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Tracking temporal and seasonal changes in nudibranch populations: citizen science data from a community aquarium

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Tracking Temporal and Seasonal Changes in Nudibranch Populations from a Small Aquarium

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The Highline Marine Science and Technology Center (MaST) is the marine biology and aquarium facility of Highline College in Des Moines, WA, located on the South-Central Puget Sound. Dedicated to expanding knowledge about Puget Sound, a central mission of the MaST Center is fostering a culture of marine stewardship by engaging the community through interactive learning, personal relations and exploration. The efforts and successes of The Nudibranch Team exemplify citizen science achievement at the Mast.

Our Aquarium is
• An open flow system- raw seawater from the Puget Sound is pumped into the tanks, bringing a variety of planktonic organisms with it.
• A proxy for nudibranch plankton populations at Redondo Beach, Puget Sound

The MaST Center

Results

Annual trends in seasonality across the focal species

Figure 2: Hermissenda crassicornis

Figure 4: Onchidoris bilamellata

Figure 6: Aeolidia papillosa

Results & Discussion

Preliminary analysis
• There are trends in seasonality for all 3 focal species
• These species’ abundance peaks of the year for each species and they occur as follows:
  o Hermissenda crassicornis are most abundant from April-June
  o Onchidoris bilamellata are most abundant from June-October, and November-January
  o Aeolidia papillosa are most abundant from October-April

Discussion
• This data provides as baseline of seasonal variability that will be necessary to track population changes
• In tracking seasonal patterns, we can better understand when their food sources, other animals not normally surveyed by scientists, such as hydroids, sponges, and bryozoans, will be in abundance.

Predator Prey Interactions

Copepod
Aggregating Anemone
Shaggy Mouse Nudibranch

Future of the Nudibranch Team

Increased Program Structure
• We hope to design a better classification system based on volunteer expertise and experience
• We are currently creating improved identification keys, that address species color variation

Data Analysis
• We are analyzing data from 2014-2017 to better understand trends in order to publish the data for public use

Other Common species

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