

Monitoring Sea Star Populations



Sea stars are a key component of intertidal ecosystems. With sea star wasting syndrome causing a rapid decline in their population, what can you do to help?



What is sea star wasting syndrome?

Sea stars along much of the North American Pacific coast are dying in great numbers from a perplexing wasting syndrome.

“Wasting syndrome” is a general description of a set of symptoms that are found in sea stars. These symptoms can progress rapidly—sometimes within days. Some of these symptoms include lesions, tissue decay, missing arms on the sea star, and eventually death. The progression of this wasting syndrome has drastically reduced sea star populations in many areas.

What is the current status?

The cause of wasting syndrome remains unidentified, and although there have been outbreaks in

previous decades, the magnitude of its impact and the extent of the area affected have never been nearly so great. The impacted region stretches from Alaska to Mexico; some areas, including Oregon, seemed to have been skipped in the early stages, but the syndrome is now prevalent here.

One encouraging finding was the presence of many juvenile sea stars at a few sites where sea star populations have been devastated. However, many juveniles have recently begun to show symptoms of wasting as well. Only time and monitoring will determine if juvenile sea stars will survive and replenish populations in rocky shore habitats.

What are scientists doing?

Researchers are currently investigating many aspects of this syndrome, in an effort to better

understand it. Important topics include: the origin of this syndrome, the pattern of its spread, short and long term consequences, as well as impacts on individual species.

To assist scientists in their investigations, CoastWatch cooperates with the Multi-Agency Rocky Intertidal Network (MARiNe) and the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) to survey Oregon's sea star population. More information can be found at seastarwasting.org. The hope is that we can help identify the causes, patterns and factors contributing to the spread of this devastating phenomenon. Trained volunteers can provide essential data that will help scientists track the progress of sea star wasting syndrome, and perhaps find a way to limit its effects.

Types of surveys

General observation: CoastWatchers and other trained volunteers can help by making careful observations of sea stars on any stretch of rocky shoreline they visit. These anecdotal reports can provide a snapshot of current conditions.

Surveys: CoastWatch is organizing formal surveys, conducted on a regular basis at selected sites, using a specific protocol in order to obtain scientifically useful data. If you would be interested in volunteering to help with a survey, and would like information about training and protocols, contact CoastWatch: (541) 279-0027, fawn@oregonshores.org.

Survey protocols

Because the cause of sea star wasting syndrome and how it spreads is unknown, reasonable precautions are taken during surveying.

Do not handle sea stars that appear to be in distress, and be especially careful not to touch unhealthy animals and then touch healthy sea stars or the rocks they are clinging to.

What to look for on an unhealthy sea star

Lesions: typically the first visible sign of the presence of this disease is white lesions on the sea star's ectoderm. There can be one lesion or many; lesions will have decaying tissue around them.

Body fragmentation: As these lesions grow the arms of the sea star will completely detach from its body and the star's skeleton will begin to degenerate.

Watching for juvenile sea stars

Keep watch for apparently healthy juvenile sea stars in areas where adult animals have been depleted. Reporting sightings of juvenile sea stars is essential to tracking the disease and identifying signs of possible recovery.

How to submit your observations

There are many ways to report your sea star observations:

1. Submit the information as part of a CoastWatch mile report, or by using the Dispatch form on the CoastWatch website: <http://oregonshores.org/coastwatch.php5>
2. You can send the information and pictures directly to CoastWatch Volunteer Coordinator Fawn Custer at: fawn@oregonshores.org
3. You can also submit your observations to MARINe (at UC Santa Cruz): <http://www.eeb.ucsc.edu/pacificrockyintertidal/data-products/sea-star-wasting/observation-log.html#track-disease>

Please submit all juvenile sea star observations to: http://gordon.science.oregonstate.edu/sea_star_wasting/recovery_log/new



Hopes for a recovery

Scientists, organizations like CoastWatch, and citizens alike are diligently working on a better understanding of this disease. With more knowledge, we may find ways to better protect sea star populations, but sea star recovery may simply depend on time or evolution. In any case, CoastWatch will continue its efforts to monitor sea stars and rocky shores.

Why is this important?

Sea stars are often "keystone species," meaning that they play a central role within their ecosystem. Their predatory feeding controls other species, by helping to shape species balance, distribution, and diversity within their intertidal zone. Because of this, the impact of sea star decline due to wasting syndrome can be far-reaching. Oregon's rocky shore ecosystems will change if sea stars don't recover.

