

Alaska sea lion study gets help from crowdsource volunteers

March 17 2017, by Dan Joling

A federal wildlife agency studying the Steller sea lion decline in Alaska's Aleutian Islands is looking for help from citizen scientists. Volunteers don't need raincoats or rubber boots to pitch in, just eyeballs and a computer screen.

Fisheries researchers at the National Oceanic and Atmospheric Administration want them to sort through 500,000 images captured by 20 cameras at six remote sites. The job is simple: Flag photos that show sea lions.

NOAA Fisheries biologist Katie Sweeney is specifically looking for 256 Steller sea lions captured starting in 2011 that were permanently marked by branding, allowing them to track movement patterns. The image sorting tells researchers which photos are most important to review.

"If we see these animals over time, we can estimate their survival," Sweeney said from her office at the Alaska Fisheries Science Center in Seattle.

Steller sea lions are the largest members of the eared seal family. Adult males in the Aleutians can grow to 2,400 pounds and females to 800 pounds, Sweeney said.

They are found in the North Pacific from Japan and Russia to Alaska and as far south as the Channel Islands off the coast of Southern California.

The western population, from Prince William Sound to the Aleutians, was listed as endangered in 1997. They fell to their lowest numbers in 2003 and the population since then has increased just 2.7 percent annually. Sea lions in the far western Aleutians were especially hard hit, declining by 94 percent over the last 30 years.

No one knows why. Tracking marked sea lions has indicated they are not simply moving east to other parts of Alaska or west to Russia. Contaminants and poor nutrition are among the possibilities, but answers don't come easy because of the expense and time needed to reach the remote locations where they live. NOAA in 2012 turned to remote cameras to gather more information.

The 20 cameras work year-round, snapping a digital photograph every 10 to 30 minutes during daylight.

"We get on a research vessel and we are out 1,200 miles in the Aleutian Islands," Sweeney said. "We go to each site and have to pull out the SD cards and download them."

A handful of people who volunteered to check the images could not keep up with the volume.

Computer analysis was not an option because creating an automated process would have been expensive and time consuming, Sweeney said.

"We kind of need the human eye for it," she said.

Researchers turned to crowdsourcing. They're working with the Zooniverse platform, a team of programmers and researchers who have created web-based systems to enable citizen participation in research across the disciplines, from astronomy to zoology, according to spokeswoman Laura Trouille, director of citizen science at the Adler

Planetarium in Chicago.

About 2,200 volunteers starting Wednesday took a short tutorial on how to help sort the first 30,000 images.

One volunteer was Charlene Andersson, a teacher at Meadows Elementary School in Valencia, California, who saw the project as an opportunity to engage her students in curriculum on animals and their habitats. That led to questions on endangered species and causes for sea lion decline.

"They're so excited about contributing to the project," Andersson said. "They're coming in and saying, 'Can we go on the site right now?'"

Sweeney hoped volunteers would finish that first batch by June, when she leaves for the Aleutians to count sea lions and brand more of them. Instead, the citizen scientists surprised her and zipped through the first batch in a day and a half. Researchers have uploaded more images.

They have also launched a second phase of the project: Asking volunteers to look at photos with sea lions to see if any animals are carrying the permanent marks that reveal where the sea lions were born, their age and their gender.

The sorting will help researchers focus on the most important images.

"Of these 10,000 images, these 100 are the good ones you want to look at," Sweeney said.

More information: Steller Watch: bit.ly/2n4jUgA

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