

Proposal for OCEANS'17 MTS/IEEE Anchorage Tutorial:

U. S. NOAA National Ocean Service Digital Showcase

The National Ocean Service (NOS) provides data, tools, and services that support coastal economies and their contribution to the national economy. NOS is one of six major divisions within the National Oceanic and Atmospheric Administration (NOAA) and is the Nation's most comprehensive coastal agency with world-class expertise in science, technology, and management. NOS has a longstanding mission to promote safe and efficient transportation and commerce, and is the Nation's leading authority on hydrography, shoreline mapping, and nautical charts; water levels, tides, and currents; and geodetic positioning. In addition to many science partnership programs, the National Spatial Reference System, National Water Level Observation Network, and National Current Observation Program are all maintained by NOS. Delivery of NOS navigation, observations, and positioning products to the public is being conducted through an ever-expanding suite of online digital portals, tools, and interactive maps. The 'firehose' of high-quality coastal and ocean data available from NOS is a boon for scientists and engineers, but only if users know how to find it.

Following a brief introduction to navigating NOAA itself, this free-of-charge tutorial will dive into a sampling of our most popular digital resources for coastal and ocean data. Attendees will be led on a whirlwind tour that includes tips for accessing NOAA shorelines, bathymetry, coastal imagery, real-time ocean observations, forecasts, and management visualization tools (like sea level change viewers). Each portion of the tutorial will focus on a different type of data products; Alaska subject-matter experts from across NOS along with private sector partner Axiom Data Science will trade off in the presentation of material in four sections with three scheduled 15-minute breaks. All presenters will be available for questions throughout and will also stick around during the breaks so that attendees may learn more about the resources in the topical area of most interest to them. While Alaska data will be featured front and center in tribute to our conference setting, the content presented represents products that are available Nationwide.

This ½-day, 4-hour session is intended for an audience diverse in experience level. From a seasoned user of NOAA data in search of tricks for faster and easier access, to a researcher interested in new public outreach opportunities, or someone who is trying to understand coastal and ocean processes through a lens of data for the very first time, there will be something for everyone. An interactive format will keep this tour interesting with entertaining use-case stories and real-time queries for data and products from participant project areas. By the end of this tutorial, attendees will be equipped with an up-to-date knowledge of how to locate and leverage the latest Federally-sourced ocean and coastal data portals in the United States.

Please note: Classroom facilities will require a projector and at least one high-speed, wired internet connection for the presenters. Writing surfaces for the attendees would be preferred.

There is no limit to the number of participants, but those interested in attending are asked to pre-register so that the speakers will know how many people to expect.

Additional supporting materials:

Curriculum Vitae for lead presenters (Kinsman and Buesseler are attached).

Short biographical sketches presenters for publication in the conference program (and contact info):

Nicole Kinsman is Alaska's Regional Advisor with NOAA's National Geodetic Survey (NGS). Based in Anchorage, she serves as the local point of contact for NGS and is available to provide technical guidance on geospatial positioning topics in support of activities such as mapping and charting, navigation, flood risk determination, data collection, land use and ecosystem management. She holds a PhD in Earth Sciences from the University of California Santa Cruz and is an affiliated faculty member at the University of Alaska Fairbanks.

Lieutenant Bart Buesseler is Alaska's Navigation Manager for NOAA's Office of Coast Survey. Based in Anchorage, he works directly with pilots, mariners, port authorities, and recreational boaters to help identify navigational challenges facing the marine transportation system, providing resources and services that promote safe and efficient navigation. He holds a Bachelor's of Science in Mechanical Engineering from Kettering University in Flint, Michigan and a commission in the NOAA Commissioned Officer Corps.

Kris Holderied is Director of the NOAA Kasitsna Bay Laboratory, in south-central Alaska, which is a coastal marine field laboratory in NOAA's National Ocean Service, operated in partnership with the University of Alaska Fairbanks. The laboratory conducts subarctic coastal ecosystem research to help Alaska coastal managers and communities understand and prepare for ecosystem changes. Kris is a physical oceanographer, with a BS in Oceanography from the U.S. Naval Academy and a MS in Physical Oceanography from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program.

Lei Shi is a physical scientist in NOAA's Coast Survey Development Laboratory, part of the National Ocean Service's Office of Coast Survey. Lei earned degrees from the Ocean University of Qingdao in Applied Mathematics (B.Sc.) and Physical Oceanography (M.Sc.), and from the University of Southampton (Ph.D.) in Marine Sciences. He has worked on a variety of coastal modeling applications, including physical-biogeochemical coupled modeling, data assimilation, tide modeling, and operational ocean forecasting. Since joining NOAA, he has worked as part of the VDatum development team in developing a tide model for Southeast Alaska and building innovative techniques to blend model results and data together that enable spatially varying uncertainty of the blended product to be computed. Lei has most recently been involved with development of the Cook Inlet Operational Forecast System (CIOFS).

Will Koeppen serves as staff scientist at Axiom Data Science and he is a liaison to many of the scientific groups with which Axiom works, including the Alaska Ocean Observing System. He has a Bachelor of Science degree from Juniata College (Geology and Physics, 2001); a Masters degree from Washington University in St. Louis (Earth and Planetary Science, 2003); and a PhD from the University of Hawaii at Manoa (Geology and Geophysics, 2008).

Bibliography of featured online resources for the proposed presentation & speaker allocation:

8:00 – 8:15 Welcome (Nicole Kinsman) and NOAA/National Ocean Service ‘101’ (K. Holdried)

8:15 – 9:00 Online tools from the Office of Coast Survey (B. Buessler):

- [Chart Locator](#) and PDF, Raster, and Electronic Navigational Charts Downloads
- [ENC Online](#)
- [Historical Maps & Charts Collection](#)
- [Hydrographic Survey Plan Story Map\(s\)](#)
- [SeaSketch](#) collaborative mapping tool for U.S Federal Mapping Coordination
- [NowCOAST](#) web map portal to real-time coastal observations, forecasts, and warnings

9:00 – 9:15 Discussion & Break

9:15 – 10:00 Products from the National Geodetic Survey and CO-OPS ‘Tides & Currents’ (N. Kinsman)

- [NOAA Shoreline Data Explorer](#)
- [Coastal Oblique](#) and [Emergency Response](#) Imagery Viewers
- [Survey Control](#) and [OPUS Shared Solution](#) Maps
- [Coordinate Conversion Tool](#) and Vertical Datum Transformation (NOS [VDatum](#))
- [Sea Levels](#), and [Extreme Water Levels](#) Tool
- [Inundation Dashboard](#)
- [Tides and Currents ODIN Map](#)

10:00 – 10:15 Discussion & Break

10:15 – 10:30 OCS Development Laboratory and CO-OPS continued (L. Shi)

- [Operational Forecast Systems](#)

10:30 – 11:00 Example Integrated Ocean Observation System Interface: [Alaska/AOOS](#) (W. Koeppen)

- [Ocean Data Explorer](#)
- [Real-time Sensor Map](#)
- [Model Explorer](#)
- [Historical Sea Ice Atlas](#)
- AOOS Regional Portal: [Gulf of Alaska](#) (K. Holderied)

11:00 – 11:15 Discussion & Break

11:15 – 11:45 Selected Data Tools for Coastal Science & Management (K. Holderied)

- [NCEI Bathymetric Data Viewer](#)
- Habitat Map Products (e.g. [BIOMapper](#))
- ShoreZone (via [AOOS](#) & [Fisheries](#))
- [Digital Coast Partnership](#) for Coastal Management Data, Tools and Visualization (N. Kinsman)