



Understanding Environmental Change Using the Local Environmental Observer (LEO) Network

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Anchorage, Alaska, USA





LEO Local Environmental Observer Network



LEO Network members share unusual environmental events that help us understand our changing world. Please join us and contribute your observations or news articles.

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Third Massachusetts resident dies of EEE, eight deaths so far this year in United States

24 Sep 2019

Freetown, Massachusetts, United States



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Basis of Knowledge

- ☐ **Local Knowledge** 1831
- ☐ **Scientific Knowledge** 1575
- ☐ **Indigenous Knowledge** 701

Community

- ☐ **Anchorage**, Alaska, United States 361
- ☐ **Fairbanks**, Alaska, United States 96
- ☐ **Victoria**, British Columbia, Canada 69
- ☐ **Juneau**, Alaska, United States 43
- ☐ **Vancouver**, British Columbia, Canada 38
- ☐ **Ensenada**, Baja California, Mexico 34
- ☐ **Seattle**, Washington, United States 34
- ☐ **Homer**, Alaska, United States 31
- ☐ **Bellingham**, Washington, United States 24
- ☐ **Nome**, Alaska, United States 24

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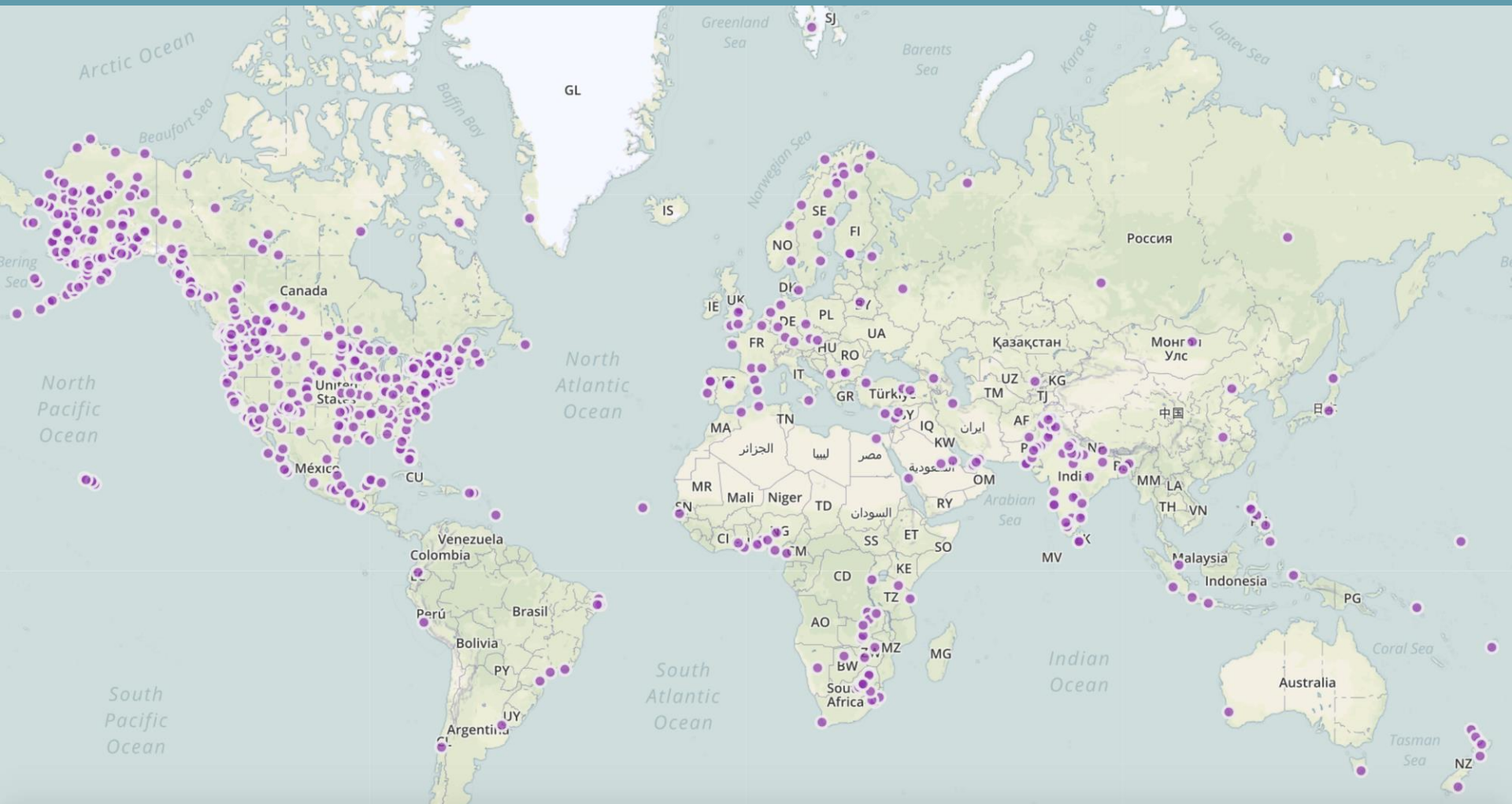
Primary Organization

- ☐ **Royal Roads University** 75
- ☐ **ANTHC** 68
- ☐ **UAF, University of Alaska Fairbanks** 51
- ☐ **Grupo de Ecología y Conservación de** 39
- ☐ **First Nations Health Authority (FNHA)** 35
- ☐ **Alaska Department of Fish and Game** 29
- ☐ **Environmental Protection Agency - EP** 28
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Interests and Expertise

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- ☐ **Weather** 1252
- ☐ **Land** 1244
- ☐ **Fish** 1210
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- ☐ **Plants** 1156
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- ☐ **Birds** 1046
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- ☐ **Human Health** 770
- ☐ **Air** 732
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- ☐ **Infrastructure** 545
- ☐ **Fungi** 484
- ☐ **Sanitation** 483
- ☐ **Amphibians** 459
- ☐ **Microbes** 459
- ☐ **Transportation** 425
- ☐ **Agriculture** 421



**Your Own Observation**

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



that help us understand
observations or news articles.

A News Article

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

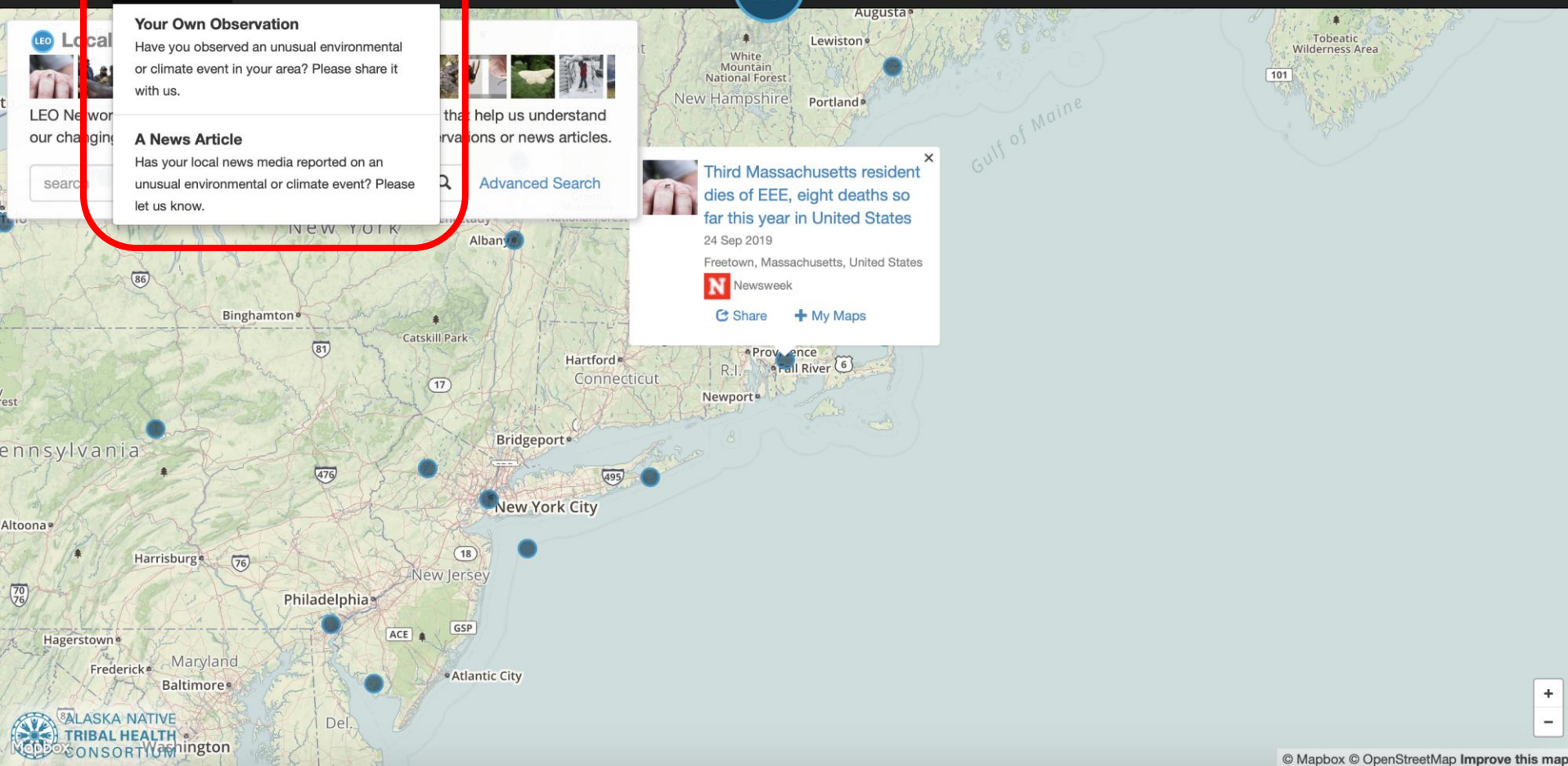
[Advanced Search](#)**Third Massachusetts resident dies of EEE, eight deaths so far this year in United States**

24 Sep 2019

Freetown, Massachusetts, United States



Newsweek

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Contributing Members



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Native Village Bill Moores Slough
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Observation by [Harold Okitkun](#):

I have a few pictures of erosion that happened along the coast North of Kotlik. This erosion for the most part happened during the storm happening on the 3rd of August. We were hit with high flood water and bad strong winds from the South and Southwest. I heard that there was erosion up North but finally went out over the weekend, in the pictures you can see how much of the beachfront was affected, this hit hard from the mouth of Kotlik going up North past Pt. Romanoff. In one of the pictures, there is a strange looking mold or something growing

Okitkun, Harold and Gino Graziano. 2019. Erosion and Weird Growth on Tundra. *LEO Network* (leonetwork.org). Accessed 25 September 2019.

8. THE HIGH LATITUDE MARINE HEAT WAVE OF 2016 AND ITS IMPACTS ON ALASKA

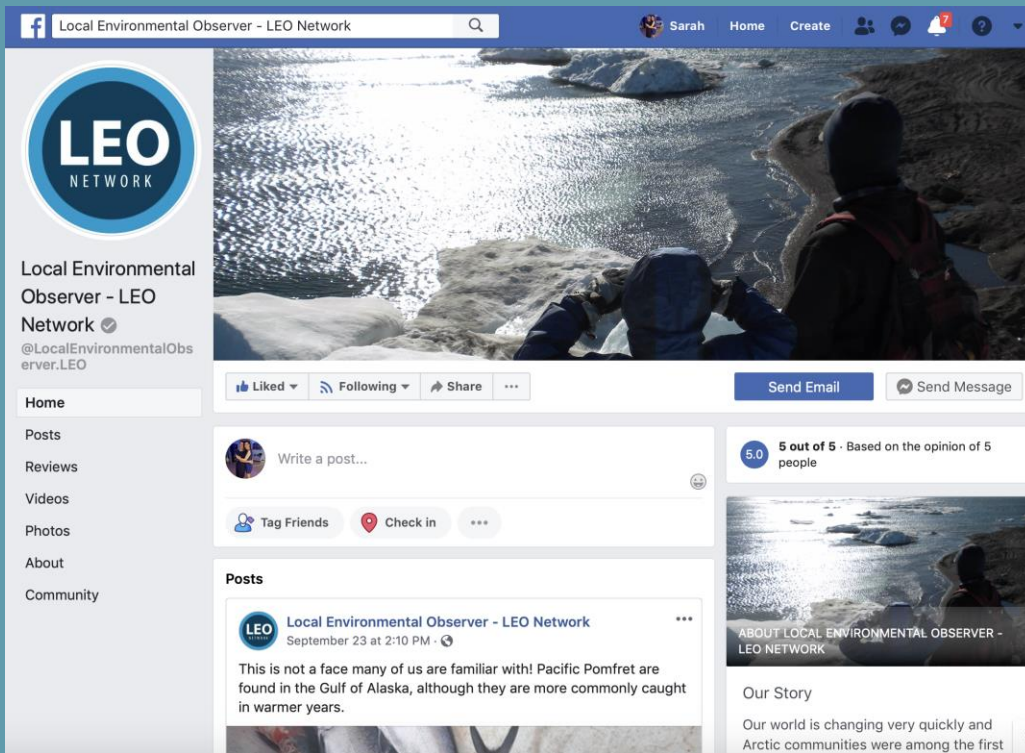
JOHN E. WALSH, RICHARD L. THOMAN, UMA S. BHATT, PETER A. BIENIEK, BRIAN BRETTSCHEIDER, MICHAEL BRUBAKER, SETH DANIELSON, RICK LADER, FLORENCE FETTERER, KRIS HOLDERIED, KATRIN IKEN, ANDY MAHONEY, MOLLY MCCAMMON, AND JAMES PARTAIN

The 2016 Alaska marine heat wave was unprecedented in terms of sea surface temperatures and ocean heat content, and CMIP5 data suggest human-induced climate change has greatly increased the risk of such anomalies.

Earth System Observations. The Gulf of Alaska (GOA) and Bering Sea have been anomalously warm for several years with the warmth peaking in 2016. As a consequence of the high marine heat content (HC) and SSTs, coastal areas of Alaska had their warmest winter–spring of record in 2016 (Walsh et al. 2017) and earliest river ice breakup for multiple Alaska rivers (www.weather.gov/aprfc/breakupDB). Observed marine warmth, impacts on the marine ecosystem, and an attribution analysis using CMIP5 models are presented here.

The marine heat wave was first noted over deep waters of the northeastern Pacific Ocean in January 2014 (Freeland 2014; Bond et al. 2015); anomalous temperatures at coastal GOA stations arrived variously between January and June. Warm temperature anomalies were confined to the top 100 meters until late 2014, after which they penetrated to depths of 300 meters and reached strengths greater than 2 standard deviations (Roemmich and Gilson 2009).

The consensus of previous studies is that atmospheric circulation anomalies played a key role in initiating and maintaining the North Pacific “blob” of warm water (Bond et al. 2015). Unusually high pressure south of the Gulf of Alaska reduced heat loss to the atmosphere and also reduced cold advection over the region. Forcing of the atmospheric anomalies has been linked to SST anomalies in the western tropical Pacific Ocean (Seager et al. 2015) and to decadal-scale modes of North Pacific Ocean variability (Di Lorenzo and Mantua 2016). Lee et al. (2015) have argued that sea ice anomalies also contributed to the atmospheric circulation anomalies in 2013/14. By contrast, the winter of 2015/16 was characterized by negative sea level pressure anomalies of more than 12 hPa centered in the eastern Bering Sea (Fig. ES8.1d). The associated northward airflow evident throughout the depth of the atmosphere (Fig. ES8.1b) likely drove lingering heat from the blob into the GOA and Bering Sea regions. An unusually deep Aleutian low is a typical





INTRODUCING:
LEO Reporter Mobile App

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The LEO Reporter App provides easy access to first-hand accounts of climate and environmental change events, made by expert local observers. With LEO, you can observe trends and analyze patterns, share knowledge, and stay informed of environmental change in your area.



Pan and zoom the LEO map to browse observations by region



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Map Type

Precipitation



Map Location

Alaska



Cities / Counties



Date

9/25/2019



Colors

Standard



Get Map

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Alaska 9/25/2019

0.0 Trace 0.01 - 0.05 0.06 - 0.10 0.11 - 0.26 0.27 - 0.63 0.64 - 0.95 0.96 - 1.07

