Appendix B

Jamestown S'Klallam Tribe
Dungeness Shellfish Farm Monitoring and Mitigation Plan

Monitoring and Mitigation Plan for the Jamestown S'Klallam Tribe's Dungeness Shellfish Farm

This plan outlines established conservation measures, site-specific stewardship measures and monitoring activities as part of a mitigation[1] strategy for the Jamestown S'Klallam Tribe's Dungeness Shellfish Farm operations associated with the DNR aquatic lease parcel (#20-A013012) in Dungeness Bay. Based on comments provided by the USFWS Dungeness Wildlife Refuge staff and local citizens, as well as environmental reports prepared by Confluence Environmental Inc., it is the understanding of the Tribe that the most pressing concerns are to Refuge wildlife, particularly migratory birds, and the surrounding habitat as follows:

1) Potential disturbance to black Brant foraging and lofting habitat
2) Potential disturbance to shorebirds – namely Dunlin.
3) Potential impact to eelgrass habitat.
4) Potential impact to forage fish spawning habitat.
5) Plastic debris from farming activities.

1. Established Conservation Measures

Several conservation measures, and terms and conditions, from the Programmatic Biological Opinions for Shellfish Activities in Washington State Inland Marine Waters (USFWS reference number 01EWFW00-2016-F-0121, NMFS reference number WCR-2014-1502) directly address the above concerns. The Tribe's proposed project satisfies these conservation measures and terms and conditions, and the Federal Individual Permit, to be issued by the USACE, will be contingent upon fulfillment of all relevant measures. Specific measures that address identified concerns are listed as follows:

> Measure #6. "Shellfish activities shall not occur within 16 horizontal feet of native eelgrass (*Zostera marina*) or Kelp (order *Laminariales*). ***Addresses concerns #1, 3 & 4****. Eelgrass has been delineated and mapped within and adjacent to the lease parcel over several years (see Jamestown Eelgrass Survey Report 2017 & Confluence Field Report 2018). A more conservative buffer will be implemented so shellfish activities will not occur within 25 horizontal feet of native eelgrass (Z. marina).*
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> Measure #7. "Activities shall not occur above the tidal elevation of +7 ft (MLLW) if the area is listed as documented surf smelt (*Hypomesus pretiosus*) spawning habitat by WDFW."
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> Measure #8. "Activities shall not occur above the tidal elevation of +5 ft (MLLW) if the area is listed as documented Pacific sand lance (*Ammodytes hexapterus*) spawning habitat by WDFW." ***Addresses concern #4.*** *The proposed upper tidal elevation of Pacific oyster cultivation is +3 ft. (MLLW). All activity will occur at or below a tidal elevation of +3 ft. MLLW.*

[1] Mitigation as it applies here are measures taken to avoid and reduce potential impacts to wildlife and the environment of Dungeness Bay.

Measure #9. "If conducting [on-bottom bag removal] within a documented spawning area of Pacific herring (*Clupea pallasi*) outside of the approved work window[2], the work area shall be surveyed for the presence of herring spawn prior to the activity occurring. Vegetation, substrate and materials (bags) shall be inspected. If herring spawn is present, [bag removal] is prohibited in the areas where the spawning has occurred until such time as the eggs have hatched and herring spawn is no longer present." ***Addresses concern #4.*** *This egg incubation time period will be avoided in general. If bag removal must occur from January 16 – April 30, all conditions will be met as described above (see forage fish survey details under monitoring plan below).*

Measure #10. "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 biologist prior to undertaking bed preparation, maintaince and harvest activities if work will occur outside approved work windows for these species[2]. If eggs are present, these activities are prohibited in the area where spawning has occurred until such time as the eggs have hatched and spawn is no longer present." ***Addresses concern #4.*** *If on-bottom bag removal or maintaince activities must occur outside the approved work window, all conditions will be met as described above (see forage fish survey details under monitoring plan below).*

Measure #11. "All shellfish gear that is not immediately needed or is not firmly attached to the substrate will be moved to a storage area…" ***Addresses concern #5.*** *The storage area for shellfish farming gear will be offsite. All gear will be brought in by boat and will be in active use and firmly secured to the substrate once onsite.*

Measure #18. "All [gear] shall be clearly, indelibly and permanently marked to identify the permittee name and contact information."

Measure #19. "All gear shall be tightly secured to prevent them from breaking free."

Measure #22. "… beaches within the project vicinity will be patrolled by crews who will retrieve debris that escape from the project area. Within the project vicinity, location will be identified where debris (if any) tends to accumulate to wave, current or wind action…. A record shall be maintained with the following information and made available upon request to Corps, NMFS and USFWS: date of patrol, location of areas patrolled, description of and amount of debris." ***Addresses concern #5****. All labeling, securing, patrolling and reporting requirements as outlined by the above conservation measures will be met. Retrieval of any identified debris will occur in close communication and coordination with Dungeness Wildlife Refuge staff.*

Measure #26. "Vessels shall not ground or anchor in native eelgrass (*Zostera marina*) or Kelp (order *Laminariales*), and paths through native eelgrass shall not be established. If

[2] The approved work window for the project lease site, tidal reference area 10 which includes Dungeness Bay, is May 1 – January 15 for herring and April 1 – July 31 for surf smelt (WAC 220-660-330).

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 operations and accessing shellfish areas." ***Addresses concerns #1, 3 & 4.*** *The applicant has identified site access routes and locations that will avoid paths through, grounding or anchoring vessels in native eelgrass.*

2. Site-specific Stewardship Measures

Site-specific stewardship measures have been identified to avoid and reduce potential impacts in addition to those covered by the Corps' conservation measures listed above.

Stewardship measure #1: **Limited gear use in starting operations**. On-bottom bag cultivation of oysters will not exceed 5 acres (only 10 % of the lease area) within the first two years of operation. Outcomes from monitoring activities will inform the potential for phased expansion as outline in the shoreline permit application. ***Addresses concerns #1–5***

Stewardship measure #2: **Limit activity during sensitive periods**. USFWS has recommended timeframes: March 15 – April 15; June; July; October 15 – November 15, that would be **least sensitive** to Refuge habitat and wildlife (USFWS April 4, 2018 letter - Attachment C). Farm activities such as gear placement/removal and 'out planting' (i.e., transfer of oysters from bag to beach) that require larger groups of farm worker (7-15 people) will generally align with these timeframes. Such activities would occur infrequently (i.e., over a single low tide cycle every few months). Outside of the above timeframes, farm activity would mostly involve basic on-bottom bag maintenance or oyster harvest which require fewer workers (typically 3-6 people) accessing the site by boat during negative low tides, at a frequency of about 2-3 site visits per low tide cycle (i.e., approximately 4-6 site visits per month). Oyster bags stacked for harvest are retrieved from the site during high tide using a mechanized lift; there is no corresponding onsite activity. ***Addresses concerns #1 & 2.***

Stewardship measure #3: **Minimize noise.** Noise levels associated with farm activities will be low. The project site will only be accessed by low profile marine vessels from designated locations (see JARPA Project Drawings) through deep tidal channels. Vessels will maintain slow (≤ 5 mph), no-wake speeds when approaching the project site and/or within 200 ft. of the shoreline of Inner Dungeness Bay. Boxes constructed with noise insulation will house the hydraulic winch motor to further reduce noise levels (< 50 dB) associated with oyster harvest activities. ***Addresses concerns #1 & #2.***

Stewardship measure #3: **Minimize light and glare**. For periodic nighttime farm activity (4-6 site visits per month restricted to negative tides), farm workers will only use

personal headlamps (500 - 1000 lumens) with down-casted light. No other light source or glare will be emitted from the project site. ***Addresses concerns #1 & #2***

3. Monitoring Plans

Monitoring activities will be used to evaluate potential impacts associated with farming activities which may adjusted (e.g., area, bag density, frequency and timing of site visits, etc...) as necessary through the proposed phased operations. If "more than minimal" adverse impacts are not identified based on statistically-supported evaluation, then the applicant reserves the right to expand activities to "Phase 2" (in years 3 – 5) and "Phase 3" (beyond year 5) operations as outlined in the JARPA.

Eelgrass Surveys

Following established Tier 1 eelgrass survey protocols by the Corps' Seattle District, eelgrass surveys will be conducted with the 50-acre lease parcel every 2-3 years by Tribal biologists to: 1) update the delineation of the eelgrass area with the lease parcel, 2) assess any changes in the distribution and area of eelgrass beds/patches and 3) adjust farm activities, as needed, to ensure the eelgrass conservation area is maintained. Eelgrass surveys will extend 200 ft. from the boundary of the lease parcel to serve as a reference site. If survey data identifies that eelgrass within the lease parcel retreats by more than 50% buffer distance (i.e., >37.5 ft. from the edge of the oyster farm), but equivalent retreat is not observed in the reference site (of similar density, tidal elevation and substrate), then the distance will be increased by the measured distance of the eelgrass retreat. Such eelgrass buffer expansion will occur until eelgrass retreat is no longer identified in the survey data. Survey records and eelgrass delineation maps will be available upon request to Clallam County, USACE, USFWS and NOAA.

Forage Fish Surveys

Per the conditions specified in conservation measures #9 and #10 (see above), forage fish spawn survey will be conducted by a WDFW-certified tribal forage fish biologist before removal or maintenance of on-bottom bags outside of the approved work windows[2]. If any forage fish spawn is present no farm activity will occur in the area where spawning has occurred until the eggs have hatched. A record will be maintained of all spawn surveys, including date and time; the survey area and gear surveyed; and results of the survey. If spawn is detected, USACE and USFWS will be notified. Survey records will be available upon request to Clallam County, USACE, USFWS and NOAA.

Brant-Farm Interactions

Monthly observations will be recorded by a shellfish farm worker, Tribal biologists and/or an Audubon volunteer on brant and shellfish farm interactions. A log will be kept that includes the date and time of observation, tidal height, number of brants observed and a description of interactions observed (i.e., type of activity occurring and brant response behaviors). If observation logs indicate any persistent (e.g., recurring over the length of the migration season) negative behavioral responses from brant to specific farm activities, those activities will be evaluated and mitigation measures will be put into place to minimize or eliminate the adverse

impact. Observation logs will be available upon request to Clallam County, USACE, USFWS and NOAA

Shorebird counts
Monthly shorebird counts will be conducted within and adjacent to the lease parcel by a shellfish farm worker, Tribal biologists and/or an Audubon volunteer. A log will be kept that includes the date and time, tidal height and number and species of shorebirds observed within and adjacent to the lease parcel. Observation logs will be available upon request to Clallam County, USACE, USFWS and NOAA