

From: [BrownScott, Jennifer](#)
To: [Thomas, Sue](#)
Subject: Ken
Date: Wednesday, November 28, 2018 1:31:36 PM

Ken,

It would be great to get some additional shorebird information to help inform our understanding of potential impacts from use within the tidelands of Dungeness Bay. Since receiving your suggestion, we have reached out to our colleagues in the "shorebird world" and found that night surveys are not recommended due to safety concerns, disturbance to wildlife, and difficulty in identifying species. Refuge staff will continue to conduct on-refuge shorebird surveys during daylight low-mid tides when weather allows.

Since shorebirds use the Bay as a whole and may shift locations due to disturbance, predation, storm events, etc., obtaining some help surveying off-Refuge portions of the Bay during the same period that on-Refuge surveys are being conducted would be most helpful. This would allow us to obtain overall densities and figure out what might be using the aquaculture plot on any given day (not just what happens to be using it on the day we happen to be on the site). Densities provide a standard measure to use to combine and compare data. The Pacific Flyway Shorebird Survey protocol is based on density estimates and is the survey protocol that we use.

If OPAS is interested in assisting with off-Refuge surveys to create a more holistic understanding of shorebird use in the Bay, there would be some upfront work that would need to be completed to make sure that data gathering was consistent:

- Someone from OPAS would need to have a thorough understanding of the Pacific Flyway Shorebird Survey protocol
- Volunteers would need to:
 - be thoroughly trained be able to identify the delineated survey area, and only count within that area,
 - focus on counting the overall numbers of major species of shorebirds (i.e., not get distracted by looking for unique species)
 - be trained not to double count birds (those in flight or those that move from one area to another)

Since this information would be used to guide management on such an important issue, it would be extremely important that protocols were followed to the letter, and that any deviations from the protocol were provided as part of the metadata (e.g., a volunteer that doesn't have experience estimating distances, counting within a delineated area, or counting large numbers of birds).

If this type of assistance is something that you are interested in, Bob Boekelheide and Sue developed an off-refuge survey based on the Pacific Flyway Shorebird Survey and were to be surveyed at the same time Refuge staff were surveying on the Refuge. The following off-refuge sites were identified:

- Wilcox Rd Bch

- Les Jones Bch
- Nellie Fry Bch
- 3 Crabs
- Dungeness Farms/Dun. River Mouth
- Oysterhouse/Dung Ldg Park
- Cline Spit

The Pacific Flyway Shorebird protocol and training material can be found at <http://data.prbo.org/apps/pfss/>

Let me know if you are interested in planning, training volunteers for, and coordinating an off-refuge effort, and I can give you the dates and times that we have scheduled (weather and sea state permitting) to conduct on-refuge surveys.

Thanks for caring about the Refuge and trying to find ways to increase our overall understanding of wildlife use.

-jennifer