

# Sea stars make a comeback after wasting disease

By Dani Palmer  
Cannon Beach Gazette

Sea stars are making a comeback after a mysterious wasting disease killed off more than 90 percent of the population. In July, Haystack Rock Awareness Program staff found 82 sea stars, mostly ochre and six rayed stars, at their north boulders location. Of those, only one had signs of wasting and it was a Category 1, a lesion restricted to one area. But it will take a long time before they fully recover.

Melissa Miner, a research associate at the University of California, Santa Cruz with MARiNe, the Multi-Agency Rock Intertidal Network that surveys sea stars along the entire west coast, said populations are still low and, because they are slow-growing animals, it will likely be a decade or longer before numbers return to pre-wasting syndrome levels.

"There's always this desire to be optimistic about it, but the sea stars were impacted a lot," Miner said. "It'll be a while before they recover."

The good news is that no one is worried about the animals going extinct, she added.

Melissa Keyser, interim coordinator of the Haystack Rock Awareness Program, said the sunflower and ochre sea stars are considered keystone species as major intertidal predators. Because of their impact on the ecosystem, if they ever died off, "it could



A sea star with lesions from sea star wasting syndrome hangs from a rock in Cannon Beach during the spring of 2014.

be catastrophic for Haystack Rock," she said.

## Sampling results

Volunteers and HRAP staff typically survey three sites every three months and send their results to MARiNe. Researchers look for lesions and missing limbs.

In July 2014, HRAP found 41 sea stars at that north boulders site and only 13 were healthy, showing no signs of the disease.

When they do contract wasting syndrome, the sea stars begin deteriorating in a matter of days or weeks, Keyser said.

HRAP's east boulder at the Needles site turned out 42 sea stars in July 2015, one with a Category 1 rating and two with a Category 2. In 2014, volunteers found 37 sea stars and 27 showed signs of the disease, including a Category 4 with severe tissue deterioration.

Miner said MARiNe found some diseased sea stars, but not many during a recent re-sampling at five long-term and three short-term sites on the Oregon coast. "Numbers are definitely down from previous years," she said.

But results looked different in Washington.

In June, researchers began seeing many sick sea stars in Washington's intertidal waters again. Fishermen are still finding signs of the disease when they pull sea stars up, Miner said.

In California, the number of diseased animals was down in the spring.

"It's interesting," Miner said. "Different places are doing different things."

## Potential causes

Sea star wasting syndrome hit the animals hard in Washington in 2013. Keyser said researchers began seeing a local impact in 2014.



SUBMITTED PHOTO/CANNON BEACH GAZETTE

A Haystack Rock Awareness Program member holds a deteriorating sea star in spring 2014.

Miner noted that there is a correlation with higher ocean temperatures in some areas, but not all. A warming ocean may make the sea stars more susceptible to disease or stress them out, she added.

While sea star wasting syndrome has been attributed to densovirus, Miner said it's unknown if it's the same strain researchers witnessed in California before the epidemic.

They haven't been able to get good tissue samples, and emergency research funding is scarce. Scientists have ideas about the cause of the virus, she said, but nothing definitive.

"This is a lot of arm waving right now," she said. "We just don't know."

California's event was tied to warm water, however, as researchers saw healthier sea stars in deeper waters, she added.

Keyser said wasting diseases have also occurred when sea stars overpopulate "but never to this extent."

The epidemic is one of the largest marine disease events worldwide, Miner added. The survival rate is difficult to determine when there are also sea stars migrating and predators picking the animals off.

## Response

Linked to many sea star wasting cases, a warming ocean is hard to stop with man-made climate change and natural cycles like El Niños, Miner said.

"That's the trickiest thing," she noted, "whether we'll be able to change our ways enough to make a difference."

Warmer waters have affected other species, such as seabirds, impacting the entire ecosystem, Keyser said.

Some studies have suggested that the disease is spread via human touch. Keyser said more research is needed before making any conclusions in Cannon Beach. Researchers sterilize their equipment and boats before going out. Miner suggested visitors and residents err on the side of caution when viewing sea stars.

She added that important information comes from the public. She encourages beachgoers to submit sightings of any sick sea stars to seastarwasting.org.

As is the case in other mysterious die-off events, researchers will have to find more answers before taking any action.

# Researchers seek answers but can do little about dying birds

Birds from Page 1A

And spikes typically occur in September or October after storm events, she added, none of which have occurred this summer.

Reporting beaches from Newport through the North Coast reported an average of 10 to 14 carcasses per kilometer this month. There was a high of roughly 20 per kilometer.

"It's all over the map," Parish said. "Not everybody is reporting large numbers."

Not everyone has reported back yet, either, so it's hard to tell how bad it is or if it'll get worse, she added. Some beaches are at the high end of previous years, but not yet catastrophic.

## A warming ocean

Last fall, tens of thousands of the Cassin's auklet, a small seabird, died. Parish said there was a correlation between warmer waters and a change in the distribution of food.

"We're kind of hoping we don't have another repeat season," she said. "The North Pacific is pretty darn warm and has been for some time."

But there is usually upwelling, making it cooler

along the coast and providing the common murre "a fair amount of food."

Assistant Director of the Wildlife Center of the North Coast in Astoria Josh Saranpaa said the center has received about 12 birds a day over the past month, many from Cannon Beach. The majority, about 90 percent, are common murre.

"Every bird we're seeing is starving to death," he said. "It's pretty bad."

Many are adults. Saranpaa said they may be starving because the adult birds are focused on taking care of their young.

With warming ocean temperatures, fish are diving deeper than the birds can handle in some areas, he added. Staff at the center are expecting even warmer temperatures with El Niño.

Parish said COASST hasn't received data from all of its reporting rehab centers yet. The high number of starving adults along the North Coast, even experienced scavenger birds, indicates a "serious sign of a stressed ecosystem."

Saranpaa said seabirds are biological indicators, a way to check an environment's health.

"Starvation is the norm" for wildlife, Parish noted. Many young murre die because they're separated from their fathers, for example. In the case of large scale die-offs, she added, scientists care more about the why.

"When you see so many starving, something is not quite right out there," Saranpaa said.

Parish added that there are multiple reasons a bird could starve to death including a lack of food, more competition, illness and poison.

## Toxic algae bloom

It's also "been a really odd year," Parish said, with multiple regional scale events, including the west coast's largest toxic algae bloom on record, stretching from central California to Alaska.

This summer researchers found floating whale carcasses near Alaska's Aleutian Islands as a result of the bloom.

Those deaths, Parish said, were essentially caused by poison.

Other species are affected as well. In addition to the whales, fish are eating poi-

sonous plankton, and birds are eating those fish.

Saranpaa said they received 770 sick or diseased seabirds in just over a week during a 2009 toxic algae bloom. "Every nook and cranny" of the wildlife center was turned into an area for birds, he added.

If toxic algae is the culprit, however, scientists would expect more species to be impacted, Parish noted.

She said COASST is waiting on necropsy reports from the U.S. Geological Survey's National Wildlife Health Center in Wisconsin for more information.

## The waiting game

At this point, Parish said there's not much researchers can do but wait and watch. Even when they do get necropsy results back, she added, researchers can do little more than document the event.

Reducing the number of dead or dying birds will require a change of global scale, she said.

"It's like too many holes in a dam," Parish added.

"You can't put your finger in one hole and stop the leak."

A loss of shellfish to the toxic algae, for example, would not only affect the ecosystem, she said, but the economy.

Saranpaa said he fears volunteers may nurse the birds back to health, only to send them back out to starve. There are so many birds coming in staff have to let them go after a month or two of fattening to make room.

Santarsiere said the tide was coming in when they

decided to rescue their bird. They didn't want it to get hypothermia.

"We're all concerned for wildlife so it was nice to have visitors band together," she added.

The McLaughlins followed along — Wendy encouraging support of the bird's weak neck — and were glad to hear the animal was headed to the police station to await help.

They, like COASST, are looking for answers.

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