



United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE 11th Avenue
Portland, Oregon 97232-4181



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 withdrawing 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. Therefore please replace the previous two letters (referenced above) with this letter 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. We recommend operations and monitoring activities occur outside of the migration and wintering periods for shorebirds and waterfowl, should a permit be provided. The attached reference list may be of assistance in understanding Refuge habitat, management, and wildlife use and assessing potential impacts from human disturbance and in-water structures.

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 Brown-Scott at (360) 457-845.

Sincerely,

Robyn Thorson
Regional Director

Attachment: [Reference List](#)

Davidson, N. C. and P. I. Rothwell. 1993. Disturbance to waterfowl on estuaries: the conservation and coastal management implications of current knowledge. *Wader Study Group Bulletin* 68: 97-105.

Fox, A. D., D. V. Bell and G. P. Mudge. 1993. A preliminary study of the effects of disturbance on feeding Wigeon grazing on Eel-grass *Zostera*. *Wader Study Group Bulletin* 68: 67-71.

Henry, W. 1980. Populations and behavior of black brant at Humboldt Bay, California. MS Thesis, Humboldt State University. <http://hdl.handle.net/2148/874>

Kelly, J. P., J. G. Evens, R. W. Stallcup and D. Wimpfheimer. 1996. Effects of oyster culture on habitat use by wintering shorebirds in Tomales Bay, California. *California Fish and Game* 82: 160-174.

Lewis, T. L., D. H. Ward, J. S. Sedinger, A. Reed, and D. V. Derksen. 2013. Brant (*Branta bernicla*), version 2.0. In *The Birds of North America* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.337>

Mori, Y., N.S. Sodhi, S. Kawanishi and S. Yamagishi. 2001. The effect of human disturbance and flock composition on the flight distances of waterfowl species. *Journal of Ethology* 19(2): 115- 119. <http://www.springerlink.com/content/f87fgcvpl7grva/>

Owens, N. W. 1977. Responses of wintering brent geese to human disturbance. *Wildfowl* 28: 5-14.

Paulson, D. 1993. *Shorebirds of the Pacific Northwest*. University of Washington Press, Seattle, WA.

Sanguinetti, P. 2003. Shorebird monitoring program assessment for North Olympic Peninsula, WA. Sequim, WA. 11 pp.

Schmidt, P. E. 1999. Population Counts, Time Budgets, and Disturbance Factors of Black Brant at Humboldt Bay, California. Thesis. Humboldt State University, Arcata, California.

Smit, C. J. and G. J. M. Visser. 1993. Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area. *Wader Study Group Bulletin* 68 (Special Issue).

Townshend, D. J. and D. A. O'Connor. 1993. Some effects of disturbance to waterfowl from bait digging and wildfowling at Lindisfarne National Nature Reserve, northeast England. *Wader Study Group Bulletin* 68 (Special Issue).

U.S. Fish and Wildlife Service. 2013. *Dungeness National Wildlife Refuge Comprehensive Conservation Plan*.

Commented [BJ1]: For the most part, the JST did not take issue with the papers themselves. Removing our interpretation of these papers from this comment should help alleviate some of those concerns. As JST pointed out, some of these papers provide data that may be assessed to reduce concern over some of their requested activities. All of the information (including references and conclusions provided by JST) can be assessed by ACE to gain a better understanding of whether or not this is the least impactful location for this activity given that it will add human presence to an area that is highly used by shorebirds and waterfowl and is otherwise closed to use for the majority of the time that work access is being requested.

Commented [BJ2]: Key paper that outlines the dynamics associated with disturbance factors (e.g., time of year, tide, weather, flock size and species composition, feeding success, type of disturbance, past history of disturbance). We agree with JST that the portions of the paper speaking specifically to impacts from aircraft and dogs are not relevant and, disturbance by small boats and sailboats may not predict disturbance from JST boats (depending on size). However, this paper also speaks to disturbance from human presence including static and dynamic on-ground activities on the shore and tidelands.

Commented [BJ3]: This study demonstrates that wigeon may abandon feeding areas or greatly reduce the time spent foraging if disturbed. The type of disturbance is not related to aquaculture, but the response to being flushed from eelgrass is important since they are the most abundant waterfowl on the Refuge in the winter. We do not know of any studies that look at interactions between wigeon and aquaculture. JST did agree that this paper shows energetic consequences for wigeon. They took issue with the fact that the disturbance was not aquaculture related.

Commented [BJ4]: The relevant portion of this paper looks at disturbance to brant from clam digging. Given that we do not have studies specific to disturbance by on-bottom bag aquaculture workers, people walking on the shore/tidelands and stopping to remove clams from the substrate is as similar of an activity as we can find. Since the boat will be anchored in one location, workers will need to cross the site to access equipment and work along the substrate.

Commented [BJ5]: This is the only known study of on-bottom bag aquaculture, so it is important to include and monitor response of key Refuge shorebirds to on-bottom bags over 5 years. We understand that the study also shows that the birds that did not avoid the aquaculture bags were not significantly disturbed by aquaculture workers. That would also be interesting information for ACE to have and assess.

Commented [BJ6]: Clearly establishes mechanisms of disturbance (single sp. Flocks vs multiple spp., roosting vs foraging, sensitivity of individual birds, etc). This is useful to establish the differences in response to a disturbance factor (they used boats for this particular study). We transposed flushing distances and misinterpreted the standard deviation for these distances in our original comment.

Commented [BJ7]: Referenced in Lewis

Commented [BJ8]: Brent is the European common name for Brant (*Branta bernicla*). JST was concerned that a small portion of the Owens study looked at experimental actions of people intentionally walking toward Brant. However, the main study occurred at 6 different sites during 2 winter seasons with varying degrees of disturbance from recreation (e.g., bait diggers, people ...)

Commented [BJ9]: This was a reference that was missing in the original comment (mis-attributed to Henry). Establishes energetic consequences of disturbance.

Commented [BJ10]: Establishes flushing distances of Brant and Dunlin and the influence of hunting and other disturbance factors (e.g., people walking on tide flats) and different responses based on shorebird activity.

U.S. Fish and Wildlife Service. 2016. Biological Opinion - Programmatic Consultation for Shellfish Activities in Washington State Inland Marine Waters - Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, and Whatcom Counties, Washington (Ref. No. OIEWFW00-2016-F-0121). Prepared by the Western Washington Fish and Wildlife Office, Lacey, Washington. August 2016. Wilson, U. W. and J. B. Atkinson. 1995. Black brant winter and spring-staging use at two Washington coastal areas in relation to eelgrass abundance. *Condor* 97: 91-98.

* Unpublished refuge-specific wildlife data is available upon request