

NOAA Office for Coastal Management
Alaska Coastal Mapping Summit

***Improving Coastal Resilience with
Tidal Datums and Imagery***

Dave Stein

Geographer, Contracting Officer's Representative

Coastal Geospatial Services Contract

- **Five year IDIQ mapping and geospatial contract designed to provide data and map products to the coastal zone management community**
 - Data Acquisition: Remotely sensed collection of imagery, topography, bathymetry using aerial, satellite, and shipboard platforms
 - GIS Services: Spatial data development, management, integration, application development, cartography, and GIS consultation in support of coastal management applications
 - Thematic Mapping: Processing and developing data into thematic classes for land cover, environmental sensitivity, benthic habitat, and hazards vulnerability mapping
 - Survey and Control Services: Establishing ground control, collection of QC checkpoints, field validation, tidal datum determination

Establishing Tidal Datums in Coastal Alaska

● New Locations
2018-2019

- Homer
- Kwigillingok
- Gambell

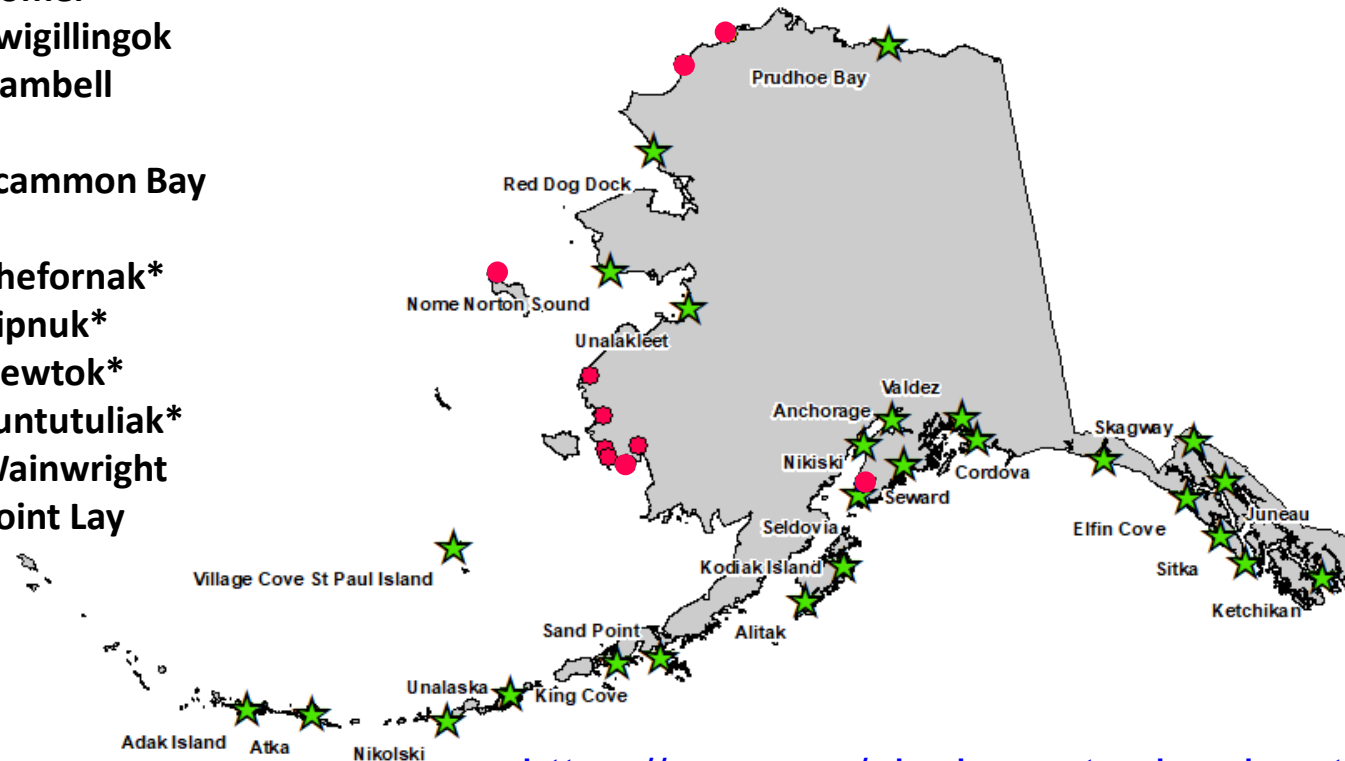
2020

- Scammon Bay

2021

- Chefornek*
- Kipnuk*
- Newtok*
- Tuntutuliak*
- Wainwright
- Point Lay

★ Active NOAA Tide Stations (26)



* Covid-19 Delays

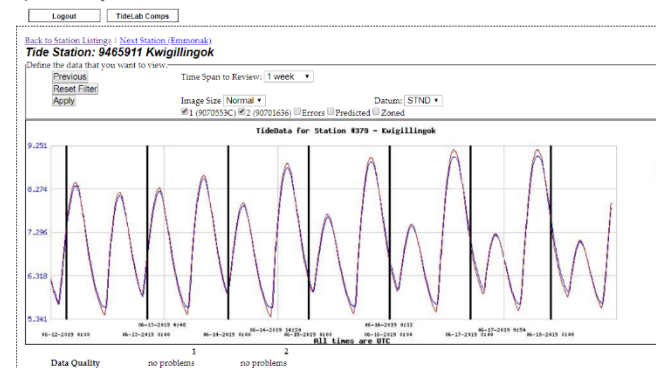
<https://aous.org/alaska-water-level-watch/>

Establishing Tidal Datums in Coastal Alaska

- **Purpose:** Improving tidal predictions, coastal flooding and forecasting, improving V-Datum tool
- **Coverage:** 10 sites – Western AK and North Slope
- **Partners:** AK DGGs, NOAA CO-OPS, NOAA OCM, Quantum Spatial, JOA
- **Specifications:** comply with CO-OPS operations and design, recon, installation, 90 data occupation, submittal to CO-OPS
- **Products:** new tidal datums, predictions, benchmarks



JOA Surveys

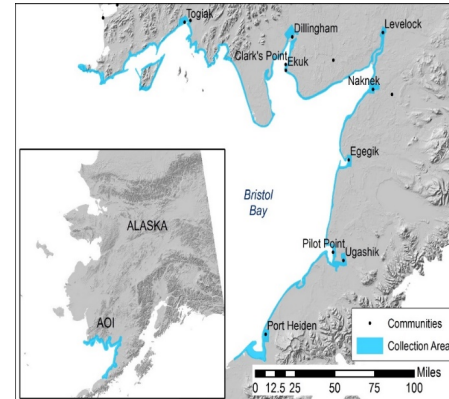


Establishing Tidal Datums in Coastal Alaska

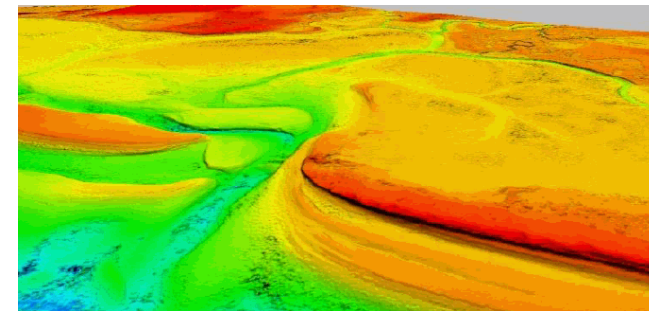


Imagery Acquisition in Bristol Bay

- **Purpose:** Baseline imagery and phodar-derived DSMs to assess risk and improve flood forecasting
- **Coverage:** Cape Newenham to Port Heiden
- **Partners:** AK DGGS, NOAA OCM, Quantum Spatial
- **Specifications:** 20cm pixel size, 4 band, 80% overlap and 40% side-lap
- **Products:** Orthoimagery, phodar point clouds, and digital surface models

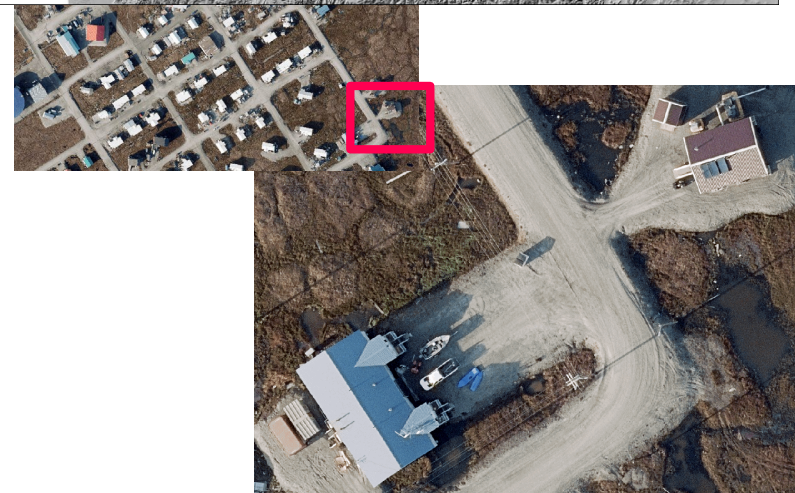
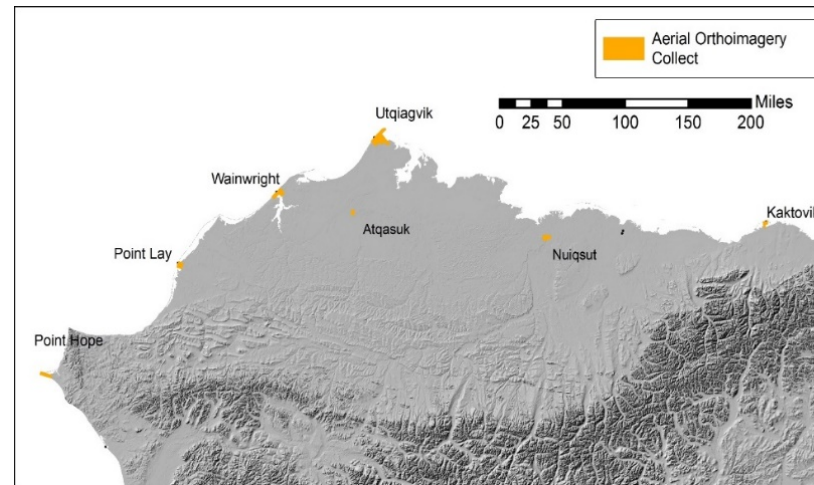


(Courtesy of Chasen Cunitz)



Imagery Acquisition along the North Slope

- **Purpose:** High resolution orthoimagery for civil works and emergency management
- **Coverage:** Point Hope, Point Lay, Wainwright, Utqiagvik, Atqasuk, Nuiqsut, and Kaktovic
- **Partners:** AK DGGs, NSB, NOAA OCM, Quantum Spatial
- **Specifications:** 3" pixel resolution, 4 band imagery
- **Products:** Orthoimagery



Where's the Data?

Go to Digital Coast/Data Access Viewer

The top screenshot shows the NOAA Data Access Viewer interface with a search for "Bristol Bay, AK". The search results show a single entry: "2019 DMC 4-Band 8 Bit Imagery: Bristol Bay, AK" with a size of 354.56 GB and a "BULK DOWNLOAD" button. The map shows a yellow bounding box around Bristol Bay.

The bottom screenshot shows the NOAA Data Access Viewer interface with a search for "Point Hope, AK". The search results show 11 entries, including:

- 2019 DMC 4-Band 8 Bit Imagery: Nuiqsut, AK (409.98 GB)
- 2019 DMC 4-Band 8 Bit Imagery: Atkasuk, AK (181.72 GB)
- 2019 DMC 4-Band 8 Bit Imagery: Kaktovik, AK (300.14 GB)
- 2019 DMC 4-Band 8 Bit Imagery: Point Hope, AK (340.70 GB)
- 2019 DMC 4-Band 8 Bit Imagery: Point Lay, AK (367.31 GB)
- 2019 DMC 4-Band 8 Bit Imagery: Wainwright, AK (736.84 GB)
- 2019 USACE NCMP Phase One Natural Color 8 Bit Imagery: Point Hope, AK

The map shows a yellow bounding box around Point Hope, AK.

A large sea turtle is swimming underwater in clear blue water. The turtle is the central focus, with its head and front flippers visible. The water is bright and clear, with some ripples on the surface. The turtle's shell is dark with some lighter patterns. The overall scene is peaceful and natural.

Questions?

Dave.Stein@noaa.gov

coast.noaa.gov/idiq/geospatial.html

Credit: Mark Sullivan, NOAA