

# Observations of a Changing Ice Environment in Northern Alaska

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*Oral history recordings made between 1978 and 2017 with local experts discussing observations of changing coastal ice conditions in the Beaufort and Chukchi Seas, how changes in the sea ice are impacting subsistence and marine resources, and how climate change is affecting the ecosystems and the local people.*



## Pressure Ridges (Ivu)

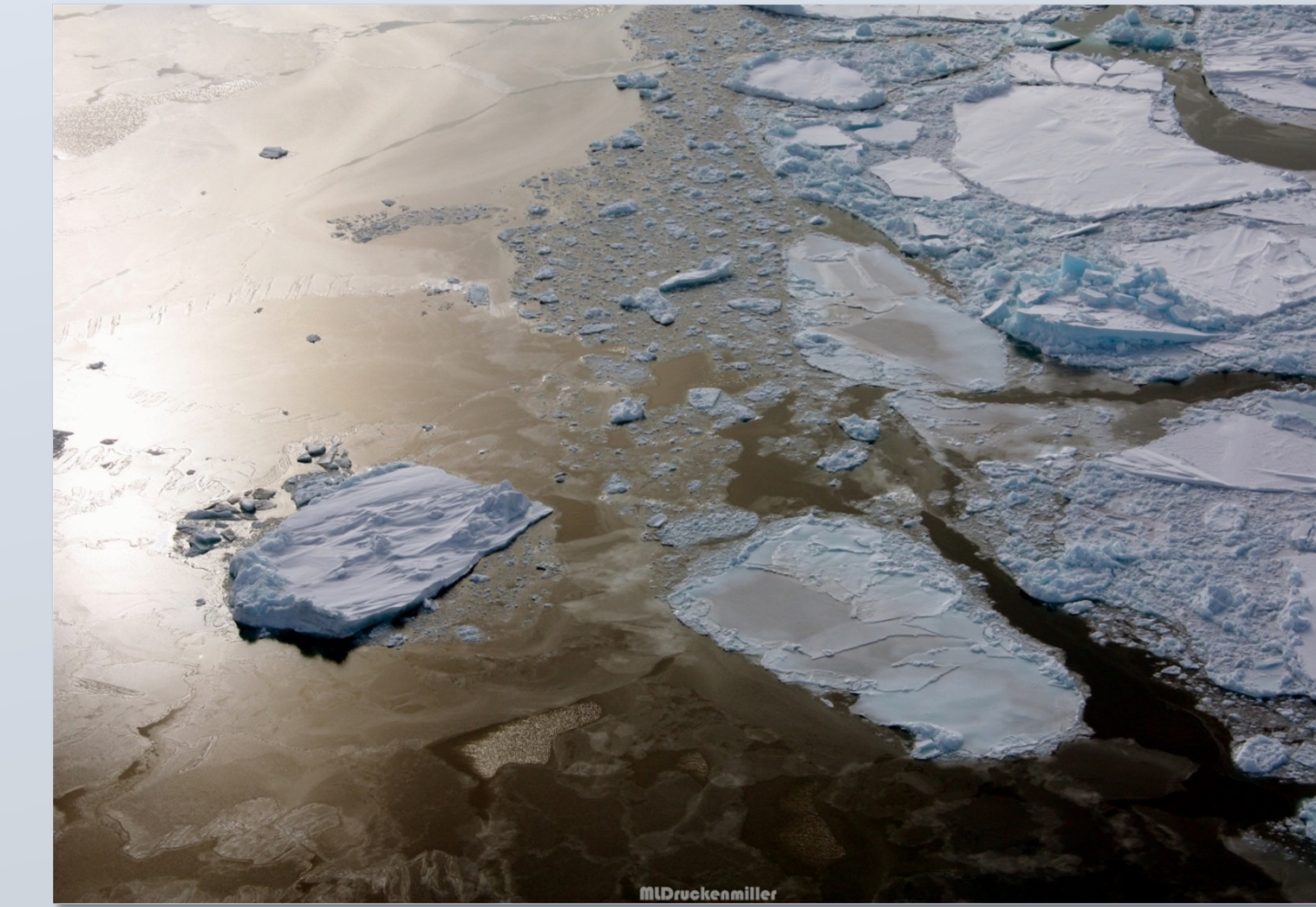
- 1890** Ice piled up high onto the bluff in Utqiagvik and toppled onto a sod house killing its occupant (Otis Ahkivgak, 1978)
- 1930's** Ivu at the Utqiagvik bluff was so high that could see it from a mile up inland (Kenneth Toovak, 1979)
- 1973** 15-foot tall pressure ridge in middle of Dease Inlet (Harry Brower, Sr., 1978)
- 1980s/1990s** More grounded and solid ice made it safer for whaling at Utqiagvik (Billy Adams, 2013)
- 2000's** Lack of grounded pressure ridges to stabilize ice at Utqiagvik makes it more dangerous to be out (Roy Ahmaogak, 2017)
- 2007** Last time saw 50-ft. tall pressure ridges at Utqiagvik (Wesley Aiken, 2017)
- 2016** Lack of pressure ridges means fewer seal den sites and seals in Kotzebue Sound (Ross Schaeffer, 2016)
- 2016** In spring, four rows of pressure ridges off of Utqiagvik made of paper thin ice that crumble up so not capable of grounding and no flat ice (Roy Ahmaogak, 2017)
- 2017** Highest pressure ridges in previous three or four years were less than a story high. Twenty years ago, were three or four times higher (Roy Ahmaogak, 2017).



## Thinning Ice

- 1970** Last time had thick ice and start to see effects of global warming (Rossman Peetok, Wainwright)
- 2000s** No more trail from Kotzebue across to Cape Espenberg because Kotzebue Sound no longer freezing over (Virgil Naylor, Sr. 2016)
- 2000s** No more heavy pack ice moving in to be afraid of (Roy Ahmaogak, 2017)

"In my 50 years of going out hunting on the ice, I've never seen it so thin." Robert Schaeffer, Kotzebue



## Drifting on Ice

- 1932** Seal hunters drifted out on moving ice from Cross Island (Henry Nashaknik, 1978)
- 1950s** – Doc Harris spent week on ice drifted out from Sealing Point, Kotzebue (Cyrus Harris, 2016)
- 1940s** – Sovalik drifting from Utqiagvik to Siberia and returns two years later (Wesley Aiken, 2017)
- 1960** – Frank Greene and other seal hunters drift out from Sisualik to off of Cape Krusenstern (Frank Greene, 2017)
- 1997** – Large break-off event left hundreds drifting off of Utqiagvik (Ronald Brower, Sr. 2016)
- 1999** – Two seal hunters drifted out and lost in Kotzebue Sound (Ross Schaeffer, 2016)



## Timing of Freeze-up/Break-up

"Over the **last thirty or forty years**, that's a guaranteed easy-to-say fact that freeze-up is happening later every year, and to a lesser degree break-up is happening earlier. So we're shortening our freezing season. In the **1980s**, in the fall time, we'd come home in slush and it was already frozen along the beach." Richard Glenn, Utqiagvik

"Kotzebue Sound doesn't start freezing up now until after Christmas. There will be some shore-fast ice, but out there it's still open. It used to freeze in October or November. Also, we're getting more fall time storms before freeze-up when there's no ice to protect the shoreline." Willie Goodwin, Jr., Kotzebue

"Seems like the broken pieces of ice used to stay around when it opened up in June, July. But nowadays you don't see it. Once the ice is gone, it's gone. In **spring 2016**, we only had a week of hunting, and then the ice was gone. Once the ice is gone the animals are gone. The ice is everything to us. Without the ice, we wouldn't be who we are." Steve Oomittuk, Point Hope



## Wind and Current

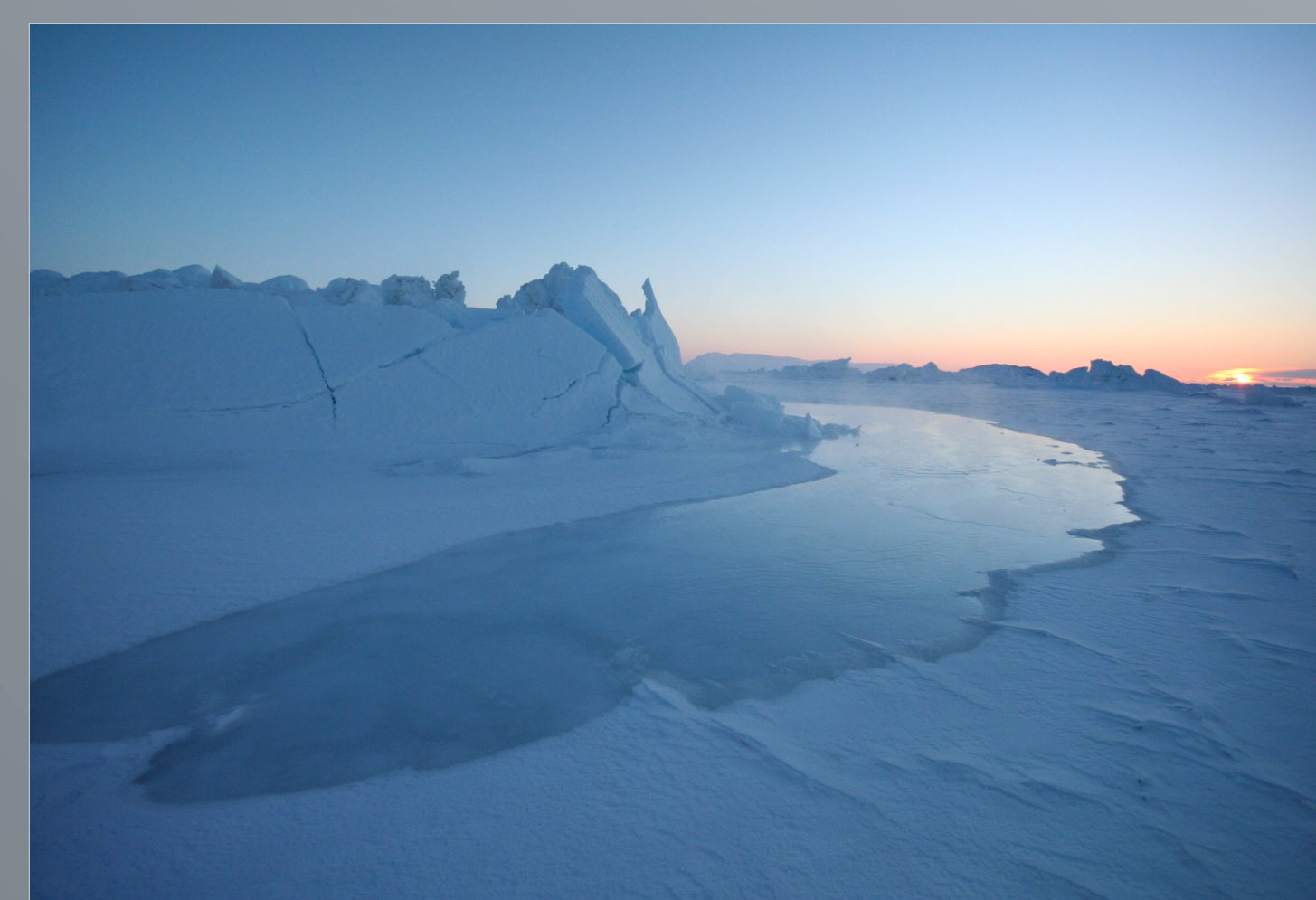
"When ice is coming out from underneath the ice you're standing on, that means the current is eating away at the bottom of the ice. This is dangerous, and time to move." Steve Oomittuk, Point Hope

"In **1957**, the wind was blowing about ten, fifteen miles an hour from the south, and all of a sudden it started blowing from the west about thirty, forty miles an hour. Suddenly heavy pack ice started coming in towards us on the shorefast ice. It happened fast. The current and the wind were moving together and that ice kept moving. It was getting closer and then the ice ivu right in front of us. That's when it took our boat and I lost all my whaling equipment." Wesley Aiken, Utqiagvik



## Multi-year Ice (Piqaluyak)

"We always look for piqaluyak because once it gets grounded to the bottom of the ocean floor and stays, it's like glue to the ice around there, and then you have safe ice. Now it's very rare to find any piqaluyak. I think the term multi-year ice is a word that's probably going to become non-existent in the years to come." Roy Ahmaogak, Utqiagvik

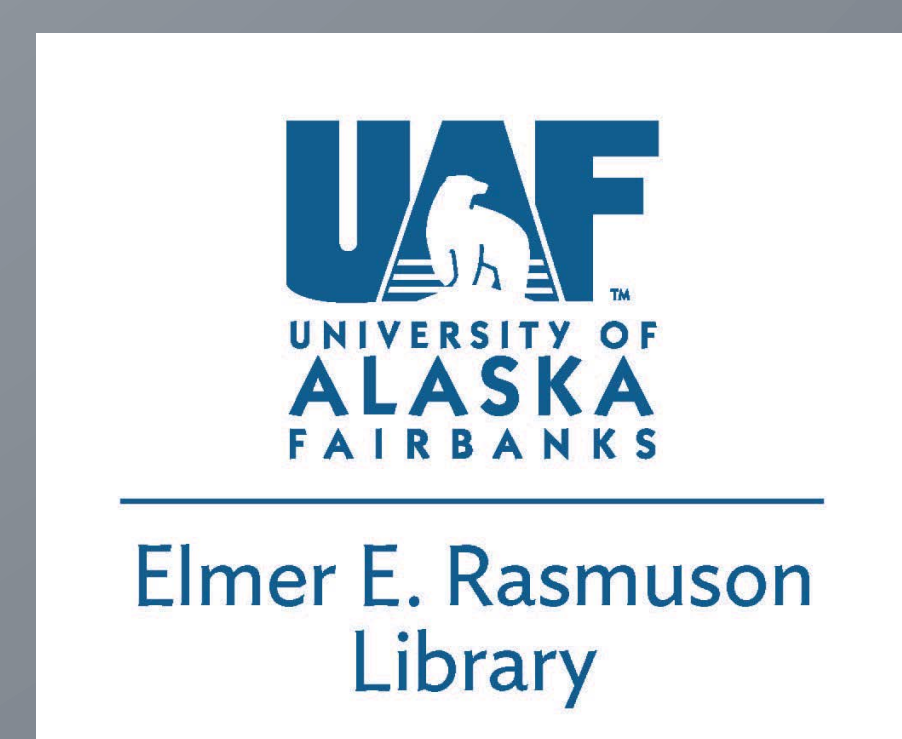
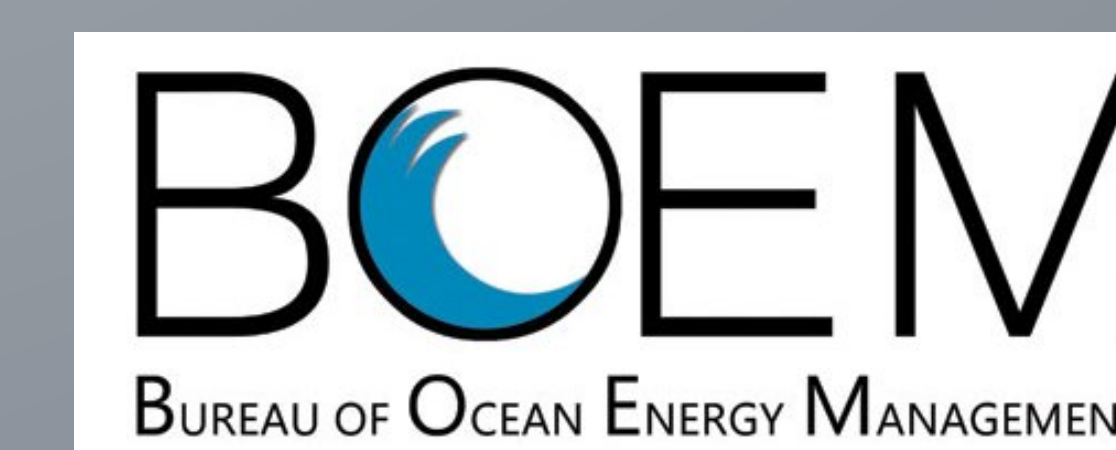


## Overflow

"In the older days, after January you had no more overflow 'cause all the ice was solid to the beach. Now, you get overflow all the time. The ice is too thin and it's not freezing to the bottom, which means it can lift up with the tide and water can seep up through cracks and around the edges." Ross Schaeffer, Kotzebue

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Northern Alaska Sea Ice Project Jukebox: <http://jukebox.uaf.edu/seaice>