

From: [Sollmann, Lorenz](#)
To: [BrownScott, Jennifer](#)
Subject: Aquaculture debris response and pics
Date: Monday, July 09, 2018 10:54:39 AM
Attachments: [Letter on Aquaculture beach debris.docx](#)
[Photos of AC debris from the refuge.pptx](#)
Importance: High

Hey Jennifer,

Here is the paragraph we talked about. I think I have all the points in it we thought were important. If you see anything that needs changing please feel free. I've read it through a few times but is first cut. The photos are large so I put them in a ppt. and put captions with each explaining something about it. If you want to go over this let me know.

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Thanks,
Lorenz Sollmann
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On the issue of marine debris within the boundaries of the refuge, specifically aquaculture debris (AC), all information discussed earlier is related to a macroplastics concern. A portion of our found items, that could be a concern for microplastic, are the finer nets used as maybe cultch bags. They seem to degrade more rapidly than other items. Additionally, the refuge has not conducted any science based study to look at AC debris impacts, but is all through quantitative observations during various clean-up efforts. Estimated percentages, of AC debris versus other marine debris, has not been documented. We have included a few photos of what we believe to be items used for various types of AC. The photos only represent the diversity of items not the quantities. We throw all of it out except those pieces we feel can demonstrate our issue with marine debris. Although not really belonging to AC, derelict fishing gear is another problem the refuge must deal with and compounds to our overall concern with marine debris in all its forms.

View of the variety of aquaculture debris the refuge has collected.



These 4 bags on the end all contain oysters of various sizes. It also appears there are 2 or 3 different farming methods represented with these bags.



The tag reads: LoveJoy Hidden Inlet with
phone number.



Some of the items have identifying markings, this we think is Taylor Shellfish. We haven't verified but we thought State law requires all bags to have owner markings but many do not.



Ownership tags that have come off of the rest of the debris item.

Top blue-Hama Hama

Res- LVLA Express



The debris entwined in the plastic is
Salicornia (Pickleweed) from Graveyard Spit
found this year.





Just showing that there is more than can be seen from the first photo.



Although not aquaculture debris derelict fishing gear is the next big concern. The bottom 6, lower 3 from each stack, were all abandoned within 50 yards of the outside (Strait side) of Dungeness Spit. They were there for about a week before we pulled them. The floats in front of the pallets are not from these traps.



We know it happens and this is not meant to get anyone in trouble. Just a FYI.

