

Tools for Visualizing Coastal Flood Risk in Alaska

An aerial photograph of a coastal town in Alaska. The town is situated on a narrow strip of land, with a large body of water to the right. The land is brown and appears to be a mix of mudflats and low-lying vegetation. There are several buildings, including a prominent one with a red roof. In the background, there are mountains under a cloudy sky.

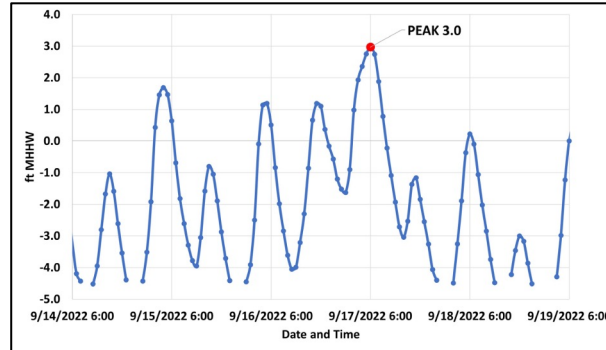
Western Interdisciplinary Science Conference (WAISC) 2026
Bethel, AK

COASTAL FLOODING HAZARDS IN ALASKA

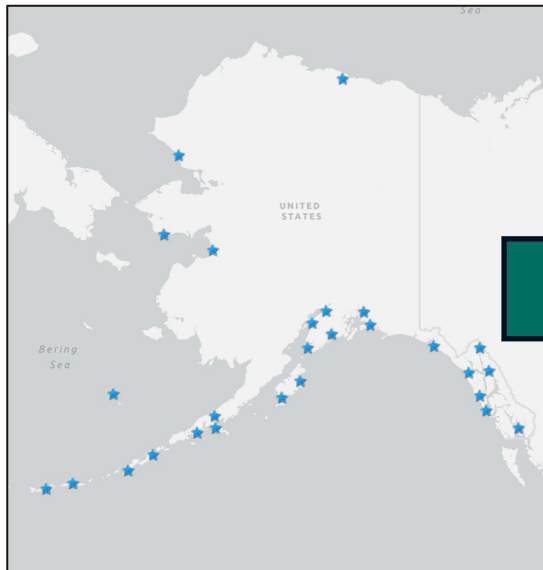
Coastal communities of Alaska are regularly impacted by storms and experience frequent flooding and erosion, which threaten critical infrastructure and traditional ways of life.



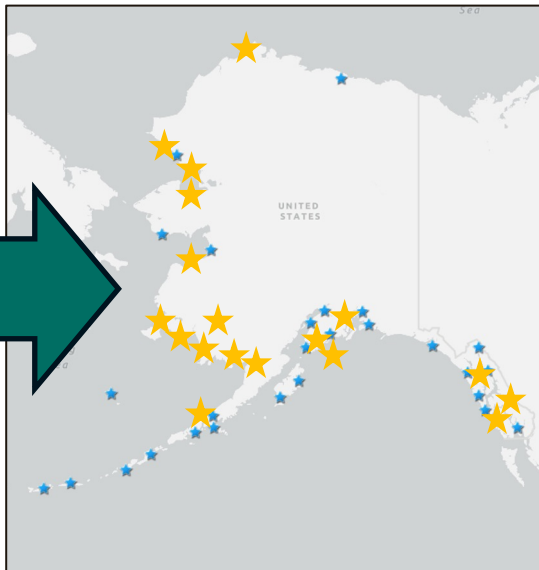
Water Level Monitoring



Water Level Data & Alaska Water Level Watch (AWLW)

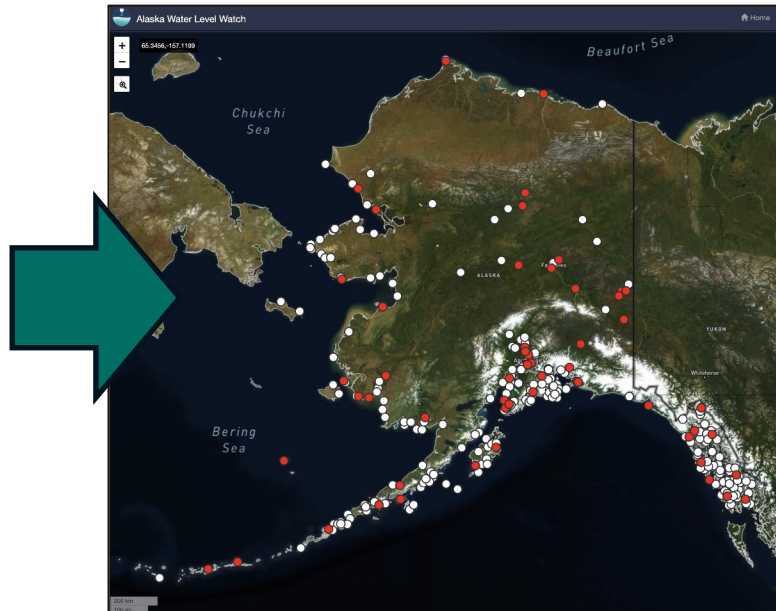


NWLON (CO-OPS) installations: 27



AWLW (non-NWLON) installations: 18

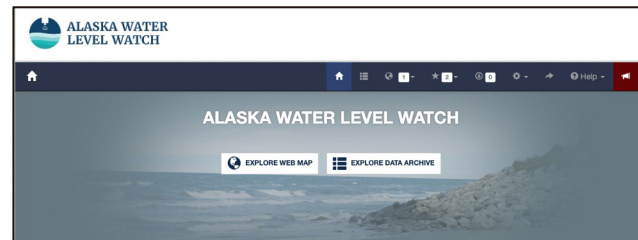
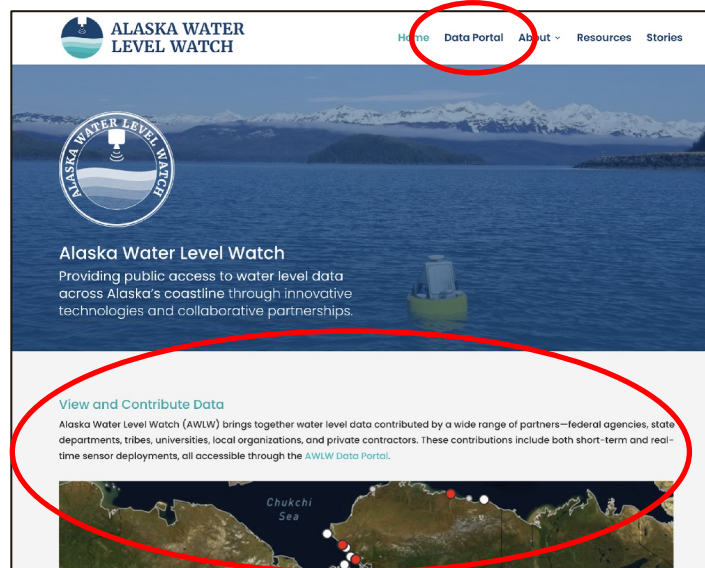
- AK DNR DGGS (AOOS) = 7
- AOOS + JOA + Others = 8
- ARFC = 1
- NPS = 1
- UAF = 1*

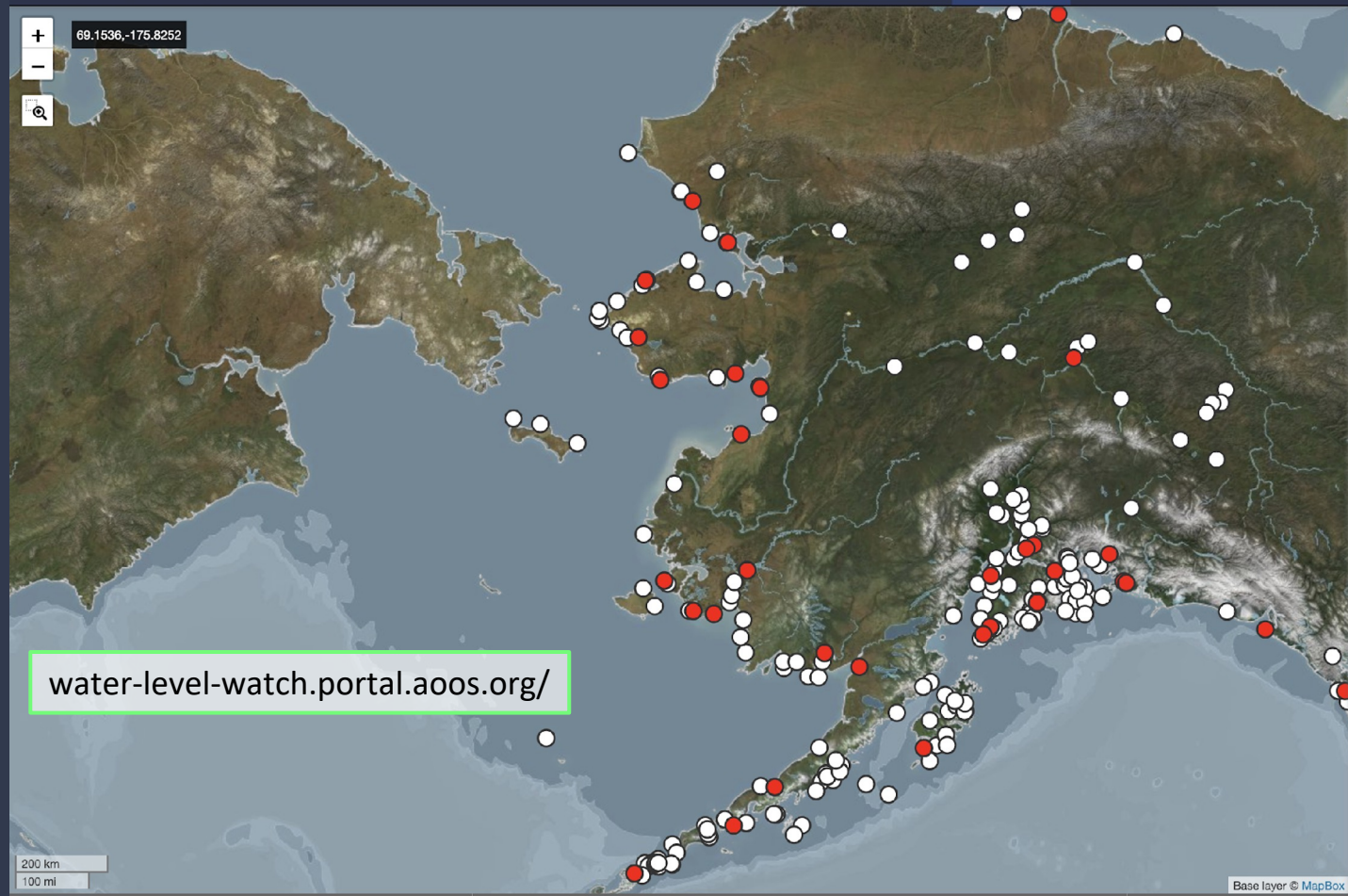


AWLW Partners increased water level observing in Alaska by more than 60%

Where to find data

On the AWLW Data Portal !
<https://water-level-watch.portal.aos.org/>





Legend Find Data

Minimize all Hide all

AOS Sensors

Alaska Water Level Sensors

Heatmap not available for water level data. Red features indicate real time data is available

Filters 1 filter applied

Variable types

Water Level (333)

Show all

Sources

All

Platform

All

Tiers

All

Search available sensor stations

+ Advanced

Total points: 332 On screen: 248

65.2252, -166.3770

+

-

🔍

200 km

100 mi

65.2252, -166.3770

AOOS Sensors: Alaska Water Level Sensors

NOAA Office of Coastal Management
Teller GNSSR

Tier B

Water Level

1.5 ft MLLW

2 hours 2 minutes ago - 1 day + now

Legend Find Data

Minimize all Hide all

AOOS Sensors

Alaska Water Level Sensors

Heatmap not available for water level data. Red features indicate real time data is available

Filters 1 filter applied

Variable types

Water Level (333)

Show all

Sources

All

Platform

All

Tiers

All

Search available sensor stations

+ Advanced

Total points: 332 On screen: 248

Data

Time

Depth

Base layer © MapBox

+ 65.2661, -166.3674 -

Water Level X

Water Level

NOAA Office of Coastal Management
Teller GNSSR Tier B

Real time Historical

Jan 18, 2026 14:00 (AKST) Fri 23 Jan 28, 2026 14:00 (AKST)

Aug 30, 2025 Nov, 2025 Dec, 2025 Jan 28, 2026

Downloads Station Sensor Sensor with QC Source Legend



Legend Find Data

Minimize all Hide all

AOS Sensors

Alaska Water Level Sensors

Heatmap not available for water level data. Red features indicate real time data is available

Filters 1 filter applied X

Variable types

Water Level (333)

Show all

Sources

All

Platform

All

Tiers

All

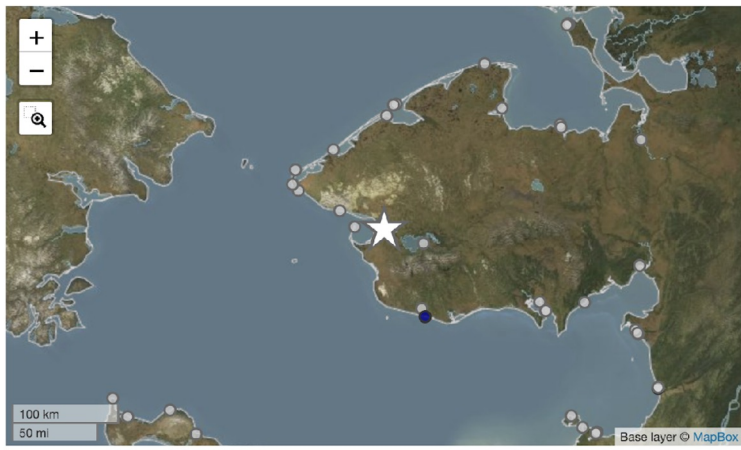
Search available sensor stations X

+ Advanced

Total points: 332 On screen: 2

NOAA Office of Coastal Management

Teller GNSSR



Location	65.2638, -166.3674
Temporal Coverage	Aug 30, 2025 16:06 (AKDT) - Jan 28, 2026 14:54 (AKST)
Tags	Tier B
Platform	Fixed
Web site	https://coast.noaa.gov/
Metadata	ERDDAP station page
URN	teller-gnssr

Affiliations

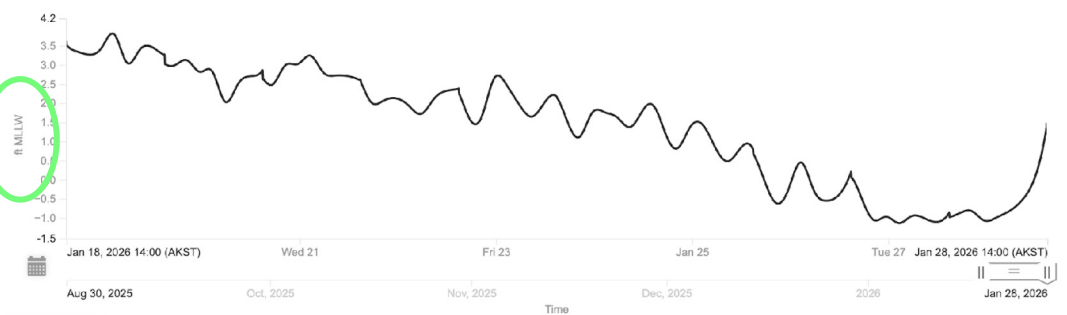
NOAA Office of Coastal Management Station site Web site	Owner
Alaska Ocean Observing System (AOOS) Web site	Affiliate

Data Inventory Latest measurements Vertical Datum More information

Water Level

Autoscale Time bin: all Auto

Real time Historical



Downloads Sensor Sensor with QC Source

Legend

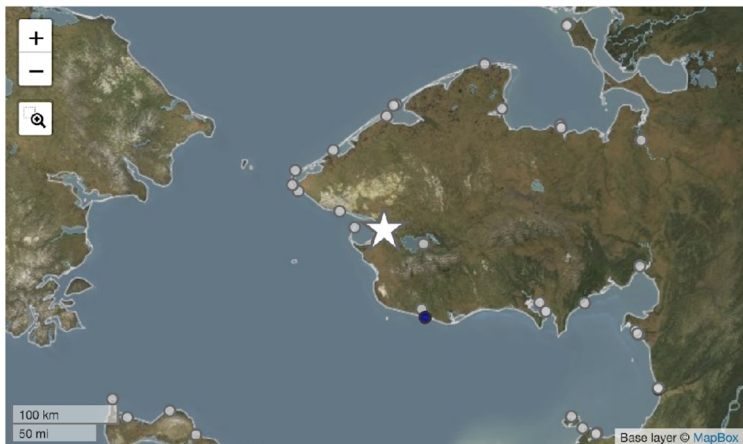
Datums are critical!
When in doubt, set the datum = MHHW!



All 749 Sensor Stations 710 Affiliates 18 Variable Types 19 Data Layers 2

NOAA Office of Coastal Management

Teller GNSSR



Data Inventory Latest measurements Vertical Datum More information

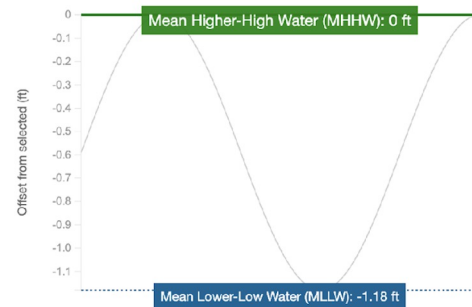
Set vertical datum

Make selected datum portal default

- Mean Higher-High Water (MHHW): 0 ft **Portal default**
- Mean High Water (MHW): -0.11 ft
- Mean Tide Level (MTL): -0.51 ft
- Mean Sea Level (MSL): -0.58 ft
- Diurnal Tide Level (DTL): -0.59 ft
- Mean Low Water (MLW): -0.91 ft
- Mean Lower-Low Water (MLLW): -1.18 ft

North American Vertical Datum of 1988 (NAVD88): -3.78 ft

Station Datum **i**: -11.28 ft **Station default**



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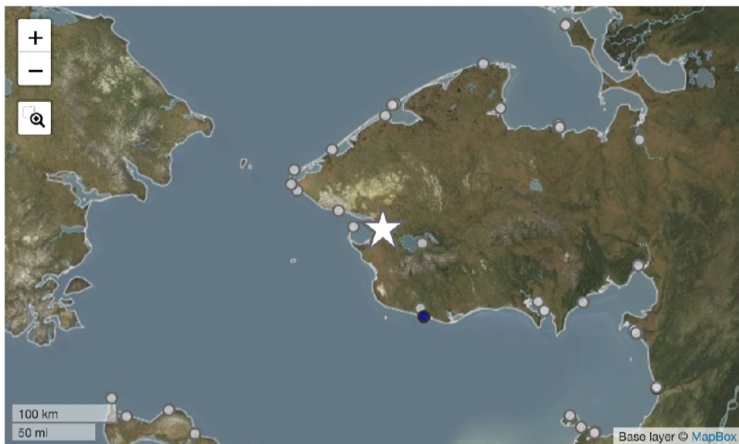
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Alaska Ocean Observing System (AOOS) Web site	Affiliate



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NOAA Office of Coastal Management

Teller GNSSR



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Affiliations

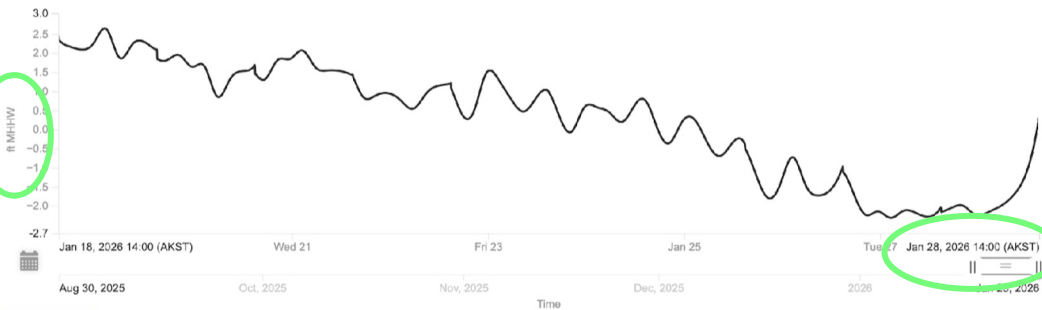
NOAA Office of Coastal Management Station site Web site	Owner
Alaska Ocean Observing System (AOOS) Web site	Affiliate

Data Inventory Latest measurements Vertical Datum More information

Water Level

Autoscale Time bin: all Auto

Real time Historical



Downloads Sensor Sensor with QC Source

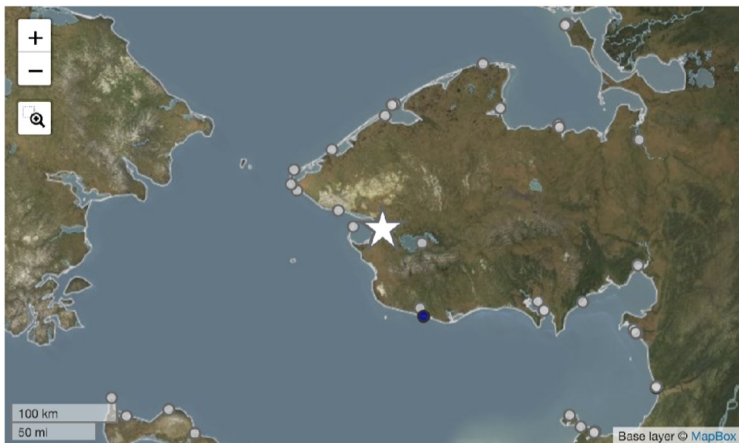
Legend



All 749 Sensor Stations 710 Affiliates 18 Variable Types 19 Data Layers 2

NOAA Office of Coastal Management

Teller GNSSR



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Data Inventory Latest measurements Vertical Datum More information

Water Level

Autoscale Time bin Hours

Real time Historical



Downloads Sensor Sensor with QC Source

Legend



DGGS Coastal Hazards Program

Alaska Flood Inundation Tool (AK-FIT)



COASTAL HAZARDS PROGRAM



Nora Nieminski
*Geologist
Program Manager*



Anika Pinzner
Geologist



KC Horen
GIS Analyst



Lucy Waghorn
Geologist



Kristina Rossavik
Geologist



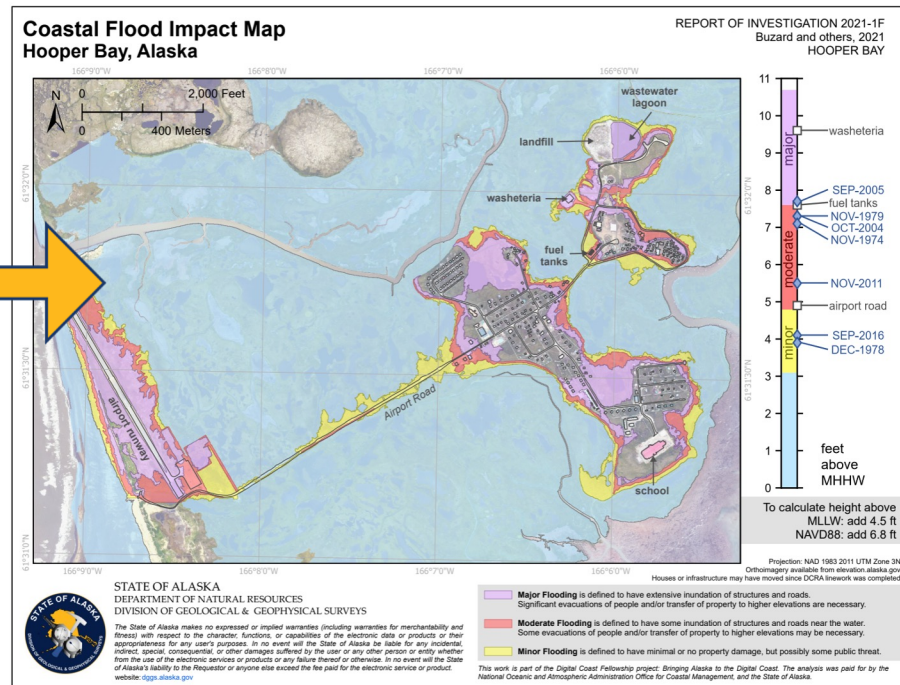
Community-specific Water Level Documentation

Still Water Inundation Model



Using best-available elevation datasets and hydrological connectivity information.

Flood Impact Assessments



Alaska Flood Inundation Tool (AK-FIT)

Still Water Inundation Model



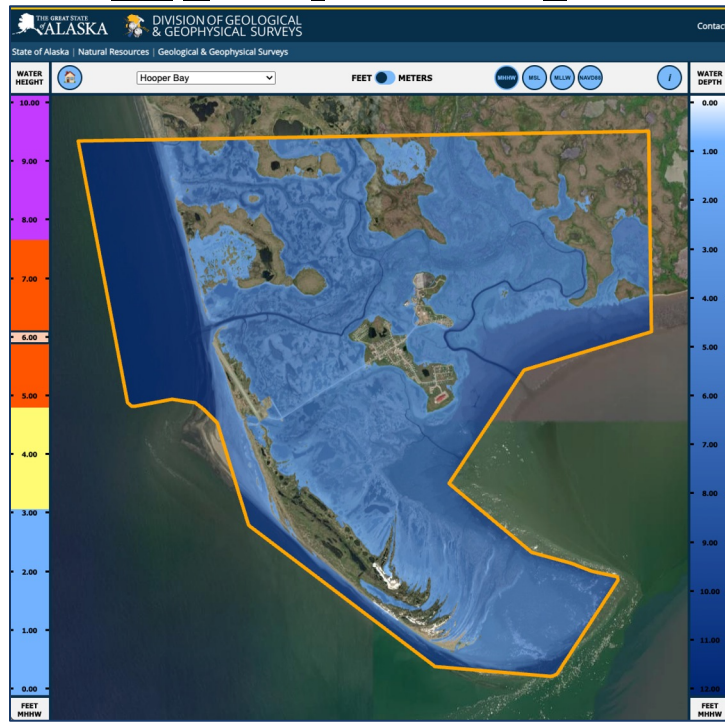
STILLWATER INUNDATION MODELING WITH HYDROLOGICAL CONNECTIVITY

Keith C. Horen

2024
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS



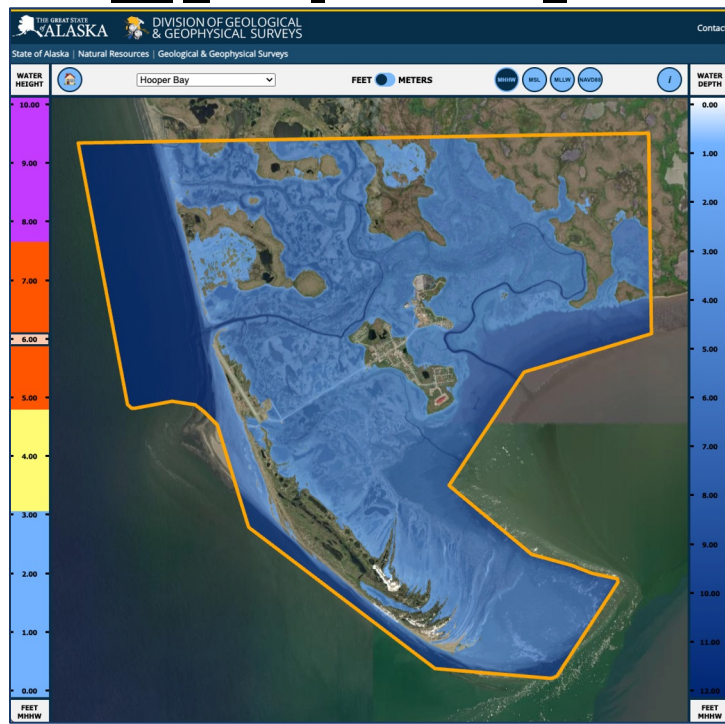
AK Flood Inundation Tool



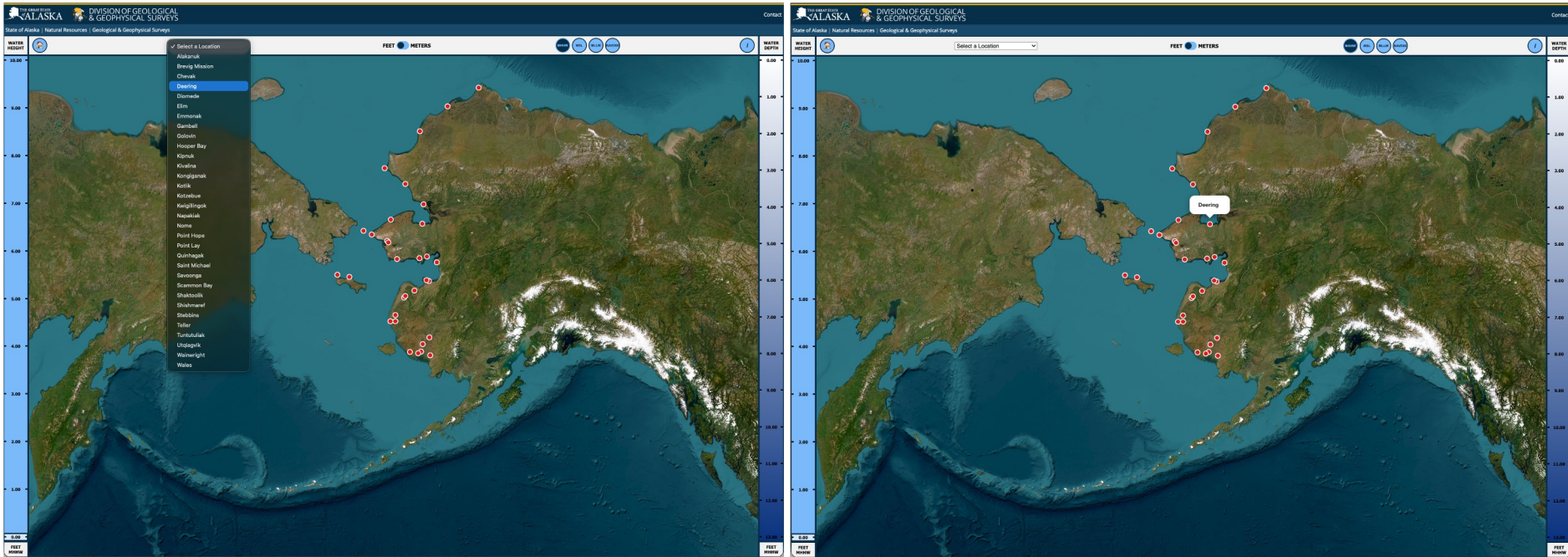
Alaska Flood Inundation Tool (AK-FIT)

- Planning and decision-support tool designed for Alaska
- Enhanced “bathtub-style” modeling with hydrologic connectivity (SWIM)
- Shows flood extent and depth for user-selected water levels
- Includes community-specific flood categories and infrastructure impacts
- Fast & mobile-friendly

AK Flood Inundation Tool

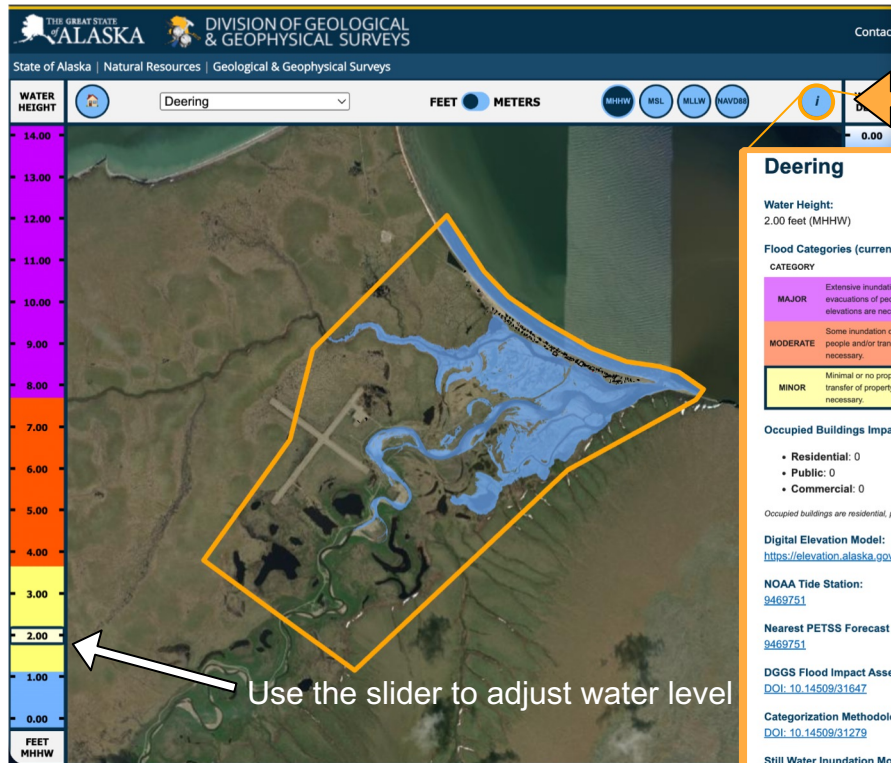


Alaska Flood Inundation Tool (AK-FIT)



Two ways to select a location (currently 32 communities available)

Alaska Flood Inundation Tool (AK-FIT)



i = more information

Deering

Water Height:
2.00 feet (MHHW)

Flood Categories (current category outlined):

CATEGORY	DESCRIPTION	RANGE
MAJOR	Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations are necessary.	> 7.67 feet (MHHW)
MODERATE	Some inundation of structures and roads. Some evacuations of people and/or transfer of property to higher elevations are necessary.	3.75 – 7.67 feet (MHHW)
MINOR	Minimal or no property damage. Evacuations of people and/or transfer of property to higher elevations are typically not necessary.	1.30 – 3.75 feet (MHHW)

Occupied Buildings Impacted (0 total):

- Residential: 0
- Public: 0
- Commercial: 0

Occupied buildings are residential, public, or commercial structures in which people live or work.

Digital Elevation Model:
<https://elevation.alaska.gov/download>

NOAA Tide Station:
9469751

Nearest PETSS Forecast Location:
9469751

DGGS Flood Impact Assessment:
[DOI: 10.14509/31647](https://doi.org/10.14509/31647)

Categorization Methodology:
[DOI: 10.14509/31279](https://doi.org/10.14509/31279)

Still Water Inundation Model
[DOI: 10.14509/31154](https://doi.org/10.14509/31154)



Alaska Flood Inundation Tool (AK-FIT)

Home / Products / 9469751 Deering, AK

Station Info / Tides/Water Levels / Sea Level/Coastal Flooding / Meteorological Obs. / Phys. Oceanography

Deering, AK - Station ID: 9469751

Station Info Today's Tides Photos Sensor Information Observations Directions and Map Available Products

Established: Jun 07, 2011
 Time Meridian: 135° W
 Present Installation: May 01, 2011
 Date Removed: 2011-10-15 23:59:00
 Water Level Max (ref MHHW): N/A
 Water Level Min (ref MLLW): N/A
 Mean Range: 1.36 ft.
 Diurnal Range: 1.83 ft.
 Latitude: 66° 5.8 N
 Longitude: 162° 44.4 W
 Met Site Elevation: N/A

Today's Tides: Feb 04, 2026 (LST)

1:10 AM	low	-0.3 ft.
7:46 AM	high	2.1 ft.
1:47 PM	low	0.3 ft.
7:28 PM	high	1.8 ft.

Deering

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2.00 feet (MHHW)

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DOI-10.14509/31154

Probabilistic Extra-Tropical Storm Surge

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MDL Storm Surge | NHC Storm Surge | P-Surge | P-ETSS | ETSS | Orig_ETSS | AHPS | OPC | CO-OPS | NowCoast
 Datums | Disclaimer | Probabilistic NAEFS Based Guidance | Latest Service Change Notices

This website is considered **EXPERIMENTAL**, is supported on an **8x5 basis**, and has **no guarantee of availability** in the future. The data located **HERE** are considered **OPERATIONAL** and are supported on a **24x7 basis**. For more disclaimers please see **here**.

Map Static Hydrograph Dynamic Hydrograph GFS-Based Guidance GFS-Based Guidance Archived Graphs Search Stations NOAA Water Levels-Tide

DEERING AK 9469751, 02/05/2026 06:21 UTC

Height in Feet (MHHW) vs Time (UTC)

Legend: Surge (blue), Tide (orange), Observation (red), Water Level Guidance (green), Anomaly (purple), Ensemble Uncertainty (grey)

Date(GMT)	Surge	Tide	Obs	Fcst	Anom	Fst90%	Fst10%
02/02 08Z	0.1	-0.4	9997.2	-0.3	-0.4	-0.2	
02/02 01Z	0.1	-0.2	9997.2	-0.1	-0.2	0.0	
02/02 02Z	0.1	-0.1	9997.2	0.0	-0.1	0.1	
02/02 03Z	0.1	-0.1	9997.2	-0.0	-0.1	0.1	
02/02 04Z	0.1	0.4	9997.2	-0.3	-0.5	-0.2	
02/02 05Z	0.0	-0.8	9997.2	-0.8	-0.9	-0.7	
02/02 06Z	-0.1	-1.3	9997.2	-1.4	-1.6	-1.3	
02/02 07Z	-0.1	-1.7	9997.2	-1.6	-2.1	-1.7	
02/02 08Z	-0.1	-1.9	9997.2	-2.0	-2.3	-1.9	
02/02 09Z	-0.2	-1.9	9997.2	-2.1	-2.4	-1.9	
02/02 10Z	-0.2	-1.7	9997.2	-1.9	-2.2	-1.7	
02/02 11Z	-0.2	-1.3	9997.2	-1.5	-1.9	-1.3	
02/02 12Z	-0.2	-0.9	9997.2	-1.1	-1.4	-0.9	
02/02 13Z	-0.2	-0.4	9997.2	-0.6	-0.9	-0.4	
02/02 14Z	-0.2	-0.1	9997.2	-0.3	-0.6	-0.1	

US Dept of Commerce | National Oceanic and Atmospheric Administration | National Weather Service | Meteorological Development Laboratory
 Authors: Huiang Liu and Arthur Taylor | 1325 East West Highway | Silver Spring, MD 20910
 Information Quality | Freedom of Information Act (FOIA) | Disclaimer | Privacy Policy

Alaska Flood Inundation Tool (AK-FIT)

METHODS FOR EVALUATING COASTAL FLOOD IMPACTS IN ALASKA COMMUNITIES

Keith C. Horen, Autumn C. Poisson, Jessie E. Christian, and Nora M. Nieminski



Published by
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
2024



Figure 1. Comparison of a simple bathtub inundation model (left) and a hydrologically connected bathtub model (right) in Teller, Alaska. The area in blue is hydrologically connected to the inundation source, whereas the areas in red are protected by barriers and incorrectly depicted as inundated in the simple bathtub model.

Report of Investigation 2025-3

COASTAL FLOOD IMPACT ASSESSMENT FOR DEERING, ALASKA

Jessica E. Christian, Keith C. Horen, and Nora M. Nieminski



Photograph of the Deering, Alaska, shoreline following a November 11-12, 2017, storm. Photo: Alaska Department of Homeland Security & Emergency Management.



Published by
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
2025



Deering

Water Height:
2.00 feet (MHHW)

Flood Categories (current category outlined):

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MAJOR	Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations are necessary.	> 7.67 feet (MHHW)
MODERATE	Some inundation of structures and roads. Some evacuations of people and/or transfer of property to higher elevations are necessary.	3.75 – 7.67 feet (MHHW)
MINOR	Minimal or no property damage. Evacuations of people and/or transfer of property to higher elevations are typically not necessary.	1.30 – 3.75 feet (MHHW)

Occupied Buildings Impacted (0 total):

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Digital Elevation Model:

<https://elevation.alaska.gov/download>

NOAA Tide Station:

[9469751](https://tidesandcurrents.noaa.gov/station/9469751)

Nearest PETSS Forecast Location:

[9469751](https://forecast.weather.gov/point.php?lat=62.3&lon=-158.5)

DGGS Flood Impact Assessment:

[DOI-10.14509/31647](https://doi.org/10.14509/31647)

Categorization Methodology:

[DOI-10.14509/31279](https://doi.org/10.14509/31279)

Still Water Inundation Model

[DOI-10.14509/31154](https://doi.org/10.14509/31154)



Alaska Flood Inundation Tool (AK-FIT)

The screenshot displays the Alaska Water Level Watch interface. At the top, the title "Alaska Water Level Watch" is visible along with navigation icons for home, catalog, map, and help. Below the title, there are filters for "All" (748), "Sensor Stations" (710), "Affiliates" (18), "Variable Types" (18), and "Data Layers" (2). The main content area is titled "Alaska Division of Geological & Geophysical Surveys (AK-DGGS)" and "Deering, Alaska, Water Level (DRTA2)".

On the left, a map shows the location of Deering, Alaska, with a white star. A legend on the far left lists various locations in Alaska, including Anchorage, Barrow, and Sitka. The map includes a scale bar (50 km / 50 mi) and a "Base layer © MapBox" label.

Below the map, a metadata table provides details for the station:

Location	66.0746,-162.7215
Temporal Coverage	Sep 6, 2018 12:00 (AKDT) - Oct 4, 2025 04:00 (AKDT)
Tags	Tier C
Platform	Fixed
Web site	https://dggs.alaska.gov/hazards/coastal/
Metadata	ERDDAP station page
URN	deering-alaska-water-level

Below the table, the "Affiliations" section shows the station is operated by the Alaska Division of Geological & Geophysical Surveys (AK-DGGS).

The right side of the interface features a "Water Level" chart. The chart is a time series plot showing water level in meters (MHW) from September 6, 2018, to October 4, 2025. The y-axis ranges from -2.7 to 5.8. The x-axis shows dates from Sep 6, 2018, to Oct 4, 2025. The chart includes a solid black line for the water level, a dashed red line for the Mean High Water (MHW) threshold, and a shaded pink area for the range between the MHW and the Mean Low Water (MLW) threshold. The chart is set to "Time series" mode with "Autoscale" checked and "Time bin" set to "all Auto".

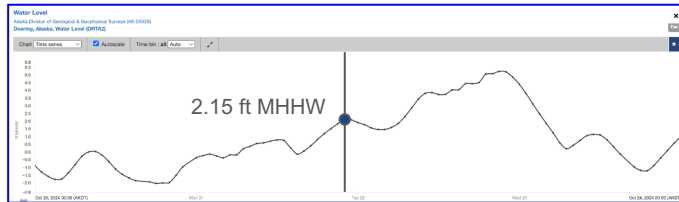
Below the chart, there are options for "Downloads", "Sensor", "Sensor with QC", and "Source". A legend is also present.

October 20–24, 2024



Alaska Flood Inundation Tool (AK-FIT)

October 20–24, 2024



THE GREAT STATE OF ALASKA | DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska | Natural Resources | Geological & Geophysical Surveys

WATER HEIGHT: Deering

FEET METERS

Water Depth: 0.00

Deering

Water Height:
2.00 feet (MHHW)

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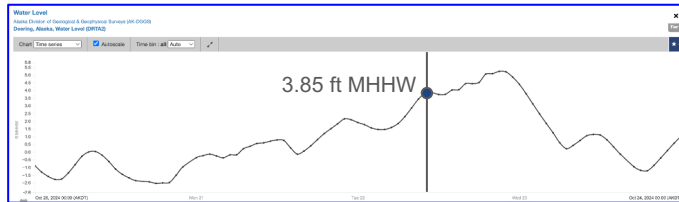
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Still Water Inundation Model
DOI: 10.14509/31154



Alaska Flood Inundation Tool (AK-FIT)

October 20–24, 2024



THE GREAT STATE OF ALASKA | DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska | Natural Resources | Geological & Geophysical Surveys

Water Height: Deering

FEET METERS

Water Depth: 0.00

Deering

Water Height:
4.00 feet (MHHW)

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DGGS Flood Impact Assessment:
DOI-10.14509/31647

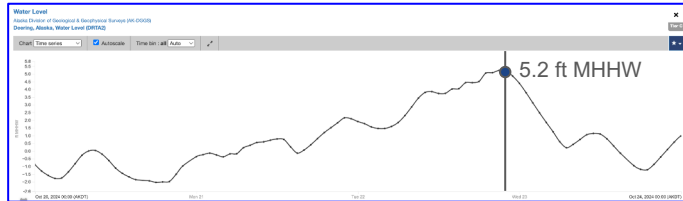
Categorization Methodology:
DOI-10.14509/31279

Still Water Inundation Model
DOI-10.14509/31154



Alaska Flood Inundation Tool (AK-FIT)

October 20–24, 2024



THE GREAT STATE OF ALASKA | DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska | Natural Resources | Geological & Geophysical Surveys

WATER HEIGHT: Deering

FEET METERS

WATER DEPTH: 0.00

Deering

Water Height:
5.00 feet (MHHW)

Flood Categories (current category outlined):

CATEGORY	DESCRIPTION	RANGE
MAJOR	Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations are necessary.	> 7.67 feet (MHHW)
MODERATE	Some inundation of structures and roads. Some evacuations of people and/or transfer of property to higher elevations are necessary.	3.75 – 7.67 feet (MHHW)
MINOR	Minimal or no property damage. Evacuations of people and/or transfer of property to higher elevations are typically not necessary.	1.30 – 3.75 feet (MHHW)

Occupied Buildings Impacted (0 total):

- Residential: 0
- Public: 0
- Commercial: 0

Occupied buildings are residential, public, or commercial structures in which people live or work.

Digital Elevation Model:
<https://elevation.alaska.gov/download>

NOAA Tide Station:
9469751

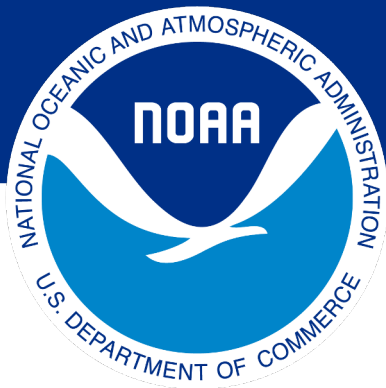
Nearest PETSS Forecast Location:
9469751

DGGS Flood Impact Assessment:
DOI_10.14509/31647

Categorization Methodology:
DOI_10.14509/31279

Still Water Inundation Model
DOI_10.14509/31154





NOAA Office for Coastal Management Sea Level Rise Viewer

NOAA Office for Coastal Management (OCM)

Digital Coast



Dana Brown
*Alaska Regional
Geospatial Coordinator*



Harper Baldwin
Geospatial Analyst



Billy Brooks
Physical Scientist



Doug Marcy
*Coastal Hazards
Specialist*



Sea Level Rise Viewer

Visualize coastal flooding and sea level rise

- Nationally consistent screening-level planning and decision-support tool
- Modified “bathtub-style” approach with hydrologic connectivity
- Flood extent and depth for user-selected water levels
- Integrated with local sea level rise projections



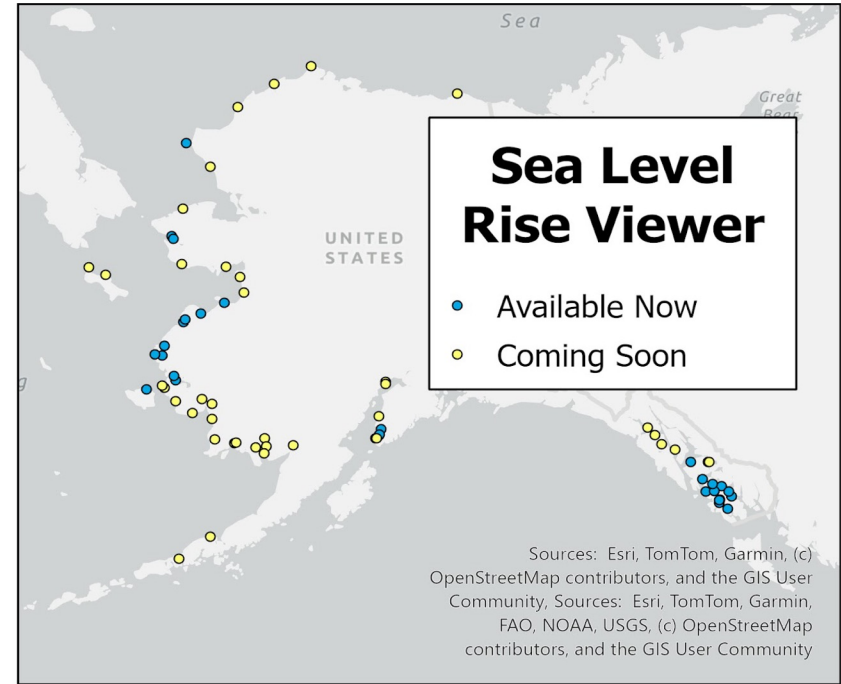
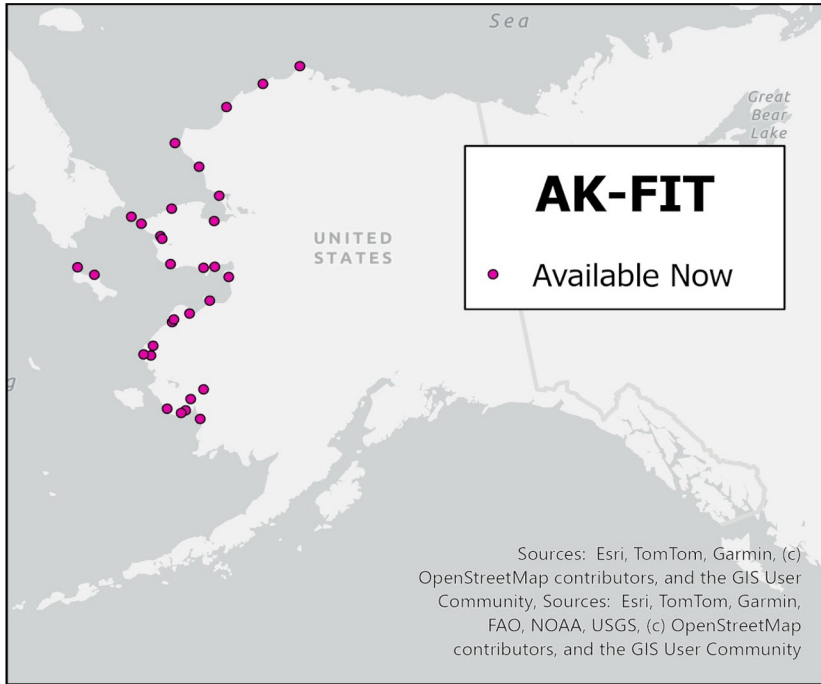
Emmonak, Alaska

coast.noaa.gov/slr



Alaska Data Availability

28 communities and 41 more coming Spring 2026





WATER LEVEL

- 10ft
- 9.5ft
- 9ft
- 8.5ft
- 8ft
- 7.5ft
- 7ft
- 6.5ft
- 6ft
- 5.5ft
- 5ft
- 4.5ft
- 4ft
- 3.5ft
- 3ft
- 2.5ft
- 2ft
- 1.5ft
- 1ft
- 0.5ft
- MHHW

MHHW



Sea Level Rise



Local Scenarios



Mapping Confidence

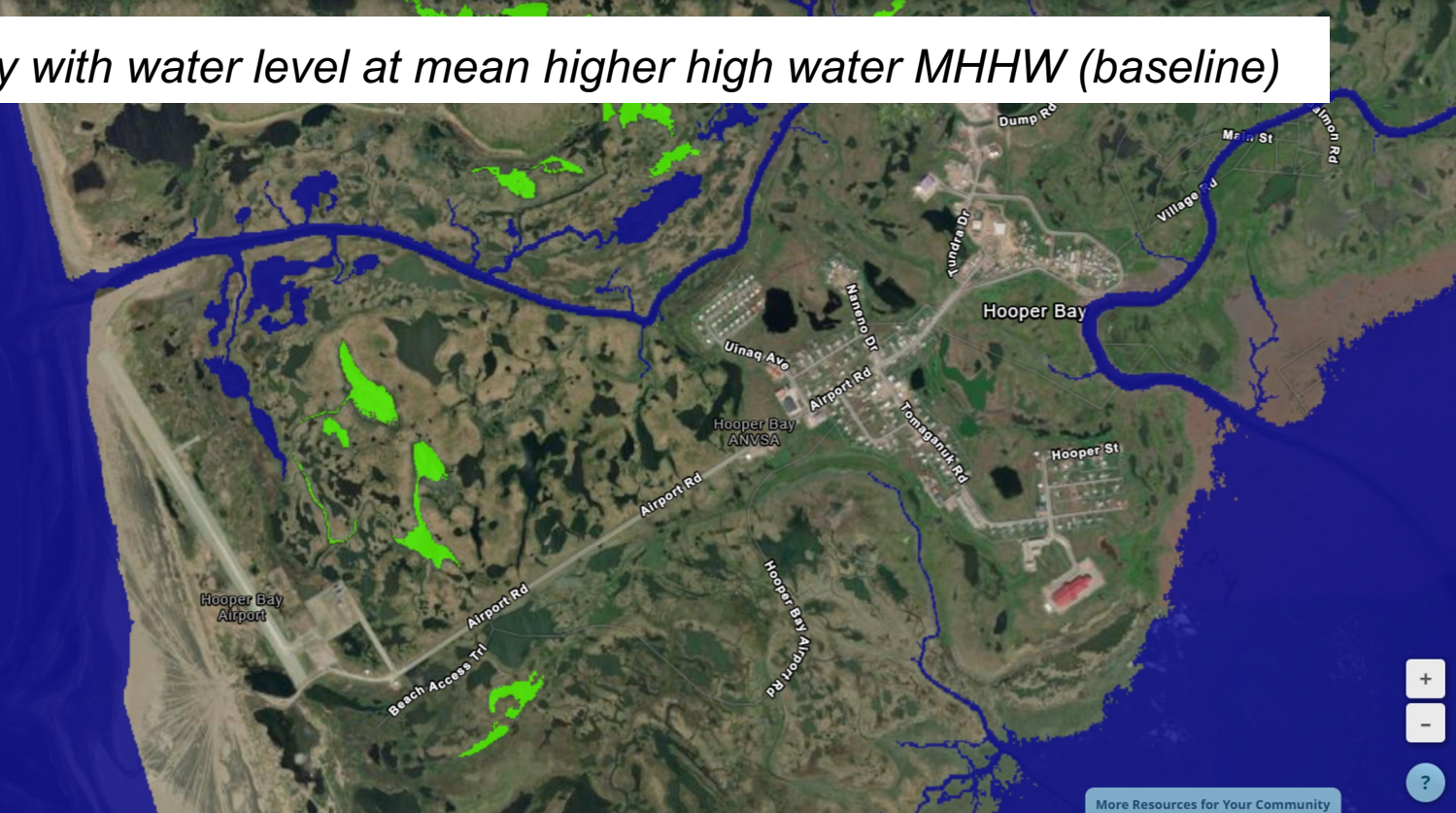


Marsh Migration



High Tide Flooding

Hooper Bay with water level at mean higher high water MHHW (baseline)



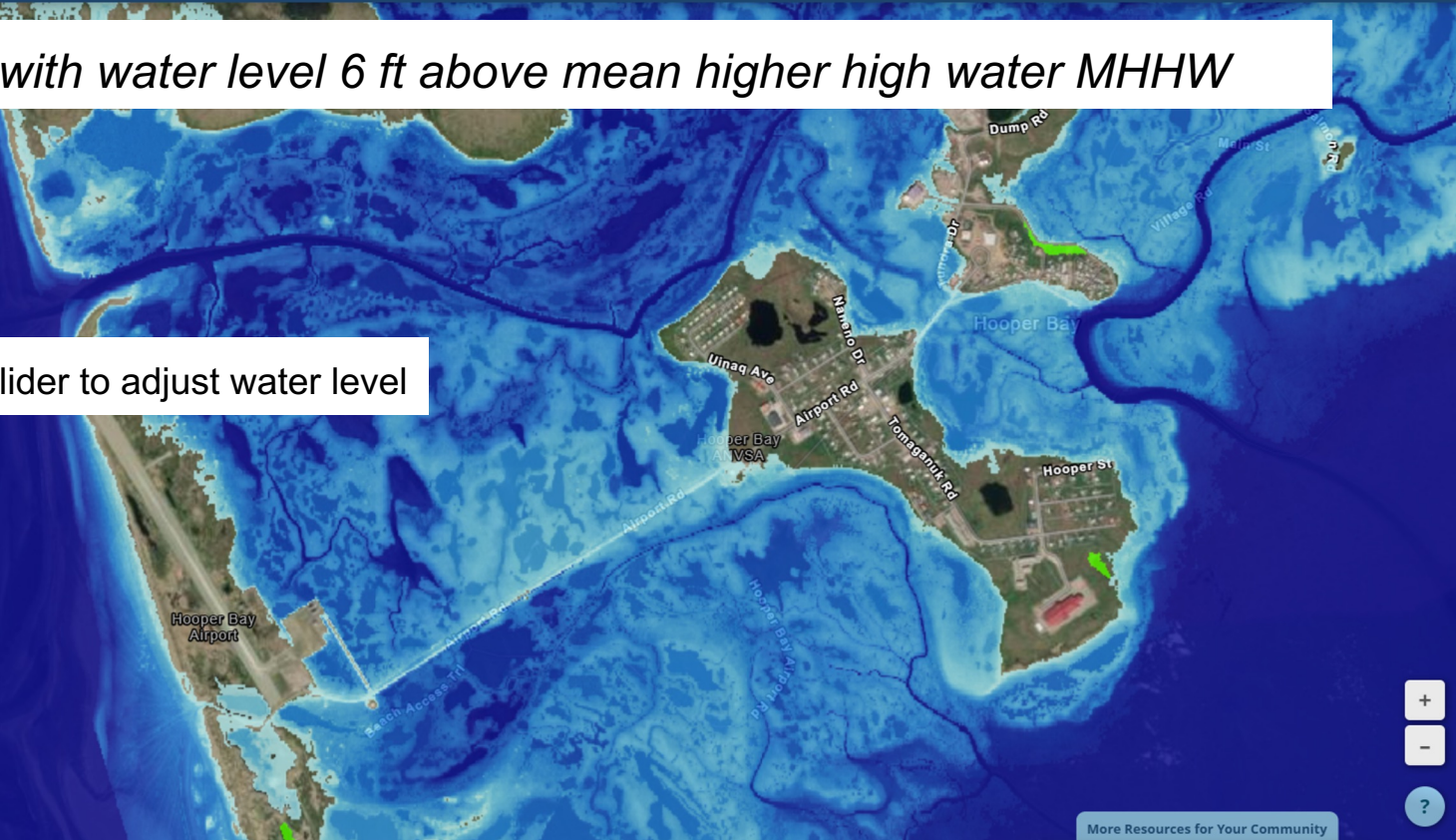
More Resources for Your Community





Hooper Bay with water level 6 ft above mean higher high water MHHW

Use the slider to adjust water level





VIEW BY SCENARIO

VIEW BY YEAR

Scenario Year

2022 Projections

HIDE GRID

Use the 'Local Scenarios' tab to select a water level value based on projected sea level rise



Sea Level Rise



Local Scenarios



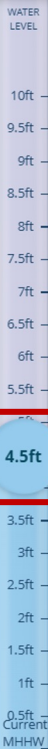
Mapping Confidence



Marsh Migration



High Tide Flooding

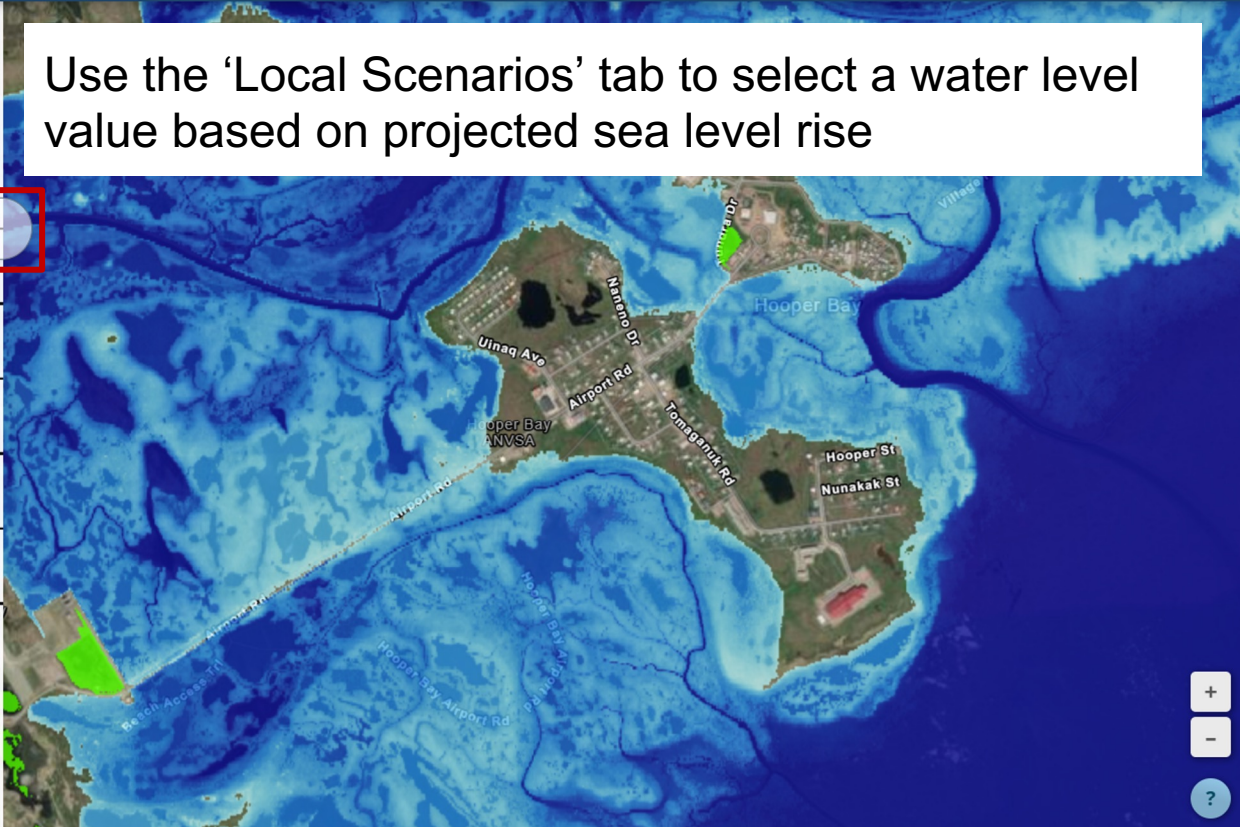


- High : 6.17ft
- 4.5ft Intermediate High : 4.43ft
- Intermediate : 2.92ft
- Intermediate Low : 1.51ft
- Low : 0.89ft

PSMSL ID: 1002801940
IN YEAR 2100

OBSERVATION EXTRAPOLATION: NOT AVAILABLE AFTER 2050

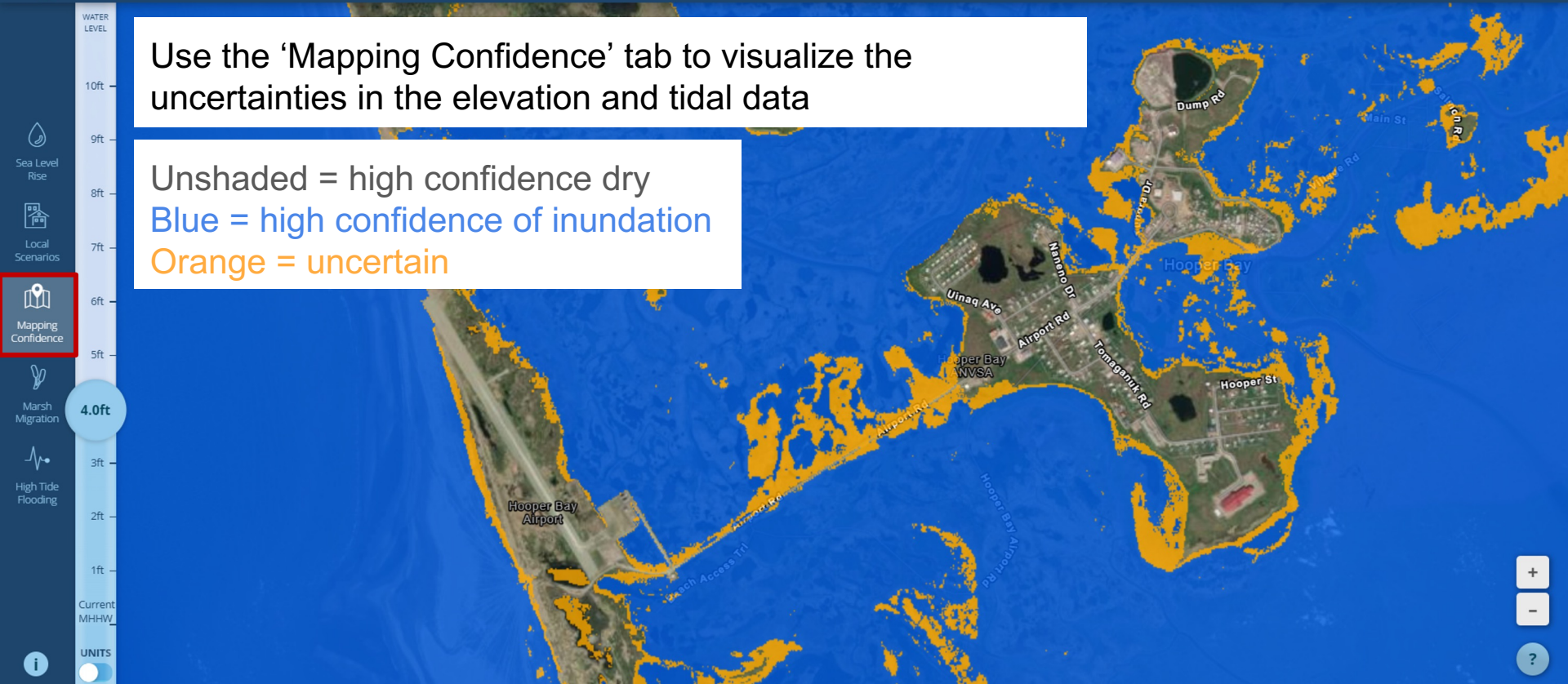
2100





Use the 'Mapping Confidence' tab to visualize the uncertainties in the elevation and tidal data

Unshaded = high confidence dry
Blue = high confidence of inundation
Orange = uncertain



Sea Level Rise



Local Scenarios



Mapping Confidence



Marsh Migration



High Tide Flooding

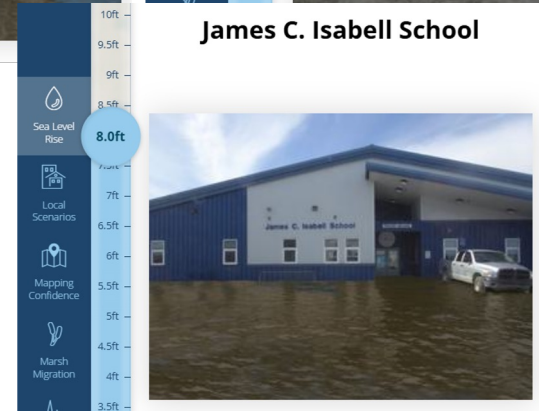
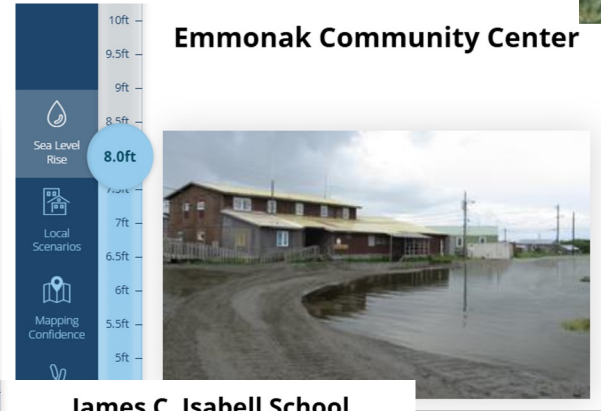
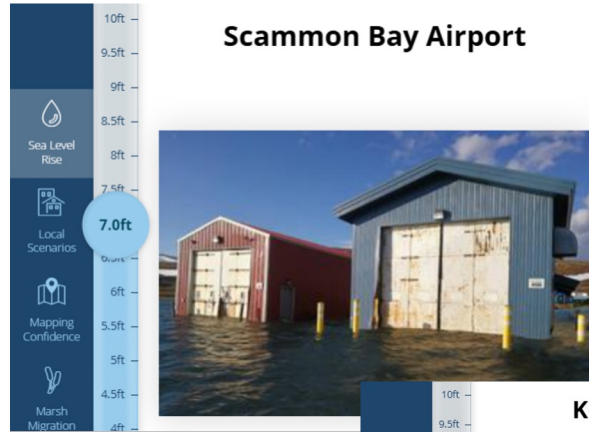
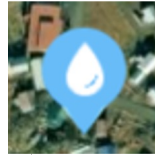


Current MHHW

UNITS



Photo Simulations of Sea Level Rise



Data Access

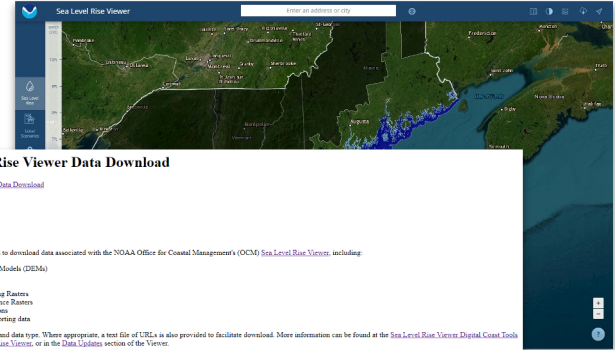
Web-based and downloadable

- Web mapping tool
- Data download
 - Digital elevation models
 - Sea level rise inundation
- Map services
- Mapping methods documentation

chs.coast.noaa.gov/htdata/Inundation/SLR/BulkDownload


coast.noaa.gov/arcgis/rest/services/dc_slr

coast.noaa.gov/digitalcoast/tools/slr.html



Sea Level Rise Viewer Data Download

[Sea Level Rise Viewer Data Download](#)



This page provides links to developed data associated with the NOAA Office for Coastal Management's (OCM) [Sea Level Rise Viewer](#), including:

- Digital Elevation Models (DEM)
- Depth Rasters
- Erosion Rasters
- High Tide Flooding Rasters
- Mapping Confidence Rasters
- Inundation Polygons
- Ancillary or supporting data

Navigate by geographic area and data type. Where appropriate, a test file of UTM is also provided to facilitate download. More information can be found at the [Sea Level Rise Viewer Digital Coast Tools Page](#), in the [Sea Level Rise Viewer](#), or in the [Data Updates](#) sections of the Viewer.

Subdirectories

[Available](#)
[DEM](#)
[Depth_Rasters](#)
[Erosion_Rasters](#)
[High_Tide_Flooding](#)
[Mapping_Confidence](#)
[Sea_Level_Rise_Vectors](#)
[Tide_Surfaces](#)

Organizational Information

- [Business Policy](#)
- [Disclaimer](#)
- [USA.gov](#)
- [National Ocean Service](#)
- [National Oceanic & Atmospheric Administration](#)
- [United States Department of Commerce](#)

ArcGIS REST Services Directory

Home > services > dc_slr > slr_3ft (MapServer) [Help](#) | [API Reference](#) [Login](#)

[JSON](#) | [SOAP](#) | [WMS](#) | [WFS](#)

dc_slr/slr_3ft (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS Online Map Viewer](#) [ArcGIS Earth](#) [ArcGIS Pro](#)

Service Description: 3ft Sea Level Rise Inundation This dataset was created as part of the National Oceanic and Atmospheric Administration Office for Coastal Management's efforts to create an online mapping viewer depicting potential sea level rise and its associated impacts on the nation's coastal areas. The purpose of this dataset is to provide coastal managers and scientists with a preliminary look at sea level rise and coastal flooding impacts. The viewer is a screening-level tool that uses nationally consistent data sets and analyses. Data and maps provided can be used at several scales to help gauge trends and prioritize actions for different scenarios. The purpose of this dataset is to show potential sea level rise inundation of 3 ft above current Mean Higher High Water (MHHW) for the area. Tiles have been cached down to Level ID 15 (1:10,055). This dataset illustrates the scale of potential flooding, not the exact location, and does not account for erosion, subsidence, or future construction. Inundation is shown as it would appear during the highest high tides (excludes wind driven tides) with the sea level rise amount. The dataset should be used only as a screening-level tool for management decisions. As with all remotely sensed data, all features should be verified with a site visit. The dataset is provided "as is," without warranty to its performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of this dataset is assumed by the user. This dataset should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes. For more information visit the Sea Level Rise Impacts Viewer (<http://coast.noaa.gov/slr>).

Map Name: Layers

Legend

[All Layers and Tables](#)

[Dynamic Legend](#)

[Dynamic All Layers](#)



Sea Level Rise Viewer

Planning

Visualize potential impacts
through maps



AK-FIT

Emergency Preparedness

Visualize potential impacts
through maps



AWLW

Real-time measurements

Data collected for storms
available for public use



Scenario 1

Plan for an incoming storm

- *A strong storm is expected to move over the Bering Sea and cause coastal flooding.*
- A flood warning is issued for **Shaktoolik** – expected to reach **12 ft MHHW**
- Let's use AK-FIT and AWLW sites.
 - **AWLW**: Look at current water level to compare to anticipated levels.
 - **AK-FIT**: Look at anticipated flood levels and impacted areas of community.
- *What parts of the community will impacted?*



awlw.aos.org



maps.dggs.alaska.gov/akfit

Scenario 2

Assess impacts of anticipated sea level rise

- *Projected sea level rise rates differ along the Alaskan coast, and projections vary with future emissions rates.*
- Let's use **SLR Viewer** to assess potential impacts to **Hooper Bay**.
- Navigate to “Local Scenarios” tab, and explore water levels “By Year” in 2100.
 - **SLR Viewer:** How much do the low and high sea level rise scenarios vary in 2100 in Hooper Bay?
 - **AWLW:** Look at current water level to compare to projected levels. **Hint:** You may need to look further than you think!
- **Question:** What parts of the community will be safe?
- **Bonus Question:** *Look at the Intermediate High water level in 2100. How high would water levels be if there was a 4ft storm surge on top of this water level? What parts of the community are safe in this scenario?*



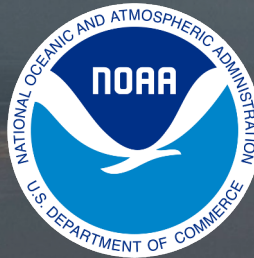
Comments, Questions, Feedback



AK DGGS, AK-FIT

Nora Nieminski, nora.nieminski@alaska.gov

Keith (KC) Horen, keith.horen@alaska.gov



NOAA OCM, Sea Level Rise Viewer

Dana Brown, dana.brown@noaa.gov

Harper Baldwin, harper.baldwin@noaa.gov



AOOS, AWLW Portal

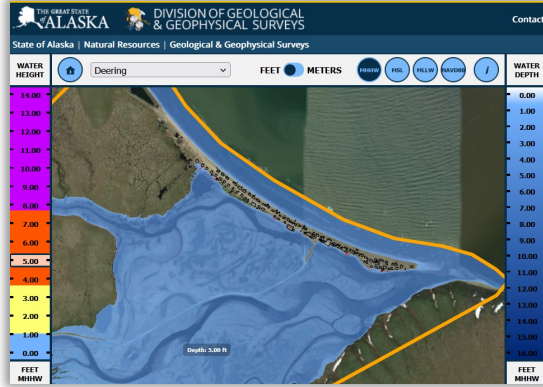
Taylor Borgfeldt, borgfeldt@aoos.org

YouTube 'Alaska Ocean Observing System' - video tutorials

Coastal Flooding Tools Comparison



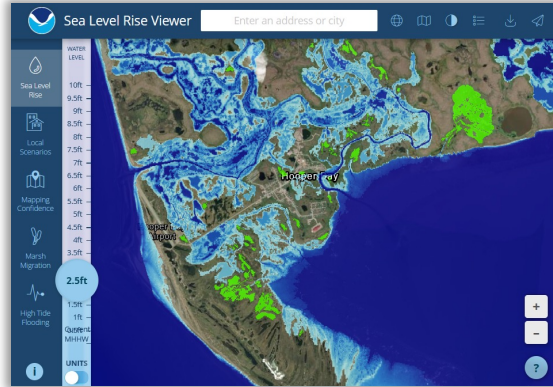
Alaska Flood Inundation Tool AK-FIT



- Emergency preparedness
- Screening tool for approaching storm flood predictions
- Flood extents include stillwater levels, no surge or waves
- Mobile-friendly
- Unique feature: displays building footprints and first-floor elevations where available



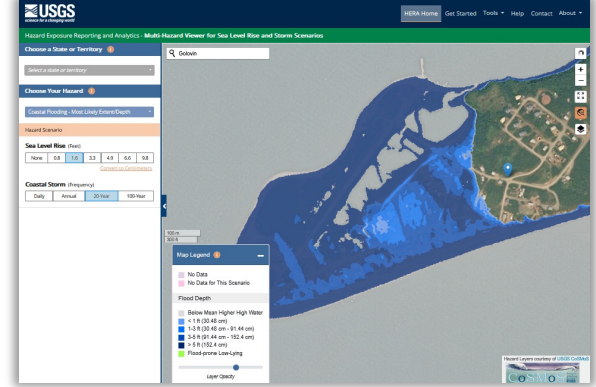
Sea Level Rise Viewer



- Planning and decision support
- Screening tool for coastal flooding and sea-level rise
- Flood extents include stillwater levels without waves
- Unique feature: integrates with local sea level rise



Coastal Storm Modeling System CoSMoS/HERA



- Long-range planning
- Screening tool for future flood hazards, including sea-level rise, storms, and changing climate
- Flood extents include effects of future storms, waves, river input
- Unique feature: includes velocity hazards, wave heights, and erosion

Availability of Alaska coastal flood tools, by community

Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT
Alakanuk		Available	Available	Kake		Available		Point Lay		Coming Soon	Available
Aleknagik		Coming Soon		Kaktovik		Coming Soon		Port Graham		Coming Soon	
Angoon		Coming Soon		Kasaan		Available		Quinhagak		Coming Soon	Available
Beluga		Coming Soon		Kipnuk			Available	Saint Michael	Coming Soon	Available	Available
Big Salt		Available		Kivalina	Coming Soon	Coming Soon	Available	Saint Paul	Coming Soon		
Brevig Mission	Coming Soon	Available	Available	Klawock		Available		Savoonga		Coming Soon	Available
Chefornak		Coming Soon		Kongiganak			Available	Scammon Bay		Available	Available
Chevak		Available	Available	Kotlik		Available	Available	Seldovia		Available	
Coffman Cove		Available		Kotzebue	Coming Soon		Available	Seldovia Village		Available	
Cold Bay		Coming Soon		Koyuk	Coming Soon			Shaktolik	Coming Soon	Coming Soon	Available
Craig		Available		Kupreanof		Coming Soon		Shishmaref	Coming Soon	Coming Soon	Available
Deering	Coming Soon		Available	Kwigillingok		Coming Soon	Available	Stebbins	Coming Soon		Available
Dillingham		Coming Soon		Levelock		Coming Soon		Teller	Coming Soon	Available	Available
Diomedede			Available	Manokotak		Coming Soon		Tenakee Springs		Coming Soon	
Edna Bay		Available		Mekoryuk	Coming Soon	Available		Thorne Bay		Available	
Eek		Coming Soon		Mertarvik		Available		Togiak		Coming Soon	
Ekuk		Coming Soon		Nanwalek		Coming Soon		Toksook Bay		Coming Soon	
Elim	Available	Coming Soon	Available	Napakiaik			Available	Tuntutuliak		Coming Soon	Available
Emmonak		Available	Available	Naukati Bay		Available		Tununak		Coming Soon	
Gambell	Coming Soon	Coming Soon	Available	Nelson Lagoon	Coming Soon	Coming Soon		Twin Hills		Coming Soon	
Golovin	Available		Available	Newtok		Available		Tyonek		Coming Soon	
Goodnews Bay		Coming Soon		Ninilchik		Coming Soon		Unalakleet	Available	Coming Soon	
Gustavus		Coming Soon		Nome	Coming Soon	Coming Soon	Available	Utqiagvik	Available	Coming Soon	Available
Homer		Available		Petersburg Borough		Coming Soon		Wainwright		Coming Soon	Available
Hoonah		Coming Soon		Point Baker		Available		Wales	Coming Soon		Available
Hooper Bay	Coming Soon	Available	Available	Point Hope		Available	Available	Whale Pass		Available	
Hydaburg		Available									