The Shallow Sound Aquarium

With the help of University of Washington Museology Graduate Student, Bri Gabel, and Highline College's Marine Science & Technology (MaST) Center's Lead Biologist, Matt Wilson, Imagine Children's Museum's Marine Ecosystem exhibit will include a 600 gallon cold-water aquarium that will feature a variety of local marine life. These creatures include various fish species, anemones, sea cucumbers, crustaceans, and much more.

This aquarium will provide visitors of all ages the opportunity see and connect with the life just below the surface. With this connection, we hope to foster a sense of marine stewardship for Puget Sound and all its inhabitants.

About the Biologists

Bri Gabel

Graduate Student
University of Washington | Museology

An experienced aquarium designer, Bri has designed and installed aquariums at Highline College's MaST Center. In addition to her aquarist skills, Bri is an accomplished skeleton articulator having worked on everything from whales to hummingbirds. She will also be assisting with other aspects of the ecosystem exhibit, such as the whale bones.

Bri can be contacted at:
brigabel@uw.edu

Matt Wilson

Lead Biologist
Highline College's MaST Center

For nearly a decade Matt has managed 17 display aquariums totaling nearly 3,500 gallons with more than 250 local species including jellyfish, wolf eels, and giant Pacific octopuses. Matt is lending his husbandry expertise to ensure animals in the aquarium get along with one another and will be well cared for by ICM staff.

Matt can be contacted at:
mwislon@highline.edu

Who Will Call the Aquarium Home?

Painted Greenling

These charismatic fish sport large stripes that change color during breeding season. They pack a lot of personality into their small size of 7".

Aggregating Anemone

Colorful and bright, these anemones reproduce by fission. Over time, a single anemone and its clones can eventually carpet the aquarium.

Hermit Crabs

Often found in tidepools, these crabs will teach visitors about why its best to leave shells on the beach where they belong.

Gunnels

Common under rocks at low tide, these long fish are often mistaken for eels. While there are many eel-like fish in Puget Sound, there are no true eels.

Who Will Call the Aquarium Home?

Shiner Surfperch

With silver bodies and bright yellow bars, these fish live in large schools and give live birth. They reproduce readily in captivity.

Sea Stars

An important predator, sea stars can be found at all depths of Puget Sound. They provide excellent touch opportunities to visitors.

Chitons

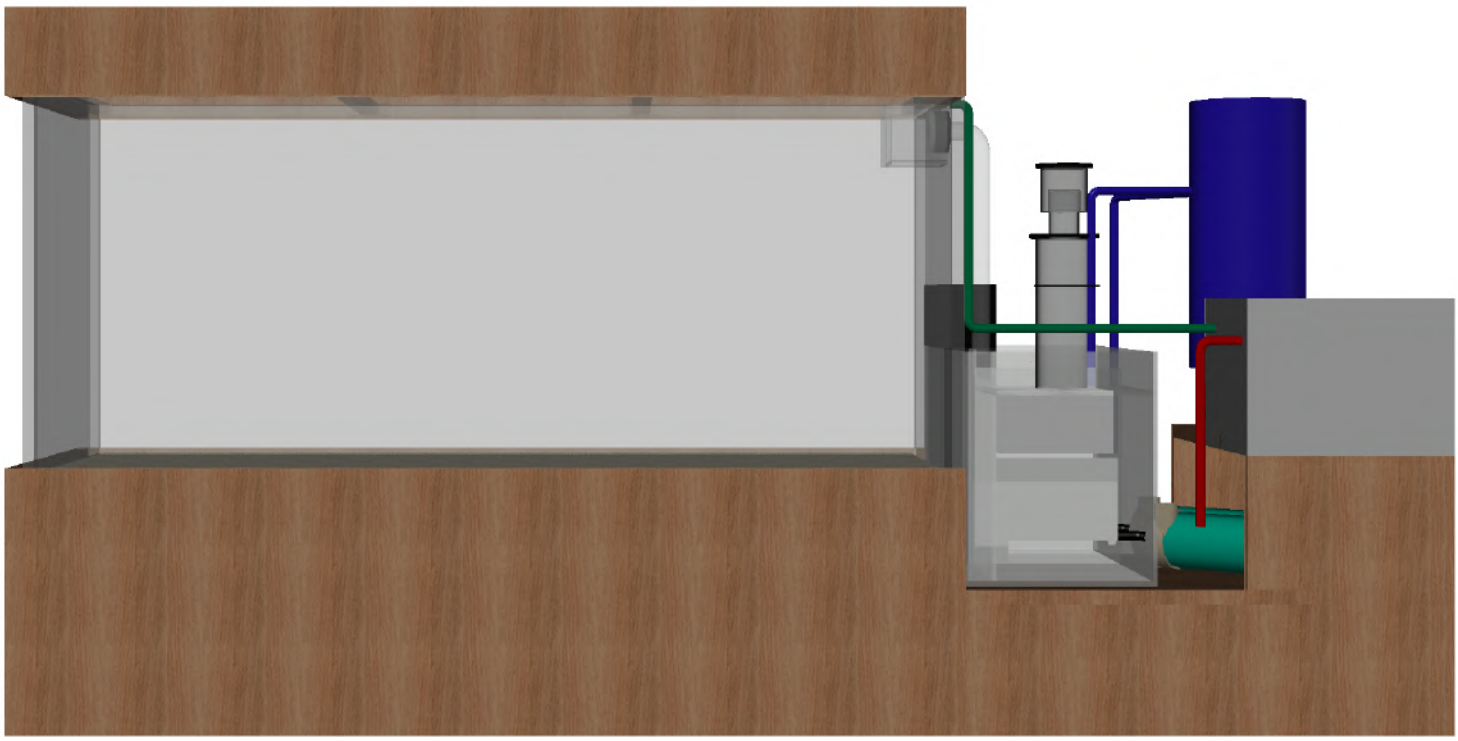
These relatives of slugs and snails are a unique find. Using their specialized tongue called a radula, they lick microscopic algae off of the glass, keeping it clean.

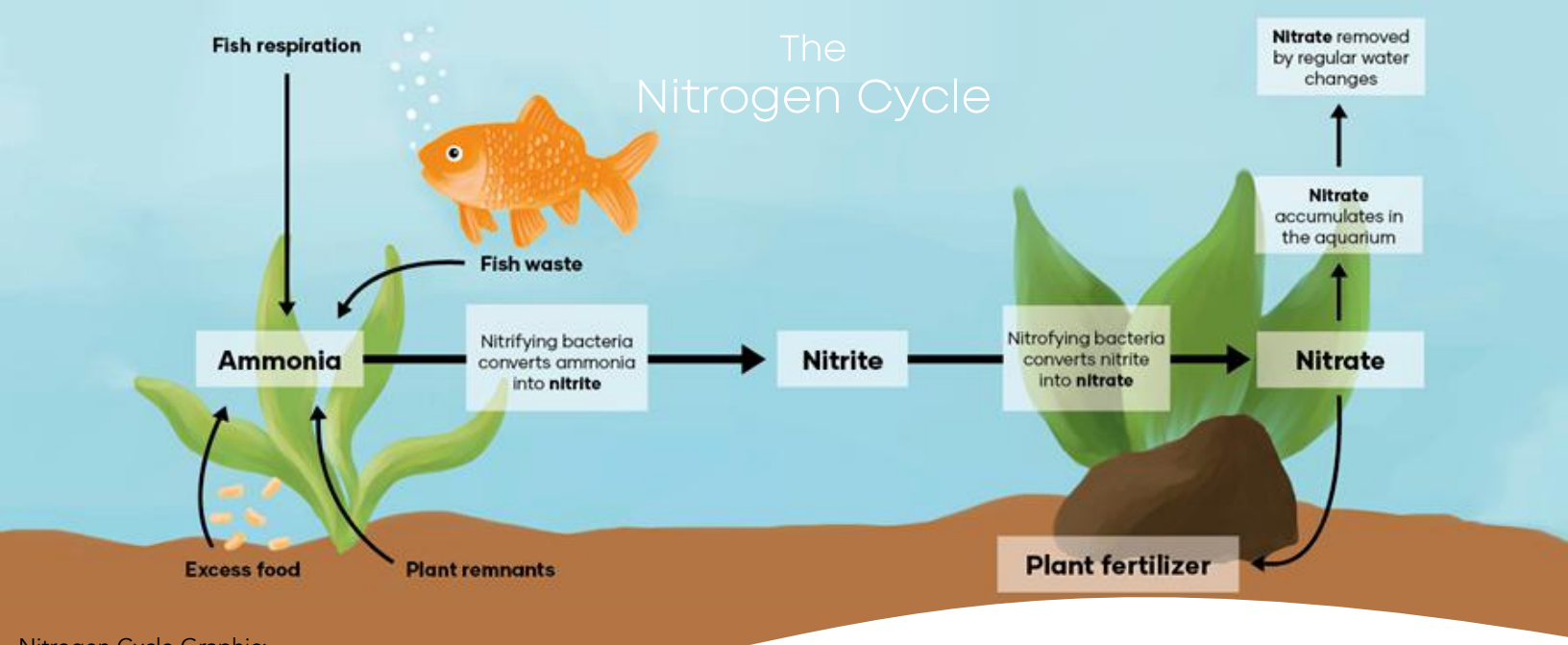
Coonstripe Shrimp

Named after the horizontal stripes down their bodies, these shrimp are commonly found in shallow water. Reaching a max size of 5'' they challenge the definition of "shrimpy".

What Will it Look Like?

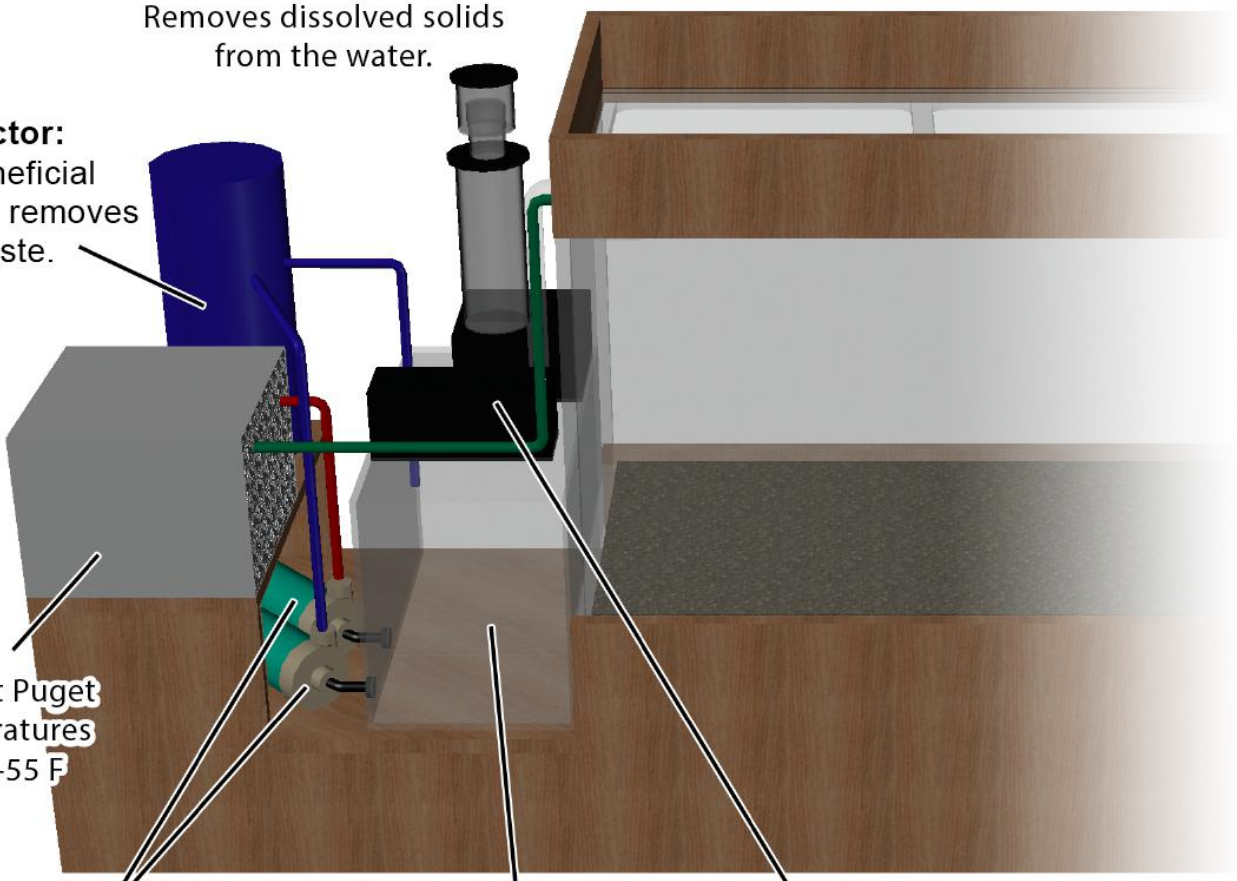
The custom designed aquarium will measure 8 ft long x 3 ft wide x 3.5 ft tall and hold approximately 600 gallons. While many facilities keep filtration behind the scenes, the Shallow Sound Aquarium will give visitors the unique chance to see the all the equipment that goes into supporting aquatic life. In addition to learning about local marine life, this aquarium will facilitate water chemistry education by illustrating the nitrogen cycle in real time.





Nitrogen Cycle Graphic:
animates.co.nz/articles/the-nitrogen-cycle

The Nitrogen Cycle: Filtration Breakdown



Protein Skimmer:
Removes dissolved solids from the water.

Bioreactor:
Grows beneficial bacteria that removes fish waste.

Chiller:
Keeps water at Puget Sound temperatures between 47-55 F

Pumps:
One returns water to tank after being chilled, the other moves water through filtration components

Sump:
Holds water from the main tank for filtration.

Algae Scrubber:
Grows algae to remove final products of the nitrogen cycle.

The Clearest View

The Shallow Sound Aquarium will be made of 1.25-1.5" clear acrylic. This was chosen for a number of reasons. Acrylic will provide better insulation for the cold-water inhabitants and better viewing as acrylic is 92% clear, versus glass which is only around 80% clear. Additionally, acrylic is much lighter than glass, and does not create a green tint like glass.

QUALITY	GLASS	ACRYLIC
Scratching	Resistant	Scratches easily
Weight	Heavy	Light
Impact Resistance	Poor	Good
Clarity	~80%	92%

Although acrylic is a softer material and more prone to scratching, special training on aquarium cleaning will be provided. To prevent scratches on the outside, a plastic protector called a "graffiti guard" will be wrapped around it.

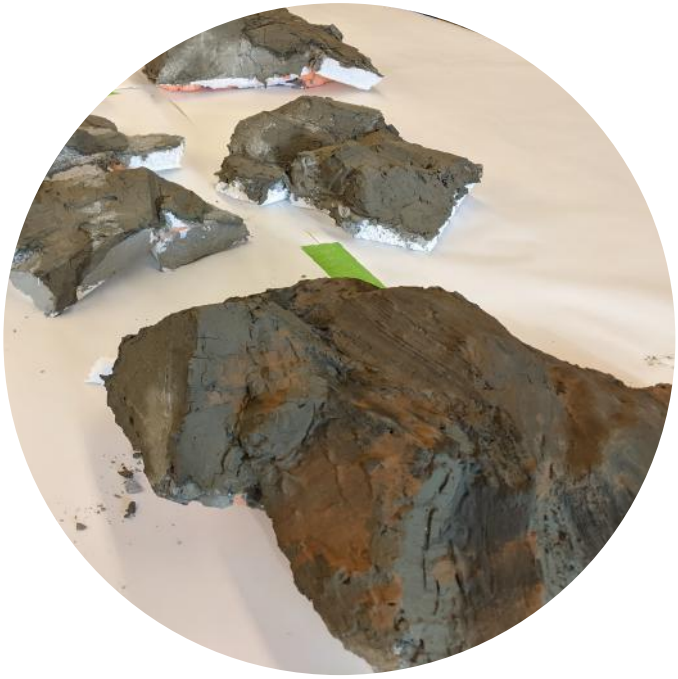
Fabrication will be done by Visual Options, an acrylic specialty company in Tacoma. Visual Options has worked with the MaST Center in the past and has constructed numerous large scale aquariums.

Artificial Habitat

The rockwork will be custom sculpted to mimic Puget Sound's geology.

Made of a combination of recycled foam and cement.

Lightweight rockwork decreases the overall weight significantly.



BCM bull kelp at Point Defiance Zoo & Aquarium

Artificial bull kelp will be made by Bio Models Company.

Bull kelp stays afloat with natural air bubbles called pneumatocysts.

Contrary to their appearance, bull kelp is not a plant, it is algae.

Educational Opportunities

Having a local aquarium will allow visitors to do more than just meet the local marine life.

This aquarium will help teach about:

Biodiversity

Some animals even glow under blacklight!

Puget Sound is often mistaken as drab and lifeless with many thinking of tropical reefs and islands as the prime marine life destination. However, that couldn't be farther from the truth! The "father" of SCUBA, Jacques Cousteau, considered it one of his favorite places to dive. Home to some of the biggest and most colorful animals in the world, Puget Sound is home to an incredible assortment of marine life.

Beach Etiquette

Although tempting to take shells, rocks, and animals from the beach, learning about how to properly interact with wildlife starts by understanding what's there. Although the Shallow Sound Aquarium will not feature a touch pool, it will still provide facilitated touch opportunities so visitors can learn how to safely engage with beach inhabitants.

STEM Exploration

If you ask a child what a marine biologist does, they will more than likely tell you something along the lines of "train dolphins". In reality, marine science encompasses all aspects of STEM learning. With its unique exposed filtration design, the Shallow Sound Aquarium will increase children's understanding of what marine science is by exposing them to not only biology, but also ecology, chemistry, and engineering.

The Shallow Sound Aquarium is
made possible through collaborations between:

imagine
children's museum

W MUSEOLOGY GRADUATE PROGRAM
UNIVERSITY of WASHINGTON

HC Marine Science
and Technology Center
HIGHLINE COLLEGE

All photos courtesy of the MaST Center and/or Bri Gabel unless otherwise stated.