

Survey shows impact of sea star wasting disease in Salish Sea

October 26 2016



Sea Stars from Mexico to the Pacific Northwest have been hard hit by Sea Star Wasting Disease. A survey by the UC Davis SeaDoc Society shows that in the Salish Sea, the impacts go beyond the intertidal sea stars visible from shore to animals that live below the low tide line. There are likely to be long-term impacts on these ecosystems. Credit: Joe Gaydos, SeaDoc Society

Sea star wasting disease has devastated intertidal populations of these animals on the West coast from Mexico to Alaska. But what about sea stars that live below the low tide line, mostly out of sight? An analysis of data collected by divers in the Salish Sea shows severe impacts on some species, especially the sunflower sea star, *Pycnopodia helianthoides*.

"Sunflower stars are major predators. This is probably going to change the shape of the ecosystem," said Joe Gaydos, wildlife veterinarian and chief scientist with the UC Davis School of Veterinary Medicine's SeaDoc Society, which carried out the analysis with colleagues from Cornell University. The findings, published Oct. 26 in the journal *PLOS One*, reflect anecdotal reports from elsewhere on the West coast, he said.

Sea star wasting disease broke out in 2013, causing massive death of several species of [sea stars](#). Infected animals develop lesions that eat away tissue, with limbs dropping off as the animals die. The disease has been linked to a virus, although environmental factors may also be involved.

"The sunflower star is the most susceptible species, so we were concerned that it could be driven way down by this non-specific virus", said coauthor Drew Harvell, professor of ecology and evolutionary biology at Cornell University.

The Salish Sea, which straddles the U.S./Canadian border and includes Puget Sound and the waters east of Vancouver Island, is home to a diverse population of sea stars. The animals are important predators, eating urchins and other animals.

"The Salish Sea is known world-wide for sea star diversity, so we wanted to know, what is the impact on different species?" Gaydos said.



Sea Stars from Mexico to the Pacific Northwest have been hard hit by Sea Star Wasting Disease. A survey by the UC Davis SeaDoc Society shows that in the Salish Sea, the impacts go beyond the intertidal sea stars visible from shore to animals that live below the low tide line. There are likely to be long-term impacts on these ecosystems. Credit: Jenn Collins

The researchers used a combination of data collected by scientific divers during 2014 - 2015 and long term data collected by trained recreational scuba divers through the Reef Environmental Education Foundation (REEF).

"The REEF data were amazing. We were able to compare eight years of

pre-epidemic data to the outbreak to show how devastating declines were for the sunflower stars," said Diego Montecino-Latorre, UC Davis graduate student, veterinarian and lead author on the study.

Sunflower Sea Stars Hit Hard

The results showed some species were hit hard, while others actually increased in number. Populations of sunflower sea stars dropped dramatically after the beginning of the epidemic, and several other sea star species, including the spiny pink star, *Pisaster brevispinus*, also declined. Numbers of the less-common leather star (*Dermasterias imbricata*) and two species of sea urchin, which are prey for sea stars, increased after 2013.

The virus outbreak continues, and will have lasting effects on the ecosystem. Sunflower sea stars have effectively disappeared from the Salish Sea, the study concludes. Likely as a result, numbers of urchins have increased, which in turn will lead to more browsing on kelp. Gaydos said that he and his colleagues are in discussions with the National Marine Fisheries Service to get the sunflower sea star listed as a "species of concern."

"This study revealed the need to generate a plan supporting the persistence of what used to be the most common sea star species in the Salish Sea," said Montecino-Latorre.

More information: Montecino-Latorre D, Eisenlord ME, Turner M, Yoshioka R, Harvell CD, Pattengill-Semmens CV, et al. (2016) Devastating Transboundary Impacts of Sea Star Wasting Disease on Subtidal Asteroids. *PLoS ONE* 11(10): e0163190. [DOI: 10.1371/journal.pone.0163190](https://doi.org/10.1371/journal.pone.0163190)

Provided by UC Davis

Citation: Survey shows impact of sea star wasting disease in Salish Sea (2016, October 26)
retrieved 26 April 2024 from <https://phys.org/news/2016-10-survey-impact-sea-star-disease.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.