

# Sea Star Wasting Disease

## No Evidence of Widespread Disease in the Northern Gulf of Alaska

Sea stars play a vital role in shaping the marine communities in which they live. These invertebrates are considered top-level predators in the nearshore system. The absence of sea stars can lead to other organisms that sea stars eat, like mussels, multiplying and driving out other nearshore inhabitants. Many species of sea star, for example the ochre star (Figure 1), have earned the title of being a keystone species, an organism that has a dramatic impact on community diversity.

Unfortunately, sea stars from Mexico to Sitka are experiencing their own form of a zombie apocalypse. Lesions begin to appear on the bodies of the sea stars, and within days they begin to die and decompose (Figure 2). Interestingly, this epidemic affects many different species of sea stars and can move through populations like wildfire.



Figure 1. Examples of a healthy ochre star (left, *Pisaster ochraceus*) and a ochre star with severe deterioration due to the disease (right).

In summer 2014, field crews from the Gulf Watch Alaska (GWA) long-term monitoring program surveyed almost 2,000 sea stars at 24 different sites in the northern Gulf of Alaska (Figure 3) finding no evidence of sea star wasting disease. Surveys were conducted in Prince William Sound, Kenai Fjords National Park, Kachemak Bay, and Katmai National Park and Preserve. None of the sea stars counted or observed in these locations showed signs of wasting disease. The GWA team was also joined by an expert from the University of California, Santa Cruz who helped ensure that sampling protocols were similar to those used elsewhere and rigorous enough to detect the disease. Additionally, one GWA researcher conducted survey dives at 10 islands with multiple sites at each in the central and western Aleutian Islands, finding no wasting disease.



Figure 2. An ochre star in advanced stages of decomposition from the wasting disease in Constellation Marine Reserve in Puget Sound. ©buzzmarinelife.blogspot.com/2013\_12\_30\_archive.html

There have been anecdotal reports of diseased sea stars in both Sawmill Bay in Prince William Sound and in Kachemak Bay<sup>1</sup>, though these reports have not been confirmed to be wasting disease. Sea stars have routinely been observed with damaged arms, which can be mistaken by the public as wasting disease. Damaged arms can also be due to injuries from impact by boulders moved by large waves, exposure to freshwater, and predators.

Future annual surveys are planned for this region (Figure 3) during each summer. The GWA program is monitoring for the disease across a large geographic area and will be able to detect large-scale outbreaks if the disease spreads to this region.

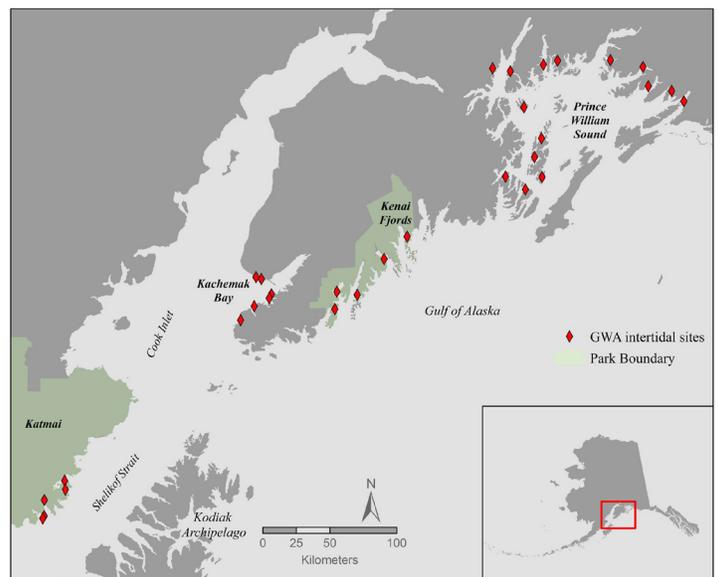


Figure 3. Sampling site locations in summer 2014.

1) <http://www.eeb.ucsc.edu/pacificrockyintertidal/data-products/sea-star-wasting/updates.html>

For further information see: <http://www.gulfwatchalaska.org/>

<http://science.nature.nps.gov/im/units/swan/index.cfm>

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