# Fact Sheet

**The U.S. Environmental Protection Agency (EPA)**

**Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) General Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:**

**Tribal Enhancement and Federal Research Marine Net Pen Facilities**

**Within Puget Sound**

**NPDES General Permit Number: WAG132000**

Public Comment Start Date: February 9, 2021

Public Comment Expiration Date: March 26, 2021

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**EPA Proposes to Reissue NPDES Permit**

EPA proposes to reissue the NPDES General Permit for tribal enhancement and federal research marine net pen facilities, NPDES Permit No. WAG132000. The permit authorizes the discharge of pollutants from these facilities to waters of the United States within Puget Sound in Washington State. In order to ensure protection of water quality and human health, the General Permit includes limits on the types and amounts of pollutants that can be discharged and includes other conditions on such activity. This is the second general permit issued by EPA for tribal enhancement marine net pen facilities in Puget Sound. In addition to the facilities covered under the previous general permit, this general permit proposes to cover federal research marine net pen facilities.

**This Fact Sheet includes:**

- information on public comment, public hearing, and appeal procedures
- a description of the industry
- a description of proposed permit conditions
- technical material supporting the conditions in the permit
- a list of known facilities eligible for coverage under this General Permit

**Tribal and State Certification of the General Permit**

EPA is requesting that the following tribes provide final certification of the General Permit under Section 401 of the Clean Water Act: Swinomish Indian Tribal Community, Port Gamble S'Klallam Tribe, Lummi Nation, Puyallup Tribe of Indians, Tulalip Tribes and Makah Nation.

EPA is also requesting that the Washington State Department of Ecology (Ecology) provide final certification of the General Permit under Section 401 of the Clean Water Act.

Ecology's public notice for EPA's request for certification pursuant to Section 401 of the Clean Water Act will be available at the following link when Ecology initiates their public notice on February 22, 2021: https://apps.ecology.wa.gov/aquatics/notices/

Comments regarding Ecology's intent to certify the General Permit pursuant to CWA section 401 can be sent to the following link during Ecology's public comment period between February 22 and March 15, 2021:

Ecology eComments: http://wq.ecology.commentinput.com/?id=7Qhig

Comments regarding the Swinomish Indian Tribal Community's intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Nicole Casper – Water Resources Manager – ncasper@swinomish.nsn.us

Comments regarding the Port Gamble S'Klallam Tribe's intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Josh Carter – Environmental Scientist – jcarter@pgst.nsn.us

Comments regarding the Lummi Nation's intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Merle Jefferson – Natural Resources Executive Director – merlej@lummi-nsn.gov

Kara Kuhlman – Water Resources Division Manager – karak@lummi-nsn.gov

Comments regarding the Puyallup Tribe of Indians' intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Char Naylor – Water Quality Manager – char.naylor@puyalluptribe-nsn.gov

Comments regarding the Tulalip Tribe's intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Kurt Nelson – Environmental Division Manager – knelson@tulaliptribes-nsn.gov

Comments regarding the Makah Nation's intent to certify the General Permit pursuant to CWA section 401 can be sent to:

Ray Colby – Makah Fisheries Assistant Director – ray.colby@makah.com

**Public Comment**

Persons wishing to comment on or request a Public Hearing for the draft General Permit may do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to EPA as described below.

By the expiration date of the public comment period, all written comments and requests must be submitted to https://www.regulations.gov/docket?D=EPA-R10-OW-2020-0506

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Water Division will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, EPA will address the comments and issue the permit.

Pursuant to Section 509(b)(1) of the Clean Water Act, 33 U.S.C. § 1369(b)(1), any interested person may appeal the permit in the Ninth Circuit Court of Appeals within 120 days following notice of EPA's final decision for the permit.

**Documents are Available for Review**

The draft NPDES permit, fact sheet and other information can be downloaded from the internet at https://www.epa.gov/npdes-permits/draft-npdes-general-permit-tribal-enhancement-and-federal-research-marine-net-pen

Because of COVID-19 response, there is no public access to the Region 10 EPA building at this time. Therefore, we cannot make hard copies available for viewing at our offices. For technical questions regarding the permit or fact sheet, contact Martin Merz at the phone number or email listed above. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

## Acronyms and Definitions

**Acronyms**

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| BE | Biological Evaluation |
| $BOD_5$ | Biochemical Oxygen Demand, five-day |
| BMP | Best Management Practices |
| °C | Degrees Celsius |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| DO | Dissolved oxygen |
| EFH | Essential Fish Habitat |
| ELG | Effluent Limitation Guidelines |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| ICIS | Integrated Compliance Information System |
| LA | Load Allocation |
| mg/L | Milligrams per liter |
| mL | Milliliters |
| NEPA | National Environmental Policy Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| TAS | Treatment in a Manner Similar to a State (EPA-Tribal Government Process) |
| TMDL | Total Maximum Daily Load |
| TOC | Total Organic Carbon |
| USFWS | U.S. Fish and Wildlife Service |
| WD | Water Division |
| WLA | Wasteload allocation |
| WQBEL | Water quality-based effluent limit |
| WQS | Water Quality Standards |

**Definitions**

**Action Threshold** is a quantifiable measure of a water or benthic quality indicator. Action thresholds are both compliance indicators and corrective action triggers.

**Administrator** means the Administrator of the United States Environmental Protection Agency, or an authorized representative [40 CFR 122.2].

**Baseline**, for the purpose of this permit, refers to environmental data collected for the purpose of understanding environmental conditions without the influence of the facility. This usually means a sample from when fish are not present, or a sample from a short distance away, outside the likely influence of the facility.

**CFR** means the Code of Federal Regulations, which is the official annual compilation of all regulations and rules promulgated during the previous year by the agencies of the United States government, combined with all the previously issued regulations and rules of those agencies that are still in effect.

**The Director** means the Regional Administrator of EPA Region 10, or the Director of EPA Region 10 Water Division.

**Discharge** when used without qualification means the "discharge of a pollutant."

**Discharge of a Pollutant** means any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger" [40 CFR 122.2].

**Drug**, for the purposes of this permit, include articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease, articles (other than food) intended to affect the structure or function of the body, and articles recognized in official drug compendia. In aquaculture, this includes compounds that one would typically think of as drugs—antibiotics and other therapeutic compounds, fish sedatives and anesthetics, gender manipulators and spawning aids, etc. However, it's important to remember that innocuous, common household compounds—hydrogen peroxide, salt, and ice—are also considered drugs [FFDCA].

**Draft Permit** means a document prepared under 40 CFR 124.6 indicating the Director's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a "permit" [40 CFR 122.2].

**Effluent Limitation** means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean [40 CFR 122.2].

**Enhancement Facility**, for purposes of this permit, is a native salmonid-rearing marine net pen operation owned or operated by a tribe that releases fish to supplement native populations. Fish are not harvested from the net pens.

**Excluded Waters, or Prohibited Waters,** means water bodies not authorized as receiving waters to be covered under this general NPDES permit.

**Facility** means any NPDES point source or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

**Fish Containment Net** is a net that encloses the fish in a net pen.

**General Permit** means an NPDES "permit" issued under Sec. 122.28 authorizing a category of discharges under the CWA within a geographical area [40 CFR 122.2].

**Indian Country** as indicated by 18 USC §1151 means: (a) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation,

(b) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and,

(c) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

**Indian Tribe**, or Tribe, means any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation [40 CFR 122.2].

**Mean Low Water Depth** is the mean water depth at the location of the net pen during all of the low tides expected during the production period.

**Minimum Clearance to Seafloor** is the minimum clearance between the bottom of the net pen and the seafloor during the lowest tide expected during the production period.

**National Pollutant Discharge Elimination System (NPDES)** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA [40 CFR 122.2]. a

**Notice of Intent (NOI)** means a request, or application, to be authorized to discharge under a general NPDES permit.

**Pollutant** means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 USC 2011 et seq.)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water [40 CFR 122.2].

**Predator Exclusion Net** is a net that is placed around the Fish Containment Net to help keep predators away.

**Puget Sound**, for the purposes of this permit, includes southern Puget Sound and Hood Canal north to the Canadian border and west through the San Juan Islands and Strait of Juan De Fuca to

the estuarine boundary formed by a line between Cape Flattery and Tatoosh Island, Washington, and Carmanah Point (Vancouver Island), British Columbia.

**Research Facility**, for the purposes of this permit, is a native finfish rearing marine net pen operation owned or operated by a federal agency that raises fish to be harvested in order to assess the growth, survival, economics, and/or environmental impact of growing certain species in net pen systems.

**Waters of the United States or Waters of the U.S.** means those waters defined in 40 CFR § 120.2

# I. Background Information

## A. Industry Description

EPA defines concentrated aquatic animal production (CAAP) facilities as point sources subject to the National Pollutant Discharge Elimination System (NPDES) permit program. See 40 CFR §122.24. Relevant to this permit, the regulations further define such a facility as a hatchery, fish farm, or other facility that contains, grows, or holds:

Cold water fish species or other cold-water aquatic animals in ponds, raceways, or other similar structures that discharge at least thirty days per year, but does not include:

1. Facilities that produce less than 20,000 harvest weight pounds of aquatic animals per year, and
2. Facilities that feed less than 5,000 pounds of food during the calendar month of maximum feeding.

The proposed General Permit will authorize discharges from tribal enhancement marine net pen facilities raising native salmonids (enhancement facilities) and federal research marine net pen facilities raising native finfish (research facilities) within Puget Sound in Washington State. Most facilities eligible for coverage are enhancement facilities. These facilities do not harvest fish. Instead, the fish are released to regional water bodies to supplement native populations. In these facilities, young fish remain in the net pens for several months in order to imprint on the location, with the expectation that they will return a year or two later for harvesting at that time. All the enhancement facilities are currently growing Coho Salmon.

One marine net pen facility eligible for coverage under this General Permit is a federal research facility that operates year-round. This facility is currently growing sablefish (black cod) in order to assess the growth, survival, economics, and/or environmental impact of growing these fish in net pen systems, and at the end of the initial two-year grow out, the fish will be harvested. This facility is also likely to raise other species of native fish in the future. Although this is the only research facility expected to apply for coverage under this General Permit, other research facilities that meet eligibility requirements may submit a Notice of Intent (NOI) for coverage under the General Permit.

Net pen systems take advantage of an existing water body's circulation to disperse wastes and bring fresh water to the animals. Net pens are typically suspended from a floating structure and anchored to the sea bottom, while allowing some movement with tides and currents. In such systems, pollutants of concern are uneaten feed and feces that add solids, biochemical oxygen demand ($BOD_5$), nutrients, and drugs or other chemicals that discharge to the water column (See Part V.B *Pollutants and Practices of Concern*).

## B. General Permits

Section 301(a) of the Clean Water Act (CWA), 33 USC § 1311(a), provides that the discharge of pollutants to waters of the U.S. is unlawful except in accordance with terms and conditions of a NPDES permit. 40 CFR § 122.28 authorizes the permitting authority to issue general permits to categories of discharges. In accordance with 40 CFR § 122.28, the permitting authority is authorized to issue a general permit to numerous facilities when the facilities:

- Are located within the same geographic area;
- Involve the same or substantially similar types of operations;
- Discharge the same types of waste;
- Require the same effluent limits or operating conditions;
- Require the same or similar treatment technologies or monitoring requirements, and
- In the opinion of EPA, are more appropriately controlled under a general permit rather than an individual permit.

EPA is issuing this draft General Permit for enhancement and research facilities discharging to Puget Sound in Washington State pursuant to EPA's authority under CWA Section 402, 33 U.S.C. § 1342. The General Permit meets the criteria set forth in 40 CFR § 122.28 as follows:

1. **Geographic area:** All of the facilities authorized to discharge under this General Permit are located in Puget Sound in the State of Washington. Puget Sound, for the purposes of this permit, includes southern Puget Sound and Hood Canal north to the Canadian border and west through the San Juan Islands and Strait of Juan De Fuca to the estuarine boundary formed by a line between Cape Flattery and Tatoosh Island, Washington, and Carmanah Point (Vancouver Island), British Columbia.
2. **Involves the Same or Substantially Similar Types of Operations:** The proposed General Permit will authorize discharges from similar types of operations – marine cold-water net pen research and enhancement facilities. This General Permit covers net pen enhancement facilities which raise native salmonids (e.g., Coho Salmon, Sockeye Salmon, Pink Salmon) for release to regional water bodies to supplement native populations, or research facilities which raise and harvest native finfish (e.g. Sablefish).
3. **Discharge the Same Types of Waste:** The marine net pens that will be authorized under the proposed General Permit discharge the same type of wastes which consist of biodeposits and dissolved constituents associated with food, metabolic wastes and cleaning.
4. **Same Effluent Limits or Operating Conditions:** The General Permit proposes similar effluent limits and operating requirements for facilities that will be covered by the proposed General Permit.
5. **Same or Similar Treatment Technologies or Monitoring Requirements:** The General Permit proposes similar operating limitations and best management practices (BMPs) for all facilities. The General Permit proposes similar monitoring requirements for all marine net pen dischargers covered by the permit.
6. **Appropriateness:** Because of the factors discussed above, EPA has determined that the enhancement and research facilities are more appropriately controlled under a general permit than under individual NPDES permits. The similarity of the operations, and the technologies used at the facilities resulting in the discharge of similar waste types has prompted EPA to propose this General Permit.

## C. Permit History

The first general permit for tribal enhancement facilities in Washington became effective on November 1, 2015 and expired on October 31, 2020. This initial General Permit covered facilities that are "located in Indian Country, as defined in 18 U.S.C. § 1151, in the State of Washington, regardless of type of ownership" or facilities that are "owned or operated by an Indian Tribe." In addition, facilities needed to produce less than 100,000 pounds final release weight per year to be eligible for coverage. There are five facilities that meet these criteria that are covered under this General Permit.

Since all the facilities currently covered under this General Permit are owned or operated by an Indian Tribe, EPA is simplifying the eligibility requirements for enhancement facilities in the proposed General Permit to just those that are "owned or operated by an Indian Tribe." Further, since all the facilities currently covered are located in Puget Sound, EPA is narrowing the geographic scope of the proposed General Permit to just cover Puget Sound.

This proposed General Permit will be the second general permit issued by EPA for marine enhancement net pen facilities that are owned or operated by a Tribe in Puget Sound. The previous general permit, which expired on October 31, 2020, only covered enhancement facilities owned or operated by a Tribe. In addition to the facilities covered under the previous general permit, this General Permit proposes to cover research facilities that are owned or operated by federal agencies. There is one facility that meets this description that is expected to apply for coverage under this proposed General Permit. Further, the proposed General Permit proposes to allow for larger tribal enhancement facilities than the previous general permit – up to 200,000 pounds annual production instead of 100,000 pounds.

## D. Summary of Major Changes from Previous Permit

This General Permit reissuance involves an expansion from the previous general permit in the types of facilities covered (federal research facilities in addition to enhancement facilities) and the size of facilities covered (up to 200,000 pounds annual production for enhancement facilities instead of 100,000 pounds). There are some new permit conditions that apply to all facilities, and other permit conditions that are new that specifically apply to research facilities.

<u>Changes that apply to all facilities:</u>

1. Sediment Surveys: When completing sediments surveys, permittees must collect five samples at each sampling location rather than one, as was required in the previous permit. Permittees must complete their own sediment surveys, as opposed to having the option to cooperate with an EPA conducted sediment survey.
2. Accident Prevention and Response Planning: Permittees must have a written plan in place that details spill response procedures and must have necessary materials for responding to spills on-site and readily available for immediate action. Permittees must also have a plan that outlines the response to a mass mortality event and fish disposal procedures. Lastly, permittees must have a plan for recovering material that is lost in an accident, storm, or other event. These were conditions in the previous permit but EPA has made them more explicit in this permit.
3. Notification requirements in the event of a spill, mass mortality or disease epidemic are broader (include more agencies such as Washington Department of Agriculture and Department of Health) and are now more explicit.

4. Dissolved Oxygen (DO): Permittees with fish in the water during the critical period lasting from August 15 – September 30 must monitor DO levels weekly during this time period instead of monthly. The DO action threshold was also increased from 6.0 to 7.0 mg/L, to reflect marine water quality standards for aquatic life in Puget Sound. In cases where DO is naturally below 7.0 mg/L, the action threshold is 0.2 mg/L below the baseline level.
5. Geographic Area: The previous general permit applied to marine waters within the boundaries of Washington State. The proposed General Permit applies only to *Puget Sound* marine waters within the boundaries of Washington State.
6. Siting Provisions: The previous general permit contained a current velocity versus depth siting provision, as well as a proximity to special habitats siting provision, that applied to facilities sited after the permit was issued. The siting provision did not apply to existing facilities. These siting provisions have been removed from the proposed General Permit.

<u>New permit provisions that only apply to federal research facilities</u>

1. Sediment Surveys: For facilities that operate more than 6 months per year, two sediment surveys must be conducted during the permit term, one near peak biomass and the other during the critical summer period of August 15 - September 30.
2. Fish Escape Plan: The proposed Permit prohibits the release of fish from research facilities, requires a fish escape prevention and response plan, and includes fish escape reporting requirements.
3. Net Cleaning: Research facilities are subject to more detailed requirements for cleaning and replacing nets than enhancement facilities. Between each cohort of fish, net pens must be fallowed for at least six (6) weeks.
4. Structural Inspections: Permittees must have inspections completed by a professional engineer every two years, when the pens are fallow, to assess the structural integrity of the net pens.
5. Harvest: Harvest is allowed for research facilities. Discharge associated with transport or harvesting of fish, including blood, viscera, carcasses, transport water containing blood, and leachate from these materials must be prevented from entering waters of the U.S.

## E. Tribal Consultation

Consistent with Executive Order 13175 (November 2000) and EPA Policy on Consultation and Coordination with Indian Tribes (May 2011), EPA has coordinated with tribal enhancement facility managers and Western Washington Tribes during the development of this General Permit, and will invite all Western Washington Tribes to engage in government-to-government consultation.

# II. Eligibility for Coverage Under this General Permit

## A. Authorized Discharges

Eligible permittees are marine enhancement net pen facilities raising native salmonids that are owned or operated by an Indian Tribe, and marine research net pen facilities that are owned or operated by a federal agency within Puget Sound in Washington State. The enhancement facilities that are expected to apply for coverage under this General Permit currently raise Coho salmon, but are permitted to raise other salmonids that are native to Puget Sound. The federal research facility that is expected to apply for coverage currently raises sablefish (black cod), but is permitted to raise other cold water fish species that are native to Puget Sound. This permit does not include provisions for addressing the variety of issues associated with non-native species, thus facilities raising non-native fish species are not eligible for coverage under this permit.

Eligible permittees must also meet the following criteria:

a. Feed at least 5,000 pounds of food during the calendar month of maximum feeding; and
b. Operate thirty (30) or more days per year; and
c. Produce between 20,000 and 99,999 pounds release or harvest weight of cold water fish per year (no growing period limit). See 40 CFR § 122.24.

In addition, enhancement facilities that produce between 100,000 and 200,000 pounds release weight of cold water fish per year that are released after a growing period of no longer than four (4) months are eligible to apply for permit coverage. See 40 CFR § 451.20. This eligibility requirement does not apply to federal research facilities.

Parts (a) and (b) above are based on the definition of a CAAP as defined in 40 CFR § 122.24 Appendix C. The lower threshold of 20,000 pounds in part (c) above is also from the definition of a CAAP. 40 CFR § 451.20 states that the Effluent Limit Guidelines (ELGs) developed for CAAP facilities apply to facilities producing 100,000 pounds or more per year of aquatic animals in net pen or submerged cage systems "*except for* net pen facilities rearing native species released after a growing period of no longer than 4 months to supplement commercial and sport fisheries." If a facility meets or exceeds the 100,000 pounds threshold then the ELGs would need to be incorporated into the general permit and the facility would be required to comply with the National Environmental Policy Act (NEPA) unless the facility meets the exception set forth in 40 CFR § 451.20. EPA has included the 40 CFR § 451.20 exception by allowing coverage for enhancement facilities that meet or exceed the 100,000-pound production threshold as long as the facilities rear native species that are released after a growing period of no longer than 4 months. The upper threshold of 200,000 pounds of annual production per year was determined based on best professional judgement, for the purpose of requiring facilities larger than this threshold to apply for an individual permit. The permit conditions and monitoring requirements in this General Permit are appropriate for facilities that meet or exceed 100,000 pounds of annual production, but they are not intended for facilities producing upwards of 200,000 pounds. Therefore, EPA is limiting permit coverage to those facilities that fall below the 100,000 pound threshold with the exception of enhancement facilities that produce up to 200,000 pounds of cold water fish that release the fish after a growing period of no longer than four (4) months.

All facilities meeting these criteria are required to have permit coverage, though the operator of the facility may seek coverage under an individual permit (see Part II.F.2) rather than this General Permit. See 40 CFR § 122.28(b)(3). Facilities producing less than 20,000 pounds final release weight of cold water fish per year may opt for coverage under this General Permit by submitting a NOI. EPA may also designate smaller facilities for coverage under this permit should the facility be identified as a significant contributor of pollution to Waters of the United States. See 40 CFR § 122.24(c).

Facilities producing 100,000 pounds or more of cold water fish per year that do not meet the ELG applicability exception (See 40 CFR § 451.20) or that produce more than 200,000 pounds final release weight per year are subject to the ELGs for CAAP facilities (40 CFR Part 451), and, thus, are not eligible for coverage under this General Permit.

A list of the facilities that are expected to be covered under this General Permit is provided in Appendix A of this Fact Sheet.

### B. Limitations on Coverage

Three types of discharges are specifically excluded from coverage under this permit and must be covered under an individual NPDES permit:

*Discharges to waters designated by a state or tribe as Outstanding National Resource Waters.* To prevent degradation of water quality, under the authority of 40 CFR §131.12, EPA requires states and Tribes with Treatment as a State (TAS) to adopt and implement an antidegradation policy. Washington State's antidegradation program establishes three formal tiers of protection. Tier 3 is used to prevent the degradation of waters formally listed as outstanding resource waters and applies to all sources of pollution. Tribes may also have marine waters designated as outstanding. General permits are not appropriate in any Tier 3 waters or in waters designated as Outstanding by a Tribe.

*Discharges to impaired waters for pollutants of concern in this permit.* If an impairment is designated during the permit cycle, existing facilities with coverage will remain covered, but will be restricted from increasing production. EPA will consider the impairment upon reissuance of the general permit. No new discharges will be authorized to impaired waters. See 40 CFR § 122.44(d)(1)(vii).

*Discharges for the purpose of nutrient enhancement.* The addition of nutrients to surface waters for the purpose of enhancing secondary production, or for any other reason, is not authorized by this permit.

### C. Permit Coverage

In accordance with 40 CFR § 122.46(a), NPDES permits shall be effective for a fixed term not to exceed five (5) years. Therefore, this General Permit will expire five years from the effective date of the final permit. If the General Permit is not reissued prior to the expiration date, it may be administratively continued in accordance with the Administrative Procedures Act (APA) and will remain in effect until a new permit is issued.

Permittees that have submitted a NOI for coverage 180 days prior to permit expiration will remain covered by the administratively continued General Permit until the earlier of:

1. Authorization for coverage under reissuance or replacement of this General Permit following timely and appropriate submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with requirements of the new permit;
2. The Permittee's submittal of a Notice of Termination;
3. The issuance of an individual NPDES permit; or,
4. A formal permit decision by the Director not to reissue this General Permit, at which time the Permittee must seek coverage under an alternative general or individual permit.

**D. Siting for New Net Pen Facilities**

The previous general permit contained two siting provisions as eligibility requirements for new net pen facilities. One of these provisions was a current velocity versus depth ratio. The other provision prohibited new enhancement facilities from obtaining coverage under the general permit if they were located within 300 feet in the direction of prevailing tidal currents, or within 150 feet in any other direction, of kelp beds, rocky reef habitats, wildlife refuges, habitats of endangered and threatened species, and certain densities of eelgrass beds, geoduck populations and hard shell clam populations. These siting provisions were included in the permit due to the lack of adequate information on water quality and depositional risks from enhancement net pens in Puget Sound. With the uncertainty surrounding the environmental impact of these facilities, it was EPA's best professional judgement at the time to include these provisions to be conservative about the siting of new facilities until more was known about the impact of these facilities on water quality and the benthic environment.

These two siting provisions were based upon interim guidelines established by Washington in 1986 for the management of marine net pen operations in Puget Sound.[1] Notably, the 2015 General Permit only required new facilities to meet the siting provision. Existing facilities that were expected to apply for coverage under the 2015 general permit were not required to meet the siting provision. Of the existing facilities covered under the general permit, which were not subject to these requirements, none would satisfy the current velocity to depth ratio, and it is unclear how many might satisfy the special habitats siting requirement. The 1986 guidance was developed for net pen operations "in which salmon are grown with the intent to harvest and market the fish upon attainment of sufficient size". The guidelines explicitly do not apply to "net pen operations in which salmon are held exclusively for delayed release to enhance wild stocks". The guidelines rely on the assumption that facilities would be operating year-round and would be feeding to maximize growth. That is to say, these guidelines were not intended to apply to the facilities eligible for coverage under this general permit.

There are more facility specific data informing the development of this proposed General Permit, providing more confidence that the new permit conditions are protective of water quality and the

[1] Ecology. 1986. *Recommended Interim Guidelines for the Management of Salmon Net-Pen Culture in Puget Sound*. Olympia, WA: Washington State Department of Ecology.

benthic environment surrounding these existing facilities. This includes quantitative TOC data and visual assessment data from permittees providing information on impacts of these facilities to the benthic environment underneath and surrounding the net pen facilities. This also includes DO data providing information on the impacts of these facilities to the water column surrounding the net pen facilities. Further, there are concrete action thresholds and corrective action requirements that directly provide for the protection of water quality and the benthic environment (see part IV.D and V of the permit).

Since the proposed General Permit is written to be protective of the existing permitted facilities, all of which do not meet the current velocity to depth ratio and it is unknown how many meet the special habitat siting provision, EPA has removed these two siting provisions so as to allow for new facilities that are largely similar to the existing facilities to apply for coverage under the proposed General Permit. Under the proposed General Permit, EPA retains the authority to evaluate proposed facilities on a case by case basis and, when appropriate, require them to seek coverage under an individual permit, or consider a different location if deemed necessary to protect water quality and the benthic environment (See Part II.E.1 of the General Permit)

# III. Obtaining Authorization to Discharge under this General Permit

## A. Deadline for NOI submittal

In accordance with 40 CFR §122.28, dischargers seeking coverage under the General Permit must submit a complete NOI to EPA Region 10, through the system set forth in Part II.C. of the Permit.

Existing net pen facilities with coverage under the previous General Permit that are seeking coverage under this permit must submit an NOI no more than 90 days following the effective date of this General Permit. Existing net pen facilities that were not covered under the previous general permit because they fall below the threshold for NPDES permit coverage are not required to submit an NOI as stipulated in Part I.A.4 of the permit. If these facilities anticipate going above the threshold, thus requiring NPDES permit coverage, they must submit an NOI for coverage 180 days prior to their anticipated exceedance of the threshold. In accordance with 40 CFR § 122.23(b)(2)(i), a discharger who fails to submit a timely and complete NOI in accordance with the terms of a general permit is not authorized to discharge. A complete and timely NOI fulfills the requirements of a permit application for purposes of 40 CFR § 122.6 and 122.21.

## B. Required NOI Information

The required contents of the NOI are specified in Part II.B of the General Permit. It requires submittal of information necessary for adequate permit administration, including the legal name and address of the owner or operator; the facility name and location; specific depth, mooring and current information about the facility; information about the fish being stocked; lists of drugs, pesticides and other chemicals expected to be used; a description of the benthos beneath and in proximity to the facility; feed and feeding rates; and monitoring locations. All NOIs must be signed in accordance with the certification requirements at 40 CFR §122.22.

### C. NOI Submittal

1. The Permittee must apply for coverage using EPA's eNOI system. Instructions on how to electronically sign and submit this form are found in Part II.C of the permit
2. A waiver from electronic reporting may be requested by contacting EPA at the address below to obtain an 'Electronic Reporting Waiver Request' application:

   U.S. Environmental Protection Agency, R10
   NPDES Permitting Section, WD-19-C04
   1200 Sixth Avenue, Suite 155
   Seattle, Washington 98101

### D. When the Permittee is Authorized to Discharge (Part II.D)

A discharger is authorized to discharge on the date that EPA provides written authorization.

### E. Requirements for an Individual Permit (Part II.E)

Under 40 CFR §122.28(b)(3)(i), EPA may require an owner or operator seeking authorization or authorized by the General Permit to apply for and obtain an individual permit in the following circumstances:

1. Whenever the permittee is not, or is not reasonably expected to be, in compliance with the conditions of this General Permit;
2. Whenever a change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source, therefore causing limitations of the General Permit to be inappropriate for the control or abatement of pollutants from the point source(s);
3. If a water quality management plan, including a Total Maximum Daily Load (TMDL), containing requirements applicable to the point source is approved after the effective date of the General Permit;
4. If circumstances have changed since the time of NOI submittal, so that the Permittee is no longer appropriately controlled under the General Permit, or either a temporary or permanent reduction or elimination of the discharge is necessary; or if the discharge is a significant contributor of pollutants, taking into account the location and size of the discharge and the quantity and nature of the pollutants, as determined by the Regional Administrator.

Owners or operators meeting the criteria for coverage by the General Permit may request to be excluded from coverage by applying to EPA for an individual permit. Owners and operators may also request termination of General Permit coverage should the net pen operation fall below the duration and weight thresholds stipulated in Part I.A.2 of the permit.

## IV. Water Quality Standards

Receiving waters within the scope of this General Permit are Waters of the State of Washington in Puget Sound and Indian Country waters in Puget Sound, both of which are also Waters of the U.S. States, including Tribes with TAS, establish water quality standards for receiving waters within their jurisdictions. Water quality standards are composed of designated beneficial water uses to be achieved and protected, as well as water quality criteria necessary to protect

designated uses. Under 40 CFR §131.10, EPA requires states and Tribes with TAS to specify appropriate water uses to be achieved and protected.

### A. Washington State Water Quality Standards

In developing the General Permit, EPA considered water quality standards of the State of Washington because these standards are applicable to the receiving waters of the majority of the net pen facilities authorized to discharge under the General Permit. Washington's water quality standards at Washington Administrative Code (WAC) 173-201A-210 (marine water) establish general aquatic life, recreation, water supply, shellfish harvesting, and miscellaneous uses, and those at WAC 173-201A-610 (marine water) designate uses for specific waters in the State. WAC 173-221A-110 lists requirements applicable to all marine finfish rearing facilities in state waters. WAC 220-370-110 and WAC 220-370-120 identify fish escape prevention and reporting requirements, which are applied only to research facilities in this permit. WAC 173-204-412 identifies marine finfish rearing facility operation, closure, and monitoring requirements, including sediment monitoring requirements.

EPA has written this General Permit to be protective of these uses.

### B. Tribal Water Quality Standards

A number of tribes within the State of Washington with TAS have developed water quality standards. EPA has approved water quality standards for the following Western Washington tribes that border Puget Sound: Swinomish Indian Tribal Community, Port Gamble S'Klallam Tribe, Lummi Nation, Puyallup Tribe of Indians, and Makah Nation. In addition, EPA has approved the Tulalip Tribe for TAS; however, the Tribe has not yet submitted WQS to EPA for approval.

These tribal standards, applicable to waters within the respective reservations, describe use classifications and the applicable water quality criteria. For the parameters that are pertinent to this General Permit, tribal water quality standards are either identical to or very similar to those of Washington State. EPA has reviewed all EPA-approved tribal water quality standards within Washington State and concludes that the application of Washington State water quality standards in this General Permit will be protective of tribal waters.

### C. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the CWA, 33 U.S.C. § 1313(d), requires States and Tribes with TAS to identify specific water bodies where water quality standards are not met or are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the State or Tribe must develop and adopt TMDLs that will specify wasteload allocations (WLAs) for specific pollutants for point sources and load allocations (LAs) for non-point sources of pollutants, as appropriate. WLAs are implemented through effluent limitations in NPDES permits.

EPA has approved the State of Washington's December 21, 2012, 303(d) list of impaired water bodies, which is available online at: http://www.ecy.wa.gov/programs/Wq/303d/currentassessmt.html. There are no Tribes in Washington with CWA 303(d) lists. As of the date of this Fact Sheet, none of the identified enhancement or research facilities expected to seek coverage under this General Permit discharge

to impaired waters. Thus, there are no relevant TMDL WLAs for the facilities that are expected to be authorized to discharge under this permit.

EPA will not grant coverage to a new facility that discharges to water bodies impaired for pollutants of concern, whether there is a TMDL in place or not. EPA will also not approve an increased discharge from an existing facility to water bodies impaired for pollutants of concern, whether there is a TMDL in place or not. A new facility that discharged to water bodies impaired for pollutants of concern will be required to obtain an individual permit.

# V. Effluent Limitations and Prohibited Practices

## A. Basis for Effluent Limits

Sections 101, 301, 304, 308, 401, 402 and 403 of the CWA provide the basis for effluent limitations and other conditions in the proposed permit. EPA has evaluated discharges from net pen facilities covered by the previous general permit issued in 2015 along with other net pen facilities with respect to these sections of the CWA and relevant NPDES implementing regulations to determine what conditions and requirements are appropriate.

In general, the CWA requires effluent limits that are the more stringent of either technology-based or water quality-based limitations. Technology-based effluent limits are based on a minimum level of treatment for discharges from point sources that is provided by currently available treatment technologies. Water quality-based effluent limits (WQBELs) are developed to ensure that applicable water quality standards for receiving waters are met.

As discussed above, EPA is using Washington water quality standards to determine the applicable permit conditions. In addition, as previously stated, EPA-approved tribal WQS that might apply to a discharge are either the same or similar to Washington water quality standards, thus, the use of Washington water quality standards will also ensure that tribal WQS are met.

The CWA authorizes, and EPA regulations at 40 CFR §122.44(k) provide for, requirements to implement BMPs in NPDES permits. These BMPs are intended to control or abate the discharge of pollutants whenever necessary to achieve effluent limitations and standards, or to carry out the purposes and intent of the CWA, and when numeric limits are infeasible. BMPs are important tools for waste minimization and pollution prevention and are an appropriate way to articulate effluent limitations for enhancement and research net pen facilities. Specific industry standard BMPs related to CAAPs have been developed nationally at 40 CFR Part 451 in the form of ELGs. These ELGs do not apply to the relatively small net pens covered under this General Permit. However, the BMP requirements in the Prohibited Practices, Prohibited Discharges, and Discharge Controls section of this General Permit are largely based on these ELGs and have been determined to be protective of water quality.

## B. Pollutants and Practices of Concern

Net pen facilities may discharge a variety of pollutants that could contribute to exceedances of water quality standards. In addition, these facilities may engage in other practices that increase the risk of disease spread or otherwise impact marine biota:

1. *Biodeposits associated with food, feces and cleaning*. Net pen facilities generate and/or contribute nutrients (nitrogen and phosphorus) in dissolved and particulate forms to receiving waters. These pollutants have the potential to contribute to a

number of negative water quality impacts related to eutrophication – water column algal blooms, increased turbidity, low dissolved oxygen, changes in benthic flora and fauna, and stimulation of harmful microbial activity. The impact of biodeposits (fish feces and uneaten feed) on the environment beneath the net pens is considered one of the high risks associated with these operations, and sedimentation rates are fairly constant irrespective of operation size.[2,3,4,5] In addition, in situ cleaning of nets can have notable effects on the benthos up to 30 meters away from the pens.[6]

2. *Biochemical Oxygen Demand (BOD) in the Water Column*. Fish stocked in contained areas have a high oxygen demand, and monitoring in Washington State has found oxygen reduction in water passing through net pens where concentrated biomasses of fish are being fed.[7]

3. *Drugs and Pesticides.* Residual drugs and pesticides have the potential to affect other marine biota. The impact on non-target organisms by the use of drugs and pesticides at net-pen facilities has been determined to be a concern for these operations.[8]

4. *Disease, i.e., bacteria, viruses and parasites.* Concentration of fish in high density net pens poses the threat of disease or parasite transmission to natural fish populations.[9] Net pen facilities are not considered to be notable sources of pathogens that affect human health.

5. *Fish escape.* Fish that have escaped from enhancement facilities prior to their intended release is acceptable, since these native salmonids will ultimately be released intentionally as part of their Hatchery Genetic Management Plans. Fish

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[2] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

[3] Pohle, G., B. Frost, and R. Findlay. 2001. *Assessment of regional benthic impact of salmon mariculture within the Letang Inlet, Bay of Fundy*. ICES Journal of Marine Science, 58:417-426.

[4] Goldburg, R. J., M. S. Elliott, R. L. Naylor. 2001. *Marine Net pen in the United States: Environmental Impacts and Policy Options*. Arlington, Virginia: Pew Oceans Commission.

[5] Waknitz, F.H. et al. 2002. *Review of Potential Impacts of Atlantic Salmon Culture on Puget Sound Chinook Salmon and Hood Canal Summer-Run Chum Salmon Evolutionarily Significant Units* (NOAA Technical Memorandum NMFS-NWFSC 53). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

[6] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

[7] Ibid.

[8] Ibid.

[9] Ibid.

escape from research facilities that do not intend to release them, even native fish as is the case with this permit, is an unknown risk, and inadvertent release could increase the chance of disease spread or lead to competition for resources with other fish populations.

6. *Heavy metals.* The impact on benthic communities by the accumulation of heavy metals in the sediments below net pens is a concern because they can be toxic in an ionic form to marine organisms. Marine anti-fouling compounds containing copper are sometimes used on net pens to prevent biofouling. Levels of copper are elevated around some net-pen farms which use government-approved anti-fouling paints on structures or, more likely, treat their nets with approved commercial compounds containing copper.[10] Fish feed can also contain zinc.

7. *Fuel, Oil and Maintenance Related Pollutants.* Fuel and oil spills can be harmful to marine life. In general, it is impractical and unnecessary to provide routine maintenance to boats and other equipment at the site of the net pen facilities.

8. *Fish Carcasses and Harvest Related Discharges.* The process of harvesting fish from a net pen operation can result in the discharge of a variety of pollutants. Discharges including blood, viscera, carcasses, transport water containing blood, and leachate from these materials can be harmful to the environment due to the high oxygen demand of the organic matter, which can reduce oxygen levels near the sea floor and smother living organisms. Improper disposal of fish waste can also create aesthetic problems and strong odors as a result of bacterial decomposition.[11]

9. *Chlorine.* Sometimes fish transport equipment is disinfected with chlorine. The discharge of chlorine can be extremely toxic at low levels to fish and other aquatic organisms.[12]

10. *Microplastics.* There is credible evidence that the breakdown of certain types of net pen gear such as nets, lines and buoys can introduce microplastics into the marine environment.[13, 14] Microplastics have been documented in marine waters, sediments and biota, and there is a growing body of literature indicating an association between

[10] Ibid.

[11] U.S. EPA. *Ocean Disposal of Fish Wastes*. Accessed April 16, 2020. https://www.epa.gov/ocean-dumping/ocean-disposal-fish-wastes

[12] U.S. EPA. *Summaries of Water Pollution Reporting Categories* (adapted EPA-841-R-12-104). Accessed May 15, 2020. https://www.epa.gov/sites/production/files/2015-08/documents/34parentattainsdescriptions.pdf

[13] Krüger, L., et al. (2020). *Plastic debris accumulation in the seabed derived from coastal fish farming*. Environmental Pollution 257: 113336. https://www.sciencedirect.com/science/article/abs/pii/S0269749119330222

[14] Sui, Q., et al. (2020). *Spatiotemporal distribution, source identification and inventory of microplastics in surface sediments from Sanggou Bay, China*. Science of The Total Environment 723: 138064. https://www.sciencedirect.com/science/article/abs/pii/S0048969720315771

uptake of microplastics and changes in the physiological or biochemical responses in some species.[15] While net pens are by no means among the most significant sources of microplastics to the environment, exposure of aquaculture gear to sunlight, wave action and fouling organisms can result in the fragmentation of materials that can eventually break down into microplastics.

Explanation of control measures and technologies for these pollutants is provided in Part V.C of this fact sheet.

## C. Prohibited Practices, Prohibited Discharges and Discharge Controls

Consistent with relevant water quality standards and limitations, as outlined above, the General Permit requires permittees to abide by the prohibited practices, prohibited discharges and discharge controls described below:

***Biodeposits associated with feed, feces and cleaning***

Feed:

Feed and fish feces are the major sources of nutrients, such as nitrogen and phosphorus, and solids. Optimizing feed management by using high quality feeds and minimizing feed waste can reduce the nutrients and solids generated and released to the environment.[16]

In order to minimize excess feed, the General Permit requires implementation of protocols that closely match feeding rates to fish size and other factors, i.e., calculation of feed conversion ratios, in combination with direct fish feeding observations designed to cease feeding when the fish are not eating (See Part III.D.1 of the permit).

On-site storage of large quantities of any substance, including food, with the potential to impact water quality is discouraged.[17] However, due to logistical considerations of net pen operations, EPA is proposing a permit provision that allows fish food to be stored on barges adjacent to the operation in weekly quantities. On-site storage must be in covered and locked facilities on the storage barge to minimize the likelihood of discharges due to inclement weather, vandalism, navigational accidents, or other events that could result in unintentional releases. (See Part III.D.3 of the permit). Used feed bags shall be collected for transport, recycling and/or disposal at a recycling or disposal facility and must not be discharged to waters of the U.S. (See Part III.D.2 of the permit).

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[15] GESAMP. 2016. *Sources, Fate and Effects of Microplastics in the Marine Environment: part two of a global assessment* (Kershaw, P.J. and Rochman, C.M., eds. No. 93, and references therein. http://www.gesamp.org/site/assets/files/1275/sources-fate-and-effects-of-microplastics-in-the-marine-environment-part-2-of-a-global-assessment-en.pdf

[16] U.S. EPA. 2006. *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category*, (EPA-821-B-05-001). Chapter 9.

[17] U.S. EPA. 2006. *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category* (EPA-821-B-05-001). Chapter 10.

Net Cleaning:

In situ cleaning of nets can have notable effects on the benthos up to 30 meters away from the pens.[18] Frames and anchoring structures remain in the water year-round, and must be cleaned in situ, but for nets it is more feasible for cleaning to take place at an upland location. Upland cleaning is preferred to in situ cleaning because it eliminates the discharge of solids directly to the water, as well as preventing the settling of those solids to the benthos.[19]

The permit requires research facilities to leave nets fallow for at least six weeks between cohorts during which time their nets must be cleaned and repaired upland or replaced. Predator exclusion nets must be cleaned in-situ as needed but not less frequently than at 6-month intervals when nets are in the water. Fish containment nets must be replaced with new nets as needed but not less frequently than at 6-month intervals while nets are in the water. Alternatively, fish containment nets may be cleaned in situ as needed but not less frequently than at 4-month intervals (See Part III.B.1 of the permit). When nets are cleaned upland, the permit stipulates that no runoff or solids from cleaning shall be discharged to surface waters. (See Part III.B.4 of the permit).

The permit requires enhancement facilities to engage in upland cleaning of net pens when it is feasible, but it allows for *in situ* mechanical cleaning (e.g., brushing and power washing) of nets, frames and anchor structures to remove solids under conditions that will disperse solids and prevent concentrated bottom settling (i.e., high tide, rapid current). (See Part III.B.2 of the permit).

For in situ cleaning, the permit further stipulates that only biofouling solids are allowed to be dispersed. All other solid wastes must be collected and removed for land-based disposal (see Part III.A.2 of the permit). Net cleaning of discreet portions of the net must be phased over a sufficient period of time in order to avoid an influx of material during a single cleaning event. (See Part III.B.2 of the permit).

To further address the deposition of biodeposits, the permit requires that nets and anchoring systems for any facilities be installed to allow proper current flow through and around the net pen structures, and not exacerbate sedimentation or deposition.[20] (See Part III.B.6 of the permit).

***Biochemical Oxygen Demand in the Water Column.***

Fish stocked in contained areas have a high oxygen demand, and monitoring in Washington State has found oxygen reduction in water passing through net pens where concentrated biomasses of

[18] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

[19] U.S. EPA. 2006. *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category* (EPA-821-B-05-001). Chapter 9.

[20] U.S. EPA. 2006. *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category*. (EPA-821-B-05-001). Chapter 11.

fish are being fed.[21] Washington water quality standards for marine DO for aquatic life use range from 4.0 to 7.0 mg/L in Puget Sound, with 7.0 mg/L and 6.0 mg/L corresponding to *extraordinary* and *excellent* quality, respectively.[22] Most of the waters of Puget Sound have an *extraordinary* standard, and many bays and inlets have an *excellent* standard. Since some of the facilities to be covered by the Permit fall within waters with an *extraordinary* standard, the action threshold for DO in this permit is 7.0 mg/L. However, some waters of Puget Sound are naturally lower in oxygen than this threshold. If this is the case, then the action threshold is a decrease in DO of 0.2 mg/L below the baseline.

See Part VI.C of Fact Sheet (Part IV.C of permit) for DO monitoring requirements and Part V.II of Fact Sheet (Part V of permit) for corrective actions.

***Drugs and Pesticides***

The permit allows for use of drugs and pesticides only in accordance with applicable label directions. Exceptions are allowed only if the operation is participating in Investigational New Animal Drug (INAD) studies, or when a veterinarian determines per prescription of extra-label drug use. (Part III.E.1 of the permit).

***Disease, i.e., bacteria, viruses and parasites***

The *Salmonid Disease Control Policy of the Fisheries Co-Managers of Washington State* outlines the treatment, surveillance and reporting policies and procedures to be followed in order to protect free-ranging and cultured fish populations from management activities that could cause the importation, dissemination, and amplification of pathogens known to adversely affect salmonids.[23] EPA concludes that following the policy will adequately meet the treatment, surveillance and reporting needs for salmonid disease control. Therefore, the General Permit requires permittees growing salmonids to comply with the provisions of the Policy but imposes no additional control measures for disease control (See Part III.E.2 of the permit).

When research facilities are growing non-salmonids, they are required to comply with the following protocols for preventing disease. These protocols were informed by the current procedures used by the Manchester Research Station and were developed in coordination with the Washington Department of Fish and Wildlife. The Permit stipulates that these facilities must (See Part III.E.3):

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[21] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

[22] Roberts, M., T. Mohamedali, B. Sackmann, T. Khangaonkar, and W. Long. 2014. *Puget Sound and the Straits Dissolved Oxygen Assessment: Impacts of Current and Future Human Nitrogen Sources and Climate Change through 2070* (Publication No. 14-03-007). Olympia, Washington: Washington State Department of Ecology.

[23] NWIFC/WDF (Northwest Indian Fisheries Commission/Washington Department of Fisheries). 2006. *The Salmonid Disease Control Policy of the Fisheries Co-Managers of Washington State (Revised July 2006)*. Olympia, Washington: Washington Department of Fish and Wildlife.

1. Complete daily inspections of fish by net pen technicians and weekly inspections by the net pen manager to look for any irregularities in fish behavior or conditions (e.g., lesions) that would suggest health issues requiring subsequent pathogen analysis and a veterinarian;
2. Carry out a mandatory health inspection of the fish and net pen system by a fish health specialist or veterinarian every 6 months during fish net pen occupancy;
3. Ensure controlled water quality rearing conditions for broodstocks, eggs, and larvae leading to the production of juveniles for net pen stocking;
4. Ensure segregation of age classes (no co-culture of >1 generation);
5. Employ standard biosecurity protocols (e.g., tank, net, and equipment disinfection) during rearing on land and during movement from land to net pens;
6. Document and report any drug, pesticide or other chemical application (See Parts VI.A and VI.B).

***Fish Escape***

As discussed in Part V.B of the Fact Sheet, fish escape from enhancement facilities is not a concern, since these fish are released intentionally. Research facilities covered under this permit harvest rather than intentionally release fish. While they are only permitted to raise native fish, the species grown in research facilities may not have been the subject of research to understand the impacts of release. Thus, the permit addresses the concern of fish escape from research facilities by prohibiting the release of fish from these facilities to waters of the U.S (See Part III.A.4 of the permit). To this end, research facility permittees are required to have a plan in place to prevent fish escape and to react in the event of a fish escape. In accordance with WAC 220-370-110 and WAC 220-370-120, the permit stipulates that the plan must include routine procedures to minimize escape during day to day operations; procedures to minimize escape during cleaning, repair, or other maintenance of net pens; training procedures on escape prevention for employees; reporting procedures for escape; procedures to recapture fish; procedures to minimize the number of escaped fish; and procedures for monitoring fish mortality, predation, and escape. (See Part III.F.1 of the permit regarding fish escape planning).

Regular net cleaning and inspection also helps to prevent net failure that can lead to fish escape. Research facilities are required to have inspections to assess structural integrity of the net pens every two years. (See Part III.B.5 of the permit regarding structural integrity inspections). The permit also requires research facilities to leave nets fallow for six weeks between each cohort of fish. Regular net cleaning or replacement is also required at least every four or six months, respectively. (See Part III.B.1 of the permit regarding net-cleaning for research facilities).

***Heavy Metals***

To address the potential for heavy metal impacts, the use of biocidal chemicals for disinfecting nets is prohibited unless prescribed by a veterinarian or so determined by the Fish Health Specialist of the Northwest Indian Fisheries Commission, as necessary to prevent the spread of disease. (See Part III.B.3 of the permit regarding net pen cleaning).

***Fuel, Oil and Maintenance Related Pollutants***

Given the water quality risks should an oil or gasoline spill occur, EPA concludes that it is appropriate to undertake these practices at upland locations, marinas or other shore-docking locations where spill and accident prevention and response measures are more easily and effectively implemented. Therefore, the proposed permit prohibits fueling, lubrication and other general maintenance of boats and other mechanical equipment at the net pen facility (See Part III.B.7 of the permit), except for short-term pump fueling during fish transfer discussed in more detail below (See Part III.C.4 of the permit).

The permit allows for on-site fueling of the gasoline powered pumps which are needed at some facilities during the process of transferring fish into the net pens at the beginning of the season. Fueling at the facility, even during this short process which generally takes less than two weeks, is a concern in that it increases the risk of a fuel spill in open water. Therefore, the permit requires that these pumps be fueled at the facility only if the activity takes place within secondary containment (See Part III.C.4 of the permit). Further, spill response procedures must also be established, and the necessary materials for responding to spills must be on-site and readily available for immediate action. (See Part III.F.2 of the permit).

In order to further minimize the effects of spills and other releases, fuel and other potential pollutants must be stored off-site and conveyed to the facility in daily quantities only.[24] (See Part III.A.3 of the permit). Prohibiting storage of such materials on site minimizes the likelihood of discharges due to inclement weather, vandalism, navigational accidents, or other events that could result in unintentional releases.

***Fish Carcasses and Harvest Related Discharges***

The process of harvesting fish from a net pen operation can result in the discharge of a variety of pollutants. Enhancement operations release fish rather than harvest them; for these facilities, harvest is prohibited except for the purposes of removing fish to evaluate growth, health or other sub-sampling for evaluation purposes. Research operations may harvest fish for research purposes only. (See Part III.C.1 of the permit).

EPA consulted with the Manchester Research Station about their harvest process. This facility is currently the only known federal research facility that will be covered under the General Permit. When fish are ready for harvest, the harvest vessel pulls adjacent to the net pen, and fish are seined within the net pen and concentrated into a brailer. The brailer is then lifted by a crane on the vessel out of the pen and into the vessel's ship hold. The fish are then taken to the dock, put in totes and transported onward to the processor on land. The permit states that materials associated with fish harvest must be prevented from entering waters of the U.S (See Part III.C.2 of the permit).

[24] U.S. EPA. 2006. *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category* (EPA-821-B-05-001). Chapter 10.

Fish carcasses and fish parts are considered waste materials, and fish mortalities should be collected, recorded and properly disposed of.[25] The proposed permit requires animal mortalities to be disposed of in leak-proof containers no less frequently than once per week. Disposal must be to an approved land-based facility, which can include properly maintained dumpsters, composting facilities or incineration. Discharges of dead fish, fish tissue, fish products or other animals to the water is prohibited. (See Part III.C.5 of the permit). Further, a plan must be in place to dispose of a large quantity of dead fish in the event of a mass fish mortality (See Part III.F.2 of the permit).

***Chlorine***

Young fish are sometimes brought to net pen facilities from upland hatcheries in tanks that have been disinfected with chlorine. EPA discourages the discharge to surface waters of any water that has been disinfected with chlorine or other chemicals. However, should the operator decide to discharge these disinfected waters to waters of the U.S. they must first be properly treated, i.e., dechlorinated. (See Part III.C.3 of the permit).

***Accident Prevention and Response Planning and Training***

One of the most effective methods to ensure proper implementation of all provisions of this permit is for all personnel involved in net pen operations to have a solid understanding of how the operation is supposed to be run, including what activities are prohibited.[26]

Therefore, the General Permit requires that all relevant personnel must be trained in fish husbandry, feeding, and other management provisions stipulated in this permit. (See Part III.F.3 of the permit). Personnel must also be trained in spill prevention and response, as well as mass fish mortality prevention and response (See Part III.F.2 of the permit).

***Microplastics***

While net pens are by no means among the most significant sources of microplastics to the environment, the General Permit includes some requirements that may reduce potential plastic discharges. The General Permit stipulates that solid wastes shall be collected and not discharged to waters of the U.S. (See Part III.A.2 of the permit) and that used feed bags shall be collected for transport and not discharged to waters of the U.S. (See Part III.D.2 of the permit). Further, net cleaning requirements reduce the exposure of nets to fouling organisms that could cause them to break down in the water, and reduces risk of net failure and possible loss of nets within waters of the U.S. Cleaning nets upland rather than in the water, to the extent feasible, also reduces discharge of net plastics (See Parts III.B.1 and III.B.2 of the permit). Lastly, the required Accident Prevention and Response Plan must include measures to recover any materials lost in an accident, storm, or other event. (See Part III.F.2.c of the permit).

[25] Ibid. Chapter 15.

[26] Ibid. Chapter 13.

***Other Effluent Limits***

Consistent with relevant water quality standards and limitations, as outlined above, enhancement and research facilities are prohibited from discharging visible oil sheen, foam, discoloration, floating solids, or settleable solids that would impair the designated uses of the receiving water to waters of the U.S. (Part III.A.1 of the permit). Further, they are prohibited from discharging solid wastes, which should be collected for transport, recycling and/or disposal at a recycling or disposal facility (Part III.A.2 of the permit).

# VI. Monitoring Requirements

In accordance with Section 308 of the CWA, 33 U.S.C. § 1318, and 40 CFR §§122.48 and 122.44(i), monitoring requirements are included in an NPDES permit to determine compliance with effluent limitations, to gather data to evaluate the need for future effluent limitations, and/or to monitor impacts on the receiving water. All analyses required by the General Permit must be conducted in accordance with methods and procedures established at 40 CFR Part 136.

EPA is proposing monitoring provisions that are adequate to detect water quality-related problems and that are commensurate with the nature and size of the facilities and the duration of the discharges. Simple pollutant indicators have been chosen for sediments (total organic carbon) and water (dissolved oxygen), and other monitoring requirements are based on visual evaluations. If water quality related problems are discovered, EPA may require additional monitoring.

## A. Sediment Characterization

The purpose of the sediment characterization condition is to understand the extent to which the net pens are having an effect on the benthos beneath them, by determining if there are biodeposits and other pollutants beneath the net pens. Biodeposits, such as feed and feces, are commonly associated pollutants below net pens.[27] Since the use of biocides for antifouling is prohibited by this permit unless prescribed by a veterinarian, the sediment monitoring provisions do not include monitoring for heavy metals such as copper and zinc.

Carbon decomposition is a critical source of oxygen demand below net pens, and carbon monitoring is a reasonable indication of whether the benthos is being affected by the net pens. Total organic carbon (TOC) levels are indexed to the silt/clay content of the sediments, using reference values for Puget Sound. The net pens discharge to Puget Sound, in waters for which water quality standards and sediment TOC reference values have been established by the State of Washington. WAC 173-204-412(3)(b) establishes these reference values and this monitoring methodology for existing marine finfish rearing facilities (see Table 1 below). The regulations specify that facilities must monitor sediment TOC to determine if sediments in the facility area are statistically different (t-test, $p \leq 0.05$) from the reference values or from TOC baseline levels

[27] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

at the facility. The Washington regulations typically apply to larger facilities than those covered under this permit. However, EPA is requiring the use of the Washington methodology because of its relative simplicity and because it utilizes a scientifically based and well-established set of reference values for Puget Sound.

**Table 1:** Puget Sound Reference Total Organic Carbon Values (compare measured TOC values to these values) [WAC 173-204-412 (3)(b)].

| Silt-Clay Particles (percent Dry Weight) | Total Organic Carbon (percent Dry Weight) |
|---|---|
| 0-20 | 0.5 |
| 20-50 | 1.7 |
| 50-80 | 3.2 |
| 80-100 | 2.6 |

In accordance with the 2015 General Permit requirements, three facilities either performed sediment surveys themselves, or cooperated with a sediment survey performed by an EPA dive team. EPA performed the sediment surveys for the Elliott Bay and Agate Pass facilities. The Squaxin Island facility undertook their own survey. Baseline data and follow up data, collected shortly before the fish were released, were collected at Elliott Bay. There was just a single sampling event at the other two facilities, shortly before fish release. The TOC values measured in the samples from Agate Pass and Squaxin Island fell well below the Puget Sound Reference Values (See Table 1). The results at Elliott Bay showed substantial increase in sediment TOC in one location, very slight increase in one location, and decrease in two locations. The large TOC increase resulted in a measurement above the reference value, while TOC at all other locations fell within the reference limits. Manchester Research Station also submitted sediment data for six locations with their permit application; measurements at three locations exceeded the reference values for TOC. However, given that there was only a single sample taken at each location at both Elliott Bay and Manchester, statistical interpretation with a t-test is not possible. Another sediment survey requiring more sample replication will be required during the proposed General Permit term, which will lead to more conclusive information. EPA proposes maintaining the requirement of sampling in three locations but increasing the number of samples collected at each sampling location from one to five.

The proposed General Permit requires sediment characterization once during the five-year permit term for facilities that operate less than six months of the year (near peak biomass during the second full season of operation under the permit), and twice during the permit term for facilities that operate more than six months of the year (once near peak biomass and once during the summer critical period between August 15 and September 30). If fish are released early during the second year of the permit term (from facilities required to carry out a single sediment characterization), the study may be postponed until the following year. Samples will be collected from underneath the net pens. These samples will be analyzed for TOC and percent silt-clay particles, in order to find out what effect the net pens are having on the benthic environment.

EPA recommends that the permittee consult Washington Department of Ecology *Guidance on the Development of a Sediment Sampling and Analysis Plan*.[28]

### B. Visual Assessments

The benthos must be evaluated within 30 days prior to the release of the fish. This is an annual requirement. The sediments must be evaluated for type and color, including an assessment for anoxic sediments, which are typically black or darker in color than the surrounding sediments, have spontaneous or induced gassing, and may also appear pimpled. The bottom should also be evaluated for any feed or other deposits originating from net pen operations. Finally, the benthos should be evaluated for the presence of *Beggiatoa* or other bacterial or fungal growths; percent coverage of these mats should be estimated for the area under the net pens and within 150 feet down-current.

Permittees have the option of making visual assessments of the benthos either through the use of underwater photography or diving. Some net pen operators have indicated that the bottom beneath the nets is easily viewable at low tide. Therefore, EPA will allow direct observation from the surface, with an underwater viewing device, if the benthos can be clearly viewed from the surface.

### C. Surface Water Monitoring

Large biomasses of fish being fed in a net pen can result in a depletion of DO. Fish stocked in contained areas such as net pens have a high oxygen demand. Monitoring in Washington State has documented oxygen concentration reductions in water passing through net pens where large biomasses of fish are being fed.[29] EPA expects that the control measures required in this permit, coupled with current velocities in Puget Sound are adequate to prevent potential water quality problems. Therefore, EPA does not expect that the net pens will prevent achievement of the water quality criteria for dissolved oxygen.

Three enhancement facilities submitted DO monitoring data during the previous permit cycle. None of the facilities monitoring results fell below the previous DO action threshold of 6.0 mg/L or the proposed action threshold of 7.0 mg/L (see Table 2).

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[28] Ecology. 2008. *Guidance on the Development of Sediment Sampling and Analysis Plans Meeting the Requirements of the Sediment Management Standards* (Chapter 173-204 WAC). Olympia, WA: Washington State Department of Ecology.

[29] Nash, C. E. (editor). 2001. *The net-pen salmon farming Industry in the Pacific Northwest* (NOAA Technical Memorandum NMFS-NWFSC-49). U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

**Table 2:** Summarized DO monitoring results from previous permit term (%)

| | 2017 | | | 2018 | | | 2019 | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Min*** | ***Max*** | ***Med*** | ***Min*** | ***Max*** | ***Med*** | ***Min*** | ***Max*** | ***Med*** |
| **Squaxin Island** | 8.6 | 12.7 | 9.7 | 9.1 | 10.6 | 9.6 | 8.4 | 10.4 | 9.2 |
| **Suquamish - Elliott Bay** | 9.2 | 9.4 | 9.4 | 9.4 | 9.7 | 9.4 | 9.4 | 9.5 | 9.5 |
| **Suquamish - Agate Pass** | | | | 9.2 | 9.4 | 9.4 | 9.1 | 9.4 | 9.4 |
| **Manchester** | | | | | | | 7.0 | 10.9 | 7.6 |

Since it is feasible and affordable to measure DO, the permit again requires measuring DO on a monthly basis while fish are in the net pens to assess any impacts to water quality from the net pens. There is a critical period when DO is typically lowest in Puget Sound between August 15 and September 30.[30] When facilities have fish in the water during this time, monitoring must be conducted weekly, as DO levels below the action threshold of 7.0 mg/L are more likely to occur during this time (see Table 3).

**Table 3:** DO monitoring frequency

| **Timeframe** | **Frequency** |
|---|---|
| October 1 – August 14 (Only while fish occupy the net pens) | 1/Month |
| August 15 – September 30 (Only while fish occupy the net pens) | 1/Week |

### D. Evaluation of Monitoring Data

EPA is proposing several pollutant indicator action thresholds in this permit to prompt the permittee to further investigate and mitigate possible water quality problems (see Table 4).

[30] Ecology. 2019. *Sediment Cleanup User's Manual (SCUM): Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC* (No. 12-09-057). Olympia, WA: Washington State Department of Ecology.

**Table 4:** Sediment and water quality threshold values

| Pollutant Indicator | Action Threshold |
|---|---|
| Sediment Total Organic Carbon | Exceeds relevant reference value (See Fact Sheet Table 1) or facility baseline level by statistically significant amount (t-test, $p \leq 0.05$). |
| Presence of anoxic sediments | 25% or more of the area under the net |
| Presence of bacterial/fungal mats | 25% or more of the area under the net |
| Water column dissolved oxygen concentration | 7.0 mg/L or less, anywhere in the water column; if baseline DO is < 7.0 mg/L, the action threshold is a decrease of ≥ 0.2 mg/L from baseline |

These thresholds are not effluent limits; therefore, an exceedance of the action threshold is not a permit violation. However, the purpose of including monitoring provisions and action thresholds is to avoid and eliminate benthic and water quality problems. Therefore, if there is an exceedance of an action threshold then the facility must undertake corrective action. If the facility neglects to take corrective action in response to an exceedance, then the facility would be in violation of the corrective action permit condition. EPA is aware that several existing enhancement facilities are located in areas with other possible pollutant sources, and will consider those sources, seasonal variations, and all relevant data when making water quality and compliance assessments.

The primary purpose of establishing the thresholds is to alert permittees to discharges with the potential to create water quality problems, and to trigger corrective action. The action threshold for sediment TOC is based on Puget Sound Reference Values, as described above. The DO action threshold is based on Washington water quality standards. Proposed action thresholds for anoxic sediments, bacterial/fungal mats are based on assessment of a variety of data and information on marine systems in Puget Sound and elsewhere. EPA will consider establishing different thresholds if provided with data suggesting that these thresholds are either too restrictive or not restrictive enough for marine systems in Washington.

# VII. Corrective Action

## A. Problem Identification and Corrective Action

Consistent with 40 CFR §122.44(d) the permittee must take all necessary steps to mitigate discharges that may contribute to water quality problems. Upon discovery or notification of a potential problem that can be traced to net pen operation, steps must be taken immediately to determine and correct the source of a poorly controlled discharge or the cause of a poorly functioning pollutant control measure.

## B. Notification Requirements

All permittees are required to report certain events to EPA and other entities within specified timeframes per Part V.B of the permit. The specified timeframes in the permit are consistent with the urgency of the event. For instance, a fish disease epidemic is important to respond to quickly and therefore must be reported orally as soon as possible but no later than 24 hours from the time the Permittee becomes aware of the circumstances. The entities to contact were developed in

coordination with Ecology, WDFW and the Northwest Indian Fisheries Commission. See Part V.B of the permit for Notification Requirements and Contact Information. For reporting to the five entities listed in Permit Part V.B.2, the permittee may allow other third-party individuals to contact these entities on their behalf; however, the permittee remains responsible for compliance with the notification requirement if the other individual fails to provide the notification.

### C. Documentation in Annual Reports

A description of the problem and how the facility resolved it shall be described in the next annual report.

## VIII. Record Keeping and Annual Reporting

### A. Record Keeping

Consistent with the effluent limitations in Part III and IV of the permit, EPA is proposing that the following records be kept for 5 years in addition to those required in Permit Part VIII.K:

1. Feed amounts and numbers and weights of fish to calculate feed conversion ratios.

2. Drug, pesticide and other chemical use, including dates and amount applied.

3. The frequency of cleanings, inspections, maintenance, and repairs.

4. All monitoring locations, dates, methods and data as required per Part IV.

5. Any other information necessary to complete the Annual Report per Part B of this section.

6. **[Research Facilities Only]** Fish Escape Prevention and Response Plan.

7. Accident Prevention and Response Plan

### B. Annual Reports

Consistent with 40 CFR §122.41(l), EPA is proposing the following annual reporting requirements:

1. Name and contact information of the person preparing the report and/or person who can be contacted by the EPA if additional information is needed.

2. Date that fish were added to the net pen(s), and date that fish were finally released or removed from the net pen(s).

3. Species of fish in the net pen(s) during the season.

4. Summary of fish mortalities. If mass mortality occurs, the report should include dates, causes of death, and pounds or numbers of fish mortalities.

5. Total weight of the fish when added to the net pen(s) and total weight of the fish when released from the net pen(s).

6. Feeding rates, and total amount of feed used during the season, by week.

7. Types of drugs and pesticides applied, including INAD and extralabel drug use. Include date and amount applied.

8. All monitoring data, including locations, dates collected and methods used for collection and analysis, per Part IV of this permit.

9. Documentation of any spills, discharges or releases not accounted for by feeding or drug and pesticide applications.

10. Documentation and explanation of the use of any chemicals, processes or materials not accounted for by feeding or drug and pesticide applications.

11. All corrective actions taken.

For the convenience of net pen operators, EPA is including with the permit, as Appendix B, a format that operators may use to submit the necessary annual report information. The use of this format is not required.

### C. Mailing Address and 24 Hour Reporting Contact Information

Reporting contact information was compiled in coordination with Ecology, WDFW and the Northwest Indian Fisheries Commission. See Part V.B of the permit for reporting contact information.

## IX. Other Legal Requirements

### A. Tribal Consultation (Executive Order 13174)

Efforts have been taken to provide tribal entities with information about the draft General Permit development process, and to simultaneously seek early input on the permit. There were opportunities for the tribes to get involved at the early stage of permit development and to provide information about existing facilities and operations. EPA held a meeting to discuss the permits with the Northwest Indian Fisheries Commission and tribal net pen operators on May 5, 2020. At this meeting and during other correspondence, EPA worked with the tribes to understand their current best management practices, monitoring, and operations. EPA took this information into consideration when the permit conditions were drafted. EPA's intent was to have the permit conditions reflect current enhancement facility practices, to the extent possible.

Executive Order 13175 (November 2000) entitled "Consultation and Coordination with Indian Tribal Governments" requires federal agencies to have an accountable process to assure meaningful and timely input by tribal officials in the development of regulatory policies on matters that have tribal implications and to strengthen the government-to-government relationship with Indian tribes. In May 2011, EPA issued the "EPA Policy on Consultation and

Coordination with Indian Tribes" which established national guidelines and institutional controls for consultation. During permit development, NPDES permits staff followed EPA Region 10 Tribal Consultation and Coordination Procedures, available online at https://www.epa.gov/r10-tribal/consultation-and-coordination-tribes-region-10. This included sharing a pre-draft permit and fact sheet on September 17, 2020 and prior with all Western Washington Tribes to elicit feedback prior to the Public Comment period. EPA will invite all of the tribes in Western Washington to engage in government-to-government consultation.

Consistent with the executive order and EPA tribal consultation policies, EPA will honor requests for consultation meetings on the draft Tribal Enhancement and Federal Research Marine Net Pen Facilities General Permit from federally-recognized tribal governments.

### B. Environmental Justice Considerations

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities." EPA strives to enhance the ability of overburdened communities to participate fully and meaningfully in the permitting process for EPA-issued permits, including NPDES permits. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. As part of an agency-wide effort, EPA Region 10 has considered implementing enhanced public involvement opportunities for EPA-issued permits where facilities' discharge to waters in overburdened communities. For more information, please visit https://www.epa.gov/environmentaljustice and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

As part of the permit development process, EPA conducted a screening analysis based on environmental justice indicators to determine whether this permit action could affect overburdened communities. For this screening analysis, EPA used a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the Census block group level. The same screening process was done for each of the facilities that is covered under the General Permit, or that EPA expects to apply for coverage under the reissued General Permit. Of the seven net pen facilities analyzed, it was determined that five are located in an area that exceeds the 80$^{th}$ percentile in the region for the environmental justice index for wastewater discharge indicator, which combines wastewater discharge information with local demographic information.

EPA concludes that these net pens do not present an environmental justice concern. The net pens tend to be located in fairly remote areas, and are not considered to be sources of pathogens that threaten human health. The net pens eligible for coverage under this General Permit are not commercial enterprises. Some are part of research efforts focused on assessing the growth, survival, economics, and environmental impact of native finfish cultivation. Others are enhancement facilities aiming to raise native fish species for release to regional water bodies with the intention that they will ultimately return for harvest. The enhancement facilities provide an environmental justice service to nearby communities, because they supply them with a healthy and high protein food source that is culturally significant. Similarly, net pen research

facilities may provide new ideas for growing fish in a more environmentally friendly and sustainable manner, ultimately supplementing local food sources.

Regardless of whether a facility is located near a potentially overburdened community, EPA encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways To Engage Neighboring Communities (see https://www.federalregister.gov/articles/2013/05/09/2013-10945/epaactivities-to-promote-environmental-justice-in-the-permit-application-process#p-104). Examples of promising practices include: thinking ahead about community's characteristics and the effects of the permit on the community, engaging the right community leaders, providing progress or status reports, inviting members of the community for tours of the facility, providing informational materials translated into different languages, setting up a hotline for community members to voice concerns or request information, follow up, and other activities.

## C. Clean Water Act Antidegradation Requirements

EPA is required under Section 301(b)(1)(C) of the CWA, 33 U.S.C. §1311(b)(1)(C), and implementing regulations (40 CFR §§122.4(d) and 122.44(d)) to establish conditions in NPDES permits that ensure compliance with state and tribal water quality standards, including antidegradation requirements. Since the net pen facilities either discharge to Washington waters or to Indian Country (with Washington as the downstream state), EPA used Washington's antidegradation implementation procedures as guidance. EPA referred to Ecology's 2011 Supplemental Guidance on Implementing Tier II Antidegradation, which is available at https://fortress.wa.gov/ecy/publications/SummaryPages/1110073.html. EPA also referred to the relevant tribal antidegradation policies, which are part of those tribes' EPA-approved water quality standards. See http://water.epa.gov/scitech/swguidance/standards/wqslibrary/tribes.cfm#r10.

Determining the Applicable Level of Protection

The State of Washington's antidegradation policy follows the federal regulations in establishing three tiers of protection:

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.

Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary to accommodate important economic or social development and is in the overriding public interest.

Tier III prevents the degradation of waters identified as constituting an outstanding national or reservation resource and applies to all sources of pollution. The receiving waters to which the six net pen facilities discharge qualify for both Tier I and Tier II protection, as explained in more detail below.

Tier I Protection

A facility must first meet Tier I requirements. Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in Chapter 173-201A WAC. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with the narrative and numeric criteria of the State/Tribe's water quality standards, which

address water quality limited waters. Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited and a TMDL must be prepared for those pollutants causing the impairment. Discharge permits must contain limitations that are consistent with the WLAs in EPA-approved TMDL. A permit with effluent limitations consistent with the WLA from an applicable TMDL will provide the level of water quality necessary to support existing and designated uses and therefore satisfies Tier 1 antidegradation requirements.

Since this is a General Permit, EPA referred to the applicable designated uses for waters of the State of Washington in this antidegradation analysis. The draft General Permit ensures a level of water quality necessary to protect the designated uses and, in compliance with 40 CFR §§ 131.12(a)(1) and 131.35(e)(2)(i), also ensures that the level of water quality necessary so that existing uses are maintained and protected. EPA developed permit conditions to protect the following uses: salmonid and other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.

Where technology-based limits are not protective enough to meet water quality standards, EPA establishes water quality-based effluent limits (WQBELs). If EPA receives information during the public comment period demonstrating that there are additional existing uses for the waterbodies in this General Permit, EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

It is anticipated that the General Permit will provide coverage to six existing facilities. None of these facilities discharge to waterbodies that are impaired for Pollutants of Concern. Further, EPA is not aware of any additional facilities that will apply for permit coverage. The limitations and requirements contained in the General Permit will ensure compliance with the narrative and numeric criteria in the water quality standards. Therefore, EPA has determined that the permit will protect and maintain existing and designated beneficial uses in compliance with the Tier 1 provisions.

Tier II Protection

A Tier II analysis consists of an evaluation of whether or not the proposed degradation of water quality that would be associated with a new or expanded action would be both necessary and in the overriding public interest. A Tier II analysis focuses on evaluating feasible alternatives that would eliminate or significantly reduce the level of degradation. The analysis also includes a review of the benefits and costs associated with the lowering of water quality. New discharges and facility expansions are prohibited from lowering water quality without providing overriding public benefits.

Five of the six net pen facilities expected to apply for coverage under the proposed General Permit were covered under the previous general permit. Under the proposed General Permit, their maximum production thresholds have been increased – for these facilities, this General Permit is considered a new or expanded action. One facility – the Manchester Research Station – did not have past NPDES permit coverage. For this facility, this General Permit is considered a new or expanded action. Accordingly, EPA evaluated whether a Tier II analysis would be necessary. If a discharge has the potential to cause measurable change in degradation to existing water quality at the edge of the chronic mixing zone, the facility would then need to conduct a full Tier II analysis.

Under Ecology's antidegradation policy, individual facilities covered under General Permits do not require a Tier II analysis. Instead, the Tier II evaluation focuses on whether the General Permit meets the Tier II requirements. Therefore, EPA evaluated whether the General Permit meets the Tier II antidegradation requirements.

Washington water quality standards define a measurable change to include:

*(a) Temperature increase of 0.3°C or greater;*

*(b) Dissolved oxygen decrease of 0.2 mg/L or greater;*

*(c) Bacteria level increase of 2 cfu/100 mL or greater;*

*(d) pH change of 0.1 units or greater;*

*(e) Turbidity increase of 0.5 NTU or greater; or*

*(f) Any detectable increase in the concentration of a toxic or radioactive substance.*

EPA determined that a Tier II analysis is **not** required for any of the facilities because none of the discharges will cause measurable change to existing water quality. An explanation of EPA's Tier II eligibility analysis is below.

*(a) Temperature increase of 0.3°C or greater;*

There are no activities in a normally operated net pen facility which will result in any measurable change in temperature. Therefore, this parameter does not trigger a Tier II antidegradation analysis.

*(b) Dissolved oxygen decrease of 0.2 mg/L or greater;*

The impact fish respiration may have on receiving water ambient dissolved oxygen (DO) levels will be minimal. The ambient DO level required in the water quality standards was based upon what is necessary for maintaining healthy fish. Operators of these facilities employ management practices to minimize DO impacts and maintain high dissolved oxygen levels to maintain fish health. Therefore, the discharges will not cause measurable change to existing water quality and this parameter does not trigger a Tier II antidegradation analysis. In addition, the permit requires measuring dissolved oxygen to assess any impacts to water quality from the net pens.

*(c) Bacteria level increase of 2 cfu/100 mL or greater;*

EPA has no evidence to conclude that bacteria levels will be impacted by the net pens. Therefore, the discharges will not cause measurable change to existing water quality and this parameter does not trigger the Tier II antidegradation analyses.

*(d) pH change of 0.1 units or greater;*

Levels of pH are not a pollutant of concern for net pens. Therefore, the discharges will not cause measurable change to existing water quality and this parameter does not trigger a Tier II antidegradation analysis.

*(e) Turbidity increase of 0.5 NTU or greater;*

Floating net pens generally produce no measurable increase in the fine solids that are measured by a turbidimeter except if during net pen cleaning activities. These activities could have an impact on receiving water turbidity. The permit requires the use of net cleaning practices which prevents to the maximum extent practicable the discharge of accumulated solids and attached

marine growth without prior treatment. There are cleaning practices currently in use by the industry which should reduce impacts to ambient turbidity levels. Therefore, the discharges will not cause measurable change to existing water quality and this parameter does not trigger a Tier II antidegradation analysis.

*(f) Any detectable increase in the concentration of a toxic or radioactive substance.*

Fish excrete small amounts of ammonia nitrogen which in high doses can be toxic to fish, depending on pH and temperature that controls the ionic species of the ammonia-ammonium complex. The swift currents in the receiving water have a high degree of dilution. The discharges will not cause measurable change to existing water quality and therefore this parameter does not trigger a Tier II antidegradation analysis.

Summary

EPA determined that the net pens do not need to complete a Tier II analysis at this time. No data or information has been provided or found to show the receiving water quality constituents are higher than the criterion designated for that water in the state surface water quality standards. Monitoring required by this permit will be used to continue this assessment. In EPA's opinion, facilities covered under the General Permit will not cause a measurable change in degradation to existing water quality. Therefore, a Tier II analysis is not necessary.

## D. Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) and the U. S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species and/or their designated critical habitat. EPA is preparing a Biological Evaluation (BE) which analyzes the discharges proposed to be authorized by the draft Tribal Enhancement and Federal Research Marine Net Pen Facilities General Permit, and their potential to adversely affect any of the threatened or endangered species or their designated critical habitat areas in the vicinity of the discharges.

## E. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH).

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. EPA is preparing an EFH assessment as part of the BE.

## F. National Environmental Policy Act (NEPA)

Section 511(c)(1) of the CWA requires that EPA comply with NEPA for federal issuance of NPDES permits for new sources. Under NPDES regulations, new sources are those buildings, structures, facilities or installations from which there is or may be a discharge of pollutants, the

construction of which commences after promulgation or proposal of new sources performance standards. (See 40 C.F.R. §122.2) New source performance standards for the concentrated aquatic animal production point source category became effective on September 22, 2004. They apply to net pen facilities that produce 100,000 pounds or more of aquatic animals each year, except for net pen facilities rearing native species released after a growing period of no longer than 4 months to supplement commercial and sport fisheries. The only facilities eligible for coverage under this General Permit that are allowed to exceed 100,000 pounds of annual production are enhancement facilities that meet this exception. Since none of the facilities eligible for coverage under this General Permit meet the definition of a new source, the issuance of the General Permit is therefore not subject to NEPA review procedures. Net pen facilities not previously covered under an NPDES permit must submit NOIs at least 180 days prior to initiation of operations. Operations may not commence until permit coverage has been obtained.

## G. Tribal and State Certification of the General Permit

Section 401 of the CWA requires EPA to seek CWA certification from States and Tribes with TAS before issuing a final permit. In the CWA Section 401 certification, a State or Tribe may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any law or regulation.

EPA is requesting that the following tribes provide final certification of the General Permit under Section 401 of the Clean Water Act: Swinomish Indian Tribal Community, Port Gamble S'Klallam Tribe, Lummi Nation, Puyallup Tribe of Indians, Tulalip Tribes and Makah Nation.

EPA is also requesting that the Washington State Department of Ecology (Ecology) provide final certification of the General Permit under Section 401 of the Clean Water Act.

## H. Permit Expiration

The permit will expire five years from the effective date.

## X. References

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001). US Environmental Protection Agency, Office of Water. https://www3.epa.gov/npdes/pubs/owm0264.pdf

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# Appendix A. Facilities Eligible for Coverage:

As of publication of today's public notice, the following existing net pen facilities are known to be eligible to apply for coverage under the proposed permit. These facilities are all located in Puget Sound as shown on the map:

| **Waterbody** | **Agate Pass** | **Elliott Bay** | **Peale Passage** | **Port Gamble** | **Quilcene Bay** | **Clam Bay** | **Lummi Bay** (not shown on map) |
|---|---|---|---|---|---|---|---|
| **Facility Operator** | Suquamish Tribe | Suquamish Tribe (co-owned by Muckleshoot Tribe) | Squaxin Island Tribe | Port Gamble S'Klallam Tribe | Skokomish Indian Tribe | NOAA (Manchester Research Station) | Lummi Tribe |
| **Coverage Status** | Covered | Covered | Covered | Covered | Covered | Applied – will be covered under new General Permit | Not yet built – interest in seeking coverage |
| **EPA Permit # (WAG)** | 132001 | 132002 | 132003 | 132004 | 132005 | N/A | N/A |
| **Latitude** | 47.703 | 47.622 | 47.202 | 47.845 | 47.786 | 47.573 | Lummi Bay Within Reservation Waters |
| **Longitude** | -122.575 | -122.367 | -122.905 | -122.574 | -122.853 | -122.545 | |
| **Annual Production (lbs)** | 45,000 | 90,909 | 52,600 | 45,850 | 13,000 | 58,429 | N/A |
| **Months/ Year** | March-June (4) | March-June (4) | January-June (6) | Jan – May (5) | January – May (6) | Year-round | N/A |
| **Species** | Coho | Coho | Coho | Coho | Coho | Sablefish | Salmonids |

Figure A1: Map of facilities known to be eligible for coverage