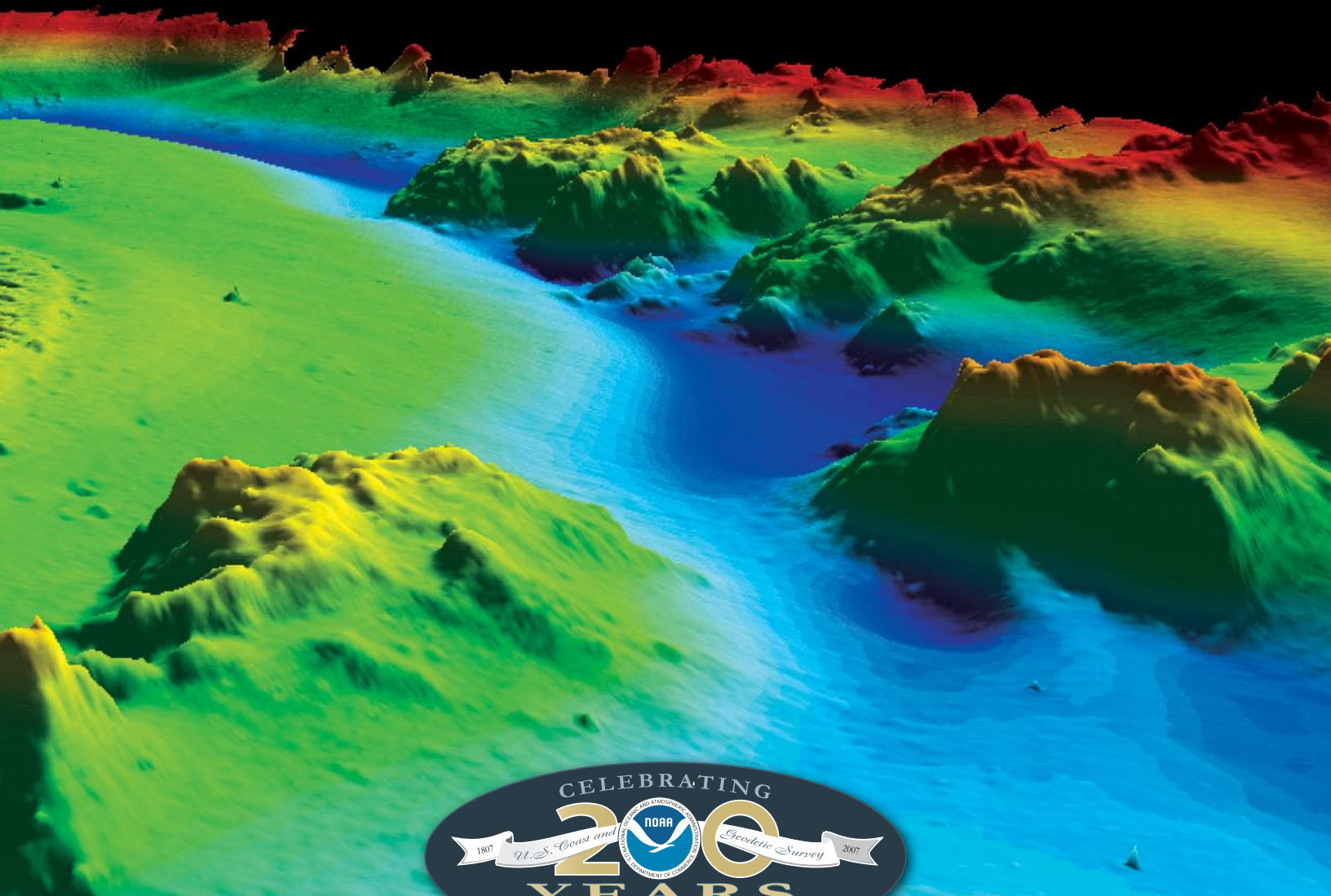
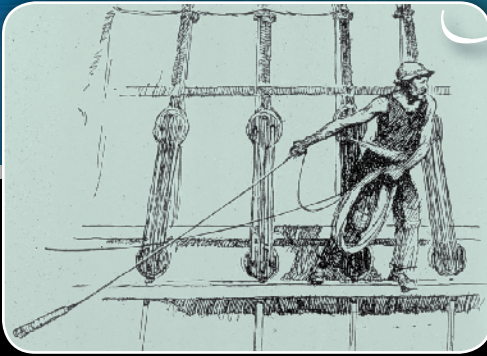


NOAA

Celebrating 200 Years of Science, Service, and Stewardship



For centuries, weighted lines were lowered by hand to measure ocean depth. Today, NOAA ships and underwater robots measure depth with hi-tech sonar. NOAA scientists turn the data into maps of the sea bed, like this image of the underwater world at the entrance to Portsmouth Harbor, New Hampshire. The data can be used for many purposes, including safe navigation, fisheries research, and flood evacuation planning. This image may be downloaded for free as a screen saver at: www.celebrating200years.noaa.gov

TOP LEFT: Sailor sounding from merchantman—19th century, sketch by Gordon Grant from Herbert Warden's "In Praise of Sailors."

Surveys and Commerce

Our 200 years of history begins in 1807 when President Thomas Jefferson signed an Act "to provide for surveying the coasts of the United States." The fledgling nation's success depended on efficient maritime commerce and border defense, and the tools to succeed were accurate charts of shores, waters and hazards to safe navigation. Thus was born America's first science agency – the Coast Survey – and a tradition of perseverance, scientific integrity, skill bordering on art, and the courage demanded of explorers charting the unknown. Later renamed the U.S. Coast and Geodetic Survey, this agency was among the first incorporated into today's NOAA.



Coast and Geodetic Survey crew uses a plane table to map shoreline in Southeast Alaska circa 1921. Credit: NOAA.

security and economic competitiveness. The nation's ports, harbors, and waterways are highways for commerce, resources for recreation, and places of scenic beauty. Reducing risk of accident boosts the U.S. economy by preventing the consequences of a grounding or oil spill—response and recovery costs, delays to other vessels and cargo, port shutdowns, and damage to the environment. Debris left in Gulf waters after the 2005

hurricanes is a stark reminder of the changing hazards facing mariners navigating between U.S. ports, and the importance of accurate NOAA hydrographic surveys, nautical charts and real-time water level and positioning data. As ships grow in size and number, and waterway congestion increases, NOAA's information about the uncertain environment in which mariners must operate becomes ever more critical.



Tug boat moving container ship loaded with goods for U.S. markets, Chesapeake and Delaware Canal. Credit: NOAA.

Today, waterborne commerce remains the backbone of the U.S. economy, contributing over 13 million jobs and \$1 trillion annually. The marinetransportation system moves over 95 percent of U.S. foreign trade tonnage each year, along with

two thirds of everything Americans buy, eat and wear. Commercial shipping, fisheries, recreational boating, tourism, national defense, emergency responders, and coastal management rely on NOAA's nautical charts, tides and currents data, and an accurate geodetic positioning framework.

Though the methods have changed over time, NOAA's navigation services continue to benefit safety, national

Where 200 years ago sailors tossed leadlines overboard to measure water depth, and location was determined by observing the stars, NOAA now uses multibeam and side scan sonar technology to fully map the sea bottom, Global Positioning System satellites for centimeter-accuracy positioning, tide stations that report water levels every six minutes, and advanced computers for compiling data into electronic nautical charts and other useful products. The Coast and Geodetic Survey's pursuit of excellence in charting the nation's shoreline and waters for safe and efficient marine transportation is testimony to Thomas Jefferson's foresight and a reminder of how vital maritime commerce is to the United States. ■



NOAA Hydrographic Survey vessel RAINIER offloading a launch in preparation to survey, Auke Bay, Southeast Alaska. Credit: NOAA.