**Intro for episode page:** A satellite system designed to image land is helping fill in data gaps of underwater topography near shorelines.

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**Eyes on Earth Episode 123 – Bathymetry Mapping**

**Summary**: This Eyes on Earth episode is the third in our series on using Landsat for coastal studies. We talk to physical geographer Jeff Danielson about bathymetry and how it is critical for coastal modeling. Bathymetry captures the shape of underwater topography, and satellite-derived bathymetry helps fill in areas where there are data gaps. Even though Landsat was designed to image land, it’s a big part of this work because of its systematic temporal coverage. Besides that, high-resolution data from sonar and lidar are too labor intensive to collect everywhere. Therefore, they use all these sources together to get a better picture of bathymetry, especially in remote areas. This modeling helps with studying changes to shorelines such as storm surge, sediment transport, and flood damage.

**Guest**: Jeff Danielson, USGS EROS

**Host**: Tom Adamson (contractor for USGS EROS)

**Producer**: Tom Adamson (contractor for USGS EROS)

**Release date**: Thursday, September 12, 2024

**More about Coastal Mapping**:

* [USGS Finds New Way to Measure Ocean Depth with Landsat](https://www.usgs.gov/centers/eros/news/usgs-finds-new-way-measure-ocean-depth-landsat)
* [USGS Coastal Marine Hazards and Resources Program](https://www.usgs.gov/programs/cmhrp)
* [USGS Coastal National Elevation Database (CoNED)](https://www.usgs.gov/special-topics/coastal-national-elevation-database-applications-project)
* [NOAA National Ocean Mapping, Exploration and Characterization (NOMEC) Council](https://www.noaa.gov/ocean-science-and-technology-subcommittee/national-ocean-mapping-exploration-and-characterization-nomec-council)

**Related Episodes:**

* [Episode 121: Mapping the Australia Coastline](https://www.usgs.gov/centers/eros/science/eyes-earth-episode-121-mapping-australia-coastline)
* [Episode 120: Mapping the California Coastline](https://www.usgs.gov/centers/eros/science/eyes-earth-episode-120-mapping-california-coastline)
* [Episode 25: Rising Seas](https://www.usgs.gov/media/audio/eyes-earth-episode-25-rising-seas)

**Keywords**: Earth Resources Observation and Science (EROS) Center, Eyes on Earth, Landsat, Lidar Bathymetry, LIDAR, Sonar, Bathymetry, Coasts, Coastal Modeling, Shorelines

**Thumbnail image:**

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**Homepage image:**<https://cms.usgs.gov/media/images/homepage-image-eoe-episode-123-bathymetry-mapping>

**Homepage descriptor**: This episode of our remote sensing podcast describes how Landsat is used to map bathymetry in areas that are too difficult to map with lidar or sonar.

**Topics:** Data, Landsat, Remote Sensing, Water

**CMS of web page:**<https://cms.usgs.gov/centers/eros/science/eyes-earth-episode-123-bathymetry-mapping>