



## Building a Baseline for Ocean Acidification Trends in Coastal Alaskan Communities

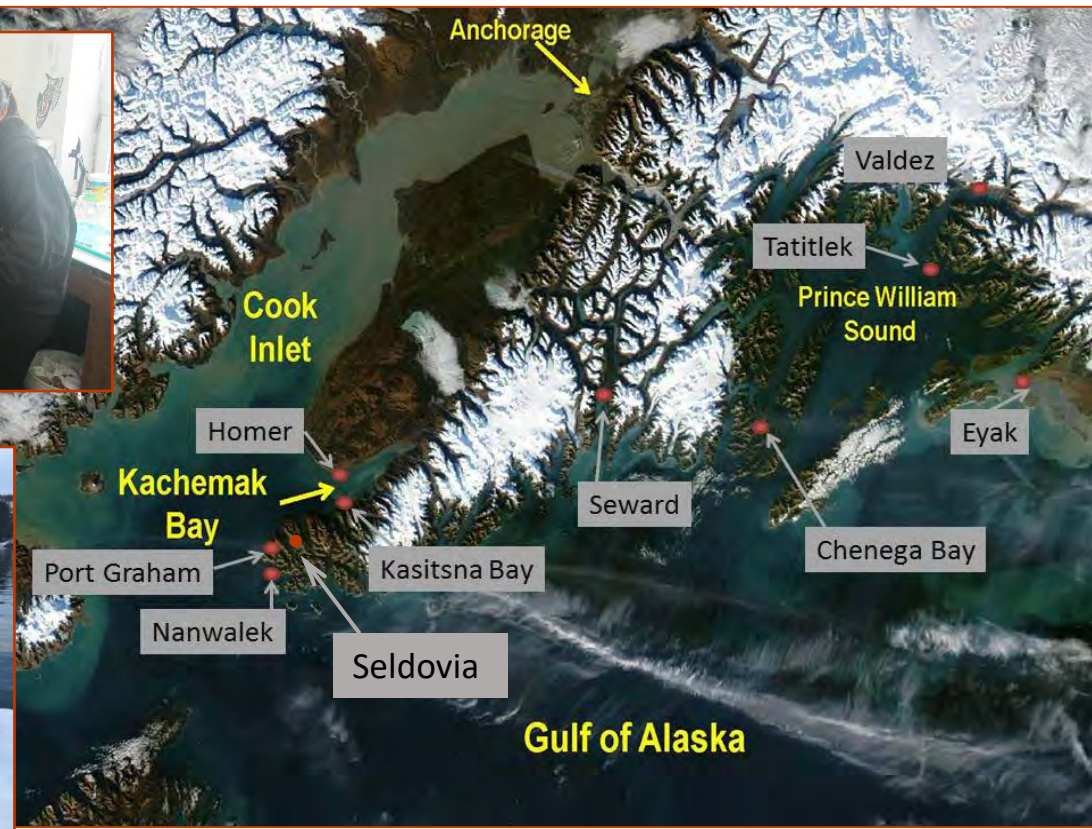
---

*Jacqueline Ramsay*

*OAR Lab Director, Alutiiq Pride Marine Institute  
A division of Chugach Regional Resources Commission*

*[jacqueline@alutiiqprideak.org](mailto:jacqueline@alutiiqprideak.org)*

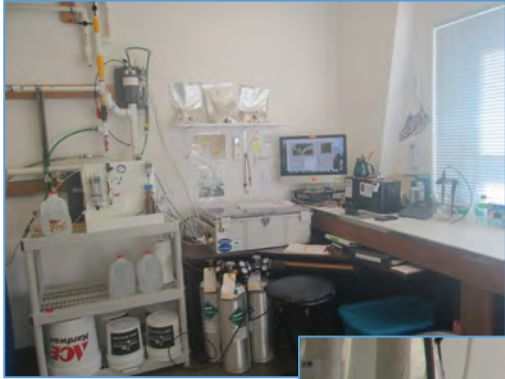




The Alutiiq Pride Marine Institute, APMI, in Seward, Alaska, began a monitoring project for seawater carbonate chemistry profiling in the coastal villages that we serve. The Ocean Acidification Research laboratory at APMI analyzes discrete ocean seawater samples from locales around the state to obtain baseline data to assess possible community vulnerability to changing ocean chemistry. In order to attain a data set that temporally represents a locale over time, with robust data, a weekly sampling protocol was adopted. The weekly sampling, ideally on the same day and time, performed by a citizen sampler or the village environmental coordinator, has proven to be an achievable model that can capture statistically meaningful trends over time and provide needed data to inform management and local community resilience planning efforts. Our program has been expanding this baseline monitoring and now includes sites from around the state including Kotzebue, Nome, and Utqiagvik.

## The system has the capacity to measure incoming seawater and discreet seawater samples

Monitoring for ocean acidification near coastal villages and communities in south-central Alaska has been expanding as interest in assessing OA vulnerability to shellfish and a subsistence way of life in our communities increases. We have in addition to the villages CRRC serves added King Cove, Little Diomede, Kotzebue, Nome, and Utqiagvik.



- Establishes near-shore seawater sampling program with community involvement
- Integrates between sites and offshore
- Fills potentially important data gaps

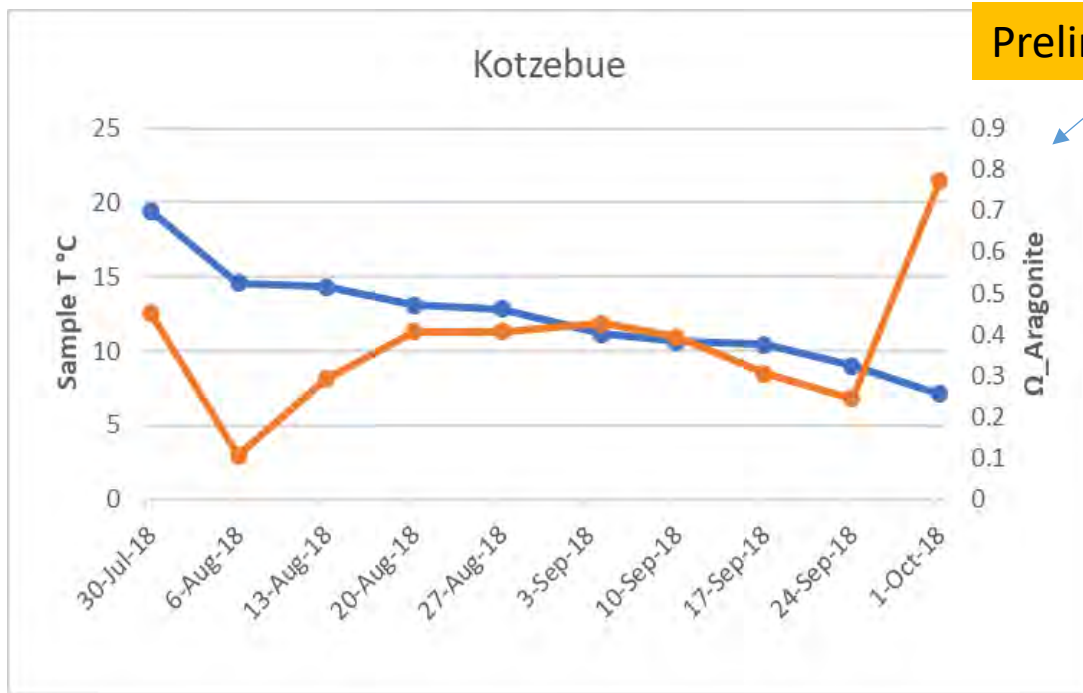
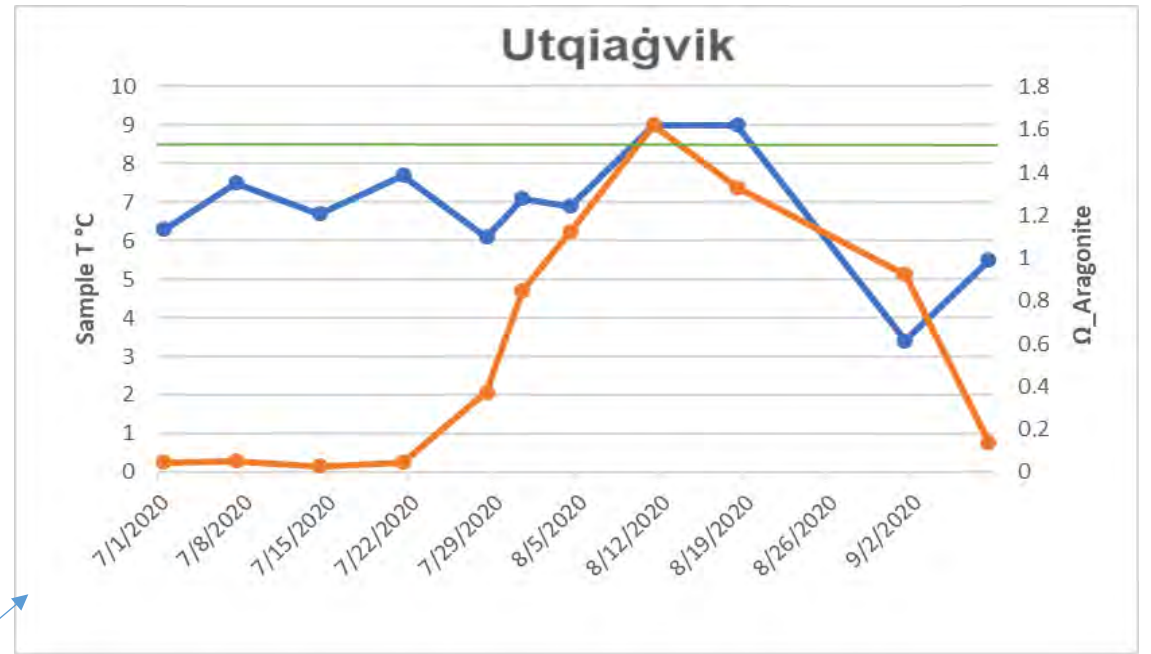
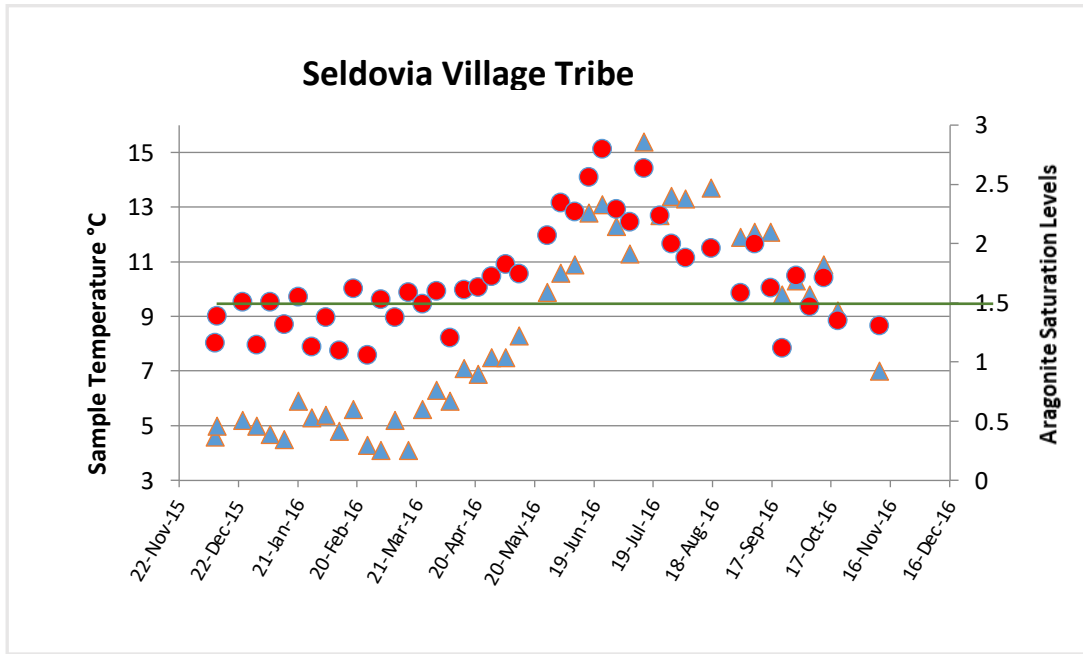
The Burke-o-Lator systems are NDIR-based CO<sub>2</sub> systems developed by Dr. Burke Hales (Oregon State University)

### Data Accuracy:

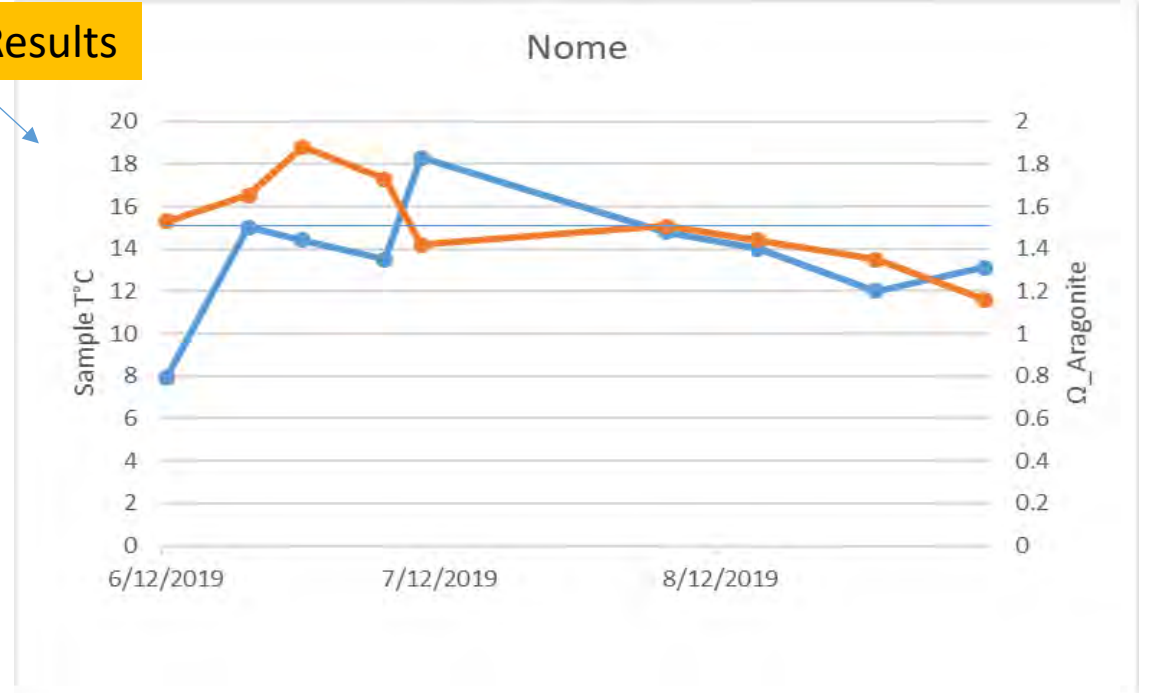
- **Inter-lab comparisons:** The lab at APSH is actively involved in establishing inter-lab comparisons with the PMEL Carbon Program laboratory.
- **Triplicate Sampling:** Samples are often taken in triplicate to ascertain the error of sample acquisition.



APMI processes seawater samples collected on a weekly basis by citizen scientists from Alaska Native communities following established protocols for acquiring dissolved inorganic carbon in sea water using APMI produced field kits.



**Preliminary Results**





Thank you for attending!

Special thanks to our environmental samplers without which this data would not be possible, and to my technicians in the OAR lab for helping me analyze them

Hanna Hellen and Vanessa Verhey



[jacqueline@alutiiqprideak.org](mailto:jacqueline@alutiiqprideak.org)  
<https://www.alutiiqprideak.org>

Photo by Todd Sformo, NSB-Dept Wildlife Management. Utqiagvik (Barrow), AK