

SPRING 2021

ISSUE 01

CONNECTED

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THE ECOSYSTEM OF THE PACIFIC NORTHWEST



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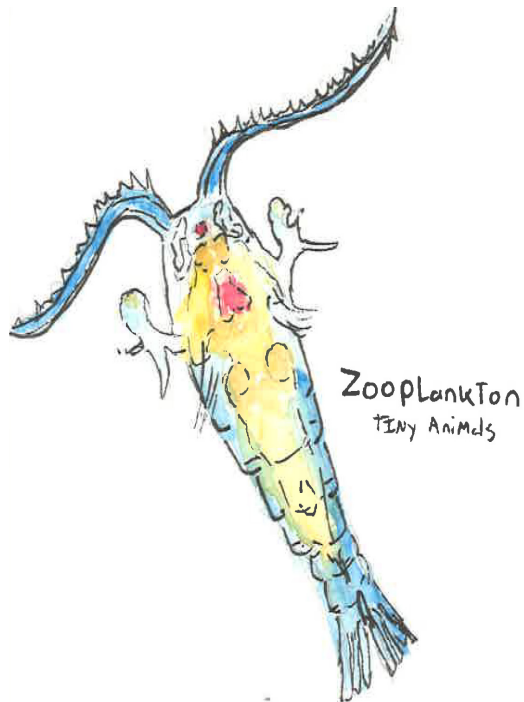
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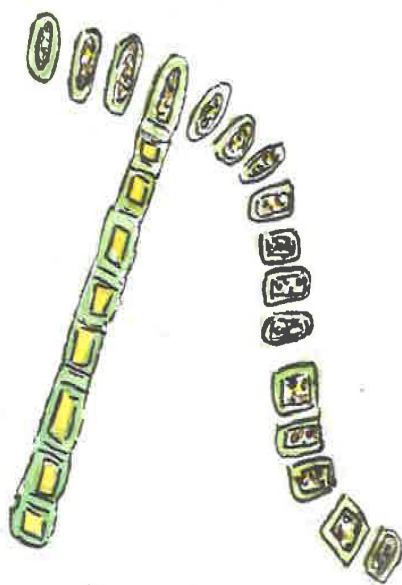
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PLANKTON



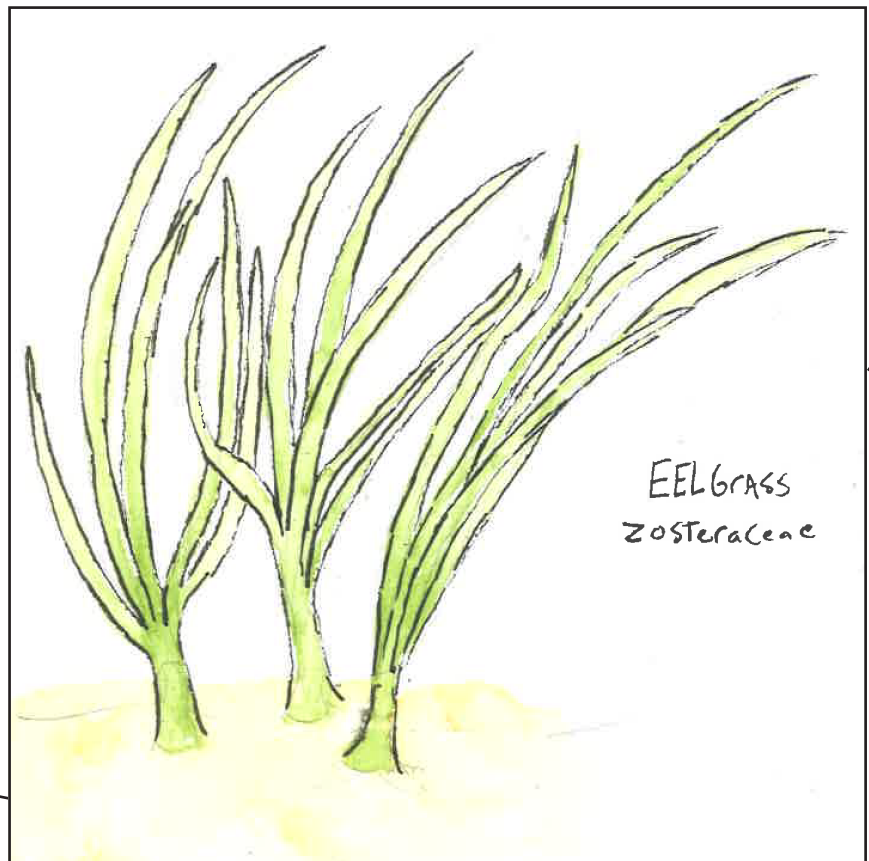
Phytoplankton, a microscopic single-celled algae, generates nearly half of the world's oxygen and are the cornerstone of most marine food chains. The amount of primary production provided by phytoplankton determines how many organisms can live and grow in a particular environment. Zooplankton, microscopic animals, consume the phytoplankton, extending the basis of the food chain. These microscopic organisms mark the world's biggest migration, with billions of them travelling daily from the depths of the ocean to the surface. It's so large that it can be seen from space.

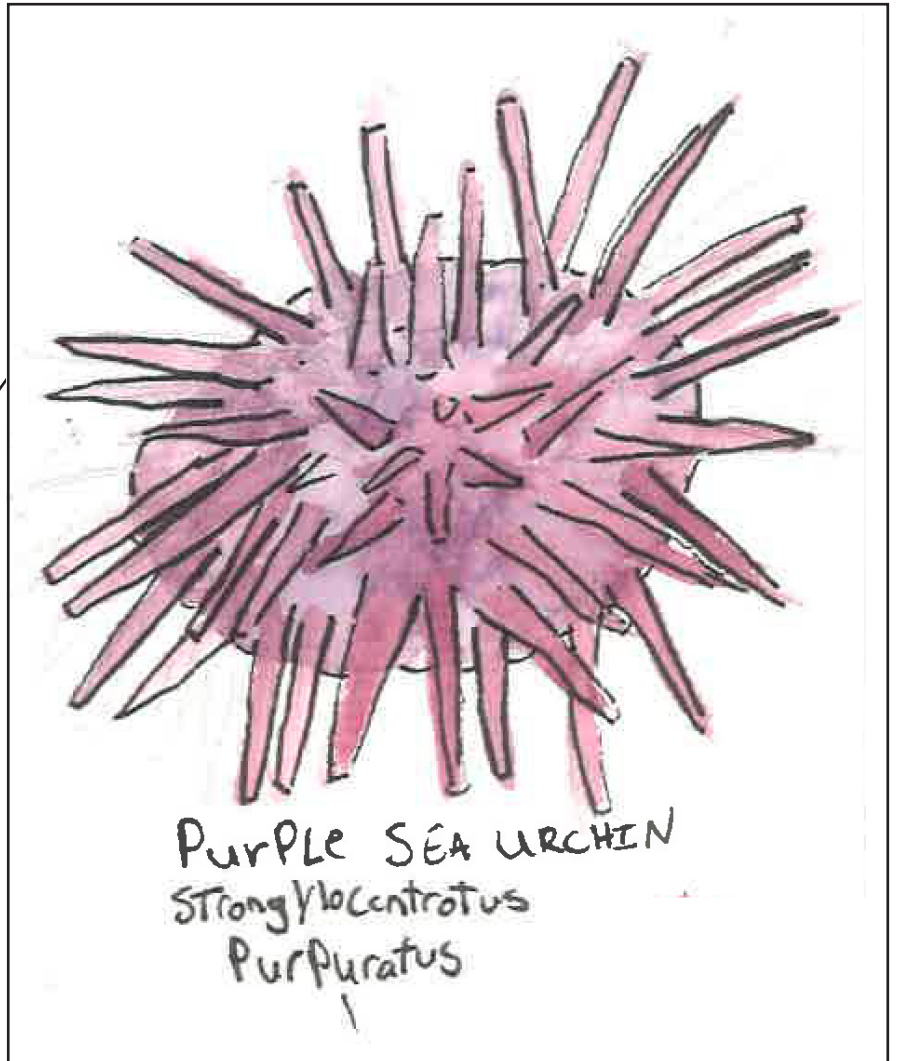


Phytoplankton
Tiny Plants

EELGRASS

Eelgrass essentially acts as a sediment stabilizer, which maintains coastlines, keeps storm surges down, and prevents erosion. It also provides a significant amount of habitat for a number of organisms, especially for all nursery and juvenile commercial species like dungeness crab, salmon, and rockfish. Eelgrass grows incredibly fast, traps carbon dioxide, and photosynthesizes. Since Eelgrass isn't an algae, or a kelp, it is technically a plant which relies on certain sea slugs to pollinate it, much like flowers and bees on land, only this is all underwater.





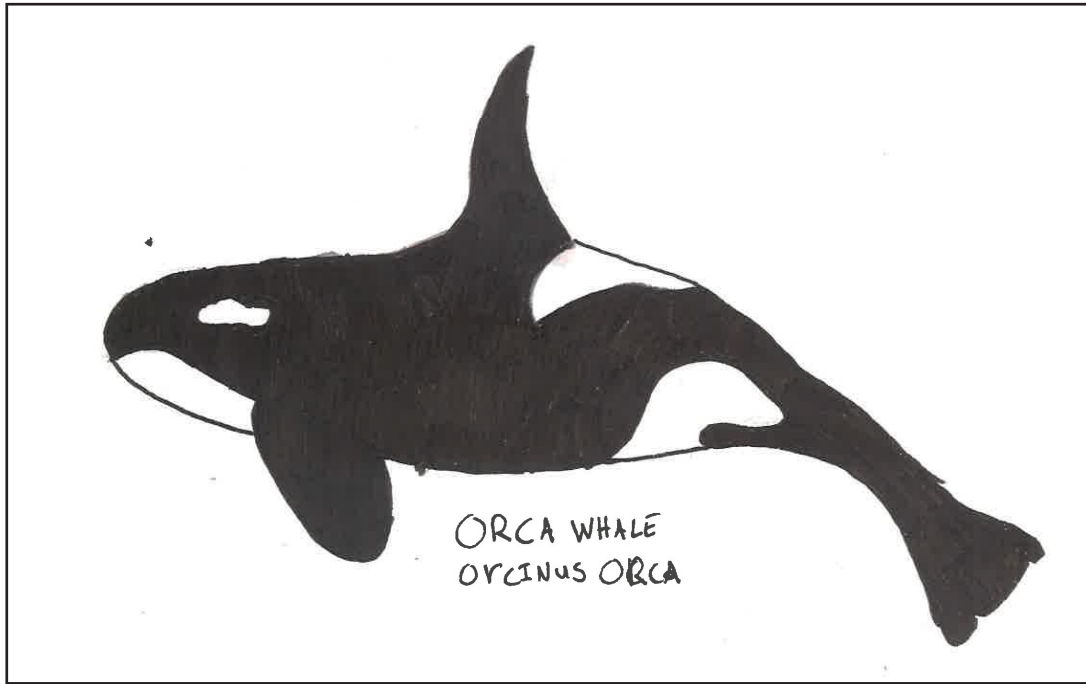
SEA URCHIN

Sea Urchins play a critical role in balancing the algae in reefs or reef like structures. In the Sound, our urchins consume the algae and kelp, but since they don't fully digest the kelp, they break it up a bit and then defecate, leaving a higher caloric value than initially consumed. Local studies at Friday Harbor Labs found that zooplankton populations did better consuming the nutrient rich developed kelp left from the Urchins than simply just eating kelp.

SALMON

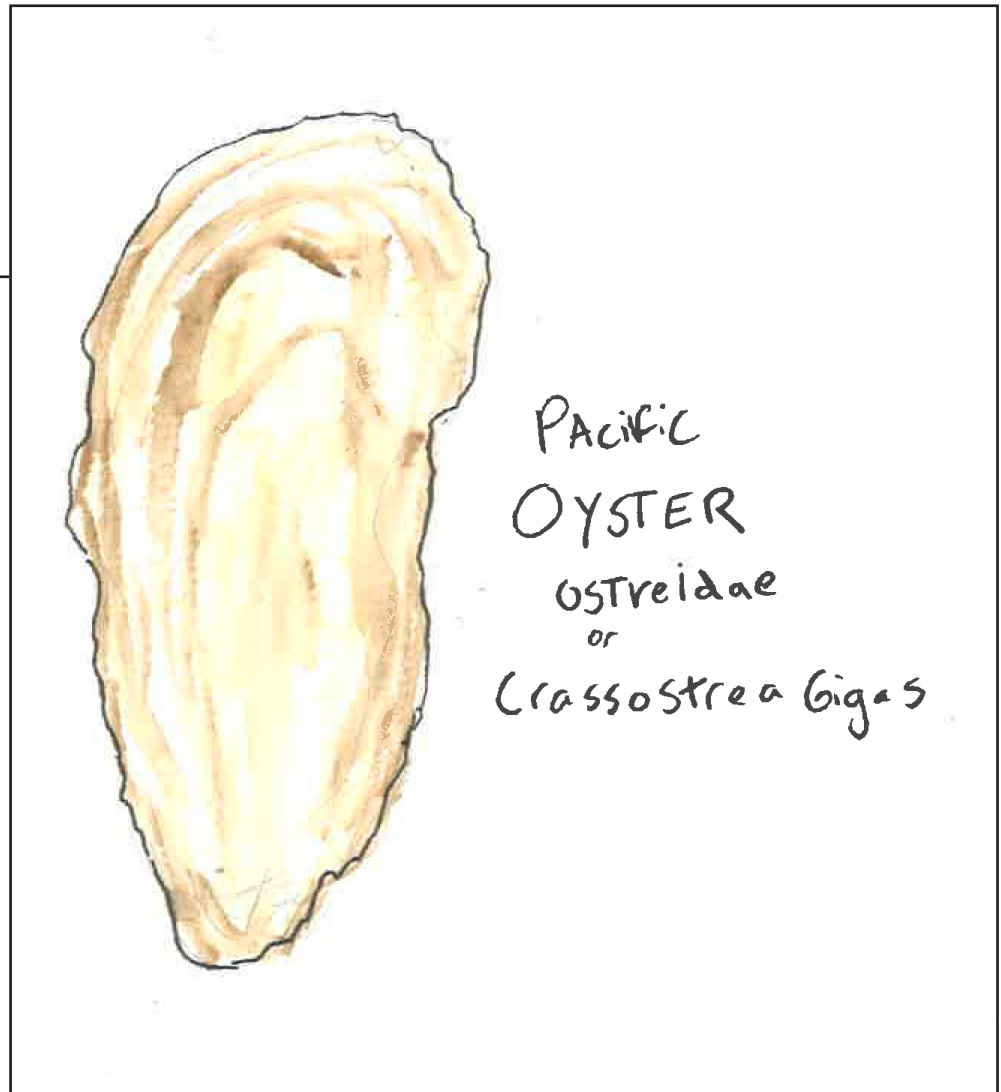
The Chinook salmon are a significant keystone organism of the Pacific Northwest. Over 130 different species, namely orcas, seals, bears, and large birds of prey, depend on them for food. Salmon transfer energy and nutrients between the Pacific Ocean, freshwater, and land ecosystems throughout their life cycle. In areas where salmon populations have plummeted, there is a measurable lack of nutrients to sustain the ecosystem.





ORCA

Different Orca pods have their own cultures, languages, lifestyles, temperaments, and food sources. As top predators, Orcas help to keep their prey species' populations in check. This means that their prey will be less likely to exceed unsustainable numbers, which would otherwise lead to them running out of food and dying off in droves. The population of our local Southern Residents has plummeted in the last few decades due to starvation, overfishing, pollution, and the initial whale hunts lead back in the 70s, but two new calves were born this year in our L pod!



OYSTER

Oysters filter thousands of gallons of water every day, reducing pollution and cleaning up the water quality for other species in their environment. In fact, oysters are about the best protein you could ever eat because they are actually carbon negative. A single oyster filters over 50 gallons of water, removing toxic nutrients such as nitrogen and phosphorus from the ocean. The formation that oysters grow also provides a reef like structure for other organisms like invertebrates to habitat.

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