. She found bones and the remains of a collapsed underground house about to break free from the dirt.

Subscribe now and get your first month for only \$1.99!

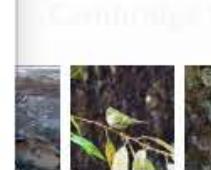


LEO Network
us understand
observations

search

Your Own Observation

Have you observed an unusual environmental or climate event in your area? Please share it with us.

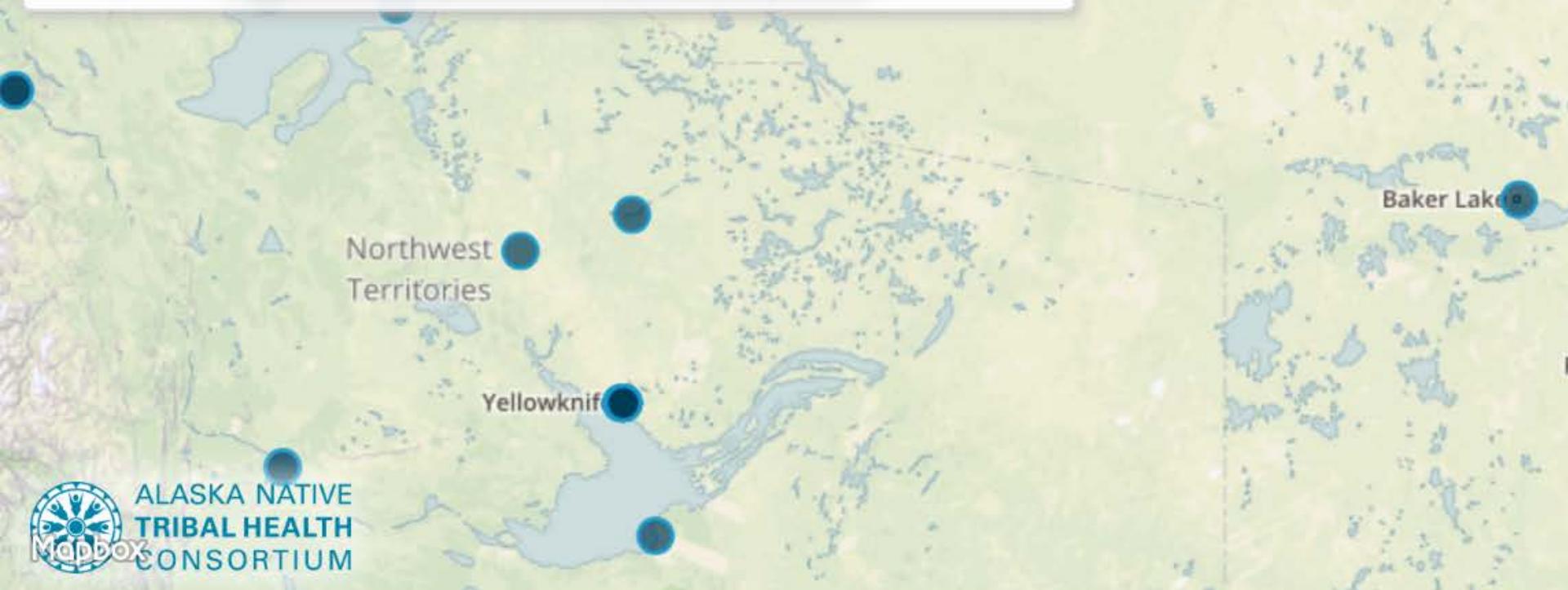


that help
oute your

ed Search

A News Article

Has your local news media reported on an unusual environmental or climate event? Please let us know.



Submit a News Article

Has an unusual environmental or climate event been covered in your local news? Please share it with us.

Please provide a link to the news story

Next ➔

Submit a News Article

Has an unusual environmental or climate event been covered in your local news? Please share it with us.

Please provide a link to the news story

<https://www.adn.com/alaska-news/article/barrows-eroding-coastline-spits-out-human-bones/2015/10/05/>

Next ➔

Thank you for submitting a news article to the LEO Network. Please review and edit this information before submitting to LEO.

 <https://www.adn.com/alaska-news/article/barrows-eroding-coastline-spits-out-human-bones/2015/10/05/>



 Anchorage Daily News

Barrow's eroding coastline reveals human bones

Next 

Publication

Anchorage Daily News

Author

Kamala Kelkar

Publication Date

10/05/2015



**Your Own Observation**

Have you observed an unusual environmental or climate event in your area? Please share it with us.



LEO Network
observations

search

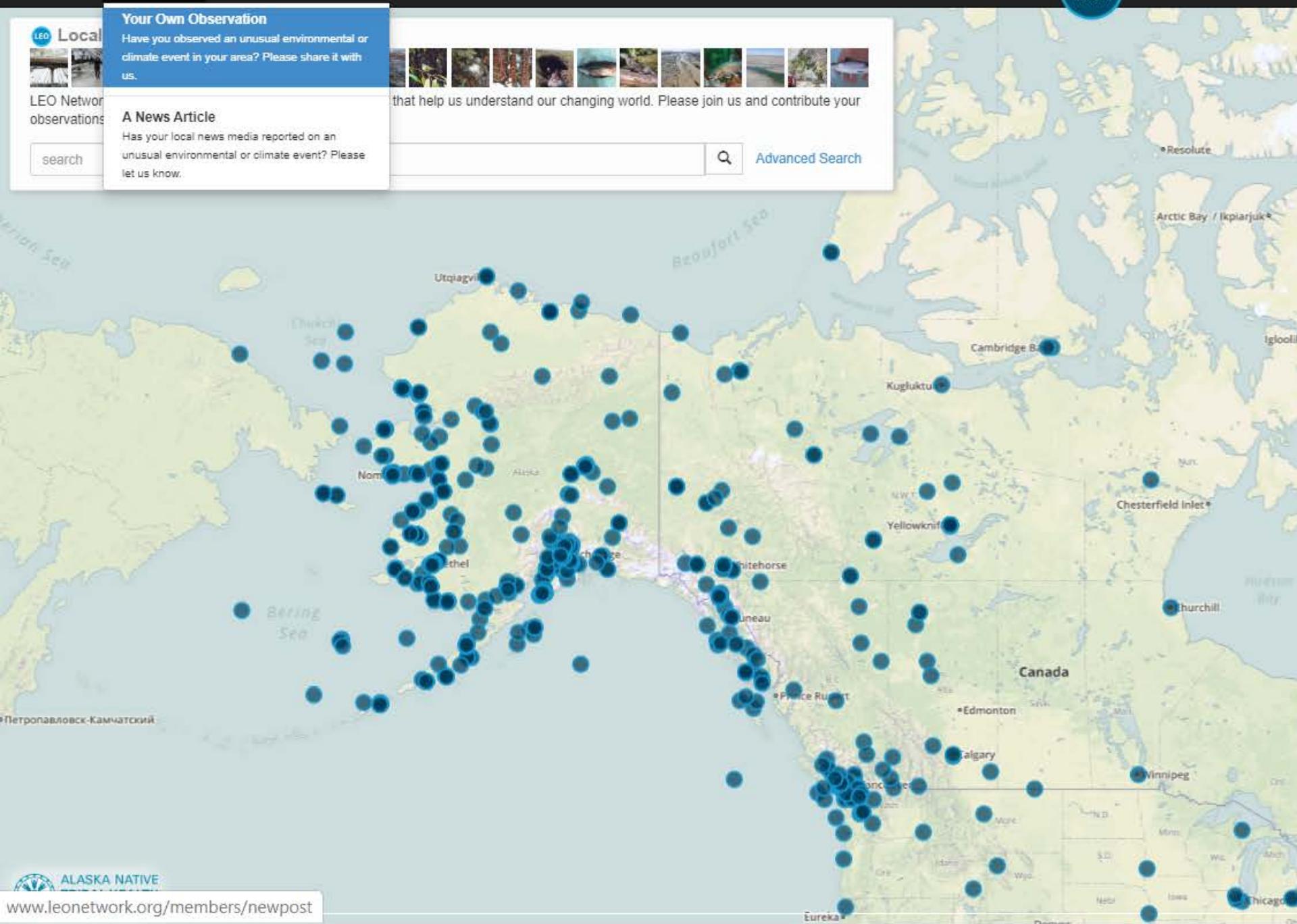
A News Article

Has your local news media reported on an unusual environmental or climate event? Please let us know.

that help us understand our changing world. Please join us and contribute your



Advanced Search



[Next ➔](#)

What's your headline?

This will be the title of your post

When did you make your observation?

[Next ➔](#)

What's your headline?

This will be the title of your post

Dozens of sick and dying caribou

When did you make your observation?

11/03/2019

 Dozens of sick and dying caribouNext 

Please describe your observation

Why is it unusual or significant?

My brother and I were traveling to our hunting camp. The weather was very warm for November and with the river open and the water higher than normal. We were twenty miles up just east of our hunting camp when we came across about twenty caribou lying on the ground...



JBMIT OBSERVATION



Next A small blue arrow pointing to the right, indicating a next action.

Add photos or files to support your observation

Add



SUBMIT OBSERVATION

Dozens of sick and dying caribou

Add photos or files to support your observation

Add



the-last-caribou.jpg

caption

attribution

Delete



Next

Where did you make your observation?



SUBMIT OBSERVATION

Dozens of sick

Where did y

Set Location

Set Location

x

Your Current Location

Near You

Search for Place

Enter Coordinates

Current Center of Map

Clear Location

Next >

Close

South
Pacific
Mapbox

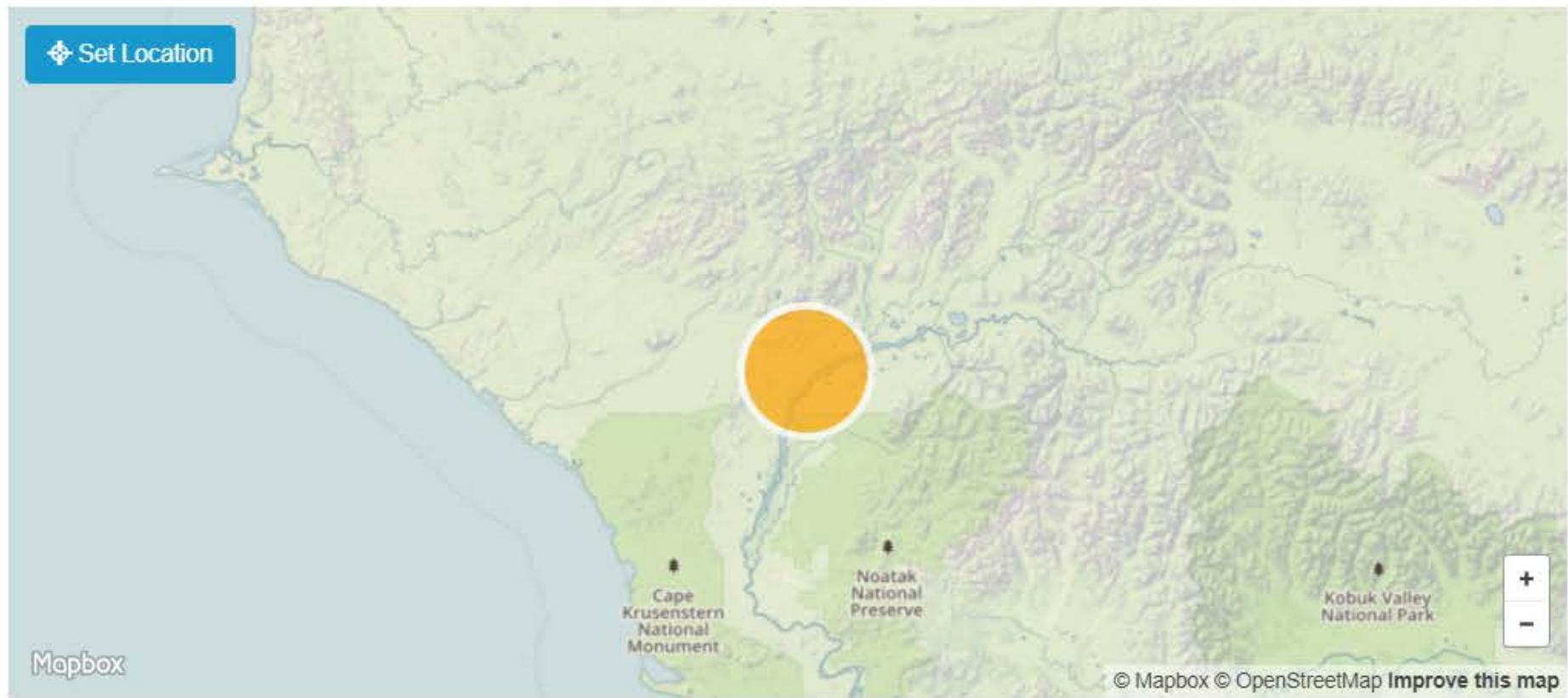
© Mapbox © OpenStreetMap Improve this map

Dozens of sick and dying caribou

Next ➔

Where did you make your observation?

Set Location



specify place name...

67.92101125483218,-162.806396484375

General Area

▼

Please help us categorize your observation

Natural Environment

What aspects of the **natural environment** are relevant to this post? Choose all that apply.



Weather



Seasons



Ocean / Sea



Surface Waters



Groundwater



Ice and Snow



Land



Air



Plants / Kelp



Fish



Marine Mammals



Land Mammals



Birds



Invertebrates



Insects



Arachnids



Reptiles



Amphibians



Fungi



Microbes

Unusual or Unexpected Event

Why is this post **unusual or unexpected**? What about this event deviates from the norm?

 <input type="checkbox"/> Extreme Temperature	 <input type="checkbox"/> Extreme Precipitation	 <input type="checkbox"/> Extreme Wind	 <input checked="" type="checkbox"/> Death / Die-off / Decline	 <input type="checkbox"/> Deformity / Disease	 <input type="checkbox"/> Unusual Range / Sighting
 <input type="checkbox"/> Unusual Abundance	 <input type="checkbox"/> Infestation	 <input type="checkbox"/> Seasonal Timing	 <input type="checkbox"/> Unusual Animal Behavior	 <input type="checkbox"/> Flood	 <input type="checkbox"/> Wildfires
 <input type="checkbox"/> Erosion	 <input type="checkbox"/> Landslide / Avalanche	 <input type="checkbox"/> Drought	 <input type="checkbox"/> Algal Bloom	 <input type="checkbox"/> Cyclone / Hurricane	 <input type="checkbox"/> Thunderstorm
 <input type="checkbox"/> Storm Surge	 <input type="checkbox"/> Earthquake	 <input type="checkbox"/> Volcano	 <input type="checkbox"/> Sea/Land Level Change	 <input type="checkbox"/> Permafrost Change	 <input type="checkbox"/> Pathogen

Please help us categorize your observation

Impact on Human Environment

How has the **human environment** been impacted by the event described in this post?

 <input type="checkbox"/> Health	 <input type="checkbox"/> Infrastructure	 <input type="checkbox"/> Transportation	 <input type="checkbox"/> Energy	 <input type="checkbox"/> Sanitation	 <input type="checkbox"/> Economic Impact
 <input type="checkbox"/> Cultural Impact	 <input type="checkbox"/> Recreation	 <input checked="" type="checkbox"/> Food Security	 <input type="checkbox"/> Water Security	 <input type="checkbox"/> Air Quality	 <input type="checkbox"/> Pollution
 <input type="checkbox"/> Harvest Failure	 <input type="checkbox"/> Agriculture	 <input type="checkbox"/> Aquaculture	 <input type="checkbox"/> Livestock	 <input type="checkbox"/> Pets	 <input type="checkbox"/> Displacement
 <input type="checkbox"/> Forestry	 <input type="checkbox"/> Burial Site	 <input type="checkbox"/> Fisheries			

 Dozens of sick and dying caribou

Ready to submit your observation

Thank you for contributing to the LEO Network.

 Save

 Submit to LEO

Home

[+ Create](#)

Published

Approved

Under Review

Draft or Pending

Rejected

Observations

31

11

14

Projects

News Articles

741

1

Major Events

2

Tweet Observations



Victoria Kotongan

Unalakleet Alaska, United States

Native Village of Unalakleet
Environmental Specialist

[✉ Send a Message to Victoria Kotongan](#)

Contributions [View on Map](#)



Unalakleet River Goes Out Early

Unalakleet, Alaska, United States

APR 27, 2016

[+ My Maps](#)



Good Year for Ptarmigan (*Lagopus lagopus*)

Unalakleet, Alaska, United States

DEC 30, 2015

[+ My Maps](#)



Spring River Ice Change

Unalakleet, Alaska, United States

MAY 26, 2015

[+ My Maps](#)



Worms *Splendidofilaria pectoralis* in Grouse and Ptarmigan

Unalakleet, Alaska, United States

OCT 7, 2012

[+ My Maps](#)

Collaborators



Caroline Van Hemert

Anchorage Alaska, United States

Research Wildlife Biologist

US Geological Survey - USGS



Todd O'Hara

Fairbanks Alaska, United States

UAF, University of Alaska Fairbanks



Victoria writes: On Saturday the 6th and Sunday the 7th I went grouse hunting up along the road to the White Alice site. 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. Three of the six grouse had these long skinny white worms on the meat.



Victoria writes: On Saturday the 6th and Sunday the 7th I went grouse hunting up along the road to the White Alice site. 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. Three of the six grouse had these long skinny white worms on the meat.

Todd writes: Today we necropsied seven birds. Three of 7 had the subcutaneous parasites that were of interest to Sissy and these were collected and placed in 10% buffered formalin. In addition, the gastrointestinal system was collected and placed in 10% buffered formalin. These we will let fix for about 7 days. After that we will place them in a small amount of water for shipping to Colorado State University where Dr. Ballweber's team will work on them.

OCTOBER 7, 2012 Chukchi

Worms *Splendidofilaria pectoralis* in Grouse and Ptarmigan

Unalakleet, Alaska, United States



BIRDS

Nome

Alaska

Bethel

Anchorage

300 km

200 mi

Mapbox



Species of nematode *Splendidofilaria pectoralis* has been described in blue grouse (*Dendragapus obscurus pallidus*) in British Columbia, but never as far north and west as Unalakleet.

Observation: On Saturday the 6th and Sunday the 7th I went grouse hunting up along the road to the White Alice site. 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. Three of the six grouse had these long skinny white worms on the meat. On Sunday the 7th all four of the grouse had worms on or in the meat. Two had worms coming out of the meat instead of just being coiled on top of the meat. I love hunting and eating grouse. It's a food source of the community. I am concerned about the health of the birds and the safety of the meat for food. Victoria Kotongan

LEO says: We are currently working with Victoria, ADFG and UAF Wildlife Toxicology Lab and others to help identify the type of worm, and we are surveying other members of the LEO network for any additional information on this type of event. Victoria has been in contact with Richard Merizon, ADFG. Mr. Merizon stated in an email to Victoria, "I have checked with our state veterinarian on your photos. The worms in the photos are some kind of filaroid, transmitted bird to bird by a biting arthropod via microscopic larvae. Humans are not susceptible (the worm itself is not infectious to anything, bird or human). The presence of the parasite does not affect the edibility of the bird." Victoria is sending the frozen birds to the Wildlife Toxicology Lab at UAF for necropsy and the worms will be removed and sent to Colorado State University for identification. M. Brubaker

UAF Wildlife Pathology Lab Consult: Dr. Todd O'Hara writes: "We have completed step 1 of the grouse parasite investigation. Today we necropsied seven birds. Three of 7 had the worm in the breast muscle. The worm is a filaroid, likely *Splendidofilaria pectoralis*." Dr. O'Hara continues, "The worms were removed and sent to Colorado State University for identification."

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Contributing Members



Victoria Kotongan

Observer

Unalakleet, Alaska, United States

Environmental Specialist

Native Village of Unalakleet

[Send Message](#)

Todd O'Hara

Consultant

Fairbanks, Alaska, United States

UAF, University of Alaska Fairbanks



Caroline Van Hemert

Consultant

Anchorage, Alaska, United States

Research Wildlife Biologist

US Geological Survey - USGS

[Send Message](#)

Latitude 63.888988494873

Longitude -160.602615356445

[Nearby](#)

Kotongan, Victoria, Todd O'Hara and Caroline Van Hemert. 2012. Worms *Splendidofilaria pectoralis* in Grouse and Ptarmigan. LEO Network (leonetwork.org). Accessed 6 November 2019.

Projects



Bering Strait

JAN 1, 2012

77 Observations

Documents



Wildlife health in a rapidly changing North: focus on avian disease

Van Hemert, C., Pearson J. M., Handel C. M.

Climate-related environmental changes have increasingly been linked to emerging infectious diseases in wildlife. The Arctic is facing a major ecological transition that is expected to substantially affect animal and human health. Changes in the phenology or environmental conditions that result from climate warming may promote novel species assemblages as host and pathogen ranges expand to

Eroding



View Options ▾

Topics: All ▾ Date: Any ▾ Region: Entire World ▾ Type: Observations+1 ▾

1 - 20 of 56

[Next →](#)

Eroding bluff threatens road

Chevak, Alaska, USA

20 JUL 2012

Eroding bluff threatens community transportation access

[+ My Maps](#)

Thawing and Eroding Trail

Golovin, Alaska, United States

26 SEP 2012

Permafrost thaw is causing trail in Golovin to erode.

[+ My Maps](#)

'Pretty unnerving': Eroding cliff creeps closer to popular trail at Point Woronzof

Susitna, Alaska, United States

27 MAY 2019

City park staff have set up barriers in hopes of encouraging passersby to stay far away. Potential fixes could include putting up a wall and relocating the bike path or road.

 Anchorage Daily News[+ My Maps](#)

Erosion and Weird Growth on Tundra

Kotlik, Alaska, United States

20 AUG 2019

An unidentified fungus is growing along the eroding coastal bank.

[+ My Maps](#)

Topic

- Land 33
- Infrastructure 23
- Erosion 19
- Ocean / Sea 18
- Surface Waters 13
- Weather 13
- Transportation 11
- Ice and Snow 8
- Cultural Impact 7
- Burial Site 5
- Sanitation 5
- Economic Impact 4
- Landslide / Avalanche 4
- Permafrost Change 4
- Birds 3
- Health 3
- Plants / Kelp 3
- Recreation 3
- Storm Surge 3
- Energy 2
- Extreme Precipitation 2
- Fish 2
- Flood 2
- Food Security 2
- Fungi 2
- Health 2
- Deformity / Disease 1
- Death / Die-off / Decline 1
- Reptile 1

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+ My Maps

Topics: All Date: Any Region: Entire World Type: Observations+1

Any Date

Past Week

Past Month

Past Year

Next

More Options...



Eroding bl

Chevak, Alaska, United States

20 JUL 2012

Eroding bluff threatens community transportation access

My Maps



Thawing and Eroding Trail

Golovin, Alaska, United States

26 SEP 2012

Permafrost thaw is causing trail in Golovin to erode.

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Anchorage Daily News

My Maps



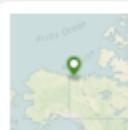
Erosion and Weird Growth on Tundra

Kotlik, Alaska, United States

20 AUG 2019

An unidentified fungus is growing along the eroding coastal bank.

My Maps



At Herschel Island, history is eroding

Herschel Island, Yukon Territory, Canada

27 JAN 2017

Herschel Island has seen a lot of people come and go. The Inuvialuit have used the place, known as Qikiqtaruk in Inuvialuktun, for at least 1,000 years.

Yukon News

My Maps



Easter Island Is Eroding

Easter Island, Chile

15 MAR 2018

Rising ocean levels are causing waves to break on the statues and platforms built a thousand years ago. The island risks losing its cultural heritage. Again.

New York Times

My Maps



Greenland Erosion: Drowning in Past History

Topics: All ▾

Date: Any ▾

Region: Entire World ▾

Type: Observations+1 ▾

Entire World

1

- Or limit to:
- A country or region
- A community or location
- A latitude band
- A bounding box
- A polygon

My Maps



Eroding bluff threatens...

Chevak, Alaska, USA

20 JUL 2012

Eroding bluff threatens commu...



Thawing and Eroding Trail

Golovin, Alaska, United States

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20 AUG 2019

An unidentified fungus is growing along the eroding coastal bank.

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At Herschel Island, history is eroding

Herschel Island, Yukon Territory, Canada

27 JAN 2017

Herschel Island has seen a lot of people come and go. The Inuvialuit have used the place, known as Qikiqtaruk in Inuvialuktun, for at least 1,000 years.

Yukon News

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Easter Island Is Eroding

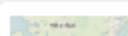
Easter Island, Chile

15 MAR 2018

Rising ocean levels are causing waves to break on the statues and platforms built a thousand years ago. The island risks losing its cultural heritage. Again.

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20 JUL 2012

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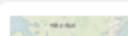
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Coastal Erosion: Drowning Roads and...



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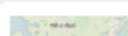
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Coastal Erosion: Drowning Road and

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Thawing ground is sinking at historic mass burial site

Brevig Mission, Alaska, United States



100 km

50 mi

Mapbox



This year was one of the warmest and wettest in recorded history and permafrost thaw is causing the ground at the mass grave site to sink. With origins in the Spanish Flu epidemic of 1918, watchful management to preserve site integrity is important.

Observation by Johnee Seetot: The mass grave is to just adjacent to community grave site, to the east, about 75-100 feet away. At the mass grave site the crosses are falling down. When they get separated from the grave site it's a big problem. The main grave area (to the north) has fallen crosses, and you can see that the edge of the area atop the creek side is showing signs of erosion.

[LEO Network Editor Comments]: This year has been the second warmest and second wettest on record (Nome weather station). These conditions are accelerating permafrost thaw in some areas, and resulting in land subsidence and erosion (see Johnee Seetot's

Contributing Members

**James Olanna** Observer

Brevig Mission Alaska, United States

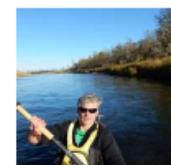
Native Village of Brevig Mission

[Send Message](#)**Johnee Seetot** Observer

Brevig Mission Alaska, United States

Coordinator IGAP

Native Village of Brevig Mission

[Send Message](#)**Mike Brubaker** Consultant

Anchorage Alaska, United States

Director **Community Environment and Health**

ANTHC

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[Gravesite Erosion](#)

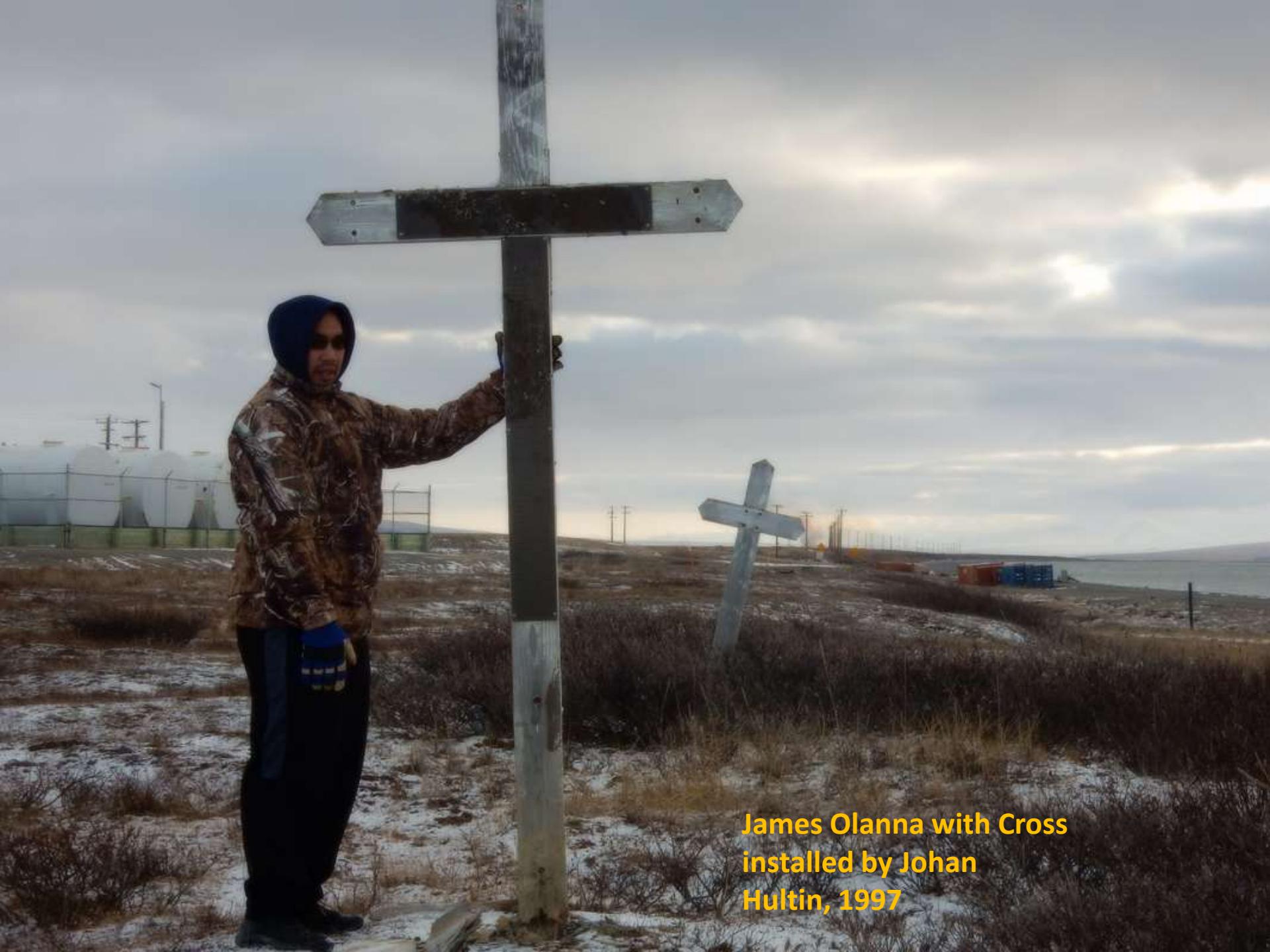
Teller, Alaska, United States

JUN 6, 2014

[My Maps](#)[As permafrost thaws, Western Alaska village cemeteries sink into swampland](#)

ADN Anchorage Daily News

Kongiganak, Alaska, United States

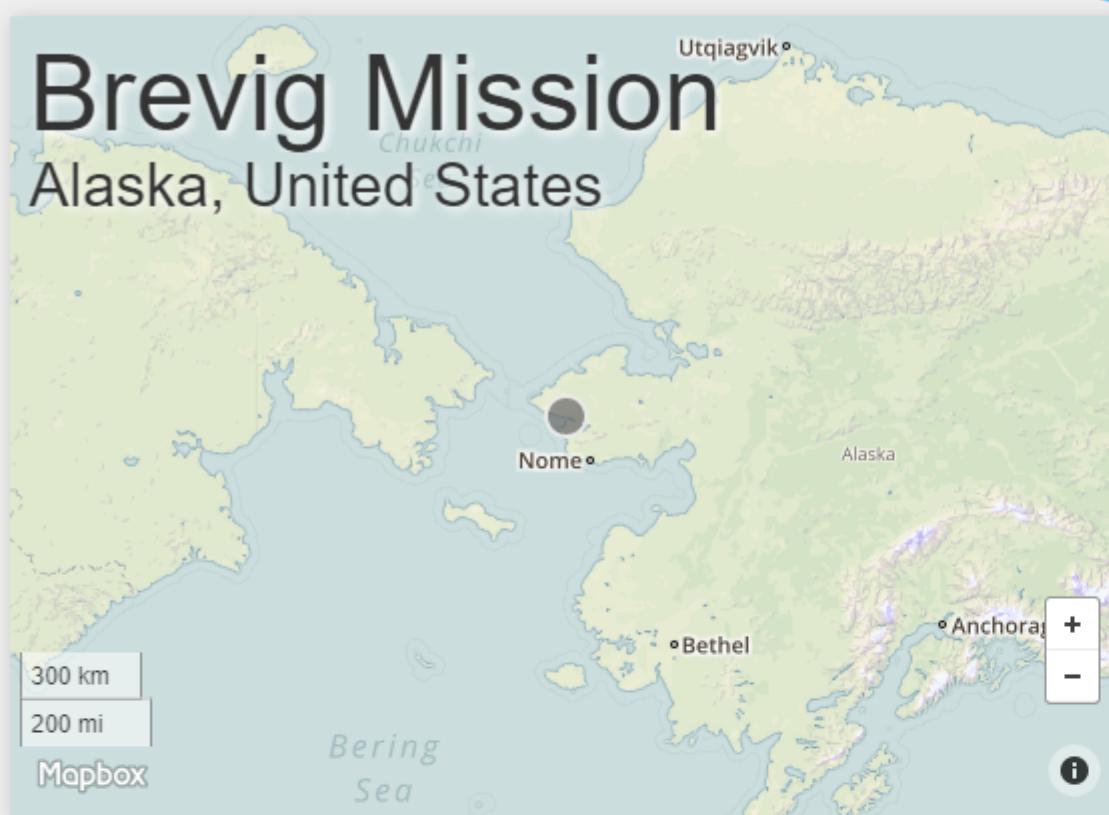


James Olanna with Cross
installed by Johan
Hultin, 1997



Brevig Mission

Alaska, United States



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Blue Mussel (*Mytilus edulis*) Die-Off

Port Clarence, Alaska, United States

20 JUN 2019

"When we looked over the side of the boat, we saw clumps of mussels floating up the whole Tuksuk channel. No one has ever heard of something like this before."

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Daily Satellite Imagery

Daily imagery from NASA satellites VIIRS, Aqua and Terra

Weather

Historical weather from weather stations near Brevig Mission

ShoreZone Photos

Aerial photography near Brevig Mission from ShoreZone.

FAA Webcam Photos

Aviation photos near Brevig Mission.

Climate Projections

Climate projections for Brevig Mission from SNAP.

Community Maps

Maps of Brevig Mission from State of Alaska DCRA.

Google Earth

High-resolution aerial imagery of Brevig Mission.

6 LEO Members

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 Ben Attatayuk

 Dora Olanna



Google

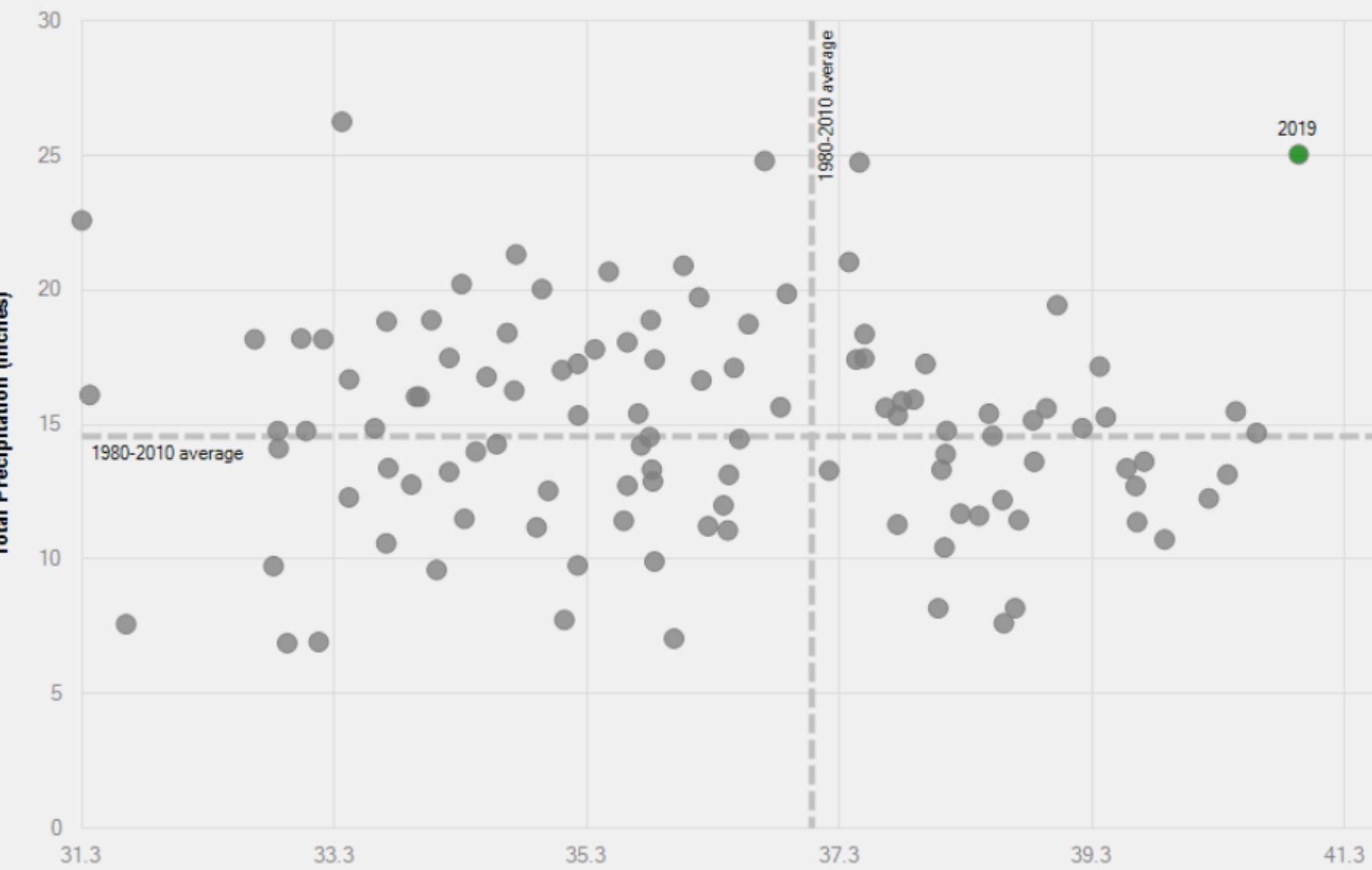
CNES / Airbus IBCAO Landsat / Copernicus Maxar Technologies TerraMetrics





Annualized Temperature & Precipitation

HOME MUNI AP / For the period Jan 1 to Nov 2





Handling Human Remains from Burial Sites and Cemeteries Fact Sheet

Background

Many of Alaska communities are situated along the coastline or along winding braided rivers, to support subsistence lifestyles. Pounding Arctic storms, continuously changing riverbeds, melting permafrost, and earthquakes endanger traditional burial grounds and more modern cemeteries located in these communities. Each year there are one or two reports that caskets and human remains have become exposed due to erosion or other forces of nature. In addition, human-made construction and building also encroach on crypts, burial grounds and cemeteries, requiring human remains to be moved to new locations.

Potential health risks

Individuals who are involved in handling human remains may have concerns about their risk for acquiring infectious diseases from the bodies they are moving. The diseases that most often cause concern are tuberculosis, influenza, and smallpox. Each of these diseases caused serious epidemics and many deaths at various points in Alaska's history.

Desiccated remains are considered very low risk, but remains with soft tissue pose a higher level of concern. Polymerase chain reaction (PCR) and other studies have identified organisms in Egyptian mummies and other historical remains; however, these organisms have not been found to be viable/infectious. Furthermore, viable influenza virus from unearthed body tissues of people who died from the Spanish flu in 1918 has never been recovered in culture, even from tissues that have remained frozen.

Recommendations

Persons involved in excavating, storing and handling human remains from burial grounds and cemeteries, should consider precautions in the following circumstances:

- Bodies recovered from sealed coffins
- Bodies that are constantly frozen or in very cold environments, or
- Individuals who are known to have died from smallpox, anthrax, or tetanus.

Recommended precautions for persons working with human remains:

- 1) Use barrier precautions
 - a. Wear latex or vinyl gloves to protect your hands when handling human remains or caskets;
 - b. Protective eyewear;
 - c. Covering for regular clothing that is disposable or can be washed with bleach.
- 2) Use disposable dust masks in enclosed environments or where there may be a lot of dust in the air in an outdoor setting.
- 3) Wash hands immediately after gloves are removed. If running water and soap aren't available, use a waterless hand wash product with 70% alcohol.
- 4) Avoid eating and drinking or smoking at the work area.
- 5) Cover all open skin lesions.
- 6) Place any human remains found outside of caskets or from damaged and opened caskets in body bags.

For more information about laws and protocols pertaining to the discovery of human remains in Alaska, see <http://dnr.alaska.gov/parks/oha/humanremainshandout.pdf>

June 18, 2013



Photo: Mr. Percy E. Hultin



Johan Hultin Expedition, 1951

Advisor	Advisor	Observer	Observer	Consultant
 <p>Anahma Shannon Nome Alaska, United St...</p> <p>Environmental Department Kawerak Inc.</p>	 <p>Tom Wolforth Cultural Resource Manager and Tribal Liaison Department of Military and Veterans Affairs</p>	 <p>James Olanna Brevig Mission Alaska...</p> <p>Native Village of Brevig Mission</p>	 <p>Johnee Seetot Brevig Mission Alaska...</p> <p>Coordinator IGAP Native Village of Brevig Mission</p>	 <p>Mike Brubaker Anchorage Alaska, Uni...</p> <p>Director Community Environment and Health ANTHC</p>
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Advisor	Advisor
 <p>Louisa Castrodale Anchorage Alaska, Uni...</p> <p>Alaska Dept. of Health and Social Services - DHSS</p>	 <p>Racheal Lee Nome Alaska, United St...</p> <p>Environmental Health Director Norton Sound Health Corporation</p>



Teller, Alaska



St. Michael, Alaska



St. Michael, Alaska



Point Hope, Alaska

Thawing Burial Sites



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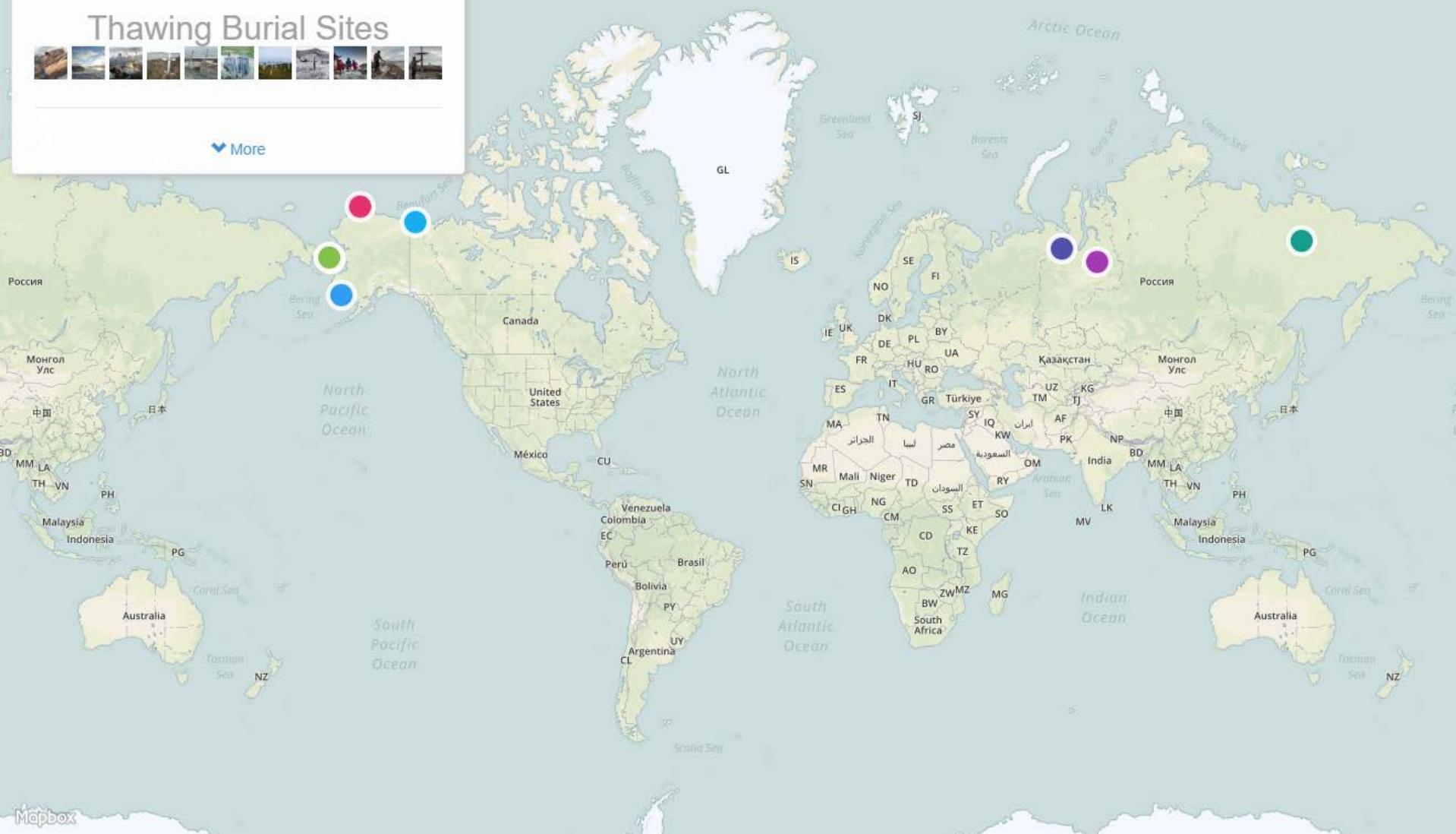
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Anthrax
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Thawing Burial Sites



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Thawing Burial Sites

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Medieval Child's Burial Unearthed in Northern Russia

Salekhard, Yamalo-Nenetskiy Avtonomnyy Okrug, Russia
28 APR 2017

Archeology

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Eroding Arctic coastline reveals human bones

Utqiagvik, Alaska, United States
7 OCT 2015

When a storm exposes human remains in Barrow, there isn't an established protocol. They are usually given to the federally recognized Native Village of Barrow for repatriation.

Eye on the Arctic

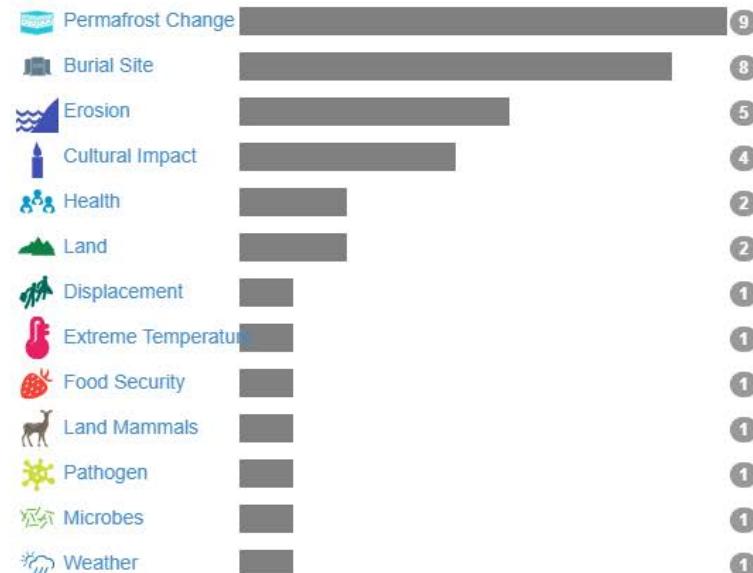
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Siberian Heatwave Sparks Anthrax Outbreak, Killing A Child And Thousands Of Reindeer

2 AUG 2016
Russian officials have said the death of a 12-year-old boy, a member of a reindeer-herding family from the Yamal tundra 1,300 miles north of Moscow, was the first fatality in Siberia



Topics



Years



Seasons



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scombroid

dead (seabirds | "sea birds")

seal (stranding | beaching | "die-off" | mortality)

"paralytic shellfish poisoning"

krill + (washup | "wash-up" | "die-off" | stranding)

bee (collapse | disease | "die-off") -spelling

invasive seaweed

"mycoplasma ovipneumoniae"

dog illness Norway

"puget sound" "atlantic salmon"

(caribou | deer | moose | reindeer) ("wasting disease" | "chronic wasting disease")

siberia + wildfires

landslide "heavy rain"

"unusual mortality event"

"dromoic acid" "del norte"

(bird | murre | seabird) "die-off"

"heat wave"

"spruce bark beetle"

walrus ("haul out" | "haulout" | "haul-out")

matanuska river erosion

"mful algal bloom"

ADN	Alaska Public	All	Arctic Sounder	CBC	Fairbanks News-Miner	Iceland Review	Juneau Empire	RUV	Siberian Times	Spokane Spokesman-Review	Sveriges Radio	YLE
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