HMSC Open Flow-Through Saltwater System
Use Requirements

The seawater system at Hatfield Marine Science Center (HMSC) delivers over 600 gallons per minute of high quality seawater to many buildings and labs on campus. The effluent from some of the labs is treated with 2ppm chlorine for a 10 minute residence time before returning to the bay. However, most of the seawater at HMSC is on an open flow-through system, where the seawater is used once and returned to the bay. HMSC follows strict precautionary principles in regard to the use of our open saltwater system. Use of the open flow-through saltwater system includes any internal or external lab spaces, tanks, floors or any surface where water, animals, or contaminates could enter the effluent trough system. To help us meet the state and federal requirements and insure the health of our local marine waters, all users of the open flow-through saltwater system must abide by the following protocols:

- Animals must be collected, transported and held per requirements of state and /or federal permits. (see state agency contacts at the end of this document.)

- Only healthy native species collected in Oregon waters (from the Washington to California border up to 3 miles off shore) can be held in the open saltwater system.

- Controlled species can be held in the open saltwater system but may have additional restrictions as defined by Oregon Fish and Wildlife (ODFW).
  Oregon's controlled and prohibited species- OAR 635-056-050:
  https://www.dfw.state.or.us/fish/crp/prohibited_controlled.asp

- Species native to Oregon but collected outside Oregon waters must be held in quarantine for a minimum of 30 days, batch treating effluent using chlorination protocols or other protocols explicitly approved by ODFW before being held in the open saltwater system.

- Species not native to Oregon must be held in permanent quarantine batch treating effluent with chorine or other procedures explicitly approved by ODFW.

- Any Oregon invasive or prohibited species must be held in permanent quarantine batch treating effluent using chlorination or other ODFW approved protocols.
  Oregon's aquatic invasive species:
  http://www.dfw.state.or.us/conservationstrategy/invasive_species.asp

- Any vertebrates, including fish, held in OSU facilities must be approved by IACUC and have a posted ACUP #

- Researchers holding Animals in Captivity must follow *HMSC Animal Care Plan*

- Only healthy animals, no sick or diseased animals can be held in the open saltwater system

- No use of chemical treatments, herbicides, or pesticides in the open saltwater system

- Food must be frozen, collected locally, provided by OSUs Molluscan Broodstock Program, or be preapproved by HMSC's Research Facility Coordinator

- General use of fertilizer is not allowed in the open saltwater system thus any nutrient loading must be preapproved by HMSC's Research Facility Coordinator

- For pH alteration experiments, effluent at an aggregated lab level must be between 6.0-9.0 or preapproved by HMSC's Research Facility Coordinator

- For temperature alteration experiments- effluent at an aggregated lab level must be between 8-18 ^{o}C or preapproved by HMSC's Research Facility Coordinator

Closed systems with batched treated effluent must be used for any animal or activity that does not meet the above requirements. All invasive or prohibited species, any sick or diseased animals, any animals collected outside Oregon waters (defined as the Washington to California borders to 3 miles offshore), any nonnative animal and any tanks where animals are medicated must be held in closed systems and all effluent water must be sanitized following chlorination protocols or other approved protocols before it is discarded.

At project's end all tanks and equipment will be cleaned, drained, and stored based on lab protocols and all Animals properly disposed of.

- All non-controlled or controlled species, if healthy can be:
    - donated to the HMSC Visitor's Center depending on the Center's need,
    - released at the area of capture in accordance to collection permit requirements,
    - preserved following best practice SOPs,
    - or euthanized, frozen and disposed of at the completion the research project.

- All unhealthy animals will be frozen and disposed of or preserved following best practice SOPs at the completion of the research project.

- Invasive or prohibited species will be frozen and disposed of or preserved following best practice SOPs at the completion the Activities.

*See *HMSC Animal Care Plan* for plan definitions.

*See *HMSC Animal Care Guidelines and HMSC Aquatic Animal Husbandry* for additional details and species specific resources.

State Agency Contacts for Permits and Requirements

Permit and Authorization for Marine Invasive and Non-native species:
Rick Boatner
Invasive Species Wildlife Integrity Coordinator
Wildlife Division
Oregon Department of Fish and Wildlife
(503) 947-6308
rick.j.boatner@state.or.us

Scientific Take Permit for collecting marine fish in Oregon:
Alison D. Whitman
Marine Fisheries Analyst
Marine Resources Program
Oregon Department of Fish and Wildlife
2040 SE Marine Science Drive
(541) 867-0300 x 284
Alison.D.Whitman@state.or.us

Fish Transport Permits for all marine species:
Arlene Merems
Marine Habitat Project Biologist
Marine Resources Program
Oregon Department of Fish and Wildlife
2040 SE Marine Science Dr.
Newport, OR 97365
(541) 867-0300 x246
arlene.r.merems@state.or.us

Scientific Take Permit for collecting marine invertebrates in Oregon:
Scott Groth
South Coast Shellfish Biologist
Marine Resources Program
Oregon Department of Fish and Wildlife
P.O. Box 5003
Charleston, OR 97420
(541) 888-3307 x233
scott.d.groth@state.or.us

Questions about Visitor Center Donations:
Colleen Hill
Senior Aquarist
Hatfield Marine Science Center
2030 SE Marine Science Drive

Newport, OR 97365
Colleen.Doyle@oregonstate.edu