

NEWS

Project to Transcribe Old Ship Logs Provides Important Weather Data

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Kathy Wendolkowski is a citizen scientist. It's a term that Wendolkowski considers far too lofty for what she claims is simply a happy addiction that she and others have for transcribing old logs from naval ship and other vessels. They perform this task to glean the regularly recorded weather data from those logs for the benefit of science. For Wendolkowski, though, greater satisfaction comes from reading what the logs also reveal about the daily lives of the sailors as well as any accompanying historical drama.

"I have to admit that for me, weather is the 'broccoli': I do it because I have to do it to get to my 'dessert,' which is the narrative portion of the log," Wendolkowski said at a 24 October news briefing presented by the U.S. National Oceanic and Atmospheric Administration (NOAA), the National Archives and Records Administration (NARA), and the Zooniverse citizen science Web portal.

At the briefing, NOAA called for additional volunteer citizen scientists to help transcribe old weather logs from about 60 U.S. Navy, Coast Guard, and Revenue Cutter ships that plied the Arctic between 1850 and the World War II era; the hope is to find out historic weather data about the region. Already, 100,000 pages of old ship logs have been digitized, according to project leader Kevin Wood, a research scientist at the Joint Institute for the Study of the Atmosphere and Ocean, a partnership between the University of Washington and NOAA. Wood said that 500,000 pages could be digitized by June 2013 (when a current grant concludes) and that the weather logs for the 60 vessels equals about 1100 ship years' worth of data. The project builds on the Zooniverse's Old Weather project that was begun in 2010 to transcribe weather observations from British Royal Navy ship logs.

For Wendolkowski, her "dessert" includes reading about the sailors' daily chores of painting, scraping, and cleaning ships; about battles, disasters, rescues, and other drama recorded in the logs; and about the sailors themselves. "Most of them were young, in their 20s, no families, no children, nobody to remember them. That has become very important to us," said Wendolkowski, who works as a consultant with the U.S. Environmental Protection Agency when she is not transcribing ship logs.

For NOAA, the payoff includes mining these old ship logs for weather data that can help fill in knowledge about Arctic weather and climate. NOAA is teaming up

with NARA and the Zooniverse on the project "to unlock some incredible records of sea ice, of past environmental observations, and weather," NOAA administrator Jane Lubchenco said at the briefing. "We are doing that in a way that engages the public and takes advantage of the best opportunities that crowd-sourcing allows. These ancient observations will allow scientists to tackle the real world challenges of understanding the Arctic climate record and its contribution to the Earth's climate."

Lubchenco said that before satellites, ship logs often were the only source of weather data, particularly for remote ocean locations. "The ship logs residing in the National Archives represent one of the largest and most underutilized collections in meteorological and marine and environmental data in existence: a virtual treasure trove of information. Once converted into digital formats, new analyses of these data will provide insights into the past state of Earth's climate."

The combination of document scanning technology and crowd-sourcing is enabling NOAA to gain an understanding, through this project, about what the weather was like in different locations in the Arctic through time, Lubchenco told *Eos*. "The Arctic has been warming about twice as fast as the rest of the planet. But we need the historic context to put those changes into perspective and that's what this project will help provide."

She told *Eos* that while this is a science project, it is also a project about the people who lived on these vessels. "You can go back into time and get a real sense of what it was like to be on one of these vessels," including the boredom and the excitement, she said. "These are sort of reality shows, but of the past."

"The power of crowd-sourcing allows us to attempt these massive projects and complete them more quickly than we would have thought possible 20 years ago," David Ferriero, archivist of the United States, said at the briefing.

"When you make something available, you have no idea how it is going to be used," Ferriero said. He recalled that when he previously served as director of the New York Public Libraries, a marine biologist used a collection of digitized restaurant menus to trace fish populations through time. He said the current project meets NOAA's goals of capturing the weather information while also providing a trove of historical information.

Ferriero, who served in the U.S. Navy aboard the *USS Sanctuary* hospital ship during the Vietnam War, told *Eos*, "The collaboration with another government agency to mine these digitized records in solving problems or learning more about our past so that we can predict the future—that's very powerful stuff. There's a statue out in front of the [Archives] building: 'Past is prologue.' That is what this is all about: What can we learn about the past that can inform us about the future?"

For Wood, a former merchant marine who wrote entries in log books, the old records hold a special meaning. "I can feel it because that was my life, just [in] a different decade. I can imagine being on the bridge or on the deck with these guys back in the 1890s, because I was there. I walked on the ice in front of a ship. I've kept the weather



U.S. National Oceanic and Atmospheric Administration (NOAA) administrator Jane Lubchenco and others examine some historic log books at the National Archives.

record, the logbook. I've done the navigating. I've done the ship handling. So when I look at a logbook, there's a certain affinity there that comes out for me," he told *Eos*.

Wood added that the project will help with the validation and verification of current computer models "and hopefully improve our ability to predict into the future, once we see how these things are working." He said that without the volunteer citizen scientists to transcribe the records, it would be far more time consuming and expensive to complete the project.

For more information, see <http://www.oldweather.org>, <http://www.pmel.noaa.gov/arctic/rediscover/>, and <https://www.zooniverse.org>.

—RANDY SHOWSTACK, Staff Writer



(Left) Project leader Kevin Wood, research scientist at the Joint Institute for the Study of the Atmosphere and Ocean. *(right)* Citizen scientist Kathy Wendolkowski.