Progression of Sea Star Wasting Syndrome on the Oregon Coast

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Pisaster ochraceus is an integral component of rocky intertidal ecosystems. As a keystone species (Gashler, 2014), it has the ability to completely transform environments, controlling mussel populations and creating vital habitat for other species. Since 2013, sea star wasting syndrome (SSWS) has affected Pisaster ochraceus populations on the West Coast of the United States, causing tissue deterioration, lesions and limb detachment. Sea star wasting syndrome threatens the well-being of intertidal communities in Oregon, as without Pisaster ochraceus, extreme loss of biodiversity will occur. This study was designed to understand the presence and progression of sea star wasting syndrome on the Oregon Coast. Cluster sampling was used to select eleven intertidal locations on the Oregon Coast. At each testing site, an environmental profile was created, water quality measurements were collected, and Pisaster ochraceus populations were surveyed for SSWS. Each Pisaster ochraceus was classified as healthy, mildly diseased or severely diseased. The results of this survey suggest that SSWS has progressed, as SSWS was observed at two more testing sites in 2021 than in 2020 (data collected by the Multi-Agency Rocky Intertidal Network). Additionally, a chi-square test for homogeneity revealed that the prevalence of SSWS was significantly different across testing sites. A linear regression found little correlation between pH and SSWS, and temperature and SSWS, where r = -0.080502 and r = 0.3794576 respectively. The results of this study can be used to better understand environmental and economic effects of SSWS and changing intertidal ecosystems.

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