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| In Reply Refer to:  FWS/R1/ | |  |  |

Colonel Mark A. Geraldi

District Engineer

U.S. Army Corps of Engineers

P.O. Box 3755

Seattle, WA 98124-3755

Attn: Ms. Pamela Sanguinetti

Dear Colonel Geraldi:

By this letter, we are rescinding the U.S. Fish and Wildlife Service comment letters dated February 27, 2019, and May 22, 2019, regarding the Jamestown S’Klallam Tribe’s application for a commercial oyster operation within Dungeness National Wildlife Refuge (Refuge). After participating in Government-to-Government Consultation with the Jamestown S’Klallam Tribe, we have a better understanding of their proposed aquaculture operation. We respectfully request that the previous two letters (referenced above) be removed from the record and that this letter replace them as the official comments from the U.S. Fish and Wildlife Service.

We recognize there is little site-specific research available on impacts of commercial, on-bottom bag aquaculture to bird species found on the Refuge and note that different parties can derive divergent conclusions from the same studies. Nevertheless, we are concerned about potential impacts to Refuge wildlife and habitat based on the proposed location for this activity and, therefore, recommend an emphasis on monitoring be included in any eventual permit. We have attached a brief summary of disturbance-related information to assist in informing the permitting process and any subsequent required resource monitoring.

We are committed to assisting with finding the least resource disturbing approaches to this potential use. Thank you for accepting these comments in lieu of the aforementioned letters. If you have any questions regarding these comments, please contact Jennifer BrownScott at (360) 457-845.

Sincerely,

Robyn Thorson

Regional Director

Attachment

**A Brief Summary of Wildlife and Habitat Disturbance-Related Literature Relevant to the Proposed Activity.**

Synopsis of Scientific Information Related to Wildlife Disturbance and Aquaculture

Aquaculture operations, transportation travel paths, and boat anchorage related to the proposed 80,000 on-bottom bags, are located within or adjacent to the highest use area for migrating and wintering waterfowl and shorebirds as defined by survey area boundaries on Dungeness NWR. This includes various published flushing distances of the most abundant refuge species (Complex, Unpublished Data 2010-2018; Cayford 1993; Mori et al. 2001; Smit and Visser 1993; Owens 1977). This high-use area is important regionally, state-wide, and internationally for some species (K. Spragens, WDFW, pers. comm.; USFWS/WDFW unpublished data).

During a five-year investigation of on-bottom bag aquaculture practices, Kelly et al. (1996) found that Dunlin and Western Sandpiper (the two most abundant shorebirds in their study and on the Refuge) “significantly avoided aquaculture areas” and their “results suggest a net decrease in total shorebird use of areas developed for aquaculture”. Impacts of human disturbance on wildlife vary considerably because wildlife response is complex and dynamic based on species, species assemblages, flock size, activity (i.e., foraging or roosting), tidal stages, different types of disturbance, and time of year (Cayford 1993, Mori et al. 2001, Smit and Visser 1993, Owens 1977). However, these studies show how activities similar to/or associated with a commercial aquaculture farm (e.g., walking on tide flats to/from the work vessel, bait digging) impact species that use the refuge. Additionally, the boat anchorage location concentrates activity (e.g., workers loading, unloading, and disseminating supplies and equipment for operations) within and adjacent to the high-use area. (Note: *To limit disturbance from human activity, the tidelands encompassing the proposed site have been closed to public use since 1997 from October 1 to May 15, and the adjacent shoreline is closed year round (USFWS 1997, USFWS 2013). In addition, since the refuge is closed to public use during the hunting season, it provides one of the few disturbance-free areas during this time.)*

Disturbance during migration and wintering periods can lead to reduced fitness, decreased productivity, or increased mortality rates (Buchanan 2006, Davidson and Rothwell 1993, Baldassarre and Bolen 1994, Ward and Andrews 1993). Some of the farming activities (e.g., maintenance, harvest, setup, debris removal, and monitoring) would occur during these sensitive periods (i.e., approximately August 1 to May 14; Paulson 1993, Wilson and Atkinson 1995, Buchanan 2006, and the Birds of North America Accounts for the primary species that occur on the refuge available online at <https://birdsna.org/Species-Account/bna/home>). We understand that the aforementioned migration and wintering timeframe differs from the dates provided to the County and Tribe in April 2018. This change was based on further assessment of disturbance effects to migrating and wintering shorebirds and waterfowl. Please disregard the access periods provided in the April 2018 comment letter to Clallam County.

Synopsis of Scientific Information Related to Eelgrass Impacts and Aquaculture

Based on tidal elevations provided in the Department of Ecology and Army Corps of Engineers Joint Public Notice, most of this site appears to be located within the growth range for eelgrass provided by Mumford (2007). In 1987, sparse eelgrass was identified in the area proposed for aquaculture (Wilson 1988, unpublished progress report) and individual turions were identified outside of the project’s eelgrass exclusion area in 2016. Eelgrass growth in higher tidal elevations, such as on this site, is important for Brant because they feed almost exclusively on eelgrass and availability is limited for this species during high tides (Moore and Black 2006). Wagner et al. (2012) found that eelgrass density and size declined with “strong impacts above a threshold of 20% cover” due to competition for space with live oysters or shell. In addition, Tallis et al (2009) found that eelgrass density, plant size, and production declined as a result of harvesting on-bottom oysters by hand. Structure can also impact eelgrass through shading, erosion and desiccation (Mumford et al. 2009, Dumbauld et al. 2009).

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