

Enclosure 1: Conservation Measures and applicable terms and conditions from the Programmatic Biological Opinions for Shellfish Activities in Washington State Inland Marine Waters (U.S. Fish and Wildlife Service (USFWS) Reference Number 01EWF00-2016-F-0121, National Marine Fisheries Service (NMFS) Reference Number WCR-2014-1502).

1. Gravel and shell shall be washed prior to use for substrate enhancement (e.g., frosting, shellfish bed restoration) and applied in minimal amounts using methods which result in less than 1 inch depth on the substrate annually. Shell material shall be procured from clean sources that do not deplete the existing supply of shell bottom. Shells shall be cleaned or left on dry land for a minimum of one month, or both, before placement in the marine environment. Shells from the local area shall be used whenever possible. Shell or gravel material shall not be placed so that it creates piles on the substrate. Use of a split-hull (e.g., hopper-type) barge to place material is prohibited.
2. The placement of gravel or shell directly into the water column (i.e., graveling or frosting) shall not be conducted between February 1 and March 15 in designated critical habitat for Hood Canal summer chum salmon.
3. For 'new'¹ activities only, gravel or shell material shall not be applied to enhance substrate for shellfish activities where native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*) is present.
4. Turbidity resulting from oyster dredge harvest shall be minimized by adjusting dredge bags to "skim" the surface of the substrate during harvest.
5. Unsuitable material (e.g., trash, debris, car bodies, asphalt, tires) shall not be discharged or used as fill (e.g., used to secure nets, create nurseries, etc.).
6. For 'new' activities only, shellfish activities (e.g., racks, stakes, tubes, nets, bags, long-lines, on bottom cultivation) shall not occur within 16 horizontal feet of native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*). If eelgrass is present in the vicinity of an area new to shellfish activities, the eelgrass shall be delineated² and a map or sketch prepared and submitted to the Corps. Surveys to determine presence and location of eelgrass shall be done during times of peak above-ground biomass: June 1 – September 30. The following information must be included to scale: parcel boundaries, eelgrass locations and on-site dimensions, shellfish activity locations and dimensions.
7. For 'new' activities only, activities shall not occur above the tidal elevation of +7 feet (MLLW) if the area is listed as **documented** surf smelt (*Hypomesus pretiosus*) spawning habitat

¹ 'New' activities are those activities that were initiated after 18 March 2007. Expansion of activities into a new geographic footprint that had not previously been in commercial aquaculture is treated as a new footprint for the purpose of this programmatic ESA.

² For guidance see Corps' Seattle District *Components of a Complete Eelgrass Delineation and Characterization Report* (May 2016).

by WDFW. A map showing the location of documented surf smelt spawning habitat is available at the WDFW website.

8. For 'new' activities only, activities shall not occur above the tidal elevation of +5 feet (MLLW) if the area is **documented** as Pacific sand lance (*Ammodytes hexapterus*) spawning habitat by the WDFW. A map showing the location of documented Pacific sand lance spawning habitat is available at the WDFW website.

9. If conducting 1) mechanical dredge harvesting, 2) raking, 3) harrowing, 4) tilling, leveling or other bed preparation activities, 5) frosting or applying gravel or shell on beds, or 6) removing equipment or material (nets, tubes, bags) within a **documented or potential** spawning area for Pacific herring (*Clupea pallasii*) outside the approved work window³, the work area shall be surveyed for the presence of herring spawn prior to the activity occurring. Vegetation, substrate, and materials (nets, tubes, etc.) shall be inspected. If herring spawn is present, these activities are prohibited in the areas where spawning has occurred until such time as the eggs have hatched and herring spawn is no longer present. A record shall be maintained of spawn surveys including the date and time of surveys; the area, materials, and equipment surveyed; results of the survey, etc. The Corps and the Services shall be notified if spawn is detected during a survey. The record of spawn surveys shall be made available upon request to the Corps and the Services.

10. For 'new' activities only, activities occurring in or adjacent to **potential** spawning habitat for sand lance, or surf smelt shall have a spawn survey completed in the work area by an approved biologist⁴ prior to undertaking bed preparation, maintenance, and harvest activities if work will occur outside approved work windows for these species. If eggs are present, these activities are prohibited in the areas where spawning has occurred until such time as the eggs have hatched and spawn is no longer present. A record shall be maintained of spawn surveys including the date and time of surveys; the area, materials, and equipment surveyed; results of the survey, etc. The Corps and the Services shall be notified if spawn is detected during a survey. The record of spawn surveys shall be made available upon request to the Corps and the Services.

11. All shellfish gear (e.g., socks, bags, racks, marker stakes, rebar, nets, and tubes) that is not immediately needed or is not firmly secured to the substrate will be moved to a storage area landward of MHHW prior to the next high tide. Gear that is firmly secured to the substrate may remain on the tidelands for a consecutive period of time up to 7 days. Note: This is not meant to apply to the wet storage of harvested shellfish.

12. All pump intakes (e.g., for washing down gear) that use seawater shall be screened in accordance with NMFS and WDFW criteria. Note: This does not apply to work boat motor intakes (jet pumps) or through-hull intakes.

13. Land vehicles (e.g., all-terrain, trucks) shall be washed in an upland area such that wash water is not allowed to enter any stream, waterbody, or wetland. Wash water shall be disposed of upland in a location where all water is infiltrated into the ground (i.e., no flow into a waterbody or wetland).

³ See Seattle District website for work window <http://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/>

⁴ For information on how to become an "approved biologist" for conducting forage fish surveys contact WDFW

14. Land vehicles shall be stored, fueled, and maintained in a vehicle staging area located 150 feet or more from any stream, waterbody, or wetland. Where this is not possible, documentation must be provided to the Corps as to why compliance is not possible, written approval from the Corps must be obtained, and the operators shall have a spill prevention plan and maintain a readily-available spill prevention and clean-up kit.
15. For boats and other gas-powered vehicles or power equipment that cannot be fueled in a staging area 150 feet away from a waterbody or at a fuel dock, fuels shall be transferred in Environmental Protection Agency (EPA)-compliant portable fuel containers 5 gallons or smaller at a time during refilling. A polypropylene pad or other appropriate spill protection and a funnel or spill-proof spout shall be used when refueling to prevent possible contamination of waters. A spill kit shall be available and used in the event of a spill. All spills shall be reported to the Washington Emergency Management Office at (800) 258-5990. All waste oil or other clean-up materials contaminated with petroleum products will be properly disposed of off-site.
16. All vehicles operated within 150 feet of any stream, waterbody, or wetland shall be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected shall be repaired in the vehicle staging area before the vehicle resumes operation and the leak and repair documented in a record that is available for review on request by the Corps and Services.
17. The direct or indirect contact of toxic compounds including creosote, wood preservatives, paint, etc. within the marine environment shall be prevented. [This does not apply to boats]
18. All tubes, mesh bags and area nets shall be clearly, indelibly, and permanently marked to identify the permittee name and contact information (e.g., telephone number, email address, mailing address). On the nets, identification markers shall be placed with a minimum of one identification marker for each 50 feet of net.
19. All equipment and gear including anti-predator nets, stakes, and tubes shall be tightly secured to prevent them from breaking free.
20. All foam material (whether used for floatation or for any other purpose) must be encapsulated within a shell that prevents breakup or loss of foam material into the water and is not readily subject to damage by ultraviolet radiation or abrasion. Un-encapsulated foam material used for current on-going activities shall be removed or replaced with the encapsulated type.
21. Tires shall not be used as part of above and below structures or where tires could potentially come in contact with the water (e.g., floatation, fenders, hinges). Tires used for floatation currently shall be replaced with inert or encapsulated materials, such as plastic or encased foam, during maintenance or repair of the structure.
22. At least once every three months, beaches in the project vicinity will be patrolled by crews who will retrieve debris (e.g., anti-predator nets, bags, stakes, disks, tubes) that escape from the project area. Within the project vicinity, locations will be identified where debris tends to accumulate due to wave, current, or wind action, and after weather events these locations shall be

patrolled by crews who will remove and dispose of shellfish related debris appropriately. A record shall be maintained with the following information and the record will be made available upon request to the Corps, NMFS, and USFWS: date of patrol, location of areas patrolled, description of the type and amount of retrieved debris, other pertinent information.

23. When performing other activities on-site, the grower shall routinely inspect for and document any fish or wildlife found entangled in nets or other shellfish equipment. In the event that fish, bird, or mammal is found entangled, the grower shall: 1) provide immediate notice (within 24 hours) to WDFW (all species), USFWS/NMFS (all species) or Marine Mammal Stranding Network (marine mammals), 2) attempt to release the individual(s) without harm, and 3) provide a written and photographic record of the event, including dates, species identification, number of individuals, and final disposition, to the Corps and Services. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425) 883-8122 with any questions about the preservation of specimens.

25. Vehicles (e.g., ATVs, tractors) shall not be used within native eelgrass (*Zostera marina*). If there is no other alternative for site access, a plan will be developed describing specific measures and/or best management practices that will be undertaken to minimize negative effects to eelgrass from vehicle operation. The access plan shall include the following components: (a) frequency of access at each location, (b) use of only the minimum vehicles needed to conduct the work and a description of the minimum number of vehicles needed at each visit, and (c) consistency in anchoring/grounding in the same location and/or traveling on the same path to restrict eelgrass disturbance to a very small footprint.

26. Vessels shall not ground or anchor in native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*) and paths through native eelgrass or kelp shall not be established. If there is no other access to the site or the special condition cannot be met due to human safety considerations, a site-specific plan shall be developed describing specific measures and/or best management practices that will be undertaken to minimize negative effects to eelgrass and kelp from vessel operation and accessing the shellfish areas. The access plan shall include the following components: (a) frequency of access at each location, (b) use of only the minimum number of boats and/or crew members needed to conduct the work and a description of the minimum number of boats and crewmembers needed at each visit, and (c) consistency in disturbance to a very small footprint.

27. Unless prohibited by substrate or other specific site conditions, floats and rafts shall use embedded anchors and midline floats to prevent dragging of anchors or lines. Floats and rafts that are not in compliance with this standard shall be updated to meet this standard during scheduled maintenance, repair, or replacement or before the end of the term of the next renewed authorization. [Any alternative to using an embedded anchor must be approved by the NMFS.]

28. Activities that are directly associated with shellfish activities (e.g., access roads, wet storage) shall not result in removal of native riparian vegetation extending landward 150 feet horizontally from MHHW (includes both wetland and upland vegetation) and disturbance shall be limited to the minimum necessary to access or engage in shellfish activities.

29. Native salt marsh vegetation shall not be removed and disturbance shall be limited to the minimum necessary to access or engage in shellfish activities.
30. Mechanical dredge harvest/harrowing shall not be conducted in **North Puget Sound** between April 1 and August 31.
31. Ensure clam and other shellfish cover nets are secured to the extent practicable. If fish are entangled, record and report species, time, and location of entanglement. Collected specimens of fish entangled shall be preserved in a freezer, and reporting shall be to the NMFS' Lacey Office in order to determine appropriate steps to ascertain the entangled species. Contact the NMFS Central Puget Sound Branch Chief by telephone or email.
32. Only oyster long lines (with flip bags ok) spaced laterally at 10 feet intervals shall be used in **fallow**⁵ areas that have been colonized by eelgrass in greater **Puget Sound and Hood Canal**. Flip bags must be suspended above the substrate so they do not rest on substrate at low tide. No other culture methods shall be used in fallow areas colonized by eelgrass. Further, with the exception of mechanical longline harvest, no mechanized activities shall occur in fallow areas colonized by eelgrass. This Term and Condition does not apply to fallow areas in Willapa Bay or Grays Harbor.
33. In **Hood Canal** summer-run chum salmon designated critical habitat⁶: Between February 1 and April 30, shellfish planting and harvesting shall not occur within 15 feet waterward of the waterline (tideline) to protect juvenile chum salmon. In addition, shellfish activities which increase turbidity in the nearshore water (e.g., geoduck harvest) shall not occur at all during this timeframe

⁵ Fallow refers to areas that are periodically allowed to lie fallow as part of normal operations.

⁶ Critical habitat for Hood Canal summer-run chum salmon occur in Hood Canal and the Strait of Juan de Fuca marine areas in Clallam, Jefferson, Kitsap, and Mason Counties. Exact locations and excluded areas are described at: <http://www.westcoast.fisheries.noaa.gov/publications/frn/2005/70fr52739.pdf>