

## Cui, Tracy

---

**From:** Adam Osbekoff <adam@snoqualmietribe.us>  
**Sent:** Thursday, August 11, 2022 12:22 PM  
**To:** Cui, Tracy  
**Subject:** RE: King County - Shoreline Substantial Development Permit Application - File Number: SHOR22-0015 - Notice of Application and SEPA Notice

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Tracy

The Snoqualmie Tribe [Tribe] is a federally recognized sovereign Indian Tribe. We were signatory to the Treaty of Point Elliott of 1855; we reserved certain rights and privileges and ceded certain lands to the United States. As a signatory to the Treaty of Point Elliot, the Tribe specifically reserved among other things, the right to fish at usual and accustomed areas and the “privilege of hunting and gathering roots and berries on open and unclaimed lands” off-reservation throughout the modern-day state of Washington.

Thank you for the opportunity to review and comment. Based on the information provided and our understanding of the project and its APE we have no substantive comments to offer at this time. However, please be aware that if the scope of the project or the parameters for defining the APE change we reserve the right to modify our current position.

Thank you

Adam Osbekoff

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**From:** Cui, Tracy [mailto:Tracy.Cui@kingcounty.gov]  
**Sent:** Thursday, August 11, 2022 9:04 AM  
**To:** Matthew Baerwalde <Mattb@snoqualmietribe.us>; Cindy Spiry <cindy@snoqualmietribe.us>; Steven Moses <steve@snoqualmietribe.us>; Adam Osbekoff <adam@snoqualmietribe.us>; Kelsey Payne <kelsey.payne@snoqualmietribe.us>; Ann House <ann.house@snoqualmietribe.us>; DAHP <dahp@snoqualmietribe.us>; Knelson@tulaliptribes-nsn.gov; dlewarch@Suquamish.nsn.us; Strudel@suquamish.nsn.us; McColloch, Duffy <McCollD@wsdot.wa.gov>; almp@wsdot.wa.gov; R4Splanning@dfw.wa.gov; Greene, John <jgreene@kingcounty.gov>; Champaco, Brent <Brent.Champaco@kingcounty.gov>; Clemenger, Anna <Anna.Clemenger@kingcounty.gov>; KC Parks SEPA <KCParks.SEPA@kingcounty.gov>; ZZGrp, DNRP Division Directors & Deputy Directors <dnrpdirdp@kingcounty.gov>; Taylor, Katherine (DNRP) <Katherine-DNRP.Taylor@kingcounty.gov>; Shannon, Kathleen <Kathleen.Shannon@kingcounty.gov>; Herrin, Sharman <Sharman.Herrin@kingcounty.gov>; Waller, Dorian <dwaller@kingcounty.gov>; Bolger, James <jbolger@kingcounty.gov>; Fischer, Katherine <Katherine.Fischer@kingcounty.gov>; Ezekiel.Rohloff@dfw.wa.gov; Scott, Todd <Todd.Scott@kingcounty.gov>; Meisner, Jennifer <Jennifer.Meisner@kingcounty.gov>; TeamMillCreek@dfw.wa.gov; SEPA (DAHP) <sepa@dahp.wa.gov>; Jeffrey.watson@muckleshoot.nsn.us; Laura.murphy@muckleshoot.nsn.us; jennifer.m.keating@puyalluptribe-nsn.gov; Brandon.reynon@puyalluptribe-nsn.gov; Russ.ladley@puyalluptribe-nsn.gov; david.winfrey <david.winfrey@puyalluptribe-nsn.gov>; Catabay, Nori <Nori.Catabay@kingcounty.gov>  
**Cc:** Peterson, Ty <Ty.Peterson@kingcounty.gov>; Mike Spranger <mike.spranger@outlook.com>  
**Subject:** King County - Shoreline Substantial Development Permit Application - File Number: SHOR22-0015 - Notice of Application and SEPA Notice

Attached is the notice of application, preliminary site plan and SEPA environmental checklist for the proposed kelp and shellfish farm.

Please let me know if you have additional questions and/or comments.

Thank you.

**Tracy Cui, AICP** | Principal Planner | 206-263-8720 | [tracy.cui@kingcounty.gov](mailto:tracy.cui@kingcounty.gov)

King County Department of Local Services, Permitting Division



Click this link for [Customer Service Information](#)

Staff are working remotely. Permitting services will continue to be online and available on the [Permitting website](#) and [MyBuildingPermit.com](#)





**King County**

**Department of Local Services**  
**Permitting Division**  
RTN-LS-0300  
919 SW Grady Way, Suite 300  
Renton, WA 98057  
206-296-6600  
<https://kingcounty.gov/depts/local-services/permits>

**Notice of Application**  
**Shoreline Substantial Development**  
**Permit**  
**and SEPA Notice Optional**  
**DNS/MDNS Process**  
(Type 2)

<b>Project Name:</b> SPARO Kelp and Shellfish Farm	<b>File No.:</b> SHOR22-0015
<b>Applicant:</b> Mike Spranger 206-491-0936 <a href="mailto:Mike.spranger@outlook.com">Mike.spranger@outlook.com</a>	<b>DLS Project Manager:</b> Tracy Cui, Principal Planner <b>Telephone No.:</b> 206-263-8720 <b>E-mail:</b> <a href="mailto:tracy.cui@kingcounty.gov">tracy.cui@kingcounty.gov</a>
	<b>Date Application Filed:</b> June 2, 2022 <b>Date Determined Complete:</b> June 30, 2022 <b>Date of Mailing:</b> August 11, 2022
<b>Project Location:</b> The site measures approximately 1,200 feet by 350 feet, for a total of 9.6 acres. It is 300 feet offshore of the mean low tide. The NW corner will be at approximately: 47.337833N, -122526706W, Section 2, Township 21N, Range 02E. The site will be entirely in open water between depth of 30 feet and 80 feet and will not access the shoreline or tidal lands.	
<b>Project Description:</b> The proposed project is an integrated and regenerative kelp and shellfish farm in the Puget Sound at the SW corner of Vashon Island, WA in Colvos Passage. The mariculture farm will grow sugar kelp, clams, mussels, oysters, and possible scallops at one location. All these species are either native or naturalized to the proposed area.	
<b>Permits requested in this application:</b> Shoreline Substantial Development Permit	
<b>Environmental review is required, and relevant environmental documents are available online at</b> <a href="http://www.kingcounty.gov/permits/">www.kingcounty.gov/permits/</a> , or at the address above.	
<b>Consistency with applicable County plans and regulations:</b> This proposal will be reviewed for compliance with all applicable King County Codes, including Roads Standards, Surface water Design Manual, Zoning, Grading, Shoreline Master Program, and Critical Areas Codes.	
<b>Other permits not included in this application, known at this time:</b> Washington DNR Use Authorization for State Owned Aquatic Lands; US Army Corps of Engineers Section 10 Authorization; US Coast Guard – Private Aids to Navigation (PATON)	

You are receiving this notice because King County property records indicate that you own property within 500 feet of the proposed project described above.

The Department of Local Services (DLS) will issue a SEPA Threshold Determination and a decision on this application following a minimum, **33-day public comment period which ends September 13, 2022**. Written comments on this application must be submitted to DLS at the address below. A public hearing is not required for this application prior to the DLS decision. However, the DLS decision may be appealed to the Shoreline Hearings Board, who would conduct an appeal hearing prior to making a decision on the appeal. Details of the appeal process will be included in the notice of decision.

**This may be the only opportunity to comment on the environmental impacts of the proposal.** The responsible official has a reasonable basis for expecting to issue a SEPA Determination of Non-Significance (DNS) on this project. As such, the optional DNS notice process is being used pursuant to WAC 197-11-355. The project review process may incorporate or require mitigation measures regardless of whether an EIS is prepared.

Any person wishing additional information on this proposed project should contact the Project Manager at the phone number or e-mail listed above.

NOTE: To request this information in alternative formats for people with disabilities, please call 206-296-6600 or TTY Relay: 711.

If you wish to receive a copy of the DLS Report and Decision on this application, complete and return the portion below to the Department of Local Services at the address listed above.

=====  
Please send me notification of any official notices concerning this application. **(Please print)**

**File No.:** SHOR22-0015  
**Name:** HANS J. LAHUE  
**Address:** 10400 SW CAVAN RD, VASHON, WA 98070  
**Telephone No.:** 407.924.7102 **e-mail:** hans.lahue@att.net  
*Notifications will be sent via Email unless otherwise requested*

## Cui, Tracy

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**From:** Andre Sapp <andresapp@gmail.com>  
**Sent:** Tuesday, August 23, 2022 3:55 PM  
**To:** Cui, Tracy  
**Subject:** comment on SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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regarding SPARO Kelp and Shellfish Farm, Im all in favor of regenerative sea farming that doesnt need fertilizers or other feeding techniques. uses native species, and doesn't interfere with other native species, assuming the local tribes dont have any issues with it.

thanks  
Andre Sapp  
Vashon Island

## Cui, Tracy

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**From:** Jon Kroman <jon.kroman@gmail.com>  
**Sent:** Tuesday, August 23, 2022 4:01 PM  
**To:** Cui, Tracy  
**Subject:** SPARO Kelp and Shellfish Farm (File No.: SHOR22-0015 )

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello-

I am writing to express support for the above project. I am a principal of Blue Dot Sea Farms, currently the only (to my knowledge) permitted combined seaweed and shellfish farm in Washington. We have followed with interest the effort of the applicant to establish an additional farm. As you may be aware, seaweed cultivation, done properly within the bounds of applicable regulation, is an environmentally responsible way to produce food. Including when combined with shellfish culture, this approach to the production of food requires no fresh water, feed or fertilizer. Moreover, there is an increasingly clear recognition in the scientific community that seaweed and shellfish farming actually provide important ecosystem services. Our farm has been the site for important research in this regard and we applaud the applicant's intention to similarly support the advancement of credible science on this important topic.

Speaking personally, and on behalf of Blue Dot Sea Farms, we urge you to approve the application for a Shoreline Substantial Development Permit.

Sincerely,

Jon Kroman



**King County**

Department of Local Services  
Permitting Division  
RTN-LS-0300  
919 SW Grady Way, Suite 300  
Renton, WA 98057  
206-296-6600  
<https://kingcounty.gov/depts/local-services/permits>

**Notice of Application  
Shoreline Substantial Development  
Permit  
and SEPA Notice Optional  
DNS/MDNS Process**  
(Type 2)

**RECEIVED**

AUG 23 2022

**KC DLS / PERMITS**

**Project Name:** SPARO Kelp and Shellfish Farm    **File No.:** SHOR22-0015

**Applicant:** Mike Spranger  
206-491-0936  
[Mike.spranger@outlook.com](mailto:Mike.spranger@outlook.com)

**DLS Project Manager:** Tracy Cui, Principal Planner  
**Telephone No.:** 206-263-8720  
**E-mail:** [tracy.cui@kingcounty.gov](mailto:tracy.cui@kingcounty.gov)

**Date Application Filed:** June 2, 2022  
**Date Determined Complete:** June 30, 2022  
**Date of Mailing:** August 11, 2022

**Project Location:** The site measures approximately 1,200 feet by 350 feet, for a total of 9.6 acres. It is 300 feet offshore of the mean low tide. The NW corner will be at approximately: 47.337833N, -122.526706W, Section 2, Township 21N, Range 02E. The site will be entirely in open water between depth of 30 feet and 80 feet and will not access the shoreline or tidal lands.

**Project Description:** The proposed project is an integrated and regenerative kelp and shellfish farm in the Puget Sound at the SW corner of Vashon Island, WA in Colvos Passage. The mariculture farm will grow sugar kelp, clams, mussels, oysters, and possible scallops at one location. All these species are either native or naturalized to the proposed area.

**Permits requested in this application:** Shoreline Substantial Development Permit

**Environmental review is required, and relevant environmental documents are available online at [www.kingcounty.gov/permits/](http://www.kingcounty.gov/permits/), or at the address above.**

**Consistency with applicable County plans and regulations:** This proposal will be reviewed for compliance with all applicable King County Codes, including Roads Standards, Surface water Design Manual, Zoning, Grading, Shoreline Master Program, and Critical Areas Codes.

**Other permits not included in this application, known at this time:** Washington DNR Use Authorization for State Owned Aquatic Lands; US Army Corps of Engineers Section 10 Authorization; US Coast Guard – Private Aids to Navigation (PATON)

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If you wish to receive a copy of the DLS Report and Decision on this application, complete and return the portion below to the Department of Local Services at the address listed above.

=====

Please send me notification of any official notices concerning this application. **(Please print)**

**File No.:** SHOR22-0015  
**Name:** AKIKO GRAHAM  
**Address:** 10847 3rd Ave S Seattle, WA 98168  
**Telephone No.:** 206-763-3108 **e-mail:** akiko@akikospottery.com

*Notifications will be sent via Email unless otherwise requested*

## Cui, Tracy

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**From:** Adam Wolf <wolfiswilder@gmail.com>  
**Sent:** Wednesday, August 24, 2022 6:56 AM  
**To:** Cui, Tracy  
**Subject:** Project Name: SPARO Kelp and Shellfish Farm File No.: SHOR22-0015

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi.

I saw the notice about this project and wanted to comment how great of an idea i think it is for King County to invest time and effort into helping businesses create sustainable practices such as this.

A farm such as this produces positive carbon outcomes, provides sustainable food practices, and does not require extensive traditional farming techniques that often include fertilizers and fossil fuel use.

I think this is a great project for King County, Vashon and the SPARO business. I hope it is approved and look forward to its success and expansion over time.

Thanks!  
adam

## Cui, Tracy

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**From:** Jim Arnold <jimsalphamarine@gmail.com>  
**Sent:** Wednesday, August 24, 2022 7:44 AM  
**To:** Cui, Tracy  
**Subject:** Seaweed Farming in Puget Sound;file SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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The people who are willing to spend the resources in order to add seaweed habitat in the Puget Sound should be commended, as it will greatly impact the environment in many positive ways. It will add oxygen into the water, provide much habitat for smaller animals, as well as cleaning contaminates from the water. It is really a win , win situation. It also provides food with no need for fertilizers (which cause more contamination) and is a cost effective way of producing a quality food source. Thanks, Jim Arnold ; 280 Griel Rd Onalaska , Wa 98570 360-915-4777



## Cui, Tracy

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**From:** Tom Gross <GrossT@bellarmineprep.org>  
**Sent:** Wednesday, August 24, 2022 3:00 PM  
**To:** Cui, Tracy  
**Subject:** SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good afternoon.

I am writing to comment on the SPARO Kelp and Shellfish farm under consideration in Clovis Passage. I live on the water on Vashon Island near Dalco Point, approximately .5 mile south and east of the proposed sight.

I am excited for this project and support this land use. I have familiarized myself with the available information for this project and I am impressed by how little this farm impacts the marine environment. It is important to me that the Puyallup are supportive.

I feel positive about this enterprise contributing to our green economy, and through kelp's various uses, also contributing to greenhouse gas reduction. All of this seems to move in the right direction.

I want to thank King County for providing an opportunity to comment on this good use of our lands. Sincerely,

Tom Gross

## Cui, Tracy

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**From:** Linda Stalzer <lindastalzer@comcast.net>  
**Sent:** Friday, August 26, 2022 11:19 AM  
**To:** Cui, Tracy  
**Subject:** Seaweed Farm Application SHOR22-0015

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I've lived in the Puget Sound area for a long time and grew up eating large amounts of salmon and shellfish. Over the last few years I've incorporated seaweed into my diet which I find healthy and delicious. I'm retired now but was actively involved in the real estate development business and believe strongly in the need for more housing and economic development. But I also understand the stress this growth puts on the environment and the importance of positive impact businesses. When I see opportunities for the support of aqua-agriculture I'm all in.

I'm very supportive of the proposal for the Vashon "seaweed farm" and the issuance of permit SHOR22-0015. I often spend time on Vashon so made a point to look at the site of the proposal. Impacts it could create seem limited or non-existent. Since seaweed farms don't disturb the natural environment like earth related development and they improve water quality by removing nitrogen and providing important habitat it appears impacts can only be positive.

On a more general note, the natural environment and the amenities it provides is often touted as a reason for employers and employees to stay in or come to our area. This is a double-edged sword so the more that can be done to promote sustainable, environmentally friendly businesses is very important. In addition, aqua-agriculture in itself is an important employer to our area and seaweed farming is perfect to add to the mix.

Linda Stalzer  
1350 Alki Avenue SW, Unit 5N  
Seattle, WA 98116  
(206) 419-4617  
[lindastalzer@comcast.net](mailto:lindastalzer@comcast.net)

## Cui, Tracy

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**From:** geospano@gmail.com  
**Sent:** Wednesday, August 31, 2022 1:37 PM  
**To:** Cui, Tracy  
**Subject:** Vashon Seaweed Farm permit SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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Hi Tracy,

I am a lifelong Vashon Island resident and boater. I fully support King County issuing Mike Spranger the needed Shoreline Substantial Development for his Seaweed Farm. Issuing this permit sure seems like a no-brainer with a tremendous upside with little or no downside. There are numerous studies showing all the benefits. Not only will it provide a food crop, but it will also improve water quality by removing excess nitrogen, provide a habitat for some fish species, and I believe there are studies to show seaweed help recapture carbon that is related to global warming. I am not a scientist, but the science sure seems to support seaweed farming.

Lastly, I got the pleasure of meeting Mike Spranger when he spoke to our Vashon Island Rotary club. He is a nice guy trying to do something that is good for himself and mother earth.

Thank you,

George Spano  
8912 SW Harbor Dr  
Vashon, WA 98070  
206-718-8857

## Cui, Tracy

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**From:** kevin en-joyproductions.com <kevin@en-joyproductions.com>  
**Sent:** Sunday, September 4, 2022 12:02 PM  
**To:** Cui, Tracy  
**Subject:** SHOR22-0015

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

To Whom it May Concern:

I am writing to provide opinion during the public comment period re. the SSDP application, reference: SHOR22-0015.

I am a 33 year resident of Vashon with a profound concern for the ecological health and sustainability not just of our island, but our region.

One of my closest and oldest friends works for the non-profit Island Institute off the coast of Maine. Their active support and work on behalf of commercial seaweed farming and cultivation is based on ample evidence of its positive impact on their region's coastal communities, with both environmental and economic indicators.

If the Puget Sound is to prove effective in modeling sustainable approaches to aquaculture and other environmental/sustainability innovations, it needs local governance to be progressive and proactive in its support of citizen-based, entrepreneurial initiatives such as this one.

As Vashon is very active in a number of novel approaches to environmental activism and initiatives, there definitely is conversation and interest in this specific project. My experience is that there is near universal support for it. I strongly encourage approval.

Thank you for your work, and your public service,

Kevin Joyce, Producing Director  
PO Box 1301 Vashon WA 98070  
[en-joyproductions.com](http://en-joyproductions.com)  
206.463.0002(o) 206.818.8136(c)



2020 Gold Medal Award Winner



## Cui, Tracy

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**From:** Joseph Bogaard <joseph.b.bogaard@gmail.com>  
**Sent:** Tuesday, September 6, 2022 2:46 PM  
**To:** Cui, Tracy  
**Cc:** Joseph Bogaard  
**Subject:** RE: Project Name: SPARO Kelp and Shellfish Farm // File No.: SHOR22-0015

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Ms. Cui,

I am writing to you re: the public notice for the proposed Seaweed farm off Vashon Island.

RE: Project Name: SPARO Kelp and Shellfish Farm // File No.: SHOR22-0015

I live on Vashon Island and would like to express my support for this project. I see multiple benefits to this business enterprise. As a regenerative farm, it will provide food for humans but it should also deliver benefits to the Puget Sound in terms of water quality and habitat for marine species.

Furthermore, farming seaweed as a human food source requires no fresh water or other inputs which, albeit in a small way, reduces pressures on the ecosystem that salmon and other species need to flourish. I hope that this project will be able to sustainably produce local foods and serve as a model for others about how we can meet our needs in low impact ways.

I urge you to support and approve this project. Please reach out if you have any questions or I can assist in any way.

Sincerely,

Joseph Bogaard

206-300-1003

## Cui, Tracy

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**From:** john jeffcoat <john@strangelife.com>  
**Sent:** Wednesday, September 7, 2022 10:06 AM  
**To:** Cui, Tracy  
**Subject:** A Seaweed farm on Vashon would be a good thing

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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I saw the notice posted at the ferry terminal about the possibility of a Seaweed farm coming to the island. Seems like that would be a great way to support the ecosystem here. From what I've read, it's a great way to create habitat for the small fish, salmon and Orcas. As well as a great way for Vashon to lead the way in this new industry.

I hope it happens!

-- John

-----  
John Jeffcoat  
[www.johnjeffcoat.com](http://www.johnjeffcoat.com)

## Cui, Tracy

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**From:** MATTHEW LONSDALE <MLONSDA@Tacoma.K12.Wa.US>  
**Sent:** Wednesday, September 7, 2022 11:18 AM  
**To:** Cui, Tracy  
**Subject:** SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Tracy Cui,

I am reaching out to give my support for the project SPARO Kelp and Shellfish Farm (SHOR22-0015). I am a high school teacher at the Tacoma Science and Math Institute in Tacoma and have worked with Mike on several collaborative projects regarding Kelp and Shellfish Farming. He has come and talked to my classes about the environmental impacts and water quality improvements that a kelp and shellfish farm can bring to the area.

Moving forward, I would love to keep the collaboration going and to have the farm be a space for learning with my students. Hands on learning is the best way for the students to understand the world around them and having this in our backyard would provide a great learning opportunity.

Thank you for your consideration.

Matt Lonsdale, NBCT (he/him/his)  
Science Teacher  
The Science and Math Institute  
5715 North Animal Loop Road  
Tacoma, WA 98407  
253-571-2306  
[mlonsda@tacoma.k12.wa.us](mailto:mlonsda@tacoma.k12.wa.us)

## TPS Land Acknowledgement

We gratefully honor and acknowledge that we rest on the traditional lands of the Puyallup People where they make their home and speak the Twulshootseed language.

ʔukʷədiitəb ʔuhigʷətəb čəł txʷəl tiit ʔa čəł ʔal tə sw  
atxʷixʷtxʷəd ʔə tiit puyaləpabš dxʷəstəłlils gʷəl ʔutx  
ʷəlšucidəbs həlgʷəʔ.



## Cui, Tracy

---

**From:** Marcia Blomgren <marciablomgren@gmail.com>  
**Sent:** Thursday, September 8, 2022 1:02 PM  
**To:** Cui, Tracy  
**Subject:** Kelp Farm

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Tracy,

I just learned of the proposed kelp farm in Vashon waters. It does not seem appropriate to have this farm in the waters just off many homes on the Island.

I hope you will reconsider approving this project. Thank you very much.

Marcia Blomgren  
Resident of Vashon for over 50 years



## Cui, Tracy

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**From:** Iain Adams <2184ferry@comcast.net>  
**Sent:** Friday, September 9, 2022 3:18 PM  
**To:** Cui, Tracy  
**Cc:** Bailey delongh; Carl Cressman; Jay Williamson & Bailey delongh; Bob & Claire Hallowell; james norton; Allan Kaplan; david lynch; Ainslie McCleoud; michael odonnell; Al & Carol Slaughter  
**Subject:** Shoreline Permit : SHOR22-0015

**Follow Up Flag:** Follow up  
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As a resident of Vashon ( pohl rd ) I have questions regarding the proposed shellfish / kelp farm , as follows 1 what is visible above water line. 2 frequency of harvesting. 3 timing ( day or night ) .4 machinery used ( dredges, hoists, cranes, marine vessels etc.and associated noise , diesel fumes ,water pollution ,ambient light if at night . Clarification of these points would be much appreciated by myself and other members of our community ,see CC ,thank you in advance .Also your mailer mentioned other permits not included in this app ,wa dnr, army corps etc are these required at a later date?not clear! Your assistance in helping navigate this process is a service to us all .Regards Iain Adams..

## Cui, Tracy

---

**From:** Iain Adams <2l84ferry@comcast.net>  
**Sent:** Friday, September 9, 2022 11:21 PM  
**To:** Cui, Tracy  
**Cc:** Bailey delongh; james norton; Allan Kaplan; david lynch; Ainslie McCleoud; michael odonnell; Al & Carol Slaughter; catfishersuzy@comcast.net; willdei@comcast.net; lhallowell@centurytel.net  
**Subject:** Fwd: Re: Shoreline Permit : SHOR22-0015

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----- Original Message -----

From: CARL CRESSMAN <carl.cressman@comcast.net>  
To: Iain Adams <2l84ferry@comcast.net>  
Date: 09/09/2022 8:16 PM  
Subject: Re: Shoreline Permit : SHOR22-0015

My 2 cents on Mike's farm are.

Does he have the financial resources on hand to withstand problems or unforeseen catastrophes this farm might present?

What is the farms maintenance schedule and who oversees it?

What happens when the first boat runs over it?

Will existing aquatic animals get caught and killed and washed up on the beach?

What sort of profit will this farm generate and will he give a percentage back to the islanders?

What makes him the right person to run this farm? Like to see his resume and who his partners will be.

Carl

On 09/09/2022 3:18 PM Iain Adams <2l84ferry@comcast.net> wrote:

As a resident of Vashon ( pohl rd ) I have questions regarding the proposed shellfish / kelp farm , as follows 1 what is visible above water line. 2 frequency of harvesting. 3 timing ( day or night ) .4 machinery used ( dredges, hoists, cranes, marine vessels etc.and associated noise , diesel fumes ,water pollution ,ambient light if at night . Clarification of these points would be much appreciated by myself and other members of our community ,see CC ,thank you in advance .Also your mailer mentioned other permits not included in this app ,wa dnr, army corps etc are these required at a later date?not clear! Your assistance in helping navigate this process is a service to us all .Regards Iain Adams..

## Cui, Tracy

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**From:** Patrick Christie <patrickchristie1@yahoo.com>  
**Sent:** Monday, September 12, 2022 4:32 PM  
**To:** Cui, Tracy  
**Subject:** Comments on Permit: SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello

I'm commenting on the proposed mariculture installation off of Vashon Island (permit SHOR22-0015).

I am a Vashon resident (living about 3 miles north of the project site near the waterfront) and am a UW professor in marine policy. In general, I favor this project. Aquaculture, if well managed, provides local and healthy food and has the potential to support ecosystem recovery. While it's clear that kelp farming is unlikely to offset carbon emissions /acidification in any significant manner, setting aside areas that are off limits to extraction can allow ecosystem recovery. It is essential that the Tribal Usual and Accustomed fishing rights are respected, but it's my understanding that the Puyallup Tribe has approved this farm. I can imagine that local residents may not wish to look at a mariculture installation, but there are many eye-sores, including overly large houses approved by King County that detract from the view scape.

Local recreational and commercial fishers may raise concerns, but there are few marine protected areas that preclude fishing anywhere in the Puget Sound. (As an expert in MPA implementation, and based on hundreds of interviews of Puget Sound residents that I've conducted with UW graduate students, the majority of Puget Sound residents support MPAs.)

The project will need to avoid adding any water pollution, as was associated with prior salmon farms in Puget Sound due to overfeeding, etc. The permit states "The mariculture farm will grow sugar kelp, clams, mussels, oysters, and possible scallops at one location.: As such, there is no risk from pollution from feeds, and the farm may locally improve water quality. I'm assuming pen cleaning and defouling will be conducted manually without chemical applications.

Native or naturalized species will be grown, unlike with Atlantic Salmon farming.

In short, this is an important development in the Puget Sound, and I welcome it. The Sound was once a significant source of sustainably sourced food, but that is no longer the case. We should experiment and look for solutions that align with ecosystem recovery, provide jobs, and encourage maritime businesses.

I assumer there will necessary ongoing biological impact monitoring.

Sincerely, Patrick Christie, Ph.D., Vashon Resident and Professor, School of Marine and Environmental Affairs, University of Washington, Seattle

## Cui, Tracy

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**From:** Karen Davis <kdavissmith@yahoo.com>  
**Sent:** Monday, September 12, 2022 7:03 PM  
**To:** Cui, Tracy  
**Subject:** SHOR22-0015, SPARO Kelp and Shellfish Farm-Comments

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Attention: Tracy Cui, Principal Planner  
File No.: SHOR22-0015, SPARO Kelp and Shellfish Farm

September 12, 2022

Dear Ms. Cui,

In addition to the concerns that I sent to you regarding the Vashon Kelp Forest, I am writing to express my concerns about this proposal and to let you know that I do not support it. I did not receive notice for this one directly, so have had even less time to research it once I became aware, but I understand that this proposal involves shellfish in addition to seaweed and does not propose any kelp restoration. The two proposals have the same comment period and the same planner, and I am disappointed with the county's decision to elect an optional DNS notice process and with a predetermined intention to issue a SEPA DNS for an unprecedented and untested practice in Vashon Island Salish Sea waters where ESA species are present. This process will not allow proper time or input concerning community and environmental considerations.

This site is not located directly off of a treasured island preserve like the other one, but I am still concerned about the multiple flashing lights that will be required by the Coast Guard. Artificial light will pollute the night sky and could cause negative issues for wildlife and people. Photoperiod is important for plants and animals, and artificial light can disrupt nesting and breeding. Artificial lighting is also known to disorient migrating birds, causing them to crash and become exhausted. It can also have a negative effect on foraging, schooling, migration and reproductive behavior of aquatic species.

I am also concerned about the vertical lines and potential to entangle wildlife. Both WWF and Sierra Club state that entanglement is a seaweed farming risk for both nearshore and offshore. It is thought not to be common, but--by all accounts--not a very studied practice. For me, any entanglement is unacceptable, especially relative to the presence of ESA species.

I request that the county take more time, conduct a more substantial environmental review with a more rigorous and involved public and stakeholder process, including a public hearing. This application should go through a thorough ESA review as well due to the presence of several ESA species, notably several specials of fish (including Chinook salmon), Grey whales and Southern Resident orca.

Please send me notification of any official notices concerning this application and thank you for your attention to and consideration of my input: kdavissmith@yahoo.com

Sincerely,

Karen A. Davis

## Cui, Tracy

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**From:** Rob Cunningham <rob.cunningham@gmail.com>  
**Sent:** Tuesday, September 13, 2022 8:09 AM  
**To:** Cui, Tracy  
**Subject:** File# SHOR22-0015

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi,  
I'm writing to voice my support for the proposed seaweed farm referenced by file # SHOR22-0015. From what I have read, seaweed farms are excellent for the environment, particularly as contrasted to many large scale farming practices that now dominate our food chain. Seaweed sequesters carbon and de-acidifies the water, making it healthier for marine species living there. In full disclosure, I am friends with the person who is trying to launch this farm, but I know that the reason he initially got interested in this project was because he is interested in doing things that benefit the environment.

Thanks for your time!

Rob Cunningham



**SOUND ACTION**  
TURNING THE TIDE FOR PUGET SOUND

Re: Comment on SHOR22-0015  
SPARO Kelp and Shellfish Farm  
Shoreline Substantial Development Permit Application

Sound Action is an environmental organization with a mission of protecting vital nearshore habitats from the impacts of shoreline development and related anthropogenic stressors. Although we work throughout the entirety of the Washington State portion of the Salish Sea, the organization originated on Vashon Island. Working as Preserve Our Islands, we previously worked to protect the Maury Island nearshore from the impacts of a proposed mining and barging facility.

Sound Action performs our habitat protection work with a particular eye on ensuring regulatory tools are appropriately applied and that the best available science is considered and documented in any decision-making. In this role, we review every state development permit proposed for inland marine waters, which gives us a unique lens and experience level in nearshore habitat protection and the known impacts on ecosystem functions that come from this wide range of project proposals.

We are a member of the Puget Sound Nearshore and Forage Fish and Foodwebs workgroups under the Puget Sound Partnership's Puget Sound Ecosystem Monitoring Program and served on the Prey Availability workgroup tasked with establishing salmon and orca-focused recommendations for Governor Inslee's Orca Task Force. We also lead in tracking and monitoring orca and other cetaceans when they are present in island waterways.

With this experience base, as well as knowledge and evaluation of the baseline conditions at the proposed project site, we are writing with deep concerns regarding both this proposal and the permit process taken by King County.

As a starting point, we are troubled that DLS has chosen the optional DNS process under SEPA.

Although we believe the project applicant is well-intended, this proposal would convert approximately 10 acres of intact and fully functioning marine habitat into a commercial kelp and primarily non-native shellfish aquaculture operation. It is not benign and comes with a range of significant environmental impacts.

Along with the nearby Vashon Kelp Farm proposal under SHOR22-0017, the proposal constitutes what would, in effect, be the first kelp farm project proposal in the state undergoing SEPA or any related form of environmental review as the Blue Dot pilot project location in Hood Canal was proposed on an existing aquaculture site. It would also be the first commercial shellfish aquaculture project in King County.

In addition to ensuring that project impacts are carefully identified and considered, SEPA is one of the few tools that allows and even mandates public and stakeholder input.

Not only does the abbreviated process of an Optional DNS eliminate the opportunity for meaningful public participation in what is currently an unprecedented type of development in Washington State, we see no support for a reasonable basis for King County to expect a DNS finding when considering the full facts. This proposal represents over 400,000 square feet of marine habitat that would be converted into a commercial aquaculture site. For comparison purposes, this altered area is equivalent to the space occupied by more than four hundred new residential docks.

As outlined below, kelp/shellfish and related long-line aquaculture has been documented to introduce a range of significant impacts to marine habitats and species. These impacts include but are not limited to benthic habitat loss from shading and direct displacement, bird and marine mammal entanglement, littoral and hydrodynamic impacts and negative effects on native kelp beds due to a decline in genetic diversity.

Additional community and public doctrine impacts are created by the loss of a recreational and navigational area commonly used for boating, fishing and kayaking and the introduction of significant visual disturbances into a natural viewscape.

That this project site is regularly used by and directly supports listed salmonids and the deeply in crisis endangered Southern Resident Orcas -- both of which are at risk from project impact -- further underscores the need for detailed evaluation with substantive public participation and more than an Optional DNS process.

When considering the habitats and species present or supported and the known impacts from the proposed project, we see no support pathway where a DNS would be the appropriate finding for the project determination under SEPA. Similarly, the project does meet the no net loss of ecological function or significant adverse impact to shoreline use requirement mandated by 21A.25.290 and also appears to have compliance issues with 21A.25.100 and 21A.25.110 as outlined below.

**There are also multiple notice and comment period procedural areas of concern.**

- It does not appear that notice was provided to local environmental organizations. Sound Action is both registered on Vashon and well known as an island-based nonprofit working specifically on marine nearshore issues. We have historically provided comment letters to DLS on a range of environmental projects. We have been a party of record for similar projects, yet we received no notice of the application or comment period. Because of this, we only learned of the NOA and Optional DNS several days ago. As a result, our comments are abbreviated, and we have not had the opportunity to compile full reference lists and citations on the informing science.
- The NOA/SEPA document instructs that ... “Written comments on this application must be submitted to DLS at the address below.” However, there is no “below” address provided, and it is unclear how comments for the record are to be submitted.

**We are also troubled to see important information is missing from the project details and environmental evaluation.**

- There are no plans showing appropriate project or site detail. The submitted “site plan” is an overlay of a rectangle on an aerial image. Although there is a brief snippet of information at the end of the SEPA checklist, this section has information discrepancies or lack of clarity. It does not provide details related to tidal datum, vegetation presence, buoy sizes or specific locations or the dimensions of the lighted Private Aids to Navigation required by the Coast Guard. There is no detail on proposed shellfish growing mechanisms versus kelp or locations.

- The submitted SAV survey is extremely limited and does not comply with state and federal requirements which generally call for a June to October survey time frame. The SAV and baseline survey submitted for this project was conducted in May 2022. Surveys conducted outside the June to October period will often miss vegetation or other habitat or species presence or abundance due to natural cycle dieback.
- The SAV survey reports transects spaced 50 feet apart. Underwater visibility is extremely limited in Puget Sound. Based on conditions captured at a Sound Action underwater camera installed along Maury island, less than ten feet would be visible along each side of a transect -- which leaves a large area between each transect line that has not been surveyed or evaluated.
- The limited SAV survey reports a significant volume of wild kelp and native macroalgae – yet no detail is provided about where this vegetation is within the project site.
- Similarly, there was no survey or information provided on the habitat and SAV found in the adjacent nearshore area. There are a range of project impacts that could impact this landward area of the project site – for example, long-line aquaculture can affect the hydrodynamics and littoral process of the area, having, in turn, a potential effect surrounding ecology.
- Humpback whales are regularly at the site and site area, yet the environmental checklist omits Humpbacks as listed species known to be on or near the site.

### **Code Compliance**

- The proposed project site is in an aquatic area adjacent to a natural shoreline environment designation. Per King County Code 21A.25.100, in the natural shoreline environment and aquatic areas adjacent to the natural shoreline environment, aquaculture activities are limited to activities that do not require structures, facilities and that will not alter the natural systems, features or character of the site. This conflict with the code is not discussed or recognized anywhere in the documentation.
- Per 21A.25.110, Aquaculture activities that, after implementation of mitigation measures, would have a significant adverse impact on natural, dynamic shoreline processes or that would result in a net loss of shoreline ecological functions shall be prohibited. As outlined below, this proposal introduces a range of impacts on habitats, species and ecological functions.
- Per 21A.25.110, Aquaculture should not be located in areas that will result in significant conflicts with navigation or other water-dependent uses. The project site is a highly used boating area with a significant volume of recreational boats commonly utilizing the area.

### **Project Impacts**

As outlined below, this proposal presents a range of significant adverse impacts across a very large project area. These impacts include displacement and impact on benthic habitat and species, interruption of migratory and forage corridors for juvenile salmonids, marine mammals, cetaceans and bird species and interruption of critical geomorphic processes. Additional impacts on native kelp stocks have also been documented.



Listed Humpback whales also commonly use -- and even favor -- the project site with regular reports documenting foraging at the site area, often daily and for weeks at a time.

**Notably, the project site is regularly used for both foraging and transit by the endangered Southern Resident Orcas during the fall and winter months.**

### **Shading and Benthic Impacts**

Benthic shading by kelp farming can affect understory algae and benthic habitats, as artificial top-down kelp canopies can reduce the light that reaches the benthos. Natural macroalgae communities grow bottom up. Cultivated seaweed habitats differ from natural macroalgal habitats as the crops must be cultivated in surface waters at depths that optimize levels of Photosynthetically Active Radiation (PAR). As a result, the cultivation of seaweeds on surface waters can shade underlying habitats. Although little detail on shellfish growing has been provided, the bags and lines typically associated are also documented to create shade impacts.

This shading can alter both macroalgae and microalgae habitat function, as well as benthic communities.

Shading is also well documented to create impacts on juvenile salmonids. Not only do juvenile salmon avoid shaded areas, they are visual feeders, and reduced light diminishes their ability to find food. This proposal includes water column areas used by juvenile salmonids, and impacts would be expected.

Shellfish growing on lines is also documented to impact benthic habitats through shading, shell debris alterations and biofouling.

### **Hydrodynamics and Littoral Process Impact**

Natural kelp beds are anchored in the seabed and have a bottom-up effect on currents and sedimentation rather than the predominantly surface-impacting structure of suspended kelp culture.

Top-down kelp and shellfish farming has been documented to alter the hydrodynamics at a project site and in adjacent areas. Impacts include changes in wave energy, water current, nutrient availability and related littoral processes that are often significant.

Alterations to water flow can affect the biodiversity and carrying capacity of a project site and adjacent areas by reducing water exchange necessary for maintaining levels of nutrients required for growth. These alterations could have implications for the adjacent and below benthic and pelagic habitats, which would experience altered flow dynamics resulting from changes to surface boundary conditions.

Additional impacts can result from changes to sedimentation and littoral processes, which in turn impact the habitats present at and adjacent to the proposed project site.

### **Impact on Wild Stock Kelp**

Wild kelp is a perennial primary producer and foundational food web species providing habitat and food that structures nearshore community composition. Species such as epiphytic algae, gastropods, amphipods, sea urchins, sea stars, and fish inhabit natural wild kelp beds. These, in turn, become food for higher food web species, including crabs, larger fish, and other predators, which are often consumed by humans or marine mammals. With this, what may appear to be small changes to the structure or genetic makeup of the wild population can cause repercussions throughout the ecosystem and to already decimated wild kelp stock.

Currently, kelp aquaculture uses a small amount of reproductive material to produce project spores. As a result, the kelp on an individual farm commonly has a similar genetic composition. This farmed kelp can release gametes into the surrounding ecosystem that could outcompete or replace wild gametes. Over time, local or even regional kelp populations can experience genetic degradation towards a genetic makeup similar to that of the farmed species as spores from the farm drift freely through the water.

Genetic diversity in the wild stock kelp population is correlated with disease resistance and increased protection against other anthropogenic stressors. In contrast, downgraded genetic diversity is widely understood to create a risk to wild stock health.

### **Impact and risk to the Endangered Southern Resident Orcas and other Cetaceans – Entanglement and Displacement.**

The proposed project site is in a designated critical habitat area the Endangered Southern Resident orcas regularly use for foraging and transit in the late fall and early winter when salmon runs are present in the South Central Puget Sound area and scarce elsewhere. This is not speculative, and the whales have been documented using the project site for decades.

Note that in the BE, the project consultant incorrectly reports the project area is a part of the Orcas Summer Core Critical Habitat Area and that “Orcas may occur in the action area while summer construction activities occur.” However, the site is not a part of the Summer Core Habitat, and the Southern Resident Orcas are not present in island waterways during the summer. The project site is part of the Puget Sound Critical habitat area, and as noted above, the whales regularly utilize the site location during the fall and winter.

The long line infrastructure presents a significant risk of entanglement and injury that could easily occur during travel or when the orcas are chasing salmonid prey.

Although there is a lack of clarity on the infrastructure of the proposed project in the application documentation, a typical Kelp and shellfish long-line development of this size would have dozens of horizontal growing and vertical anchor lines installed at the project site. In addition, there would be over 100 vertical lines and floats running upward from the growing lines. The abundance and tight spacing of these combined lines creates a barrier effect that could prevent an adult orca from fully surfacing normally in the likely event that the whale attempts to enter the project site while foraging. Similar entanglement risks would be present through normal movement behaviors like breaching, porpoising, tail and pectoral slapping and surface rolling.

In addition to the risk of injury or entanglement from intact infrastructure lines, there is also a risk from lines that may become loose or separated from the supporting float. This is a common event in aquaculture and is highly likely at the site, given that it directly faces the substantial winter weather systems that come from the SW.

The proposal also presents a similar entanglement risk to other cetaceans, including humpback whales and transient orcas that are also commonly at the site area.

Although the project consultant suggests that orcas would use echolocation to avoid lines and that no cases have been reported in the Puget Sound of entanglement by any cetacean, both of these statements are without basis.

There is no evidence to support that orcas would or even could use echolocation to determine a line or lines covered with native kelp as an area or object to avoid. Further, Orcas are attracted to the kelp beds around the Pacific Northwest, and they often play with and interact with the vegetation itself. This behavior has been observed so often that it has been dubbed “kelping.”

There have also been multiple cases of cetacean entanglement in Puget Sound, and orca (and other whales) entanglement by long lines documented worldwide. In a recent 2022 regional case, a dead juvenile orca was discovered off the Oregon coast with a crab-pot line wrapped around its tail.

Even if orcas or the humpbacks that regularly use the area somehow knew to avoid the project site, impact would occur due to displacement from important foraging and transit areas. For the orcas who are desperate for food, this is not insignificant and must be given the full weight of consideration.

In closing, we would like to reiterate our belief that the project applicant is motivated by good and commendable intentions. However, there are clear and significant project impacts that at a minimum require a detailed review and substantive public participation opportunity. With this, we request that King County step away from the Optional DNS pathway and move to a more substantive review and SEPA process.

We would also like to note that while the proposal suggests there would be significant project benefits to environmental conditions and biodiversity, the most current non-industry developed evaluation found that it is unlikely that kelp farms act as kelp forests and deliver meaningful biodiversity outcomes.

A short list of abbreviated core references is outlined below. We welcome any questions or input and can be reached via phone or email.

Amy Carey, Executive Director  
Sound Action  
PO Box 845  
Vashon, WA 98070  
(206)745-2441/[amy@soundaction.org](mailto:amy@soundaction.org)

## **References**

Campbell et al. (2019) The Environmental Risks Associated With the Development of Seaweed Farming in Europe - Prioritizing Key Knowledge Gaps.

Forbes et al. (2022) Farms and forests: evaluating the biodiversity benefits of kelp aquaculture.

Grebe et al. (2019) An ecosystem approach to kelp aquaculture in the Americas and Europe

Sustainable Inshore Fisheries Trust (2021) Seaweed Cultivation in Scotland: A guide for community participation in seaweed farm applications

## Cui, Tracy

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**From:** Roxanne Harvey <greatw10@gmail.com>  
**Sent:** Thursday, September 15, 2022 10:03 AM  
**To:** Cui, Tracy  
**Subject:** Vashon kelp farm

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello!

My name is Roxanne Harvey and I live and work on Vashon island. I completely support a kelp farm in our waters, I think it would benefit our local ecosystem and also help to create green local jobs.

## Cui, Tracy

---

**From:** Meg Chadsey <mchadsey@uw.edu>  
**Sent:** Tuesday, September 20, 2022 12:26 PM  
**To:** Cui, Tracy  
**Subject:** Washington Sea Grant: your resource for science-based information about seaweed farming & environmental impacts

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Tracy,

I understand that the public comment period for the two Vashon Island kelp farm permit applications (SHOR22-0015 and SHOR22-0017) you are managing recently closed. Job title notwithstanding, my primary focus at Washington Sea Grant for the past several years has been seaweed cultivation\*, particularly the scientific evidence for environmental impacts, both positive and negative. If Washington Sea Grant can be of any assistance as you consider these applications, please don't hesitate to contact me, via email or my cell (206.669.1387). If I don't have the expertise to field your request, I'll connect you with someone who does!

Warm regards, Meg Chadsey



**Meg Chadsey, PhD**

Pronouns:

She/Her/Hers ([what is this?](#))

Ocean Acidification  
Specialist  
NOAA Pacific Marine  
Environmental Lab  
Liaison

[Washington Sea Grant](#)

College of the  
Environment | University  
of Washington

M-F: 8-5 | 206.616.1538  
(office line; messages  
forwarded to my cell)

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\*Relevant activities, 2017-present:

- Partner, 2017-2019 [Hood Canal Kelp/Ocean Acidification Investigation](#)

- WSG Lead, [Kelp Aquaculture](#)
- Coordinator, 2019/2020 [WSG Seaweed Farming Training program](#)
- Coordinator, Washington Seaweed Collaborative ([press release](#))
- Coordinator, Dec 2022 Washington Seaweed Knowledge Symposium ([press release](#))
- Host, [WSG Seaweed Office Hours](#)
- Co-PI, [National Sea Grant Seaweed Hub](#)
- Advisor, [Ocean Visions Seaweed Sinking Working Group](#)

Media:

- [Interest in seaweed farming across Puget Sound is 'booming'](#). King5, 2022
- [Our local seaweed is disappearing. Could farming help conserve it?](#) KUOW's Soundside, 2022
- [Training Builds on Growing Popularity of Kelp Farming](#). NOAA Fisheries, 2020
- [Will Northwest Seaweed Farming Finally Take Off?](#) Seattle Met, 2020
- [Could seaweed be Washington's next cash crop?](#) Crosscut, 2019



U.S. Army Corps of Engineers Regulatory Branch  
4735 E Marginal Way S, Bldg 1202, Seattle, WA 98134-2388  
ATTN: Jordan Bunch, Project Manager  
CC: Todd Tillinger, Bonnie Shorin,

November 15, 2022

RE: NWS-2022-584-AQ.

Sound Action is an environmental organization with a mission of protecting vital nearshore habitats from the impacts of shoreline development and related anthropogenic stressors. We perform our habitat protection work with a particular eye on ensuring regulatory tools are appropriately applied and that the best available science is considered and documented in any decision-making. In this role, we review every state development permit proposed for inland marine waters, which gives us a unique lens and experience level in nearshore habitat protection and the known impacts to ecosystem functions that come from this wide range of project proposals.

We are a member of the Puget Sound Nearshore and Forage Fish and Foodwebs workgroups under the Puget Sound Partnership's Puget Sound Ecosystem Monitoring Program, work in partnership with a wide range of environmental organizations and served on the Prey Availability workgroup tasked with establishing salmon and orca-focused recommendations for Governor Inslee's Orca Task Force.

With this experience base and our knowledge and evaluation of the baseline conditions at the proposed project site, we are writing to provide comment on this proposal. This letter supplements the orca and cetacean-specific comment we have provided in partnership with other organizations with orca and cetacean expertise. It is intended to provide detail regarding the salmon and nearshore-related impacts of the proposal.

In recent years, commercial kelp farming aquaculture has been introduced as a new development type for Puget Sound and the Salish Sea. Globally, seaweed is a \$6 billion per year industry, with about eighty-five percent of the products used for food and cosmetics. In the Puget Sound region, there is also interest in the utilization of kelp farming to potentially help offset ocean acidification impacts on shellfish growing at the local scale.

Although environmental benefit from kelp farming is often touted, including claims of improved environmental conditions and biodiversity, the most current non-industry developed evaluation found that while more work needs to be done to address the complexity of comparisons between kelp farms and forests, it is unlikely that kelp farms will act as kelp forests and deliver meaningful biodiversity outcomes.<sup>1</sup>

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<sup>1</sup> Forbes, H., Shelamoff, V., Visch, W. et al. Farms and forests: evaluating the biodiversity benefits of kelp aquaculture. *J Appl Phycol* (2022). <https://doi.org/10.1007/s10811-022-02822-y>

We recognize and appreciate the good intention of efforts leading to the emergence of this development type. But, also recognize that kelp farming is not benign, and it is imperative that environmental impacts be fully evaluated and addressed.

The proposed project site is located in a unique nearshore area. It is immediately adjacent to Fern Cove, an estuarine, freshwater, and terrestrial conservancy preserve. It includes two salmon-bearing streams and 730 linear feet of Puget Sound shoreline encompassing an estuary complex and unique marine fan delta. The site is designated Critical Habitat for Puget Sound Chinook and is documented as a pocket estuary by NOAA.<sup>2</sup> The site supports juvenile salmonids from both adjacent and distant watersheds.<sup>3</sup> Juvenile salmon depend on the nearshore estuarine and marine environments in Puget Sound. The nearshore area provides food, a migration corridor, protection from predators, and a transitional environment that supports the physiological changes that occur as they transition from freshwater to a marine environment. This life history stage is particularly sensitive because these physiological changes are demanding, young salmon are small and vulnerable to predation, and their food requirements are large. These combined factors make juvenile salmon sensitive to even small changes in habitat conditions.<sup>4</sup>

The coastal landforms at the site include a transport zone and smaller areas of accretion shoreform. Because the project site is generally at the nexus of two drift cells, littoral drift runs both north and south from the project footprint. Documented surf smelt spawning occurs just adjacent to the site.

The Washington State Department of Natural Resources (DNR) Marine Vegetation Atlas documents the long-term presence of eelgrass and kelp along the shoreline at the project site.<sup>5</sup> <sup>6</sup> DNR has conducted routine monitoring at the site, and the most recent surveys document eelgrass at the project location at a depth of approximately -20.81 in that plot.<sup>7</sup>

**Despite the known presence of vegetation in the area and likely at the site, it does not appear an appropriate submerged aquatic vegetation survey (SAV) has been performed.**

- a. The Corps requires SAV surveys to be conducted in the June to October growing period with sample transects in areas with patchy vegetation directed to be spaced at 5-15 feet.<sup>8</sup> However, the SAV survey submitted for this project was conducted in January.<sup>9</sup> Surveys conducted during this winter period will often miss vegetation or other habitat species presence or abundance due to natural cycle dieback.

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<sup>2</sup> <https://noaa.maps.arcgis.com/home/webmap/viewer.html?webmap=7cb6ea0376cc4b24b65341a4e2b8ac0b>

<sup>3</sup> <https://your.kingcounty.gov/dnrp/library/2004/kcr1658/nearshore-part1.pdf>

<sup>4</sup> Enviro Vision, Herrera Environmental. Protecting Nearshore Habitat and Functions in Puget Sound-An Interim Guide. Prepared for WDFW, WDNR, Ecology, WSDOT, CTED, RCO, and the PSP (2010). figures, Table 11.6, 111-3 to 111-6

<sup>5</sup> Marine Vegetation Atlas Eelgrass layer <https://bit.ly/3UZJb87>

<sup>6</sup> Marine Vegetation Atlas Kelp <https://bit.ly/3UZJb87>

<sup>7</sup> <https://wadnr.maps.arcgis.com/apps/webappviewer/index.html?id=83b8389234454abc8725827b49272a31>

<sup>8</sup> Corps. (U.S. Army Corps of Engineers). 2018. Components of a Complete Eelgrass Delineation Report. January 9, 2018.

<sup>9</sup> Confluence Vashon Island - Colvos Passage Site 2022 Underwater Seabed and SAV Survey.



- b. The survey reports four transects spaced 50 feet apart and five 100 feet apart, running lengthwise along the proposed footprint. The survey used a towed camera, which has a limited view. Even if the camera did provide an expanded view, underwater visibility, especially via camera, is limited in Puget Sound. Based on conditions at a Sound Action underwater camera along Maury island, less than ten feet would be clearly visible.<sup>10</sup>
- c. This leaves a large area of the project footprint that was not evaluated. The proposed project footprint is 435,000 square feet. Even if assuming a generous 10 feet of viewing width for each 1000-foot-long transect, the total viewed area for the nine reported survey transects is 90,000 square feet -- which is only 20% of the project footprint.
- d. Although eelgrass would not be expected at the footprint depth, the project consultant reports an absence of kelp. As part of our work, Sound Action reviews hundreds of vegetation surveys each year. Based on this experience, it would be incredibly rare to have a complete absence of kelp in such a large area. The reported findings appear to align more with the survey gaps we have outlined rather than a confirmed absence of vegetation. Bull Kelp and non-floating kelp in Puget Sound occur from the extreme low tide level to a depth of 30 meters, which correlates to the water depth within the footprint<sup>11 12</sup>
- e. To properly evaluate impacts, it is also critical to have information on vegetation and other habitat detail for the areas *adjacent* to the proposed footprint, but survey information for this area was not provided. A range of project impacts could impact this landward area of the project site. For example, longline kelp farming can affect the hydrodynamics and wave action of the area, which can impact the surrounding ecology.

**An SAV survey following the above requirements must be performed for the Corps to appropriately evaluate the baseline site condition and potential impacts.**

Kelp farming utilizes a top-down longline infrastructure. This array is the opposite of natural kelp growth, which is bottom-up. At 435 feet wide and 1000 feet long, the proposal represents approximately 435,000 square feet of marine habitat that would be converted into a commercial aquaculture site. For comparison purposes, this altered area is equivalent to the space occupied by more than four hundred new residential docks.

Kelp farming does not mimic the natural ecosystem and can create a range of significant environmental impacts on marine habitats and species, which must be fully evaluated. These impacts include but are not limited to benthic habitat and aquatic vegetation loss from shading and direct displacement, littoral and hydrodynamic impacts, interruption of critical geomorphic processes and negative effects on native kelp beds and eelgrass due to a decline in genetic diversity and habitat alternations resulting from the adjacent kelp farm.

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<sup>10</sup> <http://soundaction.org/orcacam/>

<sup>11</sup> Mumford, T.F. 2007. Kelp and Eelgrass in Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-05. Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington.

<sup>12</sup> <https://www.eopugetsound.org/species/saccharina-latissima>

## **Shading Impacts**

Benthic shading by kelp farming can affect understory algae and benthic habitats, as artificial top-down canopies can reduce the light that reaches the benthos. Natural macroalgae communities grow bottom up. Cultivated seaweed habitats differ from natural macroalgal habitats as the crops must be cultivated in surface waters at depths that optimize levels of Photosynthetically Active Radiation (PAR).

Benthic shading by kelp can affect understory algae, as kelp canopies are capable reduce bottom light to <3% of surface influx.<sup>13 14</sup> Cultivation of seaweeds on surface waters may therefore shade underlying habitats containing pelagic phytoplankton and benthic macroalgae.

Although there has been little evaluation of the effect of this top-down shading on salmonids, there is a potential for this impact. Changes in ambient underwater light environments can alter juvenile salmon migration and distribution and potentially increase mortality risks. Shading can also impair visual tasks like feeding and predator vigilance and reduces prey availability and habitat connectivity, reducing localized habitat value. These issues must be evaluated given the fragile state of Chinook populations and kelp conditions.

## **Hydrodynamics and Littoral Process Impact**

Natural kelp beds are anchored in the seabed and have a bottom-up effect on currents and sedimentation rather than the predominantly surface-impacting structure of suspended kelp culture. Top-down kelp farming has been documented to alter the hydrodynamics at a project site and in adjacent areas. This includes changes in wave energy, water current, nutrient availability and related littoral processes. Macroalgae aggregations act as a region of high drag and have been shown to affect water velocity and attenuate waves, with studies showing a 50% or more change in wave energy<sup>15 16</sup> Suspended kelp farms also change the physical nature of water flow, creating areas of higher or lower turbulence

This could have implications for the adjacent and below benthic and pelagic habitats, which would experience altered flow dynamics resulting from changes to surface boundary conditions. In addition to this water flow change, other impacts can result from changes to sedimentation and littoral processes, which in turn impact the habitats present at and adjacent to the proposed project site, including aquatic vegetation and forage fish spawning substrates. This impact should be fully evaluated, including baseline hydrodynamic measurements and modeling to determine habitats that may be impacted and the area that may be altered.

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<sup>13</sup> Campbell I, Macleod A, Sahlmann C, Neves L, Funderud J, Øverland M, Hughes AD and Stanley M (2019) The Environmental Risks Associated With the Development of Seaweed Farming in Europe - Prioritizing Key Knowledge Gaps. *Front. Mar. Sci.* 6:107. doi: 10.3389/fmars.2019.00107

<sup>14</sup> Reed, D. C., and Foster, M. S. (1984). The effects of canopy shadings on algal recruitment and growth in a giant kelp forest. *Ecology* 65, 937–948. doi: 10.2307/1938066

<sup>15</sup> <https://umaine.edu/aquaculture/project/attenuating-waves-kelp-farms/>

<sup>16</sup> Wood et al (2017). UK macroalgae aquaculture: What are the key environmental and licensing considerations?

## **Impact on Wild Stock Kelp**

Wild kelp is a perennial primary producer and foundational food web species providing habitat and food that structures nearshore community composition. Species such as epiphytic algae, gastropods, amphipods, sea urchins, sea stars, and fish inhabit natural wild kelp beds. These, in turn, become food for higher food web species, including crabs, larger fish, and other predators, which are often consumed by humans or marine mammals.

With this, what may appear to be small changes to the structure or genetic makeup of the wild population can cause repercussions throughout the ecosystem and to already decimated wild kelp stock.

Kelp aquaculture typically uses a small amount of reproductive material to produce project spores. As a result, the kelp on an individual farm commonly has a similar genetic composition. This farmed kelp can release gametes into the surrounding ecosystem that could outcompete or replace wild gametes. Over time, local or even regional kelp populations can experience genetic degradation towards a genetic makeup similar to that of the farmed species as spores from the farm drift freely through the water.

Genetic diversity in the wild stock kelp population is correlated with disease resistance and increased protection against other anthropogenic stressors. In contrast, downgraded genetic diversity is widely understood to create a risk to wild stock health.

In addition to impacts on genetic diversity and wild stock health, the previously outlined hydrodynamic changes may impact the substrate, water flow and nutrient levels needed for native kelp growth in the areas below or adjacent to the project site.

These potential impacts must be evaluated, given the known declines in wild kelp.

## **Endangered Species Act Consultation**

Sec. 7(a)(2) of the Endangered Species Act requires every federal agency to consult with the Services to determine whether the proposed action is likely to jeopardize the survival of a protected species or result in the destruction or adverse modification of its critical habitat collectively, referred to as protected resources and if so, to identify alternatives that will avoid the action's negative impacts. See 16 U.S.C. § 1536(b)(3)(A).

An informal consultation process with the Services is limited to projects with a "Not Likely to Adversely Affect"(NLAA) determination concurrence from NOAA Fisheries after the action agency requests consultation and submits its NLAA determination with supporting analyses and documentation. "Not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur.

Alternatively, a review may find a "May affect, likely to adversely affect" (LAA) determination. This finding means that listed species and habitat/function are likely exposed to the action or its environmental consequences and will respond negatively to the exposure.

With an LAA determination, Formal ESA consultation is required. It concludes when NOAA Fisheries issues a Biological Opinion (BIOP) that states whether the action is likely to jeopardize the continued existence of the listed species and/or destroy or adversely modify critical habitat.

In 2016, NMFS and the USFWS revised the ESA implementing regulations to remove the previously used term Primary Constituent Elements (PCE) and replaced it with the statutory term "physical or biological features." These are also referred to as "essential features" of a species' habitat that are critical for survival and recovery. In marine areas, this includes:

- Estuarine areas free of obstruction and excessive predation with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fish, supporting growth and maturation.
- Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fish, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
- Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fish, supporting growth and maturation.

As outlined in this letter, the project site is designated critical habitat for Puget Sound Chinook and contains a range of unique habitat features identified as a PCE/essential features. There is no evidence that the impacts from commercial kelp aquaculture in Puget Sound on nearshore habitat and Puget Sound Chinook are insignificant or discountable. Based on studies, habitats present and the conversion of ten acres of marine habitat, it seems clear that adverse effects are likely. We urge the Corps to initiate formal ESA consultation for all such projects, as required by Section 7.

Thank you for work on this project review,

Amy Carey, Executive Director  
Sound Action  
(206)745-2441/[amy@soundaction.org](mailto:amy@soundaction.org)

## Cui, Tracy

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**From:** Amy Carey - Sound Action <amy@soundaction.org>  
**Sent:** Tuesday, October 18, 2022 10:23 AM  
**To:** Cui, Tracy  
**Subject:** SHOR22-0017 and SHOR22-0015 Request for Optional DNS Notice Rescission

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

[EXTERNAL Email Notice! ] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Tracy,

Thank you so much for the information you provided on 10/6/2022 outlining internal King County staff comments and concerns on SHOR22-0017 and SHOR22-0015.

As you are aware, in addition to sharing preliminary information on environmental impacts, Sound Action has outlined that the Optional DNS process King County utilized was an inappropriate legal pathway for review under SEPA. The fact that the County staff has now raised substantive questions surrounding environmental concerns and highlighted missing information and/or the need for additional information underscores this. Under SEPA regulations, an Optional DNS is limited to applications where the responsible official has a reasonable basis for determining that significant adverse environmental impacts are unlikely. The letter sent to the applicants on 10/5/2022 documents that the County could not have that reasonable basis test.

I want to clarify that we believe there has only been good intention by the County from the onset. However, we remain deeply concerned about the current procedural status and ask that King County rescind the Optional DNS notice until the requested project information is provided and can be reviewed.

Per 197-11-055 (Timing of SEPA Process), the appropriate consideration of environmental information shall be completed before an agency commits to a particular course of action under SEPA. You note in your message the letters that were sent to the applicant demand additional information and contain technical comments that need to be adequately addressed by the applicants before County can determine an appropriate pathway for SEPA review. This further points to a lack of support for the Optional DNS process initially set into motion and a need for rescission, with notice provided to the public so that interested stakeholders with similar SEPA, project review and public process concerns are made aware.

I look forward to hearing back from you and can be reached via phone at (206)745-2441.

Amy Carey, Executive Director  
Sound Action

U.S. Army Corps of Engineers Regulatory Branch  
4735 E Marginal Way S, Bldg 1202, Seattle, WA 98134-2388  
ATTN: Jordan Bunch, Project Manager  
CC: Todd Tillinger, Bonnie Shorin, Lynne Barre

November 15, 2022

RE: NWS-2022-584-AQ.

Mr. Bunch,

On behalf of our diverse members and supporters, we submit joint comments on NWS-2022-584-AQ. Although the information is being provided as part of the comment period for this specific application, we hope the detail documenting the risk and impact of longline aquaculture on orcas and other cetaceans will be incorporated into the Army Corps of Engineers (Corps) knowledge base and used in the analysis of future proposals as well.

We appreciate your work on this important issue and are committed to supporting the Corps in the robust application of the Endangered Species Act (ESA) when considering this project proposal and the effects on ESA-listed Southern Resident Killer Whales (SRKW) and Humpback whales as well as the nearshore habitat the orcas rely on for survival. Additional comments on ecosystem impacts on wild kelp and eelgrass, forage fish, chinook and geomorphic processes will be provided in a separate letter focusing on those issues.

"Which raindrop caused the flood?" In 2009, when issuing his decision in *Preserve Our Islands et al v. U.S. Army Corps of Engineers et al*, Judge Ricardo Martinez used those words to emphasize that while no single project or human activity has caused the depletion of the salmon runs, the near-extinction of the SRKW, or the general degradation of the marine environment of Puget Sound, every project has the potential to incrementally increase the burden upon the species and the Sound.<sup>1</sup>

In his decision, which found the Corps had failed to appropriately evaluate impacts to the SRKW and Chinook under the ESA and overall environmental impacts under the National Environmental Policy Act, Judge Martinez recognized the desirability of progress. However, he emphasized that under the ESA, the federal agencies' obligation was not to pave the way for development or give weight to economic or industry interests but to ensure that progress does not cause irreversible harm to the environment.

As outlined below, NWS-2022-584-AQ introduces a range of significant adverse impacts to listed species and habitats. We urge the Corps to embrace Judge Martinez's words and previous findings when evaluating this project.

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<sup>1</sup> *Preserve Our Islands v. United States Army Corps of Engineers* (2:06-cv-01793)

## ENDANGERED SOUTHERN RESIDENT KILLER WHALES

Since first being listed as endangered in 2005, the SRKW population has faced a steep decline with no sign of recovery. Over 60 whales have died during this time, and the current population stands at just 73. This population is at its lowest level in 40 years and reflects more than a 25% decline from the observed peak population size of 98 whales in 1995. It is also precariously close to the decimated level resulting from the catastrophic capture years in the 1970s.

Why we are losing these whales is no mystery, with study after study showing a lack of food as the core cause. This nutritional stress results from a decline in their preferred Chinook prey due to habitat loss, combined with impacts that interrupt or diminish successful prey capture or exclude the whales from their much-needed food source. Additionally, as outlined in this document, there is emerging concern that additional anthropogenic effects, such as entanglement, may contribute to the loss of individual whales. The SRKWs population decline is also exacerbated by the miscarriage or early death of the calf occurring in approximately 70% of detected pregnancies, with the lack of maternal food sources recognized as a leading reproductive impact.<sup>2</sup> This steep downward trend, along with the biological condition of the population, development impacts, the consistently low availability of salmon, and exposure to contaminants, document that the species is facing increasing threats to its survival. There is no question that without a careful approach to protect the whales from existing and new development impacts, they will go extinct.

In reflection of the low population abundance, high mortality and low reproductive success, and failure to meet the growth goals identified in the 2008 ESA recovery plan, SRKWs have been given a federal recovery Priority Number of 1C, based on criteria in the updated Recovery Priority Guidelines.<sup>3</sup> A 1C species is one whose extinction is almost certain in the immediate future because of rapid population decline or habitat destruction and because of conflicts with construction, development, or economic activity. Far from being routine, the SRKWs are one of only nine listed species with this status.<sup>4</sup> With such a small population, the Potential Biological Removal for SRKWs – the maximum that can be removed from a population due to human-caused impacts - is 0.13 whales per year or approximately one animal every seven years. The urgency of the need for action to protect the SRKWs and their critical habitat is echoed by the National Marine Fisheries Service (NMFS) inclusion of the orcas in the "Species in the Spotlight" initiative, which is a concerted agency-wide effort to save the most highly at-risk species. This initiative recognizes the need for intensive efforts to stabilize their population and prevent extinction.<sup>5</sup>

In short, a bright neon sign has been established, pointing insistently to the road that must be traveled to save the orcas from the extinction that is now so dangerously close on the horizon. We have started our comment letter with this information as a respectful yet stark reminder of all that is on the line and to underscore how close we are to losing these whales forever. With this, there is no room for error when considering impacts on the whales and their critical habitat.

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<sup>2</sup> Wasser SK, Lundin JI, Ayres K, Seely E, Giles D, Balcomb K, et al. (2017) Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales (*Orcinus orca*).

<sup>3</sup> 84 Fed. Reg. 18243, April 30, 2019

<sup>4</sup> Endangered Species Conservation: Species in the Spotlight. <https://www.fisheries.noaa.gov/topic/endangered-species-conservation/species-in-the-spotlight>

<sup>5</sup> Species in the Spotlight: Priority Actions 2021-2025, Southern Resident Killer Whale

## SRKW USE OF THE PROPOSED PROJECT SITE AND AREA

The 10-acre project site is located in Colvos passage along the west side of Vashon Island. It is approximately two miles south of the entrance into the passage and immediately adjacent to Fern Cove, an estuarine, freshwater, and terrestrial conservancy preserve that includes two salmon-bearing streams and 730 linear feet of Puget Sound shoreline encompassing an estuary complex and unique marine fan delta.

The area is federally designated Critical Habitat (CH) for the SRKWs and is part of the Puget Sound CH. It is located in Marine Area 11, designated by the Washington State Department of Fish and Wildlife, and is known to have chum, coho and chinook runs in the fall and winter.

For at least fifty years, Colvos Passage and the project site have been known and documented as a targeted use area by the SRKWs. Palo (1972) outlined that the whales visited southern Puget Sound most often during the fall and winter and that the whales' preferred route was Colvos Passage along the west side of Vashon Island and that these sites were productive areas for salmon and herring in the 1960s.<sup>6</sup> Scheffer and Slipp (1948) provided the earliest information on the areas occupied by the SRKWs in Washington. Their reporting suggests that many currently preferred use areas were also inhabited in the 1940s.<sup>7</sup>

The deeply troubling capture industry also highlighted and documented the orcas' historical use of the Colvos Passage area. In a 1982 book, Ted Griffin, who led the dark turn to remove and commercialize the whales, boasts of targeting 50 or more orcas midway along Colvos passage in 1964. Griffin's use of Colvos was later documented in a 2018 book by Jason Colby.<sup>8</sup>

*With reports of orcas headed north through Puget Sound, he leapt into a chartered G-2 Bell helicopter and headed off in pursuit. Midway down Colvos Passage, on the west side of Vashon Island, he spotted the pod. The plan was to harpoon a large male and track it using two attached buoys ...* The book reports that the capture was abandoned after a buoy became stuck on the helicopter after the whale was harpooned. The whales then traveled to the south end of Colvos Passage, near Gig Harbor, another targeted use area.

In 1976, shortly after the capture era ended, the newly founded Center for Whale Research initiated annual population surveys and photo identification for each whale. In 1979, the Whale Museum in Friday Harbor began work to compile sighting reports from the public and research teams. Later, as the digital era came to life, Orca Network joined in this sighting work in partnership with other nonprofit entities and thousands of members of the public who reported to the organization as a centralized reporting pathway. These compiled sightings have been provided to federal agencies each year, with Orca Network also posting their archived historical reports on the Orca Network website.<sup>9</sup>

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<sup>6</sup> Palo, G. J. 1972. Notes on the natural history of the killer whale *Orcinus orca* in Washington State. *Murrelet* 53:22-24.

<sup>7</sup> Wiles, G. J. 2004. Washington State status report for the killer whale. Washington Department Fish and Wildlife, Olympia. 106 pp.

<sup>8</sup> Colby, Jason 2018. *Orca: How We Came to Know and Love the Ocean's Greatest Predator*

<sup>9</sup> <http://orcanetwork.org> subpage at <https://indigo-ukulele-jm29.squarespace.com/sightings-report-archive>



Although areas without easy public viewing are under-reported, the sightings database comprises more reports dating back to 1948. Because the actual latitude and longitude are not typically available, the Whale Museum processes report locations to reflect the center point of mapping quadrants to allow comparison of area points over time. However, if an actual lat/long location is given, this is added in place of the quadrant centroid. In addition, multiple sources of the same sighting location are aggregated into one. Although the Whale Museum database does not include witnessed behavior, the Orca Network database sometimes does.

Additional sighting information can be found via a new phone application called Whale Alert, which was recently launched for use in the Puget Sound and Salish Sea Region. This tool provides a resource for the public to report sightings but, most significantly, provides mapping showing real-time and the previous 30 days of orca and other cetacean reports.<sup>10</sup>

The combined detail found in these data sources provides a wealth of information on when and how the whales use the Salish Sea and inland areas of Puget Sound, as well as observed behaviors. There is also a substantive body of knowledge held by the many organizations and individual whale monitors participating in tracking and observation. While this knowledge may not be fully narrated in sighting reports, this collective information has helped to understand how specific areas and parts of a waterway are commonly used.

Review of these collective records, as well as an understanding of reporting locations included in public reports, i.e., a report with geographic location, substantiates the SRKWs regular and targeted use of the project site and adjacent area during the late fall and early winter months when the whales come in search of food from the central and south Puget Sound salmon runs.

To help illustrate this, we have utilized the Whale Museum reports to create a basic ArcGIS map, which can be found at [www.soundaction.org/whalemap](http://www.soundaction.org/whalemap), showing the quadrant centroid points for sighting reports. As discussed above, these points represent sightings within a larger quadrant area, so the actual location of the whale may have been a distance away from the centroid marker.

Given that there is an abundance of information widely available on the SRKW use of the project area and designated Critical Habitat areas, it was troubling to see that a Biological Evaluation (BE) from the project consultant and applicant that was provided to the Corps presents the site was part of the Summer Core Area of designated Critical habitat. This report also conveyed a belief that SRKWs may be present in the summer and that resident orcas are not common in this area. Both are incorrect information presentations.

When considering the application for a second nearby kelp farm proposal (NWS-2020-1058-AQ), which utilizes the same project consultant as the applicant here, the Corps accepted this same incorrect assertion on SRKW use, and we urge the Corps to take great care to ensure fact-based information is used to support decision-making.

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<sup>10</sup> <https://apps.apple.com/us/app/whale-alert/id911035973>

## LISTED HUMPBACK DPS USE OF PROJECT SITE AND AREA

Three humpback populations occur in the North Pacific and Puget Sound areas. The Mexico population breeds along the Pacific coast of Mexico and the Revillagigedo Islands and feeds from California to Alaska. The Central America population breeds along the Pacific coast of Central America and feeds off the West Coast of the United States and southern British Columbia. The Hawaii population breeds in the main Hawaiian Islands and feeds in most of the known feeding grounds in the North Pacific. Under the ESA, NOAA has listed the Central America DPS as Endangered and the Mexico DPS as threatened. Feeding activity in the North Pacific occurs from May to December, and prey mainly includes small schooling fishes and krill caught at the surface or while submerged.<sup>11</sup>

In addition to being listed at the federal level, humpbacks are also listed as a state-endangered species in Washington. In their 2021 status report, the Washington Department of Fish and Wildlife (WDFW) estimates nearly 37% of the whales in Washington waters are from an ESA-listed DPS.<sup>12</sup> Given that this percentage is based on 2017 modeling that utilized 2004-2006 data, it is likely this percentage has grown with the increased humpback presence in Washington State.<sup>13</sup> Sighting reports of whales inside the Salish Sea waters have increased starting in the late 2000s and most dramatically in 2014, with many of these sightings extending far into Puget Sound.<sup>14</sup> More recent NMFS data models a DPS distribution for humpbacks off the coast of Washington and British Columbia of 30.3% Hawaii DPS and 69.7% Mexico DPS. Notably, while the Hawaii DPS is not currently listed under the ESA, concerning observations since 2013 include a decreasing trend in sightings and calving rates.<sup>15 16</sup>

As with orcas, there are compiled reports on sightings in Puget Sound and the greater Salish Sea. Similar to SRKW tracking, information documenting humpback use can easily be found on the Orca Network website and the Whale Alert App. Humpback sighting information documented before 2020 was also included in a publicly available thesis exploring the distribution of humpback whales. In addition to showing mapped sightings at the project area, this document correlates sightings to areas of primary productivity and food sources.<sup>17</sup>

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<sup>11</sup>WDFW <https://wdfw.wa.gov/species-habitats/species/megaptera-novaeangliae#desc-range>

<sup>12</sup> Sato, C. and G. J. Wiles. 2021. Periodic status review for the humpback whale in Washington. Washington Department of Fish and Wildlife, Olympia, Washington. 29 + iii pp.

<sup>13</sup> Wade, P. R. 2017. Estimates of abundance and migratory destination for North Pacific humpback whales in both summer feeding areas and winter mating and calving areas revision of estimates in SC/66b/IA21. IWC Scientific Committee Report SC/A17/NP/11, International Whaling Commission, Impington, Cambridge, United Kingdom.

<sup>14</sup>[https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/46497/Miller\\_washington\\_02500\\_22133.pdf?sequence=1&isAllowed=y](https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/46497/Miller_washington_02500_22133.pdf?sequence=1&isAllowed=y)

<sup>15</sup> Cites: Lizewski, K., D. Steel, K. Lohman, G. R. Albertson, Ú. González Peral, J. Urbán R., J. Calambokidis, and C. Scott Baker. 2021. Mixed-stock apportionment of humpback whales from feeding grounds to breeding grounds in the North Pacific based on mtDNA. International Whaling Commission. SC/68c/IA/01. 12 pp.

<sup>16</sup> Schakner, Z. A., Chan, A., Kurtz, Graham, K. Young, N., Teerlink, N. 2022. Interim Report on Post-Delisting Monitoring of Nine Distinct Population Segments of Humpback Whales (*Megaptera novaeangliae*). NOAA Tech. Memo. NMFS- F/SPO-230. 22 p.

<sup>17</sup> Miller, Hanna. 2020 Relating the Distribution of Humpback Whales to Environmental Variables and Risk Exposure.

Just as with the detail provided on SRKWs, the consultant and applicant submitted incorrect information regarding humpback use of the site, with the BE stating an understanding that humpbacks were only infrequently off the coast of Vashon, used deeper water shipping lanes and that the majority are thought to originate from the unlisted Hawaii DPS.

However, humpback whales commonly use the waterways in the project area, including shallower areas along Vashon Island. We know that listed DPS species are documented in Puget Sound and that the vast majority of whales here have not been crossmatched to confirm Hawaii DPS. Based on this, humpback sightings and use of an area must assume a listed DPS individual absent confirmed documentation to show otherwise.

## PROJECT IMPACT – ENTANGLEMENT

Like other longline aquaculture or similar facilities, the project would install a large infrastructure of ropes to tether anchors or buoys and interconnect arrays to suspend kelp downward into the water column. The array here calls for 64 vertical anchor rope lines, which, based on applicant-provided information, would be approximately 100 feet long. In addition, 32 rope lines approximately 1000 feet long would be placed horizontally and just below the water line. The project would introduce nearly three collective miles of longline and anchor rope into an SRKW critical habitat area regularly targeted for forage and transit by orcas and humpbacks.

NMFS has identified entanglement as the leading cause of mortality and injury to large whales in the United States and estimates that for every entangled whale reported, approximately ten more go unreported. Because most entanglements are never observed, the full extent of this issue is hard to assess, but research suggests that over 300,000 whales and dolphins die annually worldwide due to this impact.<sup>18</sup> This can have a devastating, long-term impact on critically threatened populations where the death of even one individual may jeopardize the species' continued existence and on highly social species, such as orcas, where key individuals are essential to the health and survival of the group. Entanglements are often complicated and involve multiple body parts, including the mouth, flippers, and tail. Large whales with entanglements they are unable to shed can take an average of six months to die.

Entanglements can impair feeding, causing slow starvation; can cut through skin, blubber, muscle, and bone to cause amputations, severe infections, or bone lesions; can increase stress and energetic demands; can hog-tie whales so that they cannot swim normally and develop traumatic scoliosis; and can anchor whales in place, and those that cannot break free will drown. Whales with chronic entanglements or dragging large amounts of gear may experience sub-lethal impacts that can affect their survival and ability to reproduce, which may limit the recovery of at-risk populations.

In recent years, there has been a drastic increase in reported West Coast whale entanglements. From 2015 to 2021, nearly 250 whales were entangled along the West Coast, with six in Puget Sound. Humpback whales were the most common species entangled. However, as outlined above, the actual rate and species list of entanglements are likely far higher because most reports come from opportunistic sightings of entangled whales.

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<sup>18</sup> [https://www.fisheries.noaa.gov/west-coast/marine-mammal-protection/west-coast-large-whale-entanglement-response-program#:~:text=PDF%2C%2048%20pages\)-,Disentanglement,die%20from%20entanglements%20each%20year.](https://www.fisheries.noaa.gov/west-coast/marine-mammal-protection/west-coast-large-whale-entanglement-response-program#:~:text=PDF%2C%2048%20pages)-,Disentanglement,die%20from%20entanglements%20each%20year.)

Recent scar studies provide insight into the size of the problem. An evaluation on entanglement in the Gulf of Maine found that 70% of humpbacks using the area had been entangled at least once. However, less than 10% were observed or reported. Although the information is now outdated based on increased area use, a 2007 evaluation found that 33% of humpback whales in Washington and Southern British Columbia had been entangled at least once. This study also reports that even with a high volume of humpbacks showing entanglement wound scars, there were less than six reports each of those years.<sup>19</sup> Additional studies on scarring of Pacific humpback whales indicate that only 5-10% of entanglements are reported, underscoring how infrequently entanglement events are witnessed and reported.<sup>20</sup> There is also documentation of orcas being entangled regionally and worldwide in rope similar to what would be used in the project. In June 2022, a fatally entangled orca was found in Oregon. Although the body was not recovered, the Center for Whale Research reported it was a juvenile male with markings consistent with a southern resident that matched the size of K44.<sup>21 22</sup> This recent case highlights that the risk to the SRKW is not speculative and underscores the gap in entanglement documentation. Had this whale not been spotted by a fishing boat, we would have no idea that the entanglement occurred or that it was a cause of death for a whale believed to be an SRKW. This case raises an important question about the potential that other SRKWs that have disappeared may have met a similar entanglement fate.

In addition to this recent case, NMFS has documented at least five other orca entanglements, with two occurring in Washington in 2021.<sup>23 24</sup> Orca entanglements have also occurred recently in British Columbia. In 2015 an orca was entangled and trailing rope and buoy gear near Nanaimo.<sup>25</sup> In 2018 an orca was found with a rope entanglement near Salt Spring Island.<sup>26</sup> In 2020 another whale was entangled near Nanaimo.<sup>27</sup> Gratefully, in each of these cases, the whales survived. Others have not been so lucky. An orca entangled in Dungeness crab gear was found dead in California in 2015.<sup>28</sup> In 2016, a resident of a small pod off Scotland died due to rope entanglement.<sup>29</sup> Another whale in Scotland met a similar fatal rope entanglement fate in 2021.<sup>30</sup>

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<sup>19</sup> [https://www.opc.ca.gov/webmaster/\\_media\\_library/2020/10/SANDILANDS-Scientific-Data-Collected-During-Entanglement-Response.pdf](https://www.opc.ca.gov/webmaster/_media_library/2020/10/SANDILANDS-Scientific-Data-Collected-During-Entanglement-Response.pdf)

<sup>20</sup> Calambokidis, J. et al. "Insights into entanglements from whale population monitoring." Presentation to West Coast Entanglement Science Workshop, August 25, 2020. [https://www.opc.ca.gov/webmaster/\\_media\\_library/2020/10/M.1-S.2\\_Calambokidis\\_Marine-Life.pdf](https://www.opc.ca.gov/webmaster/_media_library/2020/10/M.1-S.2_Calambokidis_Marine-Life.pdf); Pace, R.M. and Williams, R. et al. 2021. Cryptic mortality of North Atlantic right whales. *Conservation Science and Practice*. 2021;3: e346. <https://doi.org/10.1111/csp2.346>

<sup>21</sup> <https://www.seattletimes.com/seattle-news/southern-resident-orca-pod-falls-to-lowest-number-in-46-years/>

<sup>22</sup> <https://www.whaleresearch.com/orca-population>

<sup>23</sup> Saez, L., D. Lawson, and M. DeAngelis. 2021. Large whale entanglements off the U.S. West Coast, from 1982-2017. NOAA Tech. Memo. NMFS-OPR-63A, 50 p.

<sup>24</sup> NOAA Fisheries 2021 West Coast Whale Entanglement Summary

<sup>25</sup> <https://www.cbc.ca/news/canada/british-columbia/killer-whale-entangled-rope-1.3302830>

<sup>26</sup> <https://www.cbc.ca/news/canada/british-columbia/orca-rescue-1.4688481>

<sup>27</sup> <https://www.cbc.ca/news/canada/british-columbia/orca-rescue-1.4688481>

<sup>28</sup> Saez, L., D. Lawson, and M. DeAngelis. 2021. Large whale entanglements off the U.S. West Coast, from 1982-2017. NOAA Tech. Memo. NMFS-OPR-63A, 50 p. Appendix 2.

<sup>29</sup> <https://www.nms.ac.uk/explore-our-collections/stories/natural-sciences/lulu-the-killer-whale/>

<sup>30</sup> <https://mrcvs.co.uk/en/news/14058/Killer-whale-dies-as-a-result-of-entanglement>

In New Zealand, where there is only a small population of 150-200 killer whales, orcas comprised 21% of reported entanglements between 1984 and 2015, with at least eight whales found entangled in rope lines.<sup>31</sup>

That the documented entanglements of humpback and orca are often related to crab pot lines or rope and/or buoy lines where the origin could not be confirmed does not negate or even minimize the project risk to the SRKWs and humpbacks. Adding more fixed line increases the risk of entanglement to these vulnerable species.

As a starting point, the absence of evidence of direct aquaculture array entanglement does not mean or confirm evidence of absence. It is documented that adding line in an area where there is none creates risk. When considering direct aquaculture installations, there might be a gap in observation or research especially given that just a small fraction of entanglements are discovered -- or that up to 45% of entanglement rope sources are unknown.<sup>32</sup> Similarly, when considering regional west coast entanglements, there are no other known locations of longline aquaculture in SRKW habitat at water depths suitable for SRKW or humpback uses or in areas that are documented use sites by the SRKW. For example, the experimental Blue Dot farm in Hood Canal is not in a designated SRKW Critical Habitat area, and the orcas do not travel to Hood Canal. Other aquaculture installations that may be in place for shellfish are located in higher nearshore areas at water levels that are generally not accessible to cetaceans.

However, there have been documented reports of aquaculture-related entanglement when looking at other areas. For example, two reports of Bryde's whale entanglements in New Zealand shellfish farms proved fatal. There is also documentation of a humpback calf in Western Australia, which was cut free from an aquaculture line after catching it in its mouth and then rolling. Two fatal marine mammal aquaculture entanglements have been reported in Iceland: a harbor porpoise and a humpback calf. In February 2015, a young North Pacific right whale was entangled in mussel aquaculture gear off Korea. The whale escaped after volunteer responders assisted in cutting anchor lines wrapped around the caudal peduncle. In 2016, three humpback whale entanglements occurred on the anchor lines at salmon farm sites in British Columbia, Canada, two of which resulted in mortality.<sup>33</sup>

Notably, there is nothing special about longline arrays for kelp aquaculture that inherently make them less of a threat to whales. The installation is similar to the lines discussed above and to the fixed longline fishing ropes and pot lines, which are common causes of entanglement. A 2017 NOAA Technical Memorandum evaluating protected species and marine aquaculture interactions outlined that components of this type of gear are similar or analogous to aquaculture lines and that it would be appropriate to draw similarities between gear types as proxies when determining relative risks to marine mammals to inform regulatory and management decisions concerning aquaculture.

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<sup>31</sup> Entanglement of cetaceans in pot/trap lines and set nets and a review of potential mitigation methods BPM17DOC 23/07/2017New Zealand entanglement mitigation reviewv1.1

<sup>32</sup> Saez, L., D. Lawson, and M. DeAngelis. 2021. Large whale entanglements off the U.S. West Coast, from 1982-2017. NOAA Tech. Memo. NMFS-OPR-63A, 50 p

<sup>33</sup> Price, C.S., E. Keane, D. Morin, C. Vaccaro, D. Bean, and J.A. Morris, Jr. 2017. Protected Species & Marine Aquaculture Interactions. NOAA Technical Memorandum NOS NCCOS 211. 85 pp

We are aware that the applicant has suggested taut lines to address the entanglement issue. And while taut lines may be a best practice for rope installation in marine areas, this is only a minimization effort. This practice does not avoid entanglement risk or address a new introduction of risk where none currently exists. Further, even if a taut line were somehow a magic bullet to prevent entanglement, there is no pathway for a longline or anchor line used in this project to remain tight. Longline arrays are designed to be taut at *high water and* significantly loosen at lower water levels. This means there is slack in the lines at anything less than high tide.

Similarly, the breaking strength of line used in the array is likely no match for a whale. An adult humpback can reach a weight of 80,000 pounds, and an adult orca can reach 12,000 pounds. This means contact with the rope line through breaching, lunging, rolling or pulling could easily break the line and create a loose end. Additionally, even when "tight," the lines are essentially free floating and held up in the water column with buoys. A cetacean will instantly create slack, even in a tight line, by lightly pressing down or pulling on the rope. Finally, entanglement does not require a rope line to be unanchored or free-floating, and entrapment in a rope line that remains fixed presents a higher chance of immediate drowning as the animal cannot surface

In multiple project information documents, the project consultant suggests that orcas will use echolocation to avoid lines and potential entanglement. This statement is a false assertion that has no basis for support. As the multiple reports above outlined, orcas can and do become entangled. It is uncertain if entanglement occurs because animals fail to detect gear or if they do not regard the rope lines as a threat. The behavior of killer whales and humpbacks also likely plays a role in their entanglement. Killer whales and humpbacks are known to rub themselves against buoy lines, which would significantly increase their risk of entanglement. Both species are also known for an attraction to kelp and a common behavior called "kelping." For orcas, this means regularly playing with seaweed by draping it on any body part and often trying to position the kelp in the notches of flukes.<sup>34</sup> This attraction to kelp beds and kelping behavior is also a well-known and documented behavior in humpbacks.<sup>35</sup>

In a recent article discussing humpbacks, whale researcher Alisa- Shulman Janiger noted that "When they're not feeding, and resting or feeling inquisitive, fairly often they'll put their heads, flippers and flukes into the kelp," conveying her belief this behavior might help to explain why humpback whales often become entangled in ropes used by commercial trap fishermen. "They tend to be very curious about floats and lines, just as they are about kelp."<sup>36</sup>

A 2019 study on kelp aquaculture in the US documents that entanglement in non-mobile fishing gear has historically been one of the primary causes of individual mortalities. This study also reports that although no case of entanglement in kelp longlines has yet to be reported, the concern for marine mammal entanglement will be amplified as a growing number of kelp farms are deployed. It also reports that minimizing opportunities for marine mammal entanglement is the most pressing issue not currently addressed by the regulatory process or Best Management Practices and acknowledges the need to prevent entanglement by ensuring that arms are sited outside of critical habitats for whales.

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<sup>34</sup> <https://www.whaleresearch.com/orca-behaviors>

<sup>35</sup> <https://sanctuaries.noaa.gov/news/sep22/mysteries-of-humpback-whale-song.html>

<sup>36</sup> <https://www.mensjournal.com/adventure/humpback-whale-twirls-kelp-like-fork-spaghetti-video/>

## HABITAT EXCLUSION

The proposed longline array infrastructure creates a catch-22 of impacts. Continued use of the area by the whales creates a significant and well-documented entanglement risk. In contrast, forced avoidance or exclusion of the area due to the longline array displaces the whales from an important feeding and transit area.

In 2016, NMFS and the USFWS revised the ESA implementing regulations to remove the term Primary Constituent Elements (PCE) and replaced it with the statutory term "physical or biological features." These are also referred to as "essential features" of a species habitat that are critical for survival and recovery. The essential features include prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth and passage conditions to allow for migration, resting, and foraging.

Due to entanglement risk, habitat area exclusion and the adverse modification of critical habitat, the proposed project unquestionably interrupts these essential features. While the modification of critical habitat and loss of access to a prey resource is a significant impact on any listed species, it is particularly damaging for the critically imperiled SRKWs. These whales are literally starving to death, making the removal of a targeted use and forage area deeply troubling.

We are aware of at least three additional kelp farming proposals in SRKW use areas, including a second proposal in Colvos, and more on the horizon with the emergence of the industry in Puget Sound. The Corps must consider this exclusion and habitat modification impact from kelp farming at the individual site scale and cumulative level.

## ESA CONSULTATION – FORMAL CONSULTATION REQUIRED

The Endangered Species Act (ESA) underscores the importance of strict regulatory agency vigilance in ensuring the protection of listed species and supporting critical habitat.

Sec. 7(a)(2) of the Act requires every federal agency to consult with the Services to determine whether the proposed action is likely to jeopardize the survival of a protected species or result in the destruction or adverse modification of its critical habitat collectively, referred to as protected resources and if so, to identify alternatives that will avoid the action's negative impacts. See 16 U.S.C. § 1536(b)(3)(A).

An informal consultation process with the Services is limited to projects with a "Not Likely to Adversely Affect" (NLAA) determination concurrence from NOAA Fisheries after the action agency requests consultation and submits its NLAA determination with supporting analyses and documentation. "Not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur.

Alternatively, a review may find a "May affect, likely to adversely affect" (LAA) determination. This finding means that listed species and habitat/function are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

With an LAA determination, Formal ESA consultation is required. It concludes when NOAA Fisheries issues a Biological Opinion (BIOP) that states whether the action is likely to jeopardize the continued existence of the listed species and/or destroy or adversely modify critical habitat.

The proposed project being considered under NWS-2022-584-AQ would introduce nearly three collective miles of longline and anchor rope into an SRKW critical habitat area that is regularly targeted for forage and transit use by the whales during the fall and winter months – a time when the whales routinely visit Vashon Island and the specific project site in search of food. This creates the risk of entanglement and establishes a displacement where the SRKWs will be excluded from an important forage, migratory and transit use area.

This displacement creates an impact the courts have already found to be an adverse affect and a trigger for formal consultation. In *Preserve Our Islands et al. v. U.S. Army Corps of Engineers et al.*, 2009, which remains one of the few legal cases involving the SRKW and federal agency action, Judge Martinez found displacement from important feeding areas was an adverse effect and directed the services to initiate formal consultation under the ESA.

After exhaustively evaluating the proposal, project site and the science, it is clear that the impacts from this project are not insignificant or discountable and are likely to adversely affect SRKWs and listed humpback DPS and result in adverse modification of SRKW critical habitat. In turn, formal consultation is mandated by law, and we urge the Corps to initiate this ESA pathway accordingly.

Thank you again for your work on this important issue, and don't hesitate to contact us with any questions. We would also ask that each entity here be added as a party of record to this permit and any future kelp aquaculture proposals that come before the Corps.

Sincerely,

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