

Nautical Charts: An Old Art and a Modern Science

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A nautical chart of the Kodiak Island area.

Jay Barrett/KMXT

Nautical charts have been around for hundreds of years, marking the depth of waterways and noting hazards to navigation. But they don't update themselves as the ocean floor changes and new hazards appear. That job falls to the National Oceanic and Atmospheric Administration.

One of the people who work to keep those charts current is Lieutenant Matt Forney, the navigation manager of Alaska for NOAA's Office of Coast Survey. His motto is: "We find rocks so you don't have to."

Forney was in Kodiak last week working with the Coast Guard on bottom surveys around the islands.

"They were just operating in Bechevin Bay. And Bechevin Bay, False Pass area, is an area that's very dynamic. High currents and the channel changes from year to year, as well as it ices over. So they actually have to place the buoys every spring and remove them every fall. And for them to be able find the channel, they actually run around and plot it out, using their small boats' fathometers," he said. "So, since they're already putting in that effort, we figured hey, why not take the data and use it for the good of all mariners."

Forney said that in the early days, lead weights were lowered from boats on a line until the bottom is felt, revealing the depth in fathoms and feet. To find out the composition of the bottom, grease or peanut butter was smeared on the weights, which then brought up a sample when retrieved.

"The US has been surveying the seafloor — and actually NOAA dates all the way back to the U.S. Coast and Geodetic Survey, which is the predecessor to NOAA, and that was formed by Thomas Jefferson. He commissioned a gentleman by the name of Ferdinand Hassler to create the first nautical charts of the Chesapeake Bay area. The reason for that is they were tired of seeing commerce end up on the rocks instead of in the port."

Today, even with the march of technology, Forney says weighted sounding lines still have a place in his tool box.

“Actually we do use echo-sounders. And the thing is though is an echo-sounder is only as good as its calibration. So we actually still do calibrate those with the old-fashioned lead on the end of a line.”

He says that unless a disaster, such as hurricanes Katrina or Sandy, creates an immediate hazard to navigation, NOAA charts don’t get updated yearly for a reason.

“We definitely know that nautical charts are expensive and buying those little discs for your chart plotter are definitely expensive as well, so we don’t like to produce a new edition if we don’t have to. And that’s why if there is something that’s a danger to navigation that folks should know about — to keep them safe and their property safe — we put out as danger to navigation, and that gets published in the Notice to Mariners. And it takes us about one week to actually get that information out.

Forney says when a fisherman invariably asks him where the hot fishing spots are, he refers them to the NOAA Office of Coast Survey website, where the latest charts and other products can be found.