



Oregon

Tina Kotek, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Tina Kotek

Governor

State Land Board

December 12, 2023

10:00 am – 12:30 pm

Meeting Agenda

LaVonne Griffin-Valade

Secretary of State

Public Wi-Fi login: LandsDSL

Tobias Read

State Treasurer

*This is a hybrid meeting that can be attended in-person at **775 Summer St. NE, Suite 100, Salem, OR 97301-1279** or online through the Department of State Lands' livestream video:
www.youtube.com/@oregonstatelands*

CONSENT ITEMS

1. Request for approval of the minutes of the October 10, 2023, State Land Board Meeting

ACTION ITEMS

2. Request to proceed with due diligence for a potential land trade at the entrance to the South Slough Reserve Visitor Center.
Public testimony will be accepted on this item.
3. Request to proceed with due diligence to support the sale of the land and mineral rights out of the Common School Fund and into the South Slough Reserve' management.
Public testimony will be accepted on this item.
4. Request to reappoint and appoint members to the Oregon Ocean Science Trust
Public testimony will be accepted on this item.

Continued on the next page

INFORMATIONAL ITEMS

5. Aquatic Resources Management Annual Report
No public testimony will be taken on this item.
6. Elliott State Research Forest
No public testimony will be taken on this item.
7. Other
No public testimony will be taken on this item.

WATCH THE MEETING ONLINE

Meeting video and audio will be livestreamed, and the recording available after the meeting, on the DSL YouTube Channel: www.youtube.com/@oregonstatelands

ATTEND IN-PERSON

This meeting will be held in a facility that is accessible for persons with disabilities. If you need assistance to participate in this meeting due to a disability, please notify Arin Smith at arin.n.smith@dsl.oregon.gov at least two working days prior to the meeting.

Visitors are **NOT permitted to bring backpacks, bags, or large purses** into the State Lands building prior to, during, or following Land Board meetings. Purses, medical bags, and diaper bags are permitted, but may be subject to inspection by the Oregon State Police.

PROVIDE PUBLIC TESTIMONY

The State Land Board places great value on information received from the public. The public may provide written or spoken (online or in-person) testimony regarding consent and action agenda items, time permitting and at the discretion of the Chair.

- **Providing Written Testimony:** Testimony received by 10 a.m. on the Monday before the meeting will be provided to the Land Board in advance and posted on the meeting website. Submit your input in writing to: landboard.testimony@dsl.oregon.gov. Testimony received after this deadline may not be provided to the Land Board prior to a vote. Please indicate the agenda item your testimony relates to.

- **Providing Spoken Testimony by Video/Phone or In Person:** Advanced sign-up is required for the public to provide spoken testimony (in-person or by Zoom). The sign-up deadline is 10 a.m. the day before the meeting.
Please note: When the number of people interested in speaking exceeds the time allotted for an agenda item, speakers are randomly selected for testimony slots to ensure all have an equal opportunity to testify. Speakers have the same chance of being randomly selected whether they plan to testify in person or by Zoom. The testimony order will be posted to the State Land Board Meetings webpage the day before the meeting, and everyone who signed up to testify will be notified of the testimony order via email. Be aware there may not be time for everyone who signs up to speak.

Additional Testimony Information

- Testimony on action items is taken during the item's presentation, before the Land Board votes. Please review the meeting agenda and be present and prepared to provide testimony at the appropriate time.
- The Board typically accepts testimony on consent and action items only.
- The standard time limit is three minutes for each individual; the actual time available for testimony during Land Board meetings is at the discretion of the Chair.
- The Board may not be able to accept testimony on items for which a formal comment period has closed, such as a rulemaking comment period. The meeting agenda indicates whether testimony will be accepted on an item.



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State Land Board

Tina Kotek

Governor

The State Land Board (Land Board or Board) met in regular session on October 10, 2023, in the Land Board Room at the Department of State Lands (DSL), 775 Summer Street NE, Salem, Oregon. The meeting audio and video was livestreamed on the DSL YouTube channel.

LaVonne Griffin-Valade

Secretary of State

Present were:

Tina Kotek

Tobias Read

LaVonne Griffin-Valade

Governor

State Treasurer

Secretary of State – via Zoom

Tobias Read

State Treasurer

Land Board Assistants

Geoff Huntington

Jessica Ventura

Jessica Howell

Governor's Office

Secretary of State's Office

State Treasurer's Office

Department Staff

Vicki Walker

Bill Ryan

Katrina Scotto di Carlo

Ted Bright

Arin Smith

Jean Straight

Ali Ryan Hansen

Linda Safina-Massey

Department of Justice

Matt DeVore

Prior to the start of the regular meeting, the Board presented its annual awards. Governor Kotek gave a brief history of the awards before they were presented.

- **Wetland Award:** Palensky-McCarthy Creek Restoration Project
- **Stream Award:** Wade Creek Restoration
- **Stream Award:** Wilson Haun Wallowa River Project: Restoring Natural Processes for Salmon and Steelhead
- **Partnership Award:** Trailkeepers of Oregon
- **Catalyst Award:** Peggy Lynch, League of Women Voters of Oregon

Governor Kotek called the meeting to order at 10:03 a.m. The topics discussed and the results of those discussions are listed below. To view the Land Board (Board) meeting in its entirety, please visit our YouTube page: [October 10, 2023 Land Board Meeting](#)

Consent Items

1. Minutes

Treasurer Read made a motion to approve the minutes for the August 8, 2023, Land Board meeting.

Secretary Griffin-Valade seconded the motion.

The item was approved at 10:04 a.m. without objection.

2. The Department of State Lands requests approval to permanently adopt and enact specific rules of the Attorney General's Model Rules of Procedures under the Administrative Procedures Act:

- **OAR 141-001-0005, Model Rules for Rulemaking,**
- **OAR 141-001-0007, Model Rules of Procedures for Contested Case Hearings, and**
- **OAR 141-001-0020, Model Rule for Mediation Confidentiality.**

Director Walker provided background information and explained the Department recommendation that the Land Board adopt the proposed rule language for permanent adoption of OAR 141-001-0005, Model Rules for Rulemaking, 141-001-0007, Model Rules of Procedures for Contested Case Hearings, and 141-001-0020, Model Rule for Mediation Confidentiality.

Treasurer Read made a motion to approve the consent item.

Secretary Griffin-Valade seconded the motion.

The item was approved at 10:07 a.m. without objection.

Action Items

3. The Department of State Lands requests approval to permanently adopt OAR 141-088-0250, Periodic Closure for State-Owned Property on Crump Lake in Lake County. This rule would periodically restrict public access to Crump Lake in Lake County.

Director Walker provided background information and explained the Department recommendation that the Land Board adopt OAR 141-088-0250, to establish the periodic closure for State-Owned Property located within and around Crump Lake. If adopted, the proposed rule will go into effect on November 1, 2023.

The Board thanked the Department and the Rulemaking Advisory Committee (RAC) for their work on this item.

Treasurer Read made a motion to approve the action item.

Secretary Griffin-Valade seconded the motion.

The item was approved at 10:15 a.m. without objection.

4. Request for approval to enter into a settlement agreement to exchange quitclaim deeds and perpetual access easements between the Department of State Lands and the Port of Portland at West Hayden Island in Multnomah County (DSL file 55904-LE). The land is classified as historic fill.

Director Walker provided background information and a summary of the current status of discussions with the Port of Portland. Director Walker explained the Department recommendation that the State Land Board authorize the Department entering into a settlement agreement to exchange quitclaim deeds and permanent access easements with the Port of Portland to clear title of portions of West Hayden Island and establish the state ownership boundaries.

10:23 a.m.

Governor Kotek and Treasurer Read asked Director Walker questions about the future plans for the area and requested that more information be given on that at a later meeting.

10:27

Public comment was taken.

10:42 a.m.

Governor Kotek asked about ownership of adjacent lands and how the settlement agreement may impact those lands. Assistant Attorney General Matt Devore, and Department staff joined the conversation to answer questions from Governor Kotek regarding ownership. David Ashton, council for the Port of Portland answered the Governor's questions regarding floodway maps.

Treasurer Read made a motion to approve the action item.

Secretary Griffin-Valade seconded the motion.

The item was approved at 10:53 a.m. without objection.

Informational Item

5. Common School Fund Annual Report

Director Walker invited Mike Langdon, Wil Hiles and Louise Howard with Oregon State Treasury to the table to present the Common School Fund annual report.

Treasury staff presented the annual report and provided the Board with a year-end summary for Fiscal Year 2023.

Treasurer Read and Secretary Griffin-Valade expressed appreciation for the diligence of the Treasury team.

6. Department of State Lands 2022-2027 Strategic Plan Update

11:06 a.m.

Director Walker introduced Ali Ryan-Hansen, DSL's Communications Director, who presented information on the progress towards meeting the Strategic Plan goals.

Governor Kotek asked that the Department keep the Board up to date on the asset management plan process.

7. Elliott State Forest transition process: Updates on Advancing the Elliott State Research Forest

11:20 a.m.

Director Walker provided a summary of the background, and an update on the status of the Elliott State Research Forest, including:

- **The forest's financial obligations to the Common School Fund have been satisfied.** A down payment of \$100 million was made to the Common School Fund in 2019, through the sale of legislatively approved bonds. In 2022, the Legislature provided the remaining \$121 million in general funding to satisfy the Common School Fund obligation.
- **The Land Board voted to decouple the forest from the Common School Fund.** In December 2022 the Land Board voted to decouple the Elliott from the Common School Fund, thereby freeing the forest of its obligation to generate revenue for K-12 public schools. In December 2022 the Land Board also authorized further actions necessary to transfer the forest to its new research forest path, such as defining which lands were included in the transfer.

11:31 a.m.

Director Walker introduced Tommie Elder with Anew to give a Forest Carbon presentation. Tom Tuchmann with US Forest Capital was also invited to the table to assist in answering questions.

11:56 a.m.

The Board members engaged with Director Walker in discussing details of the work left to be completed on this project.

Director Walker reported that DSL, OSU, the Authority's prospective board, and stakeholders are working collaboratively toward completion of the four remaining actions. DSL looks forward to providing another update during the December Land Board meeting and presenting the FMP for Land Board consideration as an action item.

8. Other

12:02 p.m.

- Director Walker provided an update on the Department's work related to Abandoned and derelict vessels. Governor Kotek and Treasurer Read discussed options for future legislative concepts that could assist.

The meeting was adjourned at 12:07 p.m.

Tina Kotek, Governor

Vicki L. Walker, Director



Oregon

Tina Kotek, Governor

Department of State Lands

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State Land Board

State Land Board

**Regular Meeting
December 12, 2023
Agenda Item 2**

Tina Kotek

Governor

LaVonne Griffin-Valade

Secretary of State

SUBJECT

Protecting public safety and resolving property encroachments at the South Slough National Estuarine Research Reserve in Coos County

Tobias Read

State Treasurer

ISSUE

Whether the Land Board should authorize DSL to proceed with due diligence for a potential land trade at the entrance to the South Slough Reserve Visitor Center.

AUTHORITY

ORS273.553; relating to the management policy of the South Slough National Estuarine Research Reserve

ORS273.554 and ORS Chapter 183; relating to the authority of the South Slough National Estuarine Research Reserve Management Commission to adopt rules necessary to carry out ORS 273.553

BACKGROUND

The Department of State Lands oversees the South Slough National Estuarine Research Reserve (Reserve) on the southern Oregon coast. The Reserve manages nearly 7,000 acres of natural habitat which include open water channels, tidal and freshwater wetlands, riparian areas, and forested lands. This area is managed for long-term research, education, and public recreation with a focus on the stewardship and protection of natural and cultural resources. By statute, the Governor-appointed South Slough Reserve Management Commission provides for the administration of the Reserve and has the authority to establish rules to carry out the mission of the Reserve.

On June 7, 2023, during a special meeting of the South Slough Reserve Management Commission, the Commission directed Reserve staff to explore the feasibility of a land trade at the entrance of the Reserve's visitor center. The potential land trade was the result of discussions with the Lee Family who own and operate a business on land

adjacent to the Reserve's visitor center on Seven Devils Road. The Lee Family had originally requested permission to use the Reserve's existing driveway and establish a secondary driveway across Reserve land for commercial truck access to their property.

During initial research into the ownership boundaries, it was determined that encroachments existed on both Reserve land and the Lee Family property and that a land trade would be a mutually beneficial solution to resolve these encroachments and provide the Lee Family with the access they requested.

The Department received an Application to Exchange Land (Appendix A) from the Lee Family on September 7, 2023, to subdivide and trade parcels of equal size (approximately 0.29 acres). The area the Reserve would trade to the Lee Family is part of a land parcel acquired with grant funding from the National Oceanic and Atmospheric Administration (NOAA) in 2021. This property was purchased for the purpose of creating a welcoming entrance and improving internet connectivity, safety, parking, and access for buses bringing school groups to the Reserve. This is a high priority project since Reserve operations are currently limited by unreliable internet at the visitor center. Subdividing and trading a portion of this parcel will require approval by NOAA, but it will not impact project plans for the entrance.

With funding and project support from the Friends of South Slough Reserve, designs for the new entrance are currently being developed that include moving the entrance approximately 100 feet north of its current location; therefore, trading the southern end of the parcel will not impede plans for the site. The Reserve will be pursuing grant funding in early 2024 to reconfigure the entrance. The trade is dependent on the Reserve securing project funding to complete the entrance improvements.

PUBLIC INVOLVEMENT

This land trade was discussed at public meetings of the South Slough Reserve Management Commission on June 7 and September 27, 2023. No public comments were received, and the Commission voiced unanimous support at both meetings for Reserve staff to continue work on this project. At the November 28, 2023, meeting of the Commission, the design plans for a reconfigured entrance were presented by the contractors hired by the Friends of South Slough Reserve who continue to demonstrate support for this project through contributions of funding and volunteer time.

RECOMMENDATION

The Department recommends that the Land Board authorize the Reserve, through the Department of State Lands' Real Property staff, to complete due diligence reports in support of this land exchange.

APPENDICES

Appendix A – Map of SSNERR Lands for Exchange

Oregon Department of State Lands
 Bend Field Office
 951 SW Simpson Avenue, Suite 104
 Bend, Oregon 97702
 Telephone: 541-388-6112
 Fax: 541-388-6480

AGENCY # _____



APPLICATION TO EXCHANGE LAND*

Please print clearly.

Applicant Name(s): Gerald J. Lee Phone: 541-888-9623
 Address: 61869 Seven Devils Road Fax: N/A
 City: Coos Bay State: OR E-mail: N/A
 Zip Code: 97420

I (we) hereby make application to acquire by land exchange the following described DSL land:

	County	Section	Township	Range	Tax Lot	Acres
	Coos	27	26S	14W	100	0.29 (approx.)
	Coos	26	26S	14W	600	<0.10 (approx.)
(Attach additional sheets if necessary)				Total Acres		0.39 (approx.)

I (we) hereby offer DSL the following described land:

	County	Section	Township	Range	Tax Lot	Acres
	Coos	26	26S	14W	700	0.29 (approx.)
(Attach additional sheets if necessary)				Total Acres		0.29 (approx.)

Please describe the reasoning for submitting an application exchange State-owned Land:

Requesting to trade land of same acreage with Slough Slough Reserve for the purpose of securing direct
access from Seven Devils Road and resolving property encroachments on both properties. The request
is to trade partial tax lots, which will require lot line adjustments. Exact acreage will be determined by surveys.
 I acknowledge that submission of this application: May initiate a competitive sale process; provides no right of
 priority (except as determined by the State Land Board); No transaction will be made for less than fair market value.
 The Department of State Lands (DSL) reserves the right to reject this application at any time before completion of
 the sale.

**Note: Please read the Instructions for Submitting an Application to Exchange Land before completing and submitting this application.*

Gerald J. Lee
 Applicant's Signature

9-7-23
 Date

Application to Exchange Land Instructions and Procedures

*Attached to these instructions is the application to exchange land from the
Oregon Department of State Lands*

The Department of State Lands (DSL) has an active land exchange program of and invites land exchange applications. The Land Board's 2012 Asset Management Plan and rules (OAR141-067) govern and direct DSL's land exchange efforts and priorities. **Please note: Submittal of a land exchange application does not guarantee a land exchange will be authorized.**

Instructions

To insure prompt processing of your application:

- Fill out the application legibly and completely
- Sign and date the application
- Provide an accurate description of the location of the properties
- Provide a copy of the tax assessor's maps of all properties
- Remit a check for the non-refundable application fee of \$750 for each application.

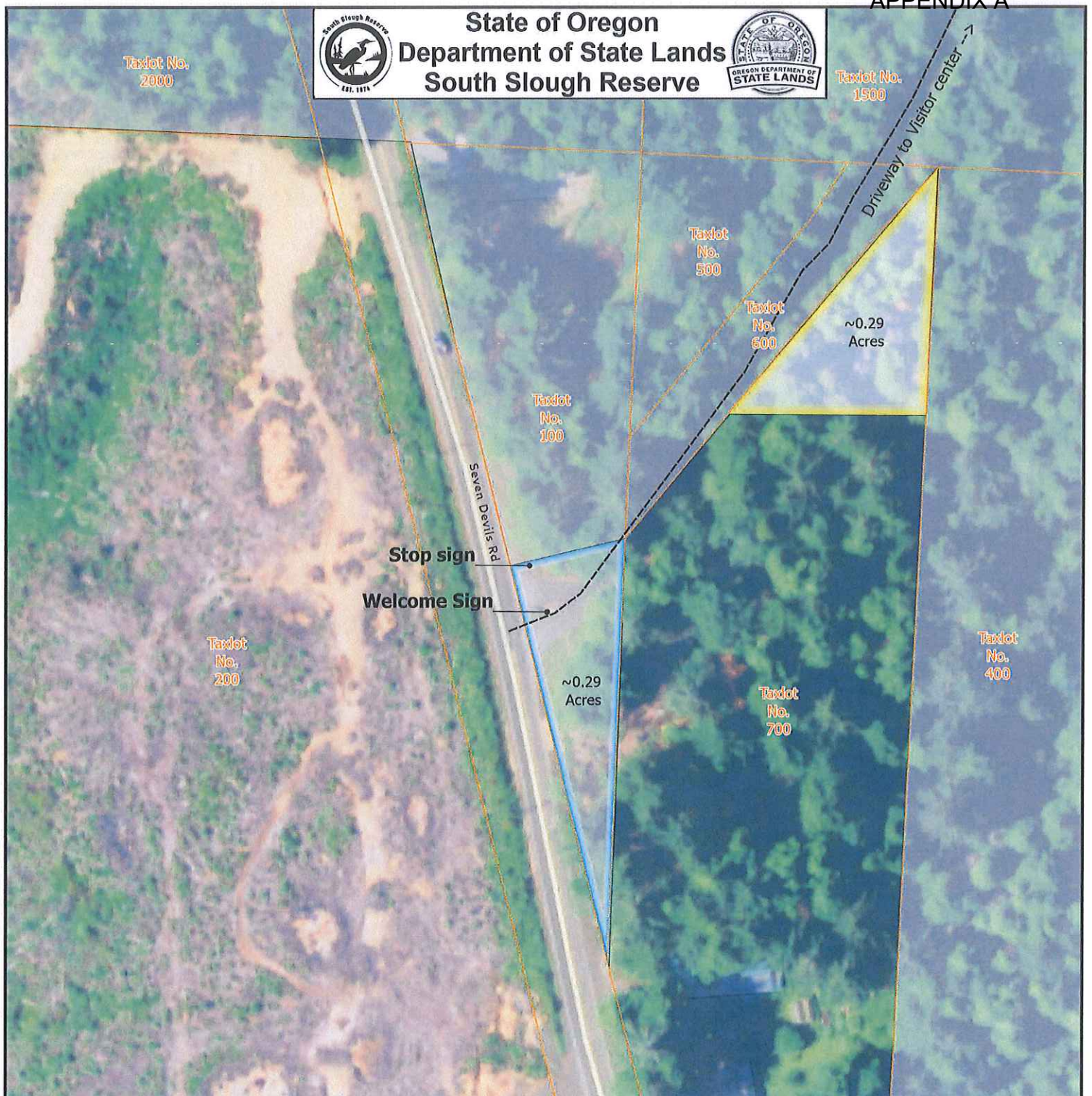
Send the completed application and check to:

**Oregon Department of State Lands
Real Property Program
951 SW Simpson Avenue, Suite 104
Bend, OR 97702**

Procedures

- All land exchange applications are given careful and thoughtful consideration by DSL and must be approved by the State Land Board.
- DSL evaluates all applications by carefully investigating the financial, natural, cultural and recreational impacts of the project. Adjacent property owners, interested parties, lessees (if applicable), federal, state and local agencies are notified during the evaluation. DSL uses the information to recommend to the Land Board whether or not to exchange and acquire the parcels under study; the Land Board must also approve the final transaction.
- If DSL decides to proceed with the exchange, a land exchange agreement will be negotiated with the applicant. The exchange agreement sets the roles and responsibilities of each party.
- DSL usually will retain mineral rights to its land and will seek to obtain the mineral rights on the exchange land.

DSL may require the applicant to provide a correct and precise description of the lands applied for in accordance with a survey.

**Exhibit A - Subject to Change**

T26S, R14W Section 26
Coos County

- | | |
|-----------------------------|----------------------|
| Reserve Trade | Reserve Manged Lands |
| Lee Trade | Tax Lots |
| • GPS approximate locations | Reserve Driveway |
| Visitor Center | |

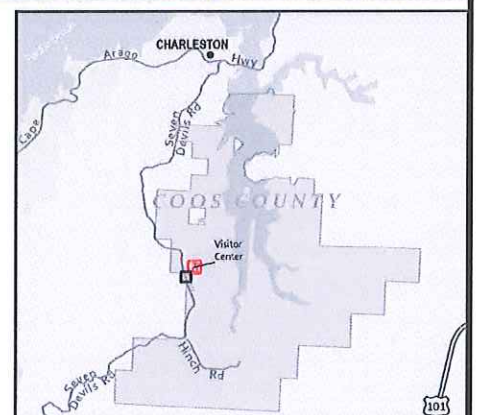
This map depicts the approximate location and extent of a Department of State Lands Proprietary authorization for use. This product is for informational purposes only and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

0 50 100
 Feet



Map Projection:
 Oregon Statewide Lambert
 Datum NAD83
 International Feet

State of Oregon
 Department of State Lands
 775 Summer St NE, Suite 100
 Salem, OR 97301
 503-986-5200
www.oregon.gov/DSL



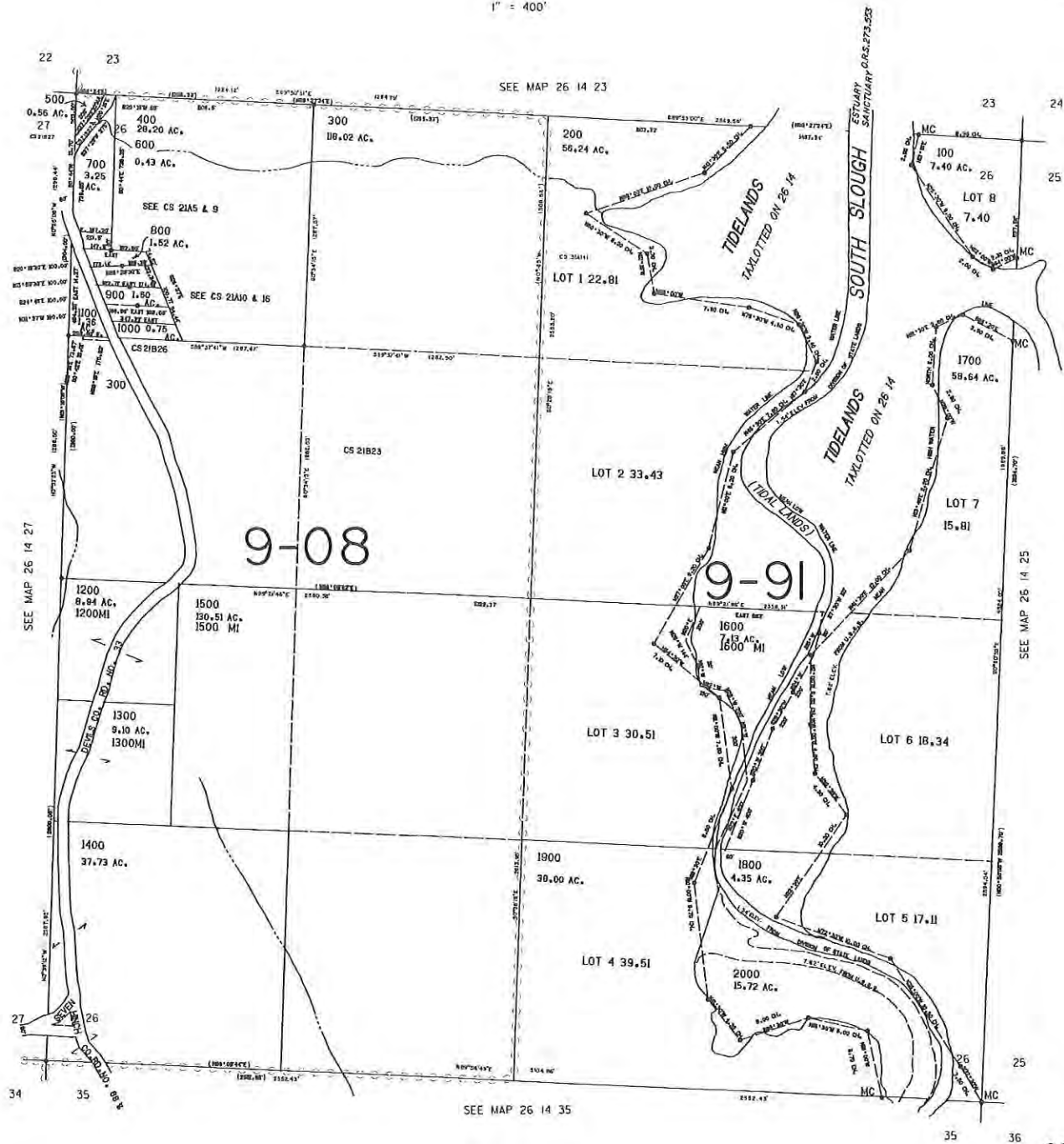
THIS MAP WAS PREPARED FOR
ASSESSMENT PURPOSE ONLY

SECTION 26 T.26S. R.14W. W.M.
COOS COUNTY

1" = 400'

26 14 26

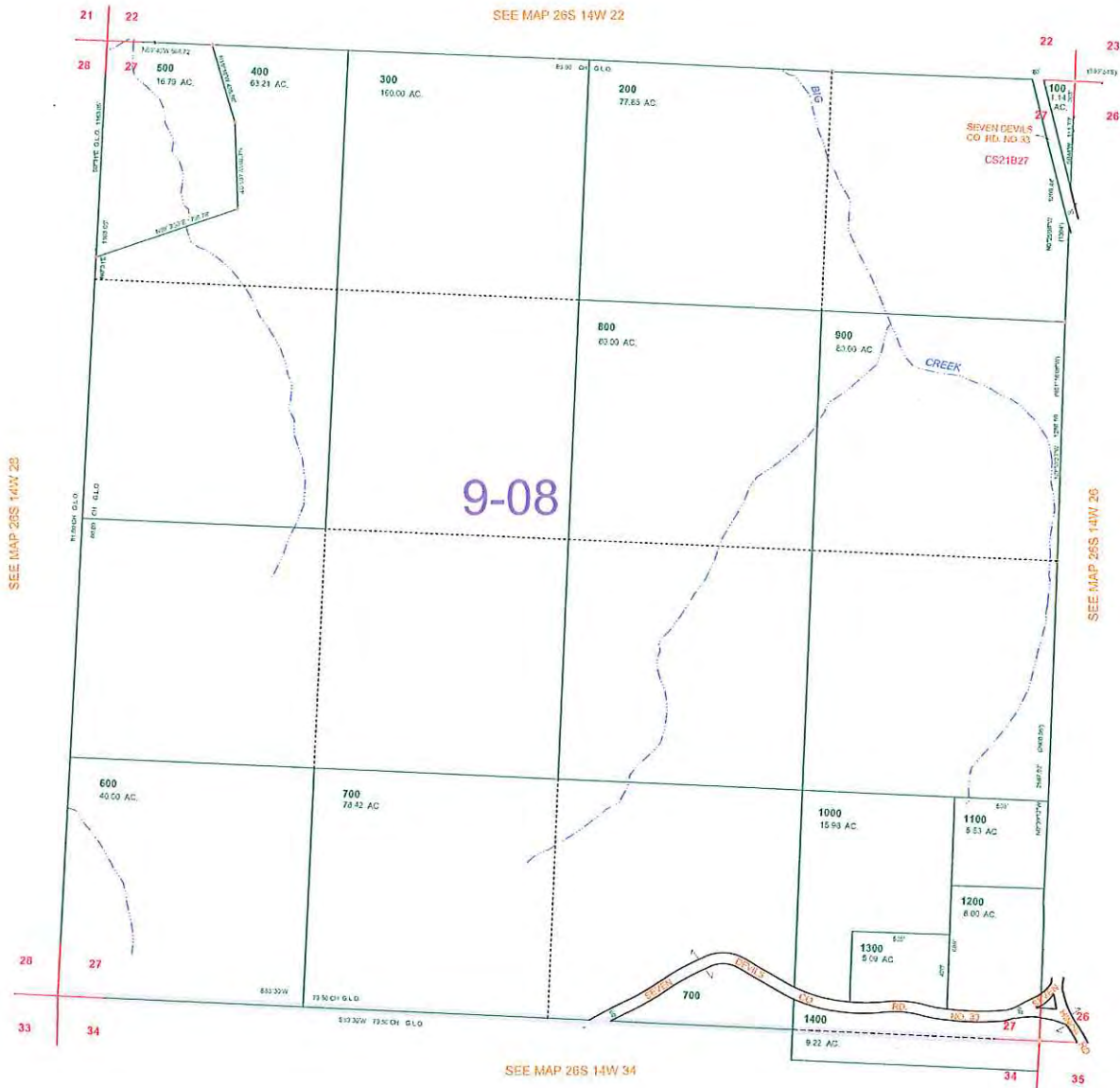
CANCELLED



$1^{\circ} = 400'$

SEE MAP 26S 14W 22

CANCELLED NO.



06-16-2021

26S 14W 27



Oregon

Tina Kotek, Governor

Department of State Lands

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State Land Board

State Land Board

**Regular Meeting
December 12, 2023
Agenda Item 3**

Tina Kotek

Governor

LaVonne Griffin-Valade

Secretary of State

Tobias Read

State Treasurer

SUBJECT

Request for approval to initiate due diligence for the sale of 80 acres of forestland in Coos County from the Common School Fund trust land property to South Slough National Estuarine Research Reserve (See Appendix A)

ISSUE

Whether the Land Board should authorize the due diligence to support the sale of the land and mineral rights out of the Common School Fund and into the South Slough Reserve' management.

AUTHORITY

Oregon Constitution, Article VIII, Sections 2 and 5; relating to the Common School Fund and land management responsibilities of the State Land Board.

ORS 273.055; relating to the power to acquire and dispose of real property.

ORS 273.171; relating to the duties and authority of the Director.

ORS 273.316 and 273.321; relating to the exchange of state lands.

ORS 273.553; relating to the South Slough National Estuarine Research Reserve agreement between Oregon and federal government rules.

BACKGROUND

The Department of State Lands oversees the South Slough National Estuarine Research Reserve (Reserve) on the southern Oregon coast. The Reserve manages nearly 7,000 acres of natural habitat which include open water channels, tidal and

freshwater wetlands, riparian areas, and forested lands. This area is managed for long-term research, education, and public recreation with a focus on the stewardship and protection of natural and cultural resources.

The proposed acquisition property is an 80-acre parcel of upland forest adjacent to the southeastern boundary of South Slough Reserve (Appendix A). As an asset of the Common School Fund, the parcel is owned by the Department and managed by Oregon Department of Forestry. The state had planned timber harvests of the parcel until observations of an endangered species using the site for habitat, the marbled murrelet, put harvest plans on hold.

The parcel is comprised of late-stage successional forest habitat and encompasses the headwaters of Tom's and Cox Creeks, both of which are tributaries of Winchester Creek, the main waterway of South Slough. Given the parcel's location and high conservation value, the Reserve submitted a grant proposal in 2017 to the National Oceanic and Atmospheric Administration (NOAA) to fund the purchase and transfer of the parcel from the Common School Fund to the Reserve. The grant proposal was ranked favorably and recommended for funding, but it was determined the Reserve lacked the required 1:1 matching funds and the grant could not be awarded.

With several million dollars recently becoming available to National Estuarine Research Reserves (NERRS) through the Bipartisan Infrastructure Law (BIL), the Reserve is in a favorable position to resume this acquisition project. In 2022, the Reserve received capacity-building funding from NOAA through the BIL and partnered with the Wild Rivers Land Trust to complete preliminary due diligence activities and develop a grant proposal for the next round of the NOAA-NERRS-BIL competitive funding program. Wild Rivers Land Trust has completed the required property title search, environmental assessment, property survey, and appraisal. The appraised value is \$745,000. The Reserve was approved to submit the full grant proposal by January 10, 2024.

The Department does not own the mineral rights on this property, but acquiring these rights would strengthen the grant proposal. The title research on this property uncovered multiple mineral rights reservations on DSL-owned land including and around this property during the past 70 years. Further due diligence is needed to confirm ownership of the mineral reservations and obtain mineral data and appraisals.

If a grant is awarded, the Department will bring this before the Land Board in mid-2024 for approval to complete the acquisition and transfer the property to the Reserve to be managed under the authority of the South Slough Reserve Management Commission. This action will also require a vote by the Land Board and the Board of Forestry to decertify the forest from active management by ODF. This action would support the Department's strategic plan goals in generating revenue for the Common School Fund, as well as supporting a thriving Oregon through habitat restoration, resiliency, and research.

PUBLIC INVOLVEMENT

South Slough Reserve Management Commission discussed this matter at two meetings of the Commission, open to the public to attend. On March 17, 2022, they authorized the Reserve staff to submit grant proposals for this project, and on December 14, 2022, they discussed the property acquisition again regarding the capacity funding for developing grant proposals. No public comments were submitted at these meetings.

RECOMMENDATION

The Department recommends the State Land Board authorize the South Slough National Estuarine Research Reserve through the Department of State Lands' Real Property staff to complete due diligence work in support of the sale of land and mineral rights.

APPENDICES

- A. Map of Property
- B. Excerpt of Appraisal Report



Part I. – Introduction

A-1. Title Page

APPRAISAL REPORT

OF

The Winchester 80.0-acre Upland Timberland Parcel

Located 0.8-mile east of 90685 Hinch Lane,

Coos Bay (South of Charleston), Oregon

Coos County Tax Lot 26-14-36-800

CLIENTS

Wild Rivers Land Trust,

c/o Max Beeken, Conservation Director

832 Oregon Street

Coos Bay (South of Charleston), Oregon 97465

and

South Slough National Estuarine Research Reserve

State of Oregon Division of State Lands

c/o Bree K. Yednock, PHD

P.O. Box 5417

Charleston, OR 97411

PREPARED BY

Jeffrey L. Marineau, MAI

Marineau and Associates

P. O. Box 1017

Coos Bay, Oregon 97420

Effective Date: June 6, 2023

Our File #: BC-1424

A-2. Letter of Transmittal

Marineau and Associates

real estate appraisers and consultants

P.O. BOX 1017 • 510 HIGHLAND AVENUE • COOS BAY, OREGON 97420-0221

TELEPHONE (541) 269-2624 • FAX NO. (541) 267-7808

E-MAIL: office@marineau.net • WEB SITE: www.marineau.net

Jeffrey L. Marineau, MAI

David S. Olson, CGA

Jason K. Boaz, CRA

Roy N. Metzger, CBA

Fred J. Marineau (1919-1996)

July 24, 2023

Wild Rivers Land Trust,
c/o Max Beeken, Conservation Director
832 Oregon Street
Coos Bay (South of Charleston), Oregon 97465

and

South Slough National Estuarine Research Reserve
State of Oregon Division of State Lands
c/o Bree K. Yednock, PHD
P.O. Box 5417
Charleston, OR 97411

RE: A Yellow Book appraisal of the proposed acquisition of the Winchester Timberland Uplands property, a forest-zoned timberland parcel located 0.8-mile east of 90685 Hinch Lane, Coos Bay (South of Charleston), Oregon, also identified as Coos County Map and Tax Lot 26-14-36-800.

Dear Max and Bree:

According to your request and authorization, we have prepared a Yellow Book narrative appraisal report using the Sales Comparison Approach, of the fee simple interest in the property located 0.8-mile east of 90685 Hinch Lane, also identified as Coos County Map and Tax Lot 26-14-36-800.

The parcel was inspected on June 6, 2023, the effective date of valuation. Working with partners at the Wild Rivers Land Trust and the South Slough National Estuarine Research Reserve, Bree K. Yednock, Ph.D., Reserve Manager is assisting the land trust and South Slough National Estuary Research Reserve (SSNERR) with the due diligence towards a potential acquisition of a Winchester Timberland Uplands property within Coos County between Highway 101 and West Beaver Hill Road. The State of Oregon Dept. of State Lands / Asset Management Section has expressed its willingness to sell the 80.0-acre Winchester Timberland Uplands parcel including its forest resource value. Therefore, this report was prepared for potential acquisition negotiations, and the intended users of this report are Wild Rivers Land Trust, Max Beeken, Conservation Director South Slough National Estuarine Research Reserve, the State of Oregon Dept of State Lands (DSL), c/o Bree K. Yednock, Ph.D., Reserve Manager, and-or their assigns.

The Sales Comparison Approach is used to value the subject land and we have subcontracted out a professional timber cruise to Farm Unlimited. The Income Approach and Cost Approach are not necessary for this appraisal to produce a credible value estimate, nor are they applicable. After careful consideration of all available information and analyzing all factors pertinent to the fee simple valuation of the one parcel, as defined in this report, the estimated market value, as of June 6, 2023, is as follows.

Final Value Conclusion \$ 745,000

Your attention is directed to the attached report for property and market descriptions, date of presentation, and reasonable assumptions that are offered in support of the previously stated conclusion of market value, subject to the included Statement of Limiting Conditions. A copy of the Appraisers' Certification is included herein.

Thank you for the opportunity of providing you with this service. Please contact this office at the referenced address if you have any questions or comments concerning this appraisal report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeffrey L. Marineau", is positioned above the printed name.

Jeffrey L. Marineau, MAI

A-3. TABLE OF CONTENTS

Part I. – Introduction	1
A-1. Title Page	1
A-2. Letter of Transmittal	2
A-3. TABLE OF CONTENTS.....	4
A-4. Appraiser’s Certification.....	6
A-5. Executive Summary	7
A-6. Images of the 80.0-acre Property	8
Photo Key.....	8
A-7. Assumptions and Limiting Conditions	11
Assumptions.....	11
Limiting Conditions	11
Estate Appraised	12
A-8. Scope of the Appraisal	12
A-9. Purpose of the Appraisal	12
Neighborhood Map	13
Aerial Detail	13
A-10. Summary of Appraisal Problems	14
Part II – Factual Data	15
A-11. Legal Description.....	15
A-12. Area, City, and Neighborhood Data	15
Area Data	15
Area Data	16
Neighborhood Map	17
Charleston Neighborhood Data.....	17
The South Slough National Estuarine Research Reserve	17
Current Market Trend	18
A-13. Property Data	18
A-13a. Site.....	18
Shape.....	19
Present Use.....	19
Access	19
Plat Map Detail	19
Lidar Topography	20
Aerial Image of Subject Parcel	21
Orthophoto Map by Farm Unlimited	21
USDA Soils (Tree Site Index)	22


Timber Resource	23
Minerals	23
Hazards	23
Seismic Map.....	23
FEMA Flood Zoning.....	24
A-13b. Improvements	24
A-13c. Fixtures.....	24
A-13d. Use History	24
A-13e. Sales History	24
Owner of Record.....	24
A-13f. Rental History.....	25
A-13g. Assessed Value and Annual Tax Information	25
A-13h. Zoning and Other Land Use Regulations.....	25
Coos County Zoning Map Detail for the Subject Property.....	26
A-13i. Easements	27
Part III – Data Analysis and Conclusions	27
A-14. Analysis of Highest and Best Use.....	27
A-15. Land Valuation.....	28
A-16. Value Estimate by the Cost Approach	28
A-17. – Value Estimate by the Sales Comparison Approach	28
Sale No. 3 (25-12-19-600) Adjacent to 22 Windy Willow Rd, Coos Bay, Coos County.....	38
Location Map of Acreage Timberland Sales	46
Sales Discussion.....	48
Value Summary.....	49
Value Conclusion by the Sales Comparison Approach	49
A-18. Value Estimate by the Income Capitalization Approach	50
A-19. Correlation and Final Value Estimate.....	50
Reasoned Analysis & Value Summary.....	50
Value Conclusion by the Sales Comparison Approach	50
A-37. Property Profile	51
A-38. Other Pertinent Exhibits.....	52
Engagement Email	52
Timber Cruise by Farm Unlimited.....	52
Coos County Forest (F) Zone	62

A-4. Appraiser's Certification

I certify that, to the best of my knowledge and belief,

- The statements of fact contained in this report are true and correct.*
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.*
- I have no present or prospective interest in the property that is the subject of this report and have no personal interest with respect to the parties involved.*
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.*
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.*
- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.*
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.*
- As of the date of this report, Jeffrey L. Marineau, MAI has completed the continuing education program for Designated Members of the Appraisal Institute.*
- The appraisal was developed and the appraisal report was prepared in conformity with the Uniform Appraisal Standards for Federal Land Acquisitions.*
- The appraisal was developed and the appraisal report prepared in conformance with the Appraisal Standards Board's Uniform Standards of Professional Appraisal Practice and complies with USPAP's JURISDICTIONAL EXCEPTION RULE when invoked by Section 1.2.7.2 of the Uniform Appraisal Standards for Federal Land Acquisitions.*
- My analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice (USPAP).*
- I have not performed a previous appraisal or service regarding the subject property within the previous 36 months prior to effective date of appraisal.*
- David S. Olson provided significant professional assistance in the preparation of this report to the person signing this report.*
- The appraiser made a physical inspection of the property appraised and the property owner, or the property owner's designated representative, was given the opportunity to accompany the appraiser on the property inspection.*

- The appraiser's opinion of the market value of the subject property, as of the effective date, June 6, 2023, is \$745,000.


Jeffrey L. Marineau, MAI
License# C000029
Expires: 4/30/2024

July 24, 2023
Date



A-5. Executive Summary

Valuation Date: June 6, 2023

Date of Report: July 24, 2023

Site: The subject property is an 80.0-acre rectangular-shape forested parcel consisting of a variety of Port Orford Cedar, hardwood, and conifer species, including mature Douglas-fir, Western Hemlock, Port Orford Cedar, Sitka Spruce, and Red Alder. The subject parcel is situated abutting the south end of the South Slough National Estuarine Sanctuary. The topography of the central portion of the parcel is level to sloping and the south portions have steeper topography in terrain adjacent to the Winchester Creek/Cox Canyon draws crossing that area. Additionally, there are a few areas of steeper topography, in the northwest portion of the parcel. Access to the property is via a gated public road across Coos County Forestlands from U.S. Highway 101. The property is located within Coos County's Forest (F) zoning jurisdiction and is well suited for timberland resource management and-or recreation uses. There is substantial value in the marketable timber, given the age, species, and quality of the timber.

Improvements: The parcel has no structural improvements or site improvements.

Highest and Best Use: The Highest and Best Use is resource land with substantial value in marketable timber.

Appraiser: Jeffrey L. Marineau, MAI

VALUE CONCLUSION BY THE SALES COMPARISON APPROACH: \$ 745,000

A-6. Images of the 80.0-acre Property

Photo Key



Photo Key - Aerial View with plat map overlay, photo vantage point, and direction of the photo view).

PHOTOGRAPHS OF THE SUBJECT PROPERTY

Photos Were Taken June 6, 2023



This is at the end of the Coos County Road where access to the subject timber resource will be appropriate. It is at the southwest corner of the property.



The typical interior forested area at the southwest corner of the site.

PHOTOGRAPHS OF THE SUBJECT PROPERTY

Photos Were Taken June 6, 2023



Interior timber resource. Photo taken by Farm Unlimited.



Typical interior brush in some interior locations. Photo taken by Farm Unlimited.

A-7. Assumptions and Limiting Conditions

The appraisal report is subject to the following limiting conditions. The report is not to be relied upon unless the conditions are also accepted.

Assumptions

1. Title to the property is assumed to be good and marketable unless otherwise stated. A Preliminary Title Report was not made available for this report. It is assumed that there are no exceptions, exclusions, or stipulations that substantially affect the fee simple valuation of the subject property. A title company should be consulted if there are questions regarding the legal description.
2. That there is legal access to the property unless otherwise noted. The property is appraised free and clear of any or all liens, easements, or encumbrances unless otherwise stated.
3. Unless otherwise stated in this report, the existence of hazardous material, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such materials on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, lead-based paints, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the assumption that there are no such materials on or in the property that would cause a loss in value. No responsibility is assumed for such conditions. If the client has any questions as to hazardous materials, an independent expert or an engineer should be consulted.
4. Assuming cash or cash equivalent terms for the subject valuation.
5. Assuming 9 to 16 months of open market exposure.

Limiting Conditions

1. Information, estimates, or opinions that are furnished to the appraisers, which may be contained in this report, were obtained from sources considered reliable and believed correct. If the client has any questions regarding this information, it is the client's responsibility to seek whatever independent verification is deemed necessary.
2. Any maps or sketches, which may be attached to this report, are included to assist the reader in visualizing the property. Acreage calculations are approximate, and if there are any questions as to their accuracy, the client should have an independent expert verify the information utilized for this report.
3. No survey of the property has been provided to the appraisers, except as indicated in the report. Should a survey indicate that the subject property area estimates defined and utilized in this report are not accurate; the appraised valuation could be affected.
4. The appraisal report has been prepared for the exclusive benefit of the client and the client's assigns. It may not be used or relied upon by any other party. Any party or parties, who use or rely upon any information in this report, without the preparer's written consent, do so at their own risk.
5. No right to testimony is included in this appraisal unless previous agreements have been made. None is proposed in this instance.

Estate Appraised

The estate appraised is Fee Simple. A Preliminary Title Report was not made available for this report; however, a property profile is shown in Section A-37.

A-8. Scope of the Appraisal

This is a Yellow Book narrative appraisal using the Sales Comparison Approach, of the Fee Simple interest in the Winchester Timberland Uplands parcel located 0.8-mile east of 90685 Hinch Lane, also identified as Coos County Map and Tax Lot 26-14-36-800.

The parcel was inspected on June 6, 2023, the effective date of valuation. Working with partners at the Wild Rivers Land Trust and the South Slough National Estuarine Research Reserve, Bree K. Yednock, Ph.D., Reserve Manager is assisting the land trust and South Slough National Estuary Research Reserve (SSNERR) with the due diligence towards a potential acquisition of a Winchester Timberland Uplands property within Coos County between Highway 101 and West Beaver Hill Road. The State of Oregon Dept. of State Lands / Asset Management Section has expressed its willingness to sell the 80.0-acre Winchester Timberland Uplands parcel including its forest resource value. Therefore, this report was prepared for potential acquisition negotiations, and the intended users of this report are Wild Rivers Land Trust, Max Beeken, Conservation Director South Slough National Estuarine Research Reserve, and the State of Oregon Dept of State Lands (DSL), c/o Bree K. Yednock, Ph.D., Reserve Manager, and-or their assigns.

The assignment involves the collection and gathering of data from various sources, which were then analyzed to arrive at a value conclusion. The types of data collected included information on the social, political, governmental, and economic factors within the county the properties are located in, assembling accurate information on the legal description, assessed value, zoning, and history of the property. Sales data was gathered from a variety of sources that includes our in-house database of sales, private investors, RMLS, SOMLS, CoStar Group & Loopnet, DataTree by 1st American Title, Zillow, Trulia & other internet real estate websites, real estate brokers and salespersons, Recorder's Office and other governmental agencies. The data was assembled and analyzed and value conclusions were developed. The sales data gathered was the best and most recent information available in the Coastal Oregon marketplace.

The data was assembled, analyzed and a value conclusion was developed, given the limiting conditions and assumptions of the assignment. The sales search was focused on Oregon's South Coastal Counties of Coos and Curry, where adequate data was found for this valuation.

The subject property is located within Coos County's Forest (F) Zoning District and the Sales Comparison Approach is used to value the subject Winchester Timberland Uplands parcel. In addition, a professional timber cruise firm, Farm Unlimited was hired to value the marketable timber. The Cost Approach is not used as the subject property has no structural improvements and the Income Approach is not used, as data regarding leases of comparable properties is not common in this market area. Therefore, the Income Approach and Cost Approach are not necessary for this appraisal to produce a credible value estimate, nor are they applicable.

A-9. Purpose of the Appraisal

This is a Yellow Book narrative appraisal made for negotiation purposes of a proposed acquisition of the Winchester Timberland Uplands parcel. This appraisal aims to estimate the market value of the Fee Simple estate in the property for negotiations in a potential acquisition.



Oregon

Tina Kotek, Governor

Department of State Lands

775 Summer Street NE, Suite 100

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(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

State Land Board

Regular Meeting
December 12, 2023
Agenda Item 4

Tina Kotek
Governor

LaVonne Griffin-Valade
Secretary of State

Tobias Read
State Treasurer

SUBJECT

State Land Board appointment of five voting members to the Oregon Ocean Science Trust.

ISSUE

Whether the State Land Board should reappoint two current members and appoint three new members to the Oregon Ocean Science Trust with terms beginning on January 1, 2024.

AUTHORITY

Oregon Constitution, Article VIII, Section 5

ORS 196.565; regarding appointment of the Ocean Science Trust

ORS 183; regarding administrative procedures and rules of state agencies

ORS 273; regarding the creation and general powers of the Land Board

ORS 274; regarding submerged and submersible lands in general

ABOUT THE OREGON OCEAN SCIENCE TRUST

In establishing the Trust in 2013 through Senate Bill 737, the Oregon Legislature created an opportunity for our state to understand how our ocean is changing and to help ensure a thriving coastal environment and economy for future generations. The Trust is charged with:

- Connecting the many ways ocean science matters for Oregon. Understanding the changes occurring off our coast matters to many, from communities whose economies depend on fishing to the millions of Oregonians and visitors who

explore our shoreline every year. The Trust aims to promote innovative, collaborative, community-oriented approaches to research and monitoring of Oregon's ocean and coastal resources.

- By promoting peer-reviewed competitive research and monitoring, the Trust increases the availability of reliable science that answers priority questions for understanding and managing Oregon's coastal resources.
- And lastly, through a competitive grant program the Trust will put independent science in the hands of the communities, businesses, and governments.

Every other year the Trust provides a report to the Legislative Assembly on their activities as well as relevant issues and emerging scientific research that may impact public policy.

BACKGROUND

The Trust is comprised of seven members. The State Land Board appoints the five voting members, and the President of the Senate and the Speaker of the House appoint one nonvoting member from each respective chamber.

Voting members are appointed to four-year terms but serve at the discretion of the Land Board. Before a voting member's term expires, the Board shall appoint a successor whose term begins on January 1 of the following year. Voting members are eligible for reappointment. Should a vacancy occur prior to term expiration, the Land Board shall make an appointment to become immediately effective for the unexpired term.

Voting members must be Oregon residents who demonstrate a commitment and interest in the stewardship of Oregon's ocean and coastal resources; and have a minimum of five years of experience in competitive granting, marine science, foundations, or fiscal assurance.

APPOINTMENT OF VOTING MEMBERS FOR JANUARY 1, 2024

In the summer of 2023 Department staff realized that two OOST members' terms had expired on December 31, 2022, and the other three were due to expire on December 31, 2023. The Department consulted with the Land Board Assistants on the desire to establish a standardized recruitment process to provide greater opportunity for a wide range of Oregonians to apply. . The Department began recruitment and outreach for the five openings on September 21, 2023, and closed applications on October 10, 2023. Outreach was sent to the Trust's mailing list, targeted stakeholders, and partners, and broadly on our online channels. We received 8 applications from a wide range of backgrounds.

RECOMMENDATION

The Department recommends the State Land Board appoint the following new members to the Oregon Ocean Science Trust with 3-year terms to begin on January 1, 2024, and end on December 31, 2026:

1. **Cristen Don**, Director Coastal Quest (South Beach, OR)
2. **Dr. Keith Wolf**, U.S. Department of Commerce, NOAA Fisheries, Oregon Washington Coastal Office (Portland, OR)
3. **Ted DeWitt**, Retired, Environmental Protection Agency (Seal Rock, OR)

The Department recommends the State Land Board reappoint the following current members to the Trust whose terms end on December 31, 2023. The reappointment is a 4-year term beginning on January 1, 2024, and ending December 31, 2027:

4. **Laura Anderson**, Owner, Local Ocean Seafood and former Commissioner, Oregon Fish and Wildlife Commission (Newport, OR) –
5. **Dr. Karina Nielsen** Director, Oregon Sea Grant (Corvallis, OR)

APPENDICES

Appendix A: OOST Board Appointments Bios

Appendix B: OOST Board Candidate Applications

**Oregon Ocean Science Trust Board Appointments:
Consensus Candidates and Biographies**

1. **Reappoint** (term ends December 31, 2023) - Laura Anderson, Owner, Local Ocean Seafood and former Commissioner, Oregon Fish and Wildlife Commission (Newport, OR)
2. **Reappoint** (term ends December 31, 2023) - Dr. Karina Nielsen, Director, Oregon Sea Grant (Corvallis, OR)
3. **Appoint** – Ted DeWitt, Retired U.S. Environmental Protection Agency (Seal Rock, OR)
4. **Appoint** – Keith Wolf, Ph.D., U.S. Department of Commerce, NOAA Fisheries, Oregon Washington Coastal Office
5. **Appoint** – Cristen Don, Director, Coastal Quest, (South Beach, OR)

Laura Anderson

Local Ocean Seafood and former Commissioner, Oregon Fish and Wildlife Commission (Newport, OR)

Laura Anderson is from a multi-generational commercial fishing family, the founder of Local Ocean Seafoods, an Independent Systems Seafood Consultant, and a leader in Oregon's sustainable fishery movement. She has an M.S. in Marine Resource Management from Oregon State University. Laura served two years as a Peace Corps volunteer in the Philippines, where she helped a village start to restore its coral reef fishery. After returning to the United States, Anderson earned an M.S. in Marine Resource Management from Oregon State University in 2000 and became a consultant to nonprofits trying to improve the coastal fish industry through ecological restoration, salmon marketing and community-based fisheries management. In Port Orford, Oregon, Anderson spearheaded a highly visible effort that sought to give local fishermen a greater voice and more responsibility in figuring out how to restore depleted fish stocks. Laura and a colleague launched Local Ocean Seafoods in 2002. In 2022, Laura sold Local Ocean Seafoods sold into a special type of ownership called a Perpetual Purpose Trust. Local Ocean's new owner - the Local Ocean Stewardship Trust - ensures that the company will forever continue to source direct from local fishermen and showcase local species, continually strive for sustainable business practices, advocate for Oregon's fisheries, and ensure that Local Ocean is operating for the benefit of its employees, fishers, and the local community.

Dr. Karina Nielsen

*Director, Oregon Sea Grant
(Corvallis, OR)*

Dr. Karina Nielsen is the Oregon Sea Grant Director. For most of her career as an academic scientist, she has been involved in substantial public service work related to coastal and ocean science and stewardship. She has extensive experience with coastal zone research and environmental monitoring, as well as working across institutions and with community members to develop evidence-based understanding of different stewardship approaches. She also has extensive experience with the peer-review process, developing requests for proposals, evaluating proposals, and making funding decisions through competitive grant programs. Dr. Nielsen started her graduate education at Oregon State University in 1992. Her graduate and postdoctoral research led her to spend considerable time getting to know the natural beauty and communities of the Oregon coast. Dr. Nielsen seeks to contribute in meaningful ways to science-based and community-engaged stewardship of the natural and cultural heritage of the coastal zone in Oregon.

Ted DeWitt

Retired U.S. Environmental Protection Agency (Seal Rock, OR)

Ted DeWitt is retired from the U.S. Environmental Protection Agency (EPA). He has spent his professional career (1985-2022) conducting applied ecological research on coastal ocean and estuarine ecosystems, and most of that was leading research for the EPA. In his capacity at EPA, he led and managed multi-laboratory research teams focused on ecosystem services science, received numerous awards from the Agency for his research and service. He served as the Chief of the Pacific Coastal Ecology Branch laboratory in Newport, OR for several years. He is also a strong advocate for developing new scientists who will lead the research of tomorrow, and has advised or mentored 50 undergraduate, graduate, or post-doctoral students as research interns, thesis researchers, or collaborators. In addition to working for the EPA he has held courtesy faculty positions in several departments at Oregon State University and has served as president of two regional science societies, Pacific NW Society of Environmental Toxicology and chemistry, and Pacific Estuarine Research Society. He has also served on the board of directors for those societies and the international Coastal and Estuarine Research Federation.

Keith Wolf, Ph.D.

*Program / Policy Manager, U.S. Department of Commerce, NOAA Fisheries, Oregon
Washington Coastal Office
Portland, Oregon*

Keith Wolf, Ph.D. serves as a Program/Policy Manager for the U.S. Department of Commerce, NOAA Fisheries, Oregon Washington Coastal Office. Keith has three decades working on ocean issues in OR, WA, ID, AK, Canada, and CA. He has a Bachelor of Science degree in Natural Resources and Biology, and a Ph. D. in Environmental Engineering. He worked 12

years with William (Bill) Ruckleshaus in the formation and execution of the Oregon Watershed Enhancement Board, the Washington Salmon Recovery Board. In both, he was a leader in developing and supporting those boards. He has a significant background in grant programs, including the Pacific Coastal Salmon Recovery Fund since its inception, NOAA SeaGrant, and others. He is currently a part of NOAA's West Coast Climate Change Team and works on various ocean ecosystems initiatives. In addition to NOAA, he has 14 years working as a policy representative and science program manager for North Central tribes, and 52 additional WA/Canadian Tribes over his career.

Cristen Don

*Director, Coastal Quest
(South Beach, OR)*

Cristen Don serves as the Director of Coastal Quest. She has a Bachelor's Degree in Marine Biology and a Master's Degree in Marine Affairs. Cristen has a deep commitment to advancing stewardship and knowledge of Oregon's ocean and coastal resources. Her experience spans two decades in a variety of ocean policy and management topics ranging from wave energy to fisheries management, to marine reserves and protected areas. She has developed enduring partnerships with universities, research institutions, the fishing industry, non-governmental organizations, philanthropic foundations, state and federal agencies, and local coastal community groups. Cristen led the Marine Reserves Program at the Oregon Department of Fish and Wildlife for 12 years. This position required her to lead an interdisciplinary team that integrated marine science, social science, communications, public policy, and resource management to implement Oregon's marine reserve sites, fulfilling the mandates established by the Oregon Legislature.

TO: Oregon Land Board
FROM: Laura Anderson, current OOST Board Member
RE: Letter of Interest for the Oregon Ocean Science Trust Board
DATE: October 5, 2023

Thank you for considering my reapplication as a board member for the Oregon Ocean Science Trust (OOST). I am a founding board member, and prior to the OOST served on the precursor organization, the Oregon Nearshore Research Taskforce (ONRTF). I have a deep understanding and appreciation for the need and value of the OOST to the State of Oregon.

Back when the ONRTF was meeting (2009-2010), it was agreed that the State would benefit greatly if it could diversify funding sources for ocean research. The dilemma was that outside funds bring a risk of influencing state research priorities and policy. The OOST was created to act as a 'firewall'; the OOST would endeavor to bring Oregon's marine scientists and policy makers together to define State's ocean research priorities and then seek sources of funding that are compatible with those priorities.

We have had some recent successes in this endeavor, and also have a way to go. The development of funding priorities in 2016 allowed the OOST to distribute competitive grants totaling over \$2 million in the last three years. But most of those funds came from our own Oregon legislature. While this is indeed a "win" for ocean research, there is much to be done to build relationships with Federal funders, as well as private foundations to bolster our work. The OOST is designed to leverage funding from multiple sources.

OOST received a capacity building grant which will allow us to contract with a communications team and a development director to help build government and foundation relationships. That team will take the research priorities from the 2023 Oregon Ocean Science Summit and build a fundraising strategy that ultimately will help the state gain the knowledge it needs to make good policy decisions related to the ocean.

The OOST does not take a position on these policies (for example wind energy siting, marine reserves, fisheries management plans). It is agnostic to the outcomes. It merely exists to channel funding to the Oregon research community to help gain information and knowledge to support policy.

That said, it is my honor to Chair the OOST and if given the opportunity to continue, I will endeavor to hold the organization accountable to its mission and action plan.

In community,

A handwritten signature in black ink, appearing to be 'LA', with a long horizontal stroke extending to the right.

Laura Anderson

LAURA ANDERSON

4365 Yaquina Bay Road, Newport, OR 97365 541-961-2524 laura@localocean.net

Education

Master of Science, Marine Resource Management, 2000

Oregon State University, College of Oceanic and Atmospheric Science, Corvallis OR

Bachelor of Science, Major: Biology, Minors: Chemistry and Exercise Science, 1993

Pacific Lutheran University, Tacoma, WA, *Cum Laude*

Newport High School, Newport OR 1988

Professional

Local Ocean Seafoods, Newport, OR, 2002-present, Founder/CFO

- Built successful sustainable seafood restaurant from the ground-up.
- Sold company into an employee ownership Purpose Trust in 2023.
- As CFO- Direct and coordinate financial programs to maximize ROI and increase productivity. Manage working capital. Perform financial forecasting including cash budget, and pro forma financial statements.
- Manage market planning, advertising, public relations, and sales. Identify new markets. Seek business opportunities and strategic alliances with other organizations and firms.
- Mentor and advise the new company leadership.

Ocean-related consulting projects

FISHCRED, Oregon Statewide

2011-2014, Executive Director

- Supported a 15 member coast wide board of commercial fishing leaders for the purpose of data management and support of Oregon's Territorial Sea Plan and Marine Spatial Planning.
- Negotiated with state and industry leaders to reduce potential conflicts associated with MSP.
- Sought balanced funding from industry and government sources to support organization.
- Significant community and public relations.

Port Orford Ocean Resources Team, Port Orford, OR

2000- 2008, Consultant

- Initiated the development and implementation of a nationally recognized model for sustainable community based fisheries management.
- Prioritized key issues. Developed strategic framework for organizational development. Led board-building, visioning and goal development process. Taught skills in conflict resolution and consensus building. Facilitated meetings on difficult and contentious topics.

- Fostered partnerships including: Ecotrust, Surfrider, Pacific Marine Conservation Council, Department of Fish and Wildlife, Division of State Lands, Economic Development Department; National Marine Fisheries Service, the Port and City of Port Orford, Oregon State University, University of Oregon.
- Procured grant funding for over \$200,000 in projects (2000-2002). Collaborated on over 13 science projects involving over 51 fishermen charters and interviews.

Other Public Service/Experience

Central Coast Food Web

2022-current, founder and President

The Nature Conservancy of Oregon

2019-current, Oregon Board of Trustees

Oregon Coast Aquarium

2017-current, Board member

Oregon Ocean Science Trust

2016-current, Chair

Oregon State University

Adjunct Faculty, 2015 COEOAS Alumni Fellow, CAS Dean's Advisory Committee (2012-2015)

Oregon Fish and Wildlife Commission

2012-2017 (appointed). OFWC sets statewide policy for the Department of Fish and Wildlife.

Oregon Albacore Commission

2011-2015 (appointed). OAC seeks marketing and educational opportunities for consumers.

Oregon Nearshore Research Task Force

2009-2010 (appointed)/ Finance subcommittee chair. ONRTF developed strategic plan for legislature to improve nearshore marine research.

United States Peace Corps, The Philippines

1994-1995, Volunteer Coastal Resource Management

Advanced Open Water Diver Habitat Specialty, Volunteer diver Oregon Coast Aquarium

F/V Taurus Oregon, California, Washington

Summers 1986, 1988, 1992, 1994, 1997, 1999, 2001, 2003 Deckhand on family fishing boat.



Karina J. Nielsen, Ph.D.
Director
Oregon Sea Grant
1600 SW Western Blvd, Ste 350, Corvallis, OR 97333
p 541.737.6200 | c 541-244-7771 | e karina.nielsen@oregonstate.edu



September 21, 2023

Re: Oregon Ocean Science Trust

State Land Board
Department of State Lands
775 Summer St. NE, Suite 100
Salem, OR 97301-1279

Dear State Land Board members,

I write to self-nominate myself and continue my service as a member of the Oregon Ocean Science Trust (OOST). I have had the honor of serving as a member of the Trust since July 2022, when I was appointed to complete a term for a vacant seat. I am the director of the Oregon Sea Grant program and a Professor of Practice in Integrative Biology at Oregon State University (OSU). In my current position I oversee a cooperative program between NOAA and OSU that delivers science in service to Oregon's coastal communities and ecosystems. We oversee a competitive research funding program, deliver educational programming, and support OSU Extension specialists with expertise on coastal issues. For most of my career I have been involved in substantial public service work related to coastal and ocean science and stewardship. I have extensive experience with coastal zone research and environmental monitoring, as well as working across institutions and with community members to develop evidence-based understanding of different stewardship approaches. I also have extensive experience with the peer-review process, developing requests for proposals, evaluating proposals, making funding decisions through competitive grant programs, and managing multi-million-dollar program budgets. Please see my CV for additional details.

I have been director of Oregon Sea Grant for a little over a year now, but I lived in Oregon and raised my family here for almost 10 years. I started my graduate education at Oregon State University in 1992 at the same time my son started attending elementary school in Corvallis. My graduate and postdoctoral research in marine ecology allowed me to spend considerable time getting to know the natural beauty and communities of the Oregon coast. We lived in Oregon through 2003, with a 2-year stay in Chile for my postdoctoral fellowship from 1998-2000. For the past two decades I lived and worked in northern California where I was a professor and then director of a marine laboratory in the California State University system. I am thrilled to have returned to Oregon and look forward to continuing my contributions to science-based and community-engaged stewardship of the natural and cultural heritage of Oregon's coastal zone and territorial sea.

Thank you for considering my nomination to continue serving as a member of the Oregon Ocean Science Trust.

Sincerely,

A handwritten signature in black ink that reads "Karina J. Nielsen".

Karina J. Nielsen, Ph.D.
Director Oregon Sea Grant

Curriculum Vita

Karina J. Nielsen, PhD

✉ karina.nielsen@oregonstate.edu
🏠 seagrant.oregonstate.edu
🌐 [linkedin.com/in/karina-j-nielsen](https://www.linkedin.com/in/karina-j-nielsen)

Oregon Sea Grant
Oregon State University
1600 SW Western Blvd, Suite 350
Corvallis OR 97333
☎ 541.224.7771

EDUCATION

Ph.D., Oregon State University, 1998

Dissertation: *Bottom-up and top-down forces in tidepools: the influence of nutrients, herbivores, and wave exposure on community structure*. Co-advisors: Jane Lubchenco & Bruce A. Menge

B.S., *Summa Cum Laude*, Brooklyn College - City University of New York, 1992

Honors Thesis: *Patterns of mussel (Guekensia demissa) recruitment to a Spartina alterniflora salt marsh*. Advisor: David R. Franz

Hampshire College, September 1979 - June 1982

Coursework in art history, fine art photography, filmmaking and holography.

PROFESSIONAL EXPERIENCE

2022 – Director, Oregon Sea Grant, Oregon State University

2022 – Professor of Practice, Department of Integrative Biology, Oregon State University

2018 – 2022 Executive Director, Estuary & Ocean Science Center, San Francisco State University

2014 – 2017 Director, Romberg Tiburon Center for Environmental Studies, San Francisco State University

2014 – 2022 Professor, Department of Biology, San Francisco State University

2013 – 2014 Professor, Department of Biology, Sonoma State University

2007 – 2022 Senior Research Associate, Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO)

2010 – 2011 Faculty Research Associate, Academic Affairs, Office of Research & Sponsored Programs, Sonoma State University

2008 – 2013 Associate Professor, Department of Biology, Sonoma State University

2003 – 2008 Assistant Professor, Department of Biology, Sonoma State University

2000 Instructor, Hatfield Marine Science Center, Oregon State University

1993 – 1998 Research Assistant, Department of Biology, Oregon State University

1992 – 1998 Teaching Assistant, Departments of Zoology & Biology, Oregon State University

1992 – 1993 Research Assistant, Department of Biology, Brooklyn College, City University of New York

POSTDOCTORAL RESEARCH EXPERIENCE

- 2000 – 2003 Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO)
Postdoctoral Research Associate, Department of Zoology, Oregon State University.
- 1998 – 2000 National Science Foundation International Postdoctoral Fellowship, Estación Costera de Investigaciones Marinas (ECIM), Pontificia Universidad Católica de Chile.

GRANTS AND FELLOWSHIPS¹

- 2023 – 2025 **National Oceanographic and Atmospheric Administration (Department of Energy)** \$300,000. Engaging with Oregon's coastal communities on floating offshore wind energy: enhancing understanding of the potential impacts and benefits. PI: Karina Nielsen, Oregon State University
- 2022 – 2024 **National Oceanographic and Atmospheric Administration** \$5,411,988.00 (+ \$2,756,408 non-federal cost-share). 2022-23 Oregon Sea Grant Omnibus. PI: Karina Nielsen (as of June 2022; former PI 2021-2022 David Hansen), Oregon State University.
- 2018 – 2024 **National Oceanographic and Atmospheric Administration 2018-2021 Oregon Sea Grant Omnibus** \$10,366,509 (+ \$5,162,062 non-federal cost-share). PI as of June 2022 (former PIs 2021-2022 David Hansen; 2018-2021 Shelby Walker).
- 2021 – 2022 **National Oceanographic and Atmospheric Administration** \$386,875 subaward via Monterey Bay Aquarium Research Institute to co-PI Nielsen/SFSU. The Central and Northern California Ocean Observing System: Information solutions to power healthy and prosperous oceanic, coastal and estuarine communities. PIs: Primary contact: Henry Ruhl (Monterey Bay Aquarium Research Institute [MBARI]), co-PIs: : F Chavez, Y Takeshita, J Ryan, & A Harper (MBARI); R Bochenek, S St Savage (Axiom Data Science); S Norris, J Sedano, J Silva, G Popescu (California Indian Environmental Alliance); A Parker (Cal. State Uni. Maritime Acad.); C Garza (CSU Monterey Bay); R Walter, E Bockmon, A Pasulka, H Liwanag (Cal Poly SLO.); C Whelan (CODAR Ocean Sensors); M Miller (Exploratorium); M García-Reyes, J Dorman, W Sydeman (Farallon Institute); J Tyburczy, B Tissot, E Bjorkstedt (Humboldt State University); J Paduan, J Joseph, M Orescanin (Naval Postgraduate School); J Doyle, H Jin, R Clare (Naval Research Laboratory); L Peavey, Reeves, J Brown, S Haver (NOAA); S Semans (Noyo Center for Marine Science); C Van Vranken (Ocean Data Network); J Barth (Oregon State University); J Jahncke, M Elliot, (Point Blue Conservation Science) K Nielsen, R Dugdale (San Francisco State University) ; T Connolly, M Grand, H Bowers (San Jose State University, Moss Landing Marine Lab); B Block, M Castleton, S Monismith, R Dunbar, F Micheli (Stanford University) J Largier, T Hill, B Phillips, L Rogers-Bennett (UC Davis); Y Chao, F Chai, K Kavanaugh (UC Los Angeles); R Kudela, C Edwards, D Costa, A Moore, K Kroeker, J Fiechter (UC Santa Cruz); D Rudnick (UC San Diego); T Bell, D McGillicuddy (Woods Hole Oceanographic Institution).

¹ KJN is also the administrative PI on behalf of Oregon Sea Grant on additional grants (not shown) from NOAA to OSU for several technical PI leads and fellows.

- 2020 – 2023 **Ocean Protection Council** \$824,809 Restoring Eelgrass in Living Shorelines: Opportunities to Combine Shore Protection with Amelioration of Ocean Acidification PI: Katharyn Boyer; co-PI: Karina Nielsen (EOS Center, SF State).
- 2020 – 2021 **Honda Marine Science Foundation** \$74,900 Smithsonian Living Shorelines Project, PI: Chela Zabin (Smithsonian Environmental Research Center), co-PIs: Andy Chang (Smithsonian Environmental Research Center), and Karina Nielsen (San Francisco State University).
- 2019 – 2023 **Ocean Protection Council** \$1,000,000 Evaluating the performance of California's MPA network through the lens of sandy beach and surf zone ecosystems. PI: Jenifer Dugan (University of California Santa Barbara) co-PIs: Robinette, D (Point Blue Conservation Science), Page, H (University of California Santa Barbara), Garza, J (National Oceanic and Atmospheric Administration - Southwest Fisheries), Jarrin, JM (Humboldt State University), Nielsen, KJ (San Francisco State University), Lindquist, K (Greater Farallones Association), Nueman, K (Point Blue Conservation Science), Colwell, M (Humboldt State University), Miller, R (University of California Santa Barbara), Hamilton, S (Moss Landing Marine Laboratories/San Jose State University), Ricker, S (California Department of Fish and Wildlife), Mulligan, T (Humboldt State University).
- 2018 – 2022 **California State Coastal Conservancy** \$190,000 Nature-based Rocky Habitat Restoration and Education PI: Karina Nielsen (EOS Center, SF State); co-PI: Chela Zabin (Smithsonian Environmental Research Center).
- 2016 – 2022 **National Science Foundation** \$2,922,930. NSF Research Traineeship (NRT): RIP-TIDES: Research Intensive Pedagogical Training of InterDisciplinary Estuarine Scientists. PI: Nielsen, KJ (San Francisco State University) Co-PIs: Komada, T, Cochlan, W (San Francisco State University). Original Lead PI: Jonathan Stillman
- 2016 – 2022 **National Oceanographic and Atmospheric Administration** subaward to Nielsen SFSU \$ \$469,234 CeNCOOS Partnership: Ocean Information for Decision Makers: PIs: Primary contact: Henry Ruhle, Director (CeNCOOS at MBARI); (co-investigators in alphabetic order): R. Bochenek (Axiom Data Science); D. Wendt, R. Walter, K. Davis (California Polytechnic State University); C. Whelan (CODAR Ocean Sensors); F. Shaughnessy, J. Anderson (Humboldt State University); F. Chavez (Monterey Bay Aquarium Research Institute); J. Paduan (Naval Postgraduate School); J. Doyle (Navy Research Laboratory); J. Barth (Oregon State University); K. Nielsen (San Francisco State University); T. Connolly, J. Smith, K. Coale (San Jose State University); J. Largier (University of California Davis); Y. Chao (University of California Los Angeles); R. Kudela, C. Edwards, A. Moore, D. Costa (University of California Santa Cruz)
- 2016 – 2018 **California Sea Grant** \$271,546 Understanding the role of oyster mariculture on ecosystem health in coastal California: Water quality in Drakes Estero before and after oyster mariculture. PI: Frances Wilkerson (San Francisco State University); co-PIs: Dick Dugdale (SF State), Karina Nielsen (SF State), Alex Parker (California Maritime Academy)
- 2016 – 2017 **San Francisco Estuary Partnership (Environmental Protection Agency)** \$69,884. The Ocean's influence on SF Bay: Assessing the Bay's exposure to ocean acidification. PI: Nielsen, KJ (San Francisco State University) Co-PIs:

John Largier (University of California Davis) and Phil Trowbridge (San Francisco Estuary Institute) in partnership with the San Francisco Estuary Program (SFEP)

- 2014 – 2017 **California Ocean Science Trust** \$450,000 The Ecological State of Northern California's Sandy Beaches and Surf Zones: A Baseline Characterization for MPA Assessment. PI: Nielsen, KJ (San Francisco State University); co-PIs: Milligan, T (Humboldt State University); Dugan, JE (University of California, Santa Barbara; Craig, S (Humboldt State University); Laucci, R. (Tolowa Dee-ni' Nation).
- 2012 – 2013 **California Sea Grant** \$10,000 Cultivation and molecular identification of Gonyaulacoid dinoflagellates associated with mortalities of abalone. PIs: O'Kelly, C.J. (Friday Harbor Laboratories, University of Washington) & K. J. Nielsen (Sonoma State University).
- 2011 – 2012 **California Sea Grant** \$10,000 Molecular identity of Gonyaulacoid dinoflagellates associated with mortalities of abalone, urchins and other marine invertebrates in Sonoma County, California, August – September 2011. PIs: O'Kelly, C.J. (Friday Harbor Laboratories, University of Washington) & K. J. Nielsen (Sonoma State University).
- 2011 – 2016 **National Science Foundation** \$1,119,999 Collaborative Research: The role of calcifying algae as a determinant of rocky intertidal macrophyte community structure at a meta-ecosystem scale. PIs: Menge, BA (Oregon State University) & Nielsen, KJ (Sonoma State University/ San Francisco State University); co-PIs: Hacker, S & Chan, F (Oregon State University)
- 2011 – 2016 **National Oceanographic and Atmospheric Administration** \$10,245,630 (subaward to Nielsen/SSU, then SFSU \$692,201) CeNCOOS: Integrating marine observations to inform decision makers and the general public. PIs: Primary contact: David Anderson, Director (CeNCOOS @MBARI) (preceded by Leslie Rosenfeld); (co-investigators in alphabetic order): Barbara Block (Hopkins Marine Lab), Mark Carr (PISCO, UC Santa Cruz), Yi Chao (Jet Propulsion Lab/UCLA), Francisco Chavez (MBARI), Jim Doyle (Naval Research Laboratory) Chris Edwards (UC Santa Cruz) Oliver Fringer (Stanford), Toby Garfield (San Francisco State / Romberg Tiburon Center), Raphe Kudela (UC Santa Cruz), Rik Kvitek (CSUMB), John Largier (UC Davis / Bodega Marine Lab), Steven Le (Science Applications International Corporation), Erika McPhee-Shaw (Moss Landing Marine Laboratory), Mark Moline (California Polytechnic Institute), Andy Moore (UC Santa Cruz), Hanna Nevins (Marine Wildlife Veterinary Care & Research Center), Karina Nielsen (Sonoma State), Jeff Paduan (Naval Postgraduate School), Frank Shaughnessy (Humboldt State University), Igor Shulman (Naval Research Laboratory), Bill Sydeman (Farallon Institute)
- 2011 – 2014 **California Ocean Science Trust** \$290,000 Sandy beach ecosystems: Baseline characterization and evaluation of monitoring metrics for MPAs along the south coast of California PI: Dugan, JE (University of California, Santa Barbara; co-PIs: Page, H (University of California, Santa Barbara); Nielsen, KJ (Sonoma State University); Bursek, J (Channel Islands National Marine Sanctuary)
- 2010 – 2013 **California Ocean Science Trust** \$288,667 Baseline Monitoring of Ecosystem and Socioeconomic Indicators for MPAs along the North Central

- Coast of California: Sandy Beaches. PI: Karina J Nielsen (Sonoma State University); co-PIs: Steven Morgan (UC-Davis, Bodega Marine Lab), Jenifer Dugan (UC- Santa Barbara, Marine Science Institute).
- 2008 – 2011 **National Oceanographic and Atmospheric Administration** \$3,281,529 (\$120,000 to Nielsen/SSU). CeNCOOS: Long-term monitoring of environmental conditions in support of protected marine area management in central and northern California total award. PI: Steven Ramp (Monterey Bay Aquarium Research Institute (MBARI)); Co-PIs: Francisco Chavez (MBARI), Frank Shaughnessy & Greg Crawford (Humboldt State University), Toby Garfield (San Francisco State University), Mitchell Craig (CSU – East Bay), Mark Moline (California Polytechnic State University), Kenneth Coale (Moss Landing Marine Lab), Raphael Kudela (UC- Santa Cruz), John Largier (UC-Davis, Bodega Marine Lab), et al.
- 2007 – 2010 **National Science Foundation** \$678,398 Collaborative Research: Scaling up from community to meta-ecosystem dynamics in the rocky intertidal - a comparative-experimental approach; PIs: Bruce Menge (Oregon State University) & Karina Nielsen (Sonoma State University); Co-PIs: Sally Hacker (Oregon State University) & Francis Chan (Oregon State University).
- 2006 – 2009 **California Sea Grant** \$128,000 Collecting Sea Palms: planning for sustainable use in a variable environment; Co-PI: Carol Blanchette (University of California, Santa Barbara)
- 2006 – 2007 **Center for Integrative Coastal Observation, Research and Education (CICORE)** \$50,000 Sonoma State University intertidal zone water quality monitoring; Co-PI: Dan Crocker (Sonoma State University)
- 2002 – 2003 **National Science Foundation** SGER (Co PI): \$100,000 A shoaling hypoxic zone on the Oregon coast: genesis and mechanisms; PI: Bruce Menge (Oregon State University) Co-PIs: Karina Nielsen, Francis Chan & Jane Lubchenco (Oregon State University)
- 1998 – 2000 **National Science Foundation** International Postdoctoral Fellowship \$92,900 Upwelling patterns and marine plant-herbivore interactions: Linking benthic and pelagic processes.
- 1997 – 1998 **American Association of University Women** Dissertation Fellowship \$4,500 The relative importance of nutrients, herbivory and wave exposure in structuring tidepool communities.
- 1997 **National Science Foundation** International Planning Grant \$4,900 Marine macrophytes and grazers: Linking coastal oceanography and rocky intertidal community ecology.
- 1995 – 1996 **University Club Foundation** Graduate Fellowship \$5,000
- 1995 **Sigma Xi Grant-in-Aid of Research** \$1,000 Bottom up forces in marine microcosms: An experimental manipulation of nutrients in tidepool communities.

HONORS , SCHOLARSHIPS AND AWARDS

- 2019 Marin County Board of Supervisors, recognition of ocean climate science engagement in proclamation for World Oceans Day
- 2017 Fellow, California Academy of Sciences
- 2011 Santa Rosa Chamber of Commerce, Excellence in Education Award
- 1999 David and Lucile Packard Foundation, Hopkins Marine Station Scholarship

- 1997 Western Society of Naturalists, Best Paper Award, honorable mention
- 1996 University Club Graduate Fellowship
- 1994 – 1997 OSU - Department of Zoology, Research Fund Awards
- 1993 Phycological Society of America, Croasdale Fellowship
- 1993 University of Washington, Friday Harbor Labs Scholarship
- 1992 ***Sigma Xi***
- 1991 ***Phi Beta Kappa***
- 1991 Merck Summer Research Scholars Fellowship
- 1991 Philip Gisses Memorial Scholarship
- 1990 – 1992 Libby Kohl Banks Scholarship
- 1990 Rose Weinstein Scholarship
- 1990 Saul Lyons Scholarship

PUBLICATIONS (PEER-REVIEWED)

- Cheng, B.S., Blumenthal, J., Chang, A.L., Barley, J., Ferner, M.C., Nielsen, K.J., Ruiz, G.M. and Zabin, C.J., 2021. Severe introduced predator impacts despite attempted functional eradication. **Biological Invasions**. <https://doi.org/10.1007/s10530-021-02677-3>
- Rosenau, N.A., Galavotti, H., Yates, K.K., Bohlen, C.C., Hunt, C.W., Liebman, M., Brown, C.A., Pacella, S.R., Largier, J.L., Nielsen, K.J. and Hu, X., 2021. Integrating High-Resolution Coastal Acidification Monitoring Data Across Seven United States Estuaries. **Frontiers in Marine Science**. <https://doi.org/10.3389/fmars.2021.679913>
- Backe, K, Hines, E, Nielsen, KJ, George, D, Twohy, E, Lowry, M. 2021. Effects of sea-level rise and storm enhanced flooding on Pacific harbor seal habitat: a comparison of haul-out changes at the Russian and Eel River Estuaries. **Aquatic Conservation: Marine and Freshwater Ecosystems**. <https://doi.org/10.1002/aqc.3574>
- Menge, B.A., Close, S.L., Hacker, S.D., Nielsen, K.J. and Chan, F., 2020. Biogeography of macrophyte productivity: Effects of oceanic and climatic regimes across spatiotemporal scales. **Limnology and Oceanography**. <https://doi.org/10.1002/lno.11635>
- Wilson, J.R., Wilkerson, F.P., Blaser, S.B., Nielsen, K.J. 2020. Phytoplankton Community Structure in a Seasonal Low-Inflow Estuary Adjacent to Coastal Upwelling (Drakes Estero, CA, USA). **Estuaries and Coasts** <https://doi.org/10.1007/s12237-020-00792-3>
- Close, S.L., Hacker, S.D., Menge, B.A., Chan, F. and Nielsen, K.J. 2020. Biogeography Of Macrophyte Elemental Composition: Spatiotemporal Modification Of Species-Level Traits. **Ecosystems**. doi:10.1007/s10021-020-00484-w.
- Hacker S.D., Menge B.A., Nielsen K.J., Chan F., Gouhier T.C. 2019. Regional processes are stronger determinants of rocky intertidal community dynamics than local biotic interactions. **Ecology**:e02763.
- Saarman E.T., Owens B., Murray S.N., Weisberg S.B., Ambrose R.F., Field J.C., Nielsen K.J., Carr M.H. 2018. An ecological framework for informing permitting decisions on scientific activities in protected areas. **PloS one** 13(6):e0199126.
- Freiwald, J., Meyer, R., Caselle, J.E., Blanchette, C.A., Hovel, K., Neilson, D., Dugan, J., Altstatt, J., Nielsen, K.J. and Bursek, J. 2018. Citizen science monitoring of marine protected areas: Case studies and recommendations for integration into monitoring programs. **Marine Ecology** 39, p.e12470. doi.org/10.1111/maec.12470
- Chan, F., Barth, J.A., Blanchette, C.A., Byrne, R.H., Chavez, F., Cheriton, O., Feely, R.A., Friederich, G., Gaylord, B., Gouhier, T., Hacker, S., Hill, T., Hofmann, G. McManus, M.A.,

- Menge, B.A., Nielsen, K.J., Russell, A., Sanford, E., Sevajian, J., Washburn, L. 2017. Persistent spatial structuring of coastal ocean acidification in the California Current System. **Scientific Reports**, 7:2526 Published online 2017 May 31. doi: 10.1038/s41598-017-02777-y.
- Liebowitz, D., K.J. Nielsen, J. Dugan, S. Morgan, D. Malone, J. Largier, D. Hubbard, M. Carr. 2016. Ecosystem connectivity and trophic subsidies of beaches. **Ecosphere** 7(10): e01503. 10.1002/ecs2.1503.
- Kroeker, K., Sanford, E.; Rose, J., Blanchette C., Chan, F., Chavez, F., Gaylord, B., Helmuth, B., Hill, T., Hofmann, G., McManus, M., Menge, B., Nielsen, K.J., Raimondi, P., Russell, A., Washburn, L. 2016. Interacting environmental mosaics drive geographic variation in mussel performance and species interactions. **Ecology Letters** 19:771-779.
- Barner, A.K.*, S. D. Hacker, B. A. Menge & K. J. Nielsen. 2016. The complex net effect of reciprocal interactions and recruitment facilitation maintains an intertidal kelp community. **Journal of Ecology** 104:33-43.
- Murray, S., Weisberg, S., Raimondi, P., S. Ambrose, R., Bell, C., Blanchette, C., Burnaford, J., Dethier, M., Engle, J., Foster, M., Miner, M., Nielsen, K.J., Pearse, J., Richards, D. and Smith, J. 2016. Level of Agreement in Evaluating the Ecological States of West Coast Rocky Intertidal Communities: A Best Professional Judgment Exercise. **Ecological Indicators** 60:802-814.
- Menge, B.A., T.C. Gouhier, S.D. Hacker, F. Chan and K. J. Nielsen. 2015. Are meta-ecosystems organized hierarchically? A model and test in rocky intertidal habitats. **Ecological Monographs** 85:213-233.
- Heather Tallis, Jane Lubchenco, and 238 co-signatories including K.J. Nielsen. Working together: A call for inclusive conservation. 2014. **Nature** 515:27-28
- Burnaford, J., K.J. Nielsen & S.L. Williams. 2014. Celestial mechanics affect emersion time and patterns of abundance of an ecosystem engineer, the intertidal kelp *Saccharina sessilis*. **Marine Ecology Progress Series** 509:127-136.
- Krenz, C., B.A. Menge, T. L. Freidenburg, J. Lubchenco, F. T. Chan, M. M. Foley & K. J. Nielsen. 2011. Ecological subsidies to rocky intertidal communities: linear or non-linear changes along a consistent geographic upwelling transition? **Journal of Experimental Marine Biology and Ecology** 409: 361-370.
- McPhee-Shaw, E., K.J. Nielsen, J. L. Largier & B. A. Menge. 2011. Nearshore Chlorophyll-a events and wave-driven transport. **Geophysical Research Letters** 38
- Thompson, S. A., H. Knoll, C. A. Blanchette & K. J. Nielsen 2010. Population consequences of biomass loss due to commercial collection of the wild seaweed *Postelsia palmaeformis*. **Marine Ecology Progress Series** 413:17-31.
- Sanford, E., M. E. Wood*, K. J. Nielsen. 2010. A non-lethal method for estimation of gonad and pyloric caecum indices in sea stars. **Invertebrate Biology** 128:372-380.
- Menge, B. A., F. T. Chan, K. J. Nielsen, E. D. Lorenzo & J. Lubchenco. 2009. Climatic variation alters supply side ecology: impact of climate patterns on phytoplankton and mussel recruitment. **Ecological Monographs** 79:379-95.
- Kavanaugh, M. T.*, K. J. Nielsen, B. A. Menge, F. T. Chan, R. M. Letelier, L. M. Goodrich. 2009. Experimental assessment of the effects of shade on an intertidal kelp: do phytoplankton blooms inhibit growth of open coast macroalgae? **Limnology & Oceanography** 54:276-288.
- Barth, J. A., B. A. Menge, J. Lubchenco, F. T. Chan, J. M. Bane, A. R. Kirincich, M. A. McManus, K. J. Nielsen, S. D. Pierce & L. Washburn. 2007. Delayed upwelling alters nearshore

- coastal ocean ecosystems in the northern California Current. **Proceedings of the National Academy of Sciences** 104:3791-3794.
- Nielsen, K. J., C. A. Blanchette, B. A. Menge & J. Lubchenco 2006. Physiological snapshots reflect ecological performance of the sea palm, *Postesia palmaeformis*, (Phaeophyceae) across intertidal elevation and exposure gradients. **Journal of Phycology** 42, 548–559.
- Bracken, M. & K. J. Nielsen 2004. Nitrogen loading by invertebrates increases diversity of intertidal seaweeds. **Ecology** 85(10):2828-2836
- Grantham, B. A., F. T. Chan, K. J. Nielsen, D. Fox, J. A. Barth, A. Huyer, J. Lubchenco, and B. A. Menge 2004. Nearshore upwelling-driven hypoxia signals ecosystem and oceanographic changes in the NE Pacific. **Nature** 429:479-754
- Nielsen, K. J. & S. A. Navarrete 2004. Mesoscale regulation comes from the bottom-up: intertidal interactions between consumers and upwelling. **Ecology Letters** 7(1):31-41.
- Nielsen, K. J. 2003. Nutrient loading and consumers: agents of change in open-coast macrophyte assemblages. **Proceedings of the National Academy of Sciences** 100: 7660-7665.
- Wieters, E., D. M. Kaplan, A. Sotomayor, S. A. Navarrete, J. L. Largier, K. J. Nielsen & F. Véliz. 2003. Spatial and temporal variation in chlorophyll-a with respect to local upwelling intensity in central Chile. **Marine Ecology Progress Series** 249:93-105.
- Nielsen, K. J. 2001. Bottom-up and top-down forces in tidepools: test of a simple food-chain model in an intertidal community. **Ecological Monographs** 71(2): 187-217.
- Nielsen, K. J. & D. R. Franz 1995. The influence of adult conspecifics and shore level on recruitment of the ribbed mussel *Geukensia demissa* (Dillwyn). **Journal of Experimental Marine Biology and Ecology** 188:89-98.

BOOK CHAPTERS

- Blanchette, C.A., M.W. Denny, J.M. Engle, B. Helmuth, L.P. Miller, K.J. Nielsen, and J. Smith. 2016. Intertidal. In H. Mooney and E. Zavaleta, (Eds.) **Ecosystems of California**. University of California Press.
- Bakker, J., K.J. Nielsen, J. Alberti, F. Chan, S.D. Hacker, O.O. Iribarne, D.P.J. Kuijper, B.A. Menge, M. Schrama & B.R. Silliman. 2015. Bottom-up and top-down interactions in coastal interface systems. In K. LaPierre and T. Hanley (Eds.) **Trophic Ecology: Bottom-Up and Top-Down Interactions across Aquatic and Terrestrial Systems**. Cambridge University Press. pp. 157-200.
- Nielsen, K. J. 2007. Algae, overview. In M. Denny and M. S. Gaines, (Eds.), **Encyclopedia of the Rocky Intertidal**. University of California Press.

ADMINISTRATIVE REPORTS, PROGRAM REVIEWS, PROPOSALS

- Nielsen, K.J. 2018, 2019, 2020. Annual Report for the Estuary & Ocean Science Center, San Francisco State University
- Nielsen, K.J. 2017. Estuary & Ocean Science Center: Connecting Science Society and the Sea for a Healthy Planet. Research and Service Organization Proposal, San Francisco State University.
- Nielsen, K.J. 2014, 2015, 2016, 2017 Annual Report for the Romberg Tiburon Center for Environmental Studies, San Francisco State University
- Harvey, J., Lee, C., Nielsen, K.J., Zachos, J. 2016. Institute of Marine Science, University of California, Santa Cruz. Program Review. External reviewer report for University of California, Santa Cruz.

- Nielsen, K.J. 2013. Moss Landing Marine Laboratories M.S. Program Review. External reviewer report for San Jose State University.
- Nielsen, K.J. 2010. Supporting Faculty Research and Scholarship: A Survey of Faculty Needs in Support of Externally Funded Research and Scholarship (2009-2010). A Collaborative project of Academic Affairs and the Faculty Subcommittee on Sponsored Projects, SSU Academic Senate.
- Nielsen, K.J. 2010. Supporting Faculty Scholarship: A Summary of Interviews with the Faculty. A report for the Division of Academic Affairs, Sonoma State University

PUBLICATIONS (OTHER)

Technical Reports

- Galavotti, H., Vasslides, J., Poach, M., Bohlen, C., Hunt, C.W., Liebman, M., Hu, X., McCutcheon, M., O'Donnell, J., Howard-Strobel, K. and Vella, P., 2021. Measuring coastal acidification using in situ sensors in the National Estuary Program (No. EPA-842-R-21001). EPA. <https://pubs.er.usgs.gov/publication/70220586>
- Sievanen, L, Phillips, J, C Colgan, G Griggs, J Finzi Hart, E Hartge, T Hill, R Kudela, N Mantua, KJ Nielsen, L Whiteman. 2019. California's Coast and Ocean Summary Report. California's Fourth Climate Change Assessment. Publication number: SUMCCC4A-2018-011. <http://www.climateassessment.ca.gov/state/docs/20180827-OceanCoastSummary.PDF>
- Cope, J., Raimondi, P., Fay, G., Jiao, Y., Nielsen, K., Tissot, B., and White, W. Final report of the scientific and technical review panel: Scientific peer review of proposed recreational red abalone management strategies. California Ocean Science Trust, Oakland, CA. October, 2018. http://www.oceansciencetrust.org/wp-content/uploads/2018/10/AbalonePeerReview_Final_Oct2018.pdf
- Nielsen, K., Stachowicz, J., Carter, H., Boyer, K., Bracken, M., Chan, F., Chavez, F., Hovel, K., Kent, M., Nickols, K., Ruesink, J., Tyburczy, J., and Wheeler, S. Emerging Understanding of the potential role of seagrass and kelp as an ocean acidification management tool in California. California Ocean Science Trust, Oakland, California, USA. January 2018. <http://www.oceansciencetrust.org/wp-content/uploads/2018/01/OA-SAV-emerging-findings-report-1.30.18.pdf>
- Trowbridge, P., Shimabuku, I., Wheeler, S., Knight, E., Nielsen, K., Largier, J., Sutula, M., Valiela, L., Nutters, H. 2017. Summary of Workshop on Monitoring for Acidification Threats in West Coast Estuaries: A San Francisco Bay Case Study. October 19-20, 2016, San Francisco Estuary Institute, Richmond, CA. http://www.sfei.org/sites/default/files/biblio_files/SFEI%20Full%20OA%20Workshop%20Summary_final.pdf
- Nielsen, KJ, Dugan, JE, Mulligan, T, Hubbard, DM, Craig, SF, Laucci, R, Wood, ME, Barrett, DR, Mulligan, HL, Schooler, N, & Succow, ML. 2017. Baseline Characterization of Sandy Beach Ecosystems along the North Coast of California. Final Report to California Sea Grant and Ocean Science Trust. 166 pp. <https://caseagrant.ucsd.edu/sites/default/files/38-Nielsen-Final.pdf>
- Ambrose, R.F., Bernstein, B., Anderson, S.S., Carr, M.H., Murray, S.N., Nielsen, K.J., Raimondi, P.T. 2016. Marine Mitigation in California: going beyond traditional approaches, **California Ocean Protection Council Science Advisory Team, California Ocean Science Trust**, Oakland, California, USA. May 2016.
- Dugan, J.E., Hubbard, D.M., Nielsen, K.J., Altstatt, J. & Bursek, J. 2015. Baseline Characterization of Sandy Beach Ecosystems Along the South Coast of California.

- Final Report for California Sea Grant and Ocean Science Trust. 113 pp.
<http://oceanspaces.org/sites/default/files/scmpa-24-final-report.pdf>
- Carr, M.H., K.J. Nielsen, J. Prince, P. Raimondi, S.C. Schroeter and B. Tissot. 2014. Final Report of the Science Advisory Committee Scientific and Technical Review of the Survey Design and Methods Used by the California Department of Fish and Wildlife to Estimate Red Abalone (*Haliotis rufescens*) Density. **California Ocean Science Trust, California Ocean Protection Council and California Department of Fish and Wildlife**. <http://calost.org/pdf/science-advising/peer-review/Abalone%20Review%20Final%20Report%20FINAL.pdf>
- Nielsen, K.J., S.G. Morgan & J. E. Dugan. 2013. Baseline Characterization of Sandy Beach Ecosystems in California's North-Central Coast Region. **Final Report for the Monitoring Enterprise**. October 14, 2013
- Rogers-Bennett, L., R. Kudela, K. J. Nielsen, A. Paquin*, C. O'Kelly, G. Langlois, D. Crane & J. Moore. 2012. Dinoflagellate bloom coincides with marine invertebrate mortalities in northern California. **Harmful Algae News**
- California MLPA Master Plan Science Advisory Team# (2011, January 13). *Methods Used to Evaluate Marine Protected Area Proposals in the North Coast Study region*. Sacramento, CA: Marine Life Protection Act Initiative 31 October 2012, <http://www.dfg.ca.gov/mlpa/pdfs/northcoastproposals/evaluationmethods.pdf>
 #KJN is a co-author and was a member of the Science Advisory Team
- Nutrients Supply Affects Seaweed Diversity. 2005. **PISCO Coastal Connections** 4:12-13. An annual publication of the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO). http://www.piscoweb.org/files/file/Coastal_Connections/PCC4-Final-Booklet.pdf
- Sunlight Shapes Shoreline Ecology. 2005. **PISCO Coastal Connections** 4:12-13. An annual publication of the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO). http://www.piscoweb.org/files/file/Coastal_Connections/PCC4-Final-Booklet.pdf
- Perspectives, opinions, letters, statements, and blogs***
- Domingo, C. Simonis, U., Marzke, R., Burrus, L., Baird Jr., T., Puder, A., Dekens, P., Siong-The, K., Oliphant, A., Hsu, E., Barranco, J., Wright, C., Nielsen, K., Fuse, M., Horvath, L. 2020. Announcing a CoSE Task Force for Anti-Racism. 20 August 2020.
<https://cose.sfsu.edu/announcing-cose-task-force-anti-racism>
- Nielsen, K.J. 2020. Listen, learn, and reset your compass to build an anti-racist future. Anti-Racism Statement. Bayside Newsletter, Estuary & Ocean Science Center, 4 June, 2020. <https://eoscenter.sfsu.edu/content/listen-learn-and-reset-your-compass-build-anti-racist-future>
- Hill, TM, Nielsen, KJ, Cloyd, ET, Knight, E. 2018. Why we need #ClimateFriday: Centering discussions on climate change impacts and solutions. Medium.com. November 30, 2018. <https://medium.com/@phyllospadix/why-we-need-climatefriday-37e60c9c5585>
- Ramirez KS, Berhe AA, Burt J, Gil-Romera G, Johnson RF, Koltz AM, Lacher I, McGlynn T, Nielsen KJ, Schmidt R, Simonis JL. 2018. The future of ecology is collaborative, inclusive and deconstructs biases. **Nature Ecology & Evolution** 2(2):200.
- Nielsen, K.J. 2014. Applying Scientific Thinking to Decision-Making. Perspectives from the Ocean Protection Council – Science Advisory Team -- Part 2. Ocean Spaces blog post,

- December 8, 2014. <http://oceanspaces.org/blog/perspectives-opc-sat-part-2-applying-scientific-thinking-decision-making>
- December 15, 2008, Op-Ed, Nielsen, K. J., A bailout plan for ocean ecosystems, **The Ukiah Daily Journal**, Ukiah, CA
- May 1, 2008, Op-Ed, Nielsen, K. J., Don't let sea palms go the way of salmon, **The Mendocino Beacon**, Mendocino, CA
- April 29, 2004, Op-Ed, Nielsen, K. J., Don't miss chance to save our oceans, **The Press Democrat**, Santa Rosa, CA

MEDIA COVERAGE

- June 27, 2018. An acidified San Francisco Bay? No one's studied that yet, by Eric Simons. Bay Nature, <https://baynature.org/article/acidified-sf-bay/>
- March 15, 2018. BOB and MARI Will Monitor Water Chemistry in the San Francisco Bay, by Karla Lant. Environmental Monitor. <https://www.fondriest.com/news/bob-mari-will-monitor-water-chemistry-san-francisco-bay.htm>
- March 16, 2018. BOB and MARI Start Monitoring the Bay, San Francisco Estuary Partnership. <https://www.sfestuary.org/bob-and-mari-start-monitoring-the-bay/>
- January 21, 2018. Radio Interview by Margie Shafer KCBS on climate change and research at the Estuary & Ocean Science Center.
2017. At a snail's place: In which the distribution of a common Pacific Coast sea snail explains the underlying logic of the universe, by Eric Simons In WEIRD, UGLY, RARE, a series showcasing the stories of species it's hard to tell stories about. They're weird. They're ugly. They're rare. **Bay Nature**. <https://baynature.org/biodiversity/>
- October, 25, 2016. Tiburon's Romberg center gets \$3M for master's program on coastal cities, by Mark Prado. **Marin Independent Journal**. <http://www.marinij.com/article/NO/20161025/NEWS/161029864>
- February 1, 2014. Creating a marine reserve snapshot; collaborative project sets baseline for protected areas, by Will Houston. **The Times-Standard**. http://www.times-standard.com/ci_25041666/creating-marine-reserve-snapshot-collaborative-project-sets-baseline
- January 1, 2012. Killer algae on Sonoma coast, by Aleta George, **Bay Nature**. <http://baynature.org/articles/jan-mar-2012/ear-to-the-ground/killer-algae-on-sonoma-coast>
- October 27, 2011 Radio interview by Cal Winslow, **Mendocino Public Radio (KZYX &Z)**, Mendocino Institute's Environmental Issues mini-series, show covered recent dinoflagellate bloom and associated die-off of abalone and other marine life and discussion of newly established marine protected areas.
- October 13, 2011. Cryptic phytoplankton may hold answer, by Ryan Jacobs, **Point Reyes Light**. <http://www.ptreyeslight.com/article/cryptic-phytoplankton-may-hold-answer>
- October 3, 2011. Red tide rising: Harmful phytoplankton blooms, by Jennifer Skene, **QUEST** (KQED, San Francisco). <http://science.kqed.org/quest/2011/10/03/red-tide-rising/>
- September 23, 2011, Killer red tide baffles scientists, by John Upton, **The Bay Citizen**. <http://www.baycitizen.org/environment/story/killer-red-tide-baffles-scientists/>
- September 23, 2011. What's next for Abalone hunters? by Sam Scott, **Santa Rosa Press Democrat**. <http://www.pressdemocrat.com/article/20110923/articles/110929705>

- June 17, 2009. Radio interview by Christina Aanistad, **Mendocino Public Radio (KZYX &Z)**, Evening Local News, segment on conflict between north coast seaweed harvesters and the Marine Life Protection Act.
- October 7, 2005. Could you please pass the Sea Palm? West coast seaweed popular gourmet snack; harvesting regulations limited, by Bob Norberg, **Santa Rosa Press Democrat**.
http://www.sonoma.edu/users/n/nielseka/press/Press_Democrat_07OCT05.pdf
- March 2003, interview appearance on, **Oregon Public Broadcasting: Oregon Field Guide**, segment on Oregon's marine hypoxic zone.
- August 7, 2002. Dead marine life signals a sea change, by Jonathon Brinkman, **The Oregonian**.
- August 1, 2002. Researchers puzzle over seawater, by Susan Palmer, **The Register-Guard**.
- July 31, 2002,. 'Dead Zone' May Explain Crab Die-Off, by Alison Frost, **Oregon Public Broadcasting (Oregon Considered)**.
- July 31, 2002. Dead sea life afflicts coastal zone, by Jonathon Brinkman, **The Oregonian**.
- July 31, 2002. Researchers find cause of coastal crab and fish die off, by Joel Gallob, **The Newport News-Times**.

TEACHING EXPERIENCE

UNDERGRADUATE COURSES

Sonoma State University, Department of Biology, Rohnert Park, CA

- **A Watershed Year**. Lecture, Discussion, and Laboratory Instruction and Curriculum Development for a new, NSF-funded 'freshman year experience' for STEM majors; the course integrates critical thinking, philosophy of science, pre-calculus math and biology; co-taught with Dr. Jeremy Qualls [Physics & Astronomy], Dr. Brigitte Lahme [Mathematics & Statistics], Dr. John Sullins III [Philosophy], Dr. Suzanne Rivoire [Computer Science], Dr. Martha Shott [Mathematics & Statistics] and Dr. Nathan Rank [Biology]. (Fall 2012 – Spring 2014)
- **Marine Botany** (Lecture & Laboratory) (Fall 2011)
- **Marine Ecology** (Lecture & Laboratory) (Spring 2004 – 2008, 2010 - 2014)
- **Invertebrate Biology** (Lecture & Laboratory) (Fall semesters 2003 – 2013)
- **Diversity, Structure & Function** (Lecture and Laboratory content including supervision and training of graduate teaching assistants) (Fall 2003 – 2008; co-taught with Dr. Nathan Rank, Sonoma State University, Department of Biology)
- **Biological Oceanography** (Lecture) (Spring 2005, 2006)
- **Ocean Science Literacy for School & Society**. Lecture & supervision of student teaching in local public elementary schools. (Spring 2006, 2007; co-taught with Dr. Paula Lane [School of Education])
- **Special Studies, Research Experience and Honors Research**. Supervised research experiences for biology majors in my lab group. (Spring 2004 – present; 2-7 students every semester)
-

Hatfield Marine Science Center & Biology Program, Oregon State University, Newport, OR.

- **Marine Ecology** (Lecture & Laboratory) (Spring 2000)

GRADUATE COURSES

San Francisco State University, Interdisciplinary Marine & Estuarine Sciences, Tiburon, CA

- **Professional Internship** (Fall 2018, 2019, 2020)
- **Writing & Professional Skills Workshop** (Spring 2020, 2021)
- **Foundations in Global Change in Urbanized Coasts and Estuaries** (Fall 2017, 2018, 2019, 2020)

Sonoma State University, Department of Biology, Rohnert Park, CA

- **Applied Data Analysis** (Spring 2009, 2010, 2011)
- **Professional Skills** (Fall 2008)
- **Philosophy of Science** (Fall 2006)
- **Sound Science and Sound Bites: Ecology in the News** (Fall 2004)

GRADUATE STUDENT ADVISEES

Carl Hendrickson (**NSF Research Trainee**), MS anticipated 2023; Understanding the effect of living shoreline projects on the ecosystem services of eelgrass (*Zostera marina*) to enhance the outcomes of restoration projects. (co-advised with Katharyn Boyer)

Shea Grady (**NSF Research Trainee**), MS 2023; Determining complete buffering capacity (total alkalinity) in shallow estuarine habitats.

Mehak Jain (**NSF Research Trainee**), MS 2023; Can an eelgrass dominate bay ameliorate coastal acidification in an urban estuary?

Byron Riggins (**NSF Research Trainee**), MS 2022; Climate change exacerbates the impacts of small hydropower projects..

Chelsey Wegener (**NSF Research Trainee**), MS 2021; Reproductive ecology of the rockweed *Fucus distichus* in an urban estuary.

Ryan Hartnett; MS Fall 2016 (Marine Science, San Francisco State University); Connecting the dots in the Gulf of the Farallones: linking physical ocean conditions to the ecological success of planktivorous predators.

Athena Maguire; MS 2016 (Biology, Sonoma State University); Ecology of the ecoparasitic pyramidellid snail, *Evalea tenuisculpta* and its host, the red abalone, *Haliotis rufescens*.

Jill Stokes; MS 2016, (Biology, Sonoma State University); Physiological ecology of the intertidal kelp *Saccharina sessilis*.

Preston Malm; MS 2016, (Biology, Sonoma State University) Trophic subsidies: links between rocky and sandy shore ecosystems

Mustafa Gül (**International Graduate Fellow, Ministry of National Education, Turkey**); MS 2015 (Biology, Sonoma State University); Climate change impacts on interactions between native and exotic marine species.

Suzanne Garcia; MS not completed (Biology, Sonoma State University); The influence of source waters on phytoplankton community structure in Point Reyes National Seashore and Bodega Bay, California.

Adele Paquin ; MS 2012 (Biology, Sonoma State University); Patterns of nearshore phytoplankton composition within a northern California upwelling cell.

Marian Parker; MS 2009 (Biology, Sonoma State University); Reproductive output of *Balanus glandula* and *Chthamalus dalli*: can oceanography trump the effects of competitive exclusion?

Heather Knoll (**CA Sea Grant Trainee**); MS not completed (Biology, Sonoma State University); *Postelsia* in the face of human exploitation: mechanisms of population persistence.

Megan Wood (**EPA STAR Fellow**); MS 2008 (Biology, Sonoma State University); Reproductive output of a keystone predator and its preferred prey: the differential influence of oceanographic regime and local habitat.

Sarah Ann Thompson (**CA Sea Grant Trainee**); MS 2007 (Biology, Sonoma State University); Balancing conservation with commercial use: an experiment to guide sustainable exploitation of an ecologically vulnerable kelp.

GRADUATE STUDENT COMMITTEES

Elizabeth Max, MS anticipated 2023; California mussel condition and trends in relation to climate indices in the rocky intertidal of the Farallon Islands. (MS committee member, Advisor: Ellen Hines).

Tettlebach, Christian; MS 2021. Effects of climate change on the herbivory of eelgrass (*Zostera marina*) by an invasive grazer in San Francisco Bay. (MS committee member, Advisor: Katharyn Boyer).

Abby Mohan; MS 2019. Benefits to community well-being from mangrove restoration activities. (MS committee member, Advisor: Ellen Hines).

Backe, Karen; MS 2018. Effects of Sea-level Rise and Storm Enhanced Flooding on Pacific Harbor Seal Habitat: a Comparison of Haul-out Changes at the Russian and Eel River Estuaries. (MS committee member, Advisor: Ellen Hines)

Wilson, Jessica; MS 2028. Spatial and Temporal Changes in Phytoplankton Communities in Drakes Estero, a Low-inflow Estuary. (MS committee member, Advisor: Frances Wilkerson)

Chenchen Shen; PhD 20XX (Zoology, Oregon State University); *Corallina vancouveriensis*: impact of ocean acidification and consequences for its role as an ecosystem engineer; (PhD Committee member; Advisor: Bruce Menge)

Letzing, Sandy; MS 2013 (Marine Resource Management, Oregon State University); Characterizing the response of coralline algae to ocean acidification and nutrient changes in the California current system. (MS Committee member; Advisor: Francis Chan)

Joshua Cutler; MS 2012 (Biology, Sonoma State University); Behavioral plasticity of female northern elephant seals drive fine-scale foraging success (MS Committee member; Advisor: Dan Crocker)

Frederique Lavoipierre; MS 2011 (Biology, Sonoma State University); Effects of floral resources and local environment on tri-trophic interactions (MS Committee member; Advisor: Nathan Rank)

Betsy Kelso; MS 2011 (Biology, Sonoma State University); Sex differences in fuel use and metabolism during development in fasting northern elephant seals (MS Committee member; Advisor: Dan Crocker)

Meghan Skaer; MS 2009; (Biology, Sonoma State University); Evaluating the influence of cattle grazing on a coastal prairie in central California (MS Committee member; Advisor: Hall Cushman)

Catherine Hare; MS 2010 (Biology, Sonoma State University); Algal culturing using wastewater and potential for production of biodiesel. (MS Committee member; Advisor: Michael Cohen)

Dawn Graydon; MS 2009 (Biology, Sonoma State University); Ecology and management of an endangered butterfly: the importance of host plant characteristics, exotic plants and interactions with ants (MS Committee member; Advisor: Hall Cushman)

Lovissa Sonnerstedt; MS 2008 (Biology, Sonoma State University); Physiological ecology of Elephant Seals (MS Committee member; Advisor: Dan Crocker).

- Emi Yamamoto; MS 2008 (Biology, Sonoma State University); Characterization of Mycophagous Amoebae Strain ANN04-395 and its Potential for Biocontrol of *Phytophthora ramorum* (MS Committee member; Advisor: Michael Cohen)
- Michele Early; MS pending (Biology, Sonoma State University); Evaluating the influence of biotic and abiotic factors on valley oak distributions in the Santa Rosa Plain, California (MS Committee member; Advisor: Caroline Christrian)
- Michelle Cooper; MS 2006 (Biology, Sonoma State University); The effects of recreation on the dispersal of an exotic forest pathogen (MS Committee member; Advisor: Hall Cushman).
- Joan Schwann; MS 2006 (Biology, Sonoma State University); Influence of goat grazing on invasive species in vernal pools (MS Committee member; Advisor: Hall Cushman).
- Rich Hunter; MS 2006 (Biology, Sonoma State University); Development and evaluation of a model incorporating spatial and temporal variability in a plant-pathogen invasion: Spread of *Phytophthora ramorum* in California landscapes (MS Committee member; Advisor: Ross Meentemeyer, Geography).
- Kristina Stanton; MS 2006 (Institute of Interdisciplinary Studies, Sonoma State University); Ecology education: a case study of a fourth grade tide pool and conservation experience (MS Committee member; Advisor: Paula Lane, School of Education).
- Maria Kavanaugh; MS 2005 (Zoology, Oregon State University); Phytoplankton shading of Benthic Macrophytes: Implications for Community Structure (MS Committee member; Advisor: Bruce Menge).
- Melissa Foley; PhD 2009 (Ecology & Evolutionary Biology, University of California, Santa Cruz) Effect of terrestrial inputs on marine communities (Qualifying Exam Committee Member; Advisor: Pete Raimondi).

TEACHING ASSISTANT EXPERIENCE

Hatfield Marine Science Center & Biology Program, Oregon State University, Newport, OR.

- **Marine Ecology** (1994, 1997, 1998; *Bruce Menge*, instructor)
- **Invertebrate Zoology** (1994, 1997; *Sylvia Yamada*, instructor)
- **Marine Phycology** (Full responsibility for lab exercises; 1995, *Carol Blanchette*, instructor; 1997, *Kathy Van Alstyne*, instructor)

Biology Program and Department of Zoology, Oregon State University, Corvallis, OR

- **General Biology** (1992-1993)
- **Human Anatomy and Physiology** (1993-1994)

OTHER TEACHING EXPERIENCE

Supervisor, undergraduate research assistants, Department of Zoology, Oregon State University, Corvallis, OR (September 1993- June 1998)

Biology Tutor, Peer Tutoring Program, Brooklyn College - City University of New York (September 1990 - June 1992)

Exhibitor and Software Demonstrator, PC-ORD: Multivariate Analysis of Ecological Data (Ver. 2.0), MjM Software, Ecological Society of America, August 1995, Snowbird, Utah.

Assistant to the Director of Public Programs and Nature Walk Guide, The Brooklyn Center for the Urban Environment, Prospect Park, Brooklyn, NY (March 1987- June 1992).

WORKSHOPS (*organizer/co-organizer)

***Ocean Protection Council SF Bay Academic Roadshow.** Lightning talks, networking, and engagement with the Ocean Protection Council, Ocean Science Trust and California's two Sea Grant programs (California Sea Grant and USC Sea Grant). March 5, 2020, Estuary & Ocean Science Center - San Francisco State University, Tiburon, CA.

Integrated Ocean Observing for a Changing California Coastline. Presenter: Nearshore & estuarine ecosystem health. Organizer: Southern and Central and Northern California Ocean Observing Systems workshop. November 19, 2019. Sacramento, CA

Bay Beaches Briefing. Organized by the State Coastal Conservancy. Many environmental partners, agencies, and local landowners in the Bay Area are considering coarse grain beach restoration designs to help adapt to sea level rise and protect shorelines from erosion. Both natural and restored coarse grain beaches can include different grain sizes (sand, pebble, cobble, gravel, rock) as well as vegetation and other natural features. Bay beaches are being incorporated into living shorelines approaches and have been prioritized for more testing and study in several regional projects including SF Bay Subtidal Habitat Goals, Baylands Ecosystem Goals Update, and SF Bay Adaptation Atlas. Many groups are helping to address data gaps and working on innovative assessment and planning projects to better understand beach foreshore/backshore dynamics; engineering and nature-based design considerations; and developing conceptual restoration designs. Presenter: *EOS Center: Rocky intertidal and coarse beach design*. May 21, 2020, virtual meeting (via Zoom).

Living Shorelines & Resilience in the SF Bay Area. Organized by: San Francisco Bay and Outer Coast Sentinel Site Cooperative. These workshops provide an introduction to the living shorelines design approach, and share information about the state of the science and best practices around living shorelines (i.e. nature-based or green infrastructure) shoreline adaptation strategies. These workshops are geared towards San Francisco Bay Area professionals who work or may work in the near future on shoreline adaptation projects in various capacities, including land and natural resource managers, scientists, municipal and regional planners, consultants, engineers, community conservation organizations, and key community leaders. Panel presenter: *Perspectives on Living Shorelines*. March 1st, 2019, Bay Area Metro Center, Yerba Buena Room, 375 Beale St, San Francisco 94105

Marin County Sea Level Rise Adaptation Workshop. Hosted by: Marin County's Sea Level Rise: C-SMART and BayWAVE, Drawdown: Marin, and the California State Coastal Conservancy. Presentation: Estuary & Ocean Science Center shoreline restoration & adaptation. Mill Valley, CA March 21st, 2019.

***Monitoring for Acidification Threats in West Coast Estuaries: A San Francisco Bay Case Study.** Organized by: San Francisco Estuary Institute; Romberg Tiburon Center for Environmental Studies, San Francisco State University; Coastal and Marine Sciences Institute, University of California Davis; Southern California Coastal Water Research Project Authority; U.S. Environmental Protection Agency; San Francisco Estuary Partnership; and California Ocean Science Trust. Funding provided by: U.S. Environmental Protection Agency through the San Francisco Estuary Partnership; Regional Monitoring Program for Water Quality in San Francisco Bay; California Ocean Science Trust; and California Sea Grant. San Francisco Estuary Institute, Richmond, CA. October 19-20, 2016.

Developing Principles & Good Practice for Expert Judgments (sponsored by the MPA Monitoring Enterprise) National Center for Ecological Analysis and Synthesis (NCEAS) Santa Barbara, CA, January 25-26, 2012

***Understanding and Developing Recommended Responses to Harmful Algal Bloom (HAB) Events in California** (sponsored by CA Ocean Science Trust and CA Sea Grant, with meeting space donated by Monterey Bay Aquarium Research Institute). January 11, 2012.

In Pursuit of Bio-Criteria for Evaluating the Condition of Rocky Intertidal Communities, Workshop II (sponsored by the University of Southern California Sea Grant Program with Assistance from the Bureau of Ocean Energy Management, Regulation and Enforcement). February 2012. Invited participant. Southern California Coastal Water Research Project, Costa Mesa, CA.

In Pursuit of Bio-Criteria for Evaluating the Condition of Rocky Intertidal Communities, Workshop I (sponsored by the University of Southern California Sea Grant Program with Assistance from the Bureau of Ocean Energy Management, Regulation and Enforcement). March 2010. Invited participant. Wrigley Marine Science Center (University of Southern California), Catalina Island.

***Los Fondos de Estudios Avanzados en Areas Prioritarias (FONDAP) - Comisión Nacional de Investigación Científica y Tecnológica (CONICYT) Workshop on Marine Primary Productivity**, ECIM, Universidad Católica de Chile, Las Cruces, Chile, May 1999. Presentation: Nielsen K.J. 1999. Growth and abundance patterns of marine phototrophs along the central Chilean coast.

Andrew J. Mellon Foundation Working Group, ECIM, Universidad Católica de Chile, Las Cruces, Chile, December 1998. Presentation: Nielsen, K. J. 1998. Temporal and spatial variation in patterns of upwelled nutrients: How might oceanographic climate play a role in structuring algal assemblages in temperate upwelling ecosystems?

SERVICE

PROFESSIONAL SERVICE - CURRENT

January 2023 – present, Member, **Sea Grant Association**, External Relations Committee

July 2022 – present, Trustee, **Oregon Ocean Science Trust**.

<https://www.oregon.gov/dsl/OOST/Pages/OOST.aspx>

June 2022 – present, Member, **Oregon Ocean Acidification & Hypoxia Coordinating Council**. <https://www.oregonocean.info/index.php/ocean-acidification>

June 2022 – present. Chair, **Science & Technical Advisory Committee, Oregon Ocean Policy Advisory Committee**. <https://www.oregonocean.info/index.php/scientific-and-technical-advisory-committee>

June 2022 – present. Executive Committee Member (Ex-Officio), **Oregon Ocean Policy Advisory Committee**. <https://www.oregonocean.info/index.php/opac-meetings>

May 2020 – present. Trustee, **California Ocean Science Trust**.

<https://www.oceansciencetrust.org/>

January 2019 – present, Scientific Advisory Committee Member, **Point Blue Conservation Science**. <https://www.pointblue.org/>

PROFESSIONAL SERVICE - PAST

September 2014 – April 2022, Board Member, **San Francisco Bay National Estuarine Research Reserve Management Advisory Board**.

February 2008 – April 2022, **California Ocean Protection Council Science Advisory Team.** <https://www.opc.ca.gov/science-advisory-team/>

February 2010 – April 2022, Governing Council, **Central & Northern California Ocean Observing System;** <https://www.cencoos.org/organization-overview/staff-governing-council/>

January 2020 – December 2021. President, **Western Association of Marine Laboratories.** <http://waml.naml.org/>

January 2020 – December 2021. Treasurer, **National Association of Marine Laboratories.** <http://www.naml.org/>

January 2020 – December 2021 Executive Committee, **CSU Council on Ocean Affairs, Science & Technology.**

February 2018 – December 2019. Co-Lead **Master Plan for the Romberg Tiburon Campus**, San Francisco State University <https://plan.sfsu.edu/rtcmp>

January 1, 2018 – December 31, 2019. President-Elect, **Western Association of Marine Laboratories.** <http://waml.naml.org/>

January 1, 2018 – December 31, 2019. Chair, Executive Committee Chair, **CSU Council on Ocean Affairs, Science & Technology.**

September 2016 – Strategic Planning Committee member, **Shoals Marine Laboratory.**

June 11, 2015 – May, 2020. Liaison to the **Ocean Science Trust Board of Trustees** for the Ocean Protection Council Science Advisory Team.

September 2013 –2017, Co-Chair **California Ocean Protection Council Science Advisory Team;** <https://www.opc.ca.gov/science-advisory-team/>

August 2013 – June 2014, Scientific Advisory Committee, Red Abalone Density Estimates, **California Department of Fish and Wildlife and Ocean Science Trust;** <http://calost.org/science-advising/?page=ongoing-reviews>

September 2012 – 2018, Scientific Working Group, Research in Marine Protected Areas, **California Department of Fish and Wildlife and California Ocean Protection Council Science Advisory Team**

June 2012- 2016, Editorial Board, **Journal of Phycology.**

January 2012 – 2013, Policy Committee, **Phycological Society of America**

January 2012, co-organizer with Raphael Kudela (University of California, Santa Cruz) and administrative support from Errin Kramer-Wilt (Ocean Science Trust), **Understanding and Developing Recommended Responses to Harmful Algal Bloom (HAB) Events in California** (sponsored by CA Ocean Science Trust and CA Sea Grant, with meeting space donated by Monterey Bay Aquarium Research Institute). January 11, 2012. <http://calost.org/resources/?page=workshops>

May 2012, External Program Reviewer, **Moss Landing Marine Laboratories, San Jose State University,** M. S. Program.

September 2009 – January 2011, Scientific Consultant & Grant Writer, **Noyo Center for Science and Education at Fort Bragg.** Collaborative project: City of Fort Bragg and Sonoma State University to create a nature interpretive and marine research center. Worked with City staff, Susan Lohr (private consultant), Claudia Luke (SSU Field Stations and Nature Preserves), Sheila Semens (California Coastal Conservancy), Saeid Rahimi (Interim Dean, School of Science and Technology, SSU) to develop a plan gifting SSU land, design plans and phase 1 construction of the *Noyo Center* <http://city.fortbragg.com/pages/viewpage.lasso?pagename=4%7CMarine%20Science%20Institute>

- September 2010 – January 2011, **co-chair** with Claudia Luke, Director, Sonoma State University Preserves, **SSU Ad Hoc Committee on Academic Enhancement Opportunities** (Noyo Center for Science and Education at Fort Bragg).
- December 2009 – 2010, **California Marine Life Protection Act Initiative Science Advisory Team** (North Coast); <http://www.dfg.ca.gov/marine/mpa/ncsat.asp>
- January 2009, symposium organizer, “Marine Ecological Theory in Practice: Informing Marine Conservation Strategies in the 21st Century”, **International Temperate Reef Symposium**, Adelaide, Australia
- July 2007 – September 2008, **California Marine Life Protection Act Initiative Science Advisory Team** (North-Central Coast); <http://www.dfg.ca.gov/marine/mpa/mpsat.asp>
- October, 2006. **Northern California Forum for Diversity in Graduate Education**. Invited panelist. Mills College, Oakland, CA.
- June 2003, symposium organizer, “Linking Algae, Oceanography and Marine Ecology”, **Phycological Society of America**, Gleneden Beach, OR.
- February 2003, scientific reviewer, “Life in a Tide Pool” by Steven Otfinosko, **Newbridge Educational Publishing**, New York, NY.
- October 2002, invited speaker, **Understanding Marine Protected Areas (MPAs) and Marine Reserves: Scientific Realities and Public Perceptions**, A Workshop for Oregon Media, sponsored by **Communication Partnership for Science and the Sea (COMPASS)**, **Ocean Wilderness Network**, **SeaWeb**, **Oregon State University & PISCO**. The Oregon Ocean: A Nature Tour. LeSells Stewart Center, Corvallis, OR
- September 2000 -2002, scientific advisory panel, **Oregon State Department of Parks and Recreation**, Monitoring protocol for the first permit issued for the commercial collection of seaweeds in Oregon.
- November 2000, co-instructor (with Gary Allison), **SAS Workshop: Elementary Statistics and Data Manipulation using SAS Software**, training workshop for graduate students and lab technicians, Lubchenco - Menge lab group, Oregon State University.
- June 1997, played role of ‘Intertidal Ecologist’ for **Math in the Middle of Nature** (educational video funded by NSF and **South Carolina Educational Television**)
- October 1996 & 1995, Panelist, **Life in Graduate School, Symposium on Graduate Study in Science for Undergraduate Women**, Oregon State University, Corvallis, OR
- February 1995, Symposium Organizer, “Science and Society,” **Pacific Ecology Conference**, Oregon Institute of Marine Biology, Charleston, OR

UNIVERSITY COMMITTEES

- August 2023 - present, Director of Extension External Relations, Extension Service, **Search Committee**, Oregon State University.
- January 2023 - April 2023, Professor of Archaeology, College of Language, Culture, and Society, Anthropology Program, **Search Advocate for Faculty Search Committee**, Oregon State University.
- December 2022 - February 2023, Director Coastal Oregon Marine Experiment Station, College of Agriculture, **Search Committee**, Oregon State University.
- March 2021- May 2021, Professor of Archaeology, College of Language, Culture, and Society, Anthropology Program, **Search Advocate for Faculty Search Committee**, Oregon State University.

August 2020 – April 2022, **Academic Senate**, Senator for the College of Science & Engineering, and member of the Strategic Issues Standing Committee, San Francisco State University

August 2014 – April 2022, **Science Council**, College of Science & Engineering, San Francisco State University.

March 2021- May 2021, Vice President for Administration and Finance, **Administrative Search Committee**, San Francisco State University.

July 2020 – November 2020. **Ad Hoc Anti-Racism Committee**, College of Science & Engineering, San Francisco State University

August 2017 – July 2018, **University Research Council**, San Francisco State University.

October 2016-January 2017, Co-chair, Executive Director of Government Relations and Community Relations, **Administrative Search Committee**, San Francisco State University.

August 2013 – August 2014, **Budget Committee**, Department of Biology, Sonoma State University.

September 2011- August 2014, Internal Advisory Group, **S³: Stepping up STEM at Sonoma State University, NSF STEM Talent Expansion Program (STEP)**.

August 2013 – December 2013, **Faculty Search Committee**, Department of Biology, Sonoma State University.

August 2011 – December 2011, **Director of the Office of Sponsored Programs Search Committee**, Faculty Affairs, Sonoma State University.

August 2012 – May 2013, **Department of Biology Reappointment, Tenure and Promotion Committee**, Sonoma State University.

May 2010 – December 2011, **Chair, Department of Biology Reappointment, Tenure and Promotion Committee**, Sonoma State University.

August 2008 – January 2009, **Director of the Office of Sponsored Programs Search Committee**, Faculty Affairs, Sonoma State University.

August 2007 – December 2007, **Faculty Search Committee**, Department of Biology, Sonoma State University.

August 2007 – May 2009, **Chair, Faculty Subcommittee on Sponsored Programs**, Sonoma State University.

January 2006 – May 2007 & August 2000 – May 2011, **Faculty Subcommittee on Sponsored Programs**, Sonoma State University.

August 2004 – May 2007, **Biology Department Graduate Committee**.

August 2006 – May 2008, **Chair, Budget Committee**, Department of Biology, Sonoma State University.

September 2005 – 2009, **Budget Committee**, Department of Biology, Sonoma State University.

March 2005 –May 2006, **Information Technology Strategic Planning Committee**, Sonoma State University.

August 2006 –May 2007, **School of Science & Technology Elections Committee**, Sonoma State University.

August 2004 –May 2006, **Chair, School of Science & Technology Elections Committee**, Sonoma State University.

August 2005 –May 2006, **Chair, Biology Department Computer Committee**.

August 2004 –May 2005 & August 2006 – May 2007, **Biology Department Computer Committee**.

February 2004, **International Programs**, Faculty interviewer for CSU's statewide study abroad program; selection of SSU students to advance to state-wide selection process.

September 1995– June 1996, Graduate Student Representative, **Graduate Council, Oregon State University**, Corvallis, OR

September 1993– 1998, **Graduate Student Welfare Committee**, Department of Zoology, Oregon State University, Corvallis, OR

June 1994–February 1995, Chair of Steering Committee, **Pacific Ecology Conference**, Oregon Institute of Marine Biology, Charleston, OR

INVITED PRESENTATIONS

SCIENTIFIC MEETINGS

Nielsen, K.J., 2019. Meeting of waters in a time of change. **Connections between the SF Bay & Greater Farallones Sanctuary Symposium**. Estuary & Ocean Science Center - Bay Conference Center, Tiburon, CA October 16, 2019

Nielsen, K. J. 2019. San Francisco Bay is a Hope Spot for people and ocean wildlife (Zooming Out to the Full System, plenary presentation). **14th Biennial State of the San Francisco Estuary Conference**. Scottish Rite Center in Oakland, CA. October 21 – 22, 2019.

Nielsen, K. J. 2015. Rock, sand, water: meta-ecosystems at the land-sea interface. **Western Society of Naturalists, Presidential Symposium: Global Change Marine Ecology** (Gretchen Hoffman, Organizer). Sacramento CA. November 5-8, 2015.

Nielsen, K. J. 2012. Synopsis of the Sonoma Harmful Algal Bloom(HAB) Event. **Understanding and Developing Recommended Responses to Harmful Algal Bloom (HAB) Events in California**, Scientific Workshop hosted by the **Ocean Science Trust and CA Sea Grant**. Monterey Bay Aquarium Research Institute, Moss Landing, CA. January 11, 2012.

Nielsen, K. J. 2008. Low Recruitment Success From A Large, Competent Larval Pool: Is Negative Selection Or Habitat Choice To Blame? **Western Society of Naturalists, Presidential Symposium: Women in Marine Biology: Personal Perspectives from the Field** (Kathy-Ann Miller, organizer), Vancouver, British Columbia, Canada, 6-9 November 2008.

Nielsen, K. J. 2007. Intercepting light: the key to understanding interactions among, and the contributions of, benthic and pelagic photosynthesizers in highly productive, nearshore ecosystems. **PISCO Scientific Symposium**, Corvallis, OR 10-13 December 2007.

Nielsen, K. J. 2006. Macroalgae reveal the underappreciated role of resources in structuring benthic marine communities **Phycological Society of America**, mini-symposium: **The Experimental Ecology - Macroalgae Connection** (Robert Paine, organizer), Juneau AK, 7-12 July 2006.

Nielsen, K. J., P. Halpin, T. Freidenberg, B. A. Menge & J. Lubchenco. 2004. Grazer-alga interactions: Glimpses of generality across temperate rocky shores. **Geographical Ecology: Variation in and Control of Species Interaction Intensity over Regional and Global Scales, Symposium** (Bruce Menge, organizer), **Ecological Society of America Annual Meeting**, Portland, OR August 2004.

Grantham, B., K. J. Nielsen, & F. Chan 2002. Hypoxia and enrichment of inshore waters at 44.3N. **U.S. GLOBEC NEP-CCS SI Meeting**, Oregon State University, Corvallis, OR. 19-21 November, 2002.

- Nielsen, K. J., P. Halpin, T. Freidenberg & B. A. Menge 2000. Upwelling, macrophytes, and herbivory in Oregon, New Zealand and Chile. **PISCO - Mellon Symposium: Dynamics of Pacific Coastal Upwelling Ecosystems**, Oregon State University, Corvallis, OR, 14-20 December 2000.
- Blanchette, C., T. Freidenburg, K. Nielsen & P. Halpin 2000. Bottom-up effects on macrophyte assemblages in relation to upwelling intensity. **PISCO - Mellon Symposium: Dynamics of Pacific Coastal Upwelling Ecosystems**, Oregon State University, Corvallis, OR, 14-20 December 2000.
- Sotomayor, A., E. Wieters, D. Kaplan, S. Navarrete & K. J. Nielsen 2000. Spatial and temporal variation in chlorophyll-a on the central coast of Chile. **PISCO - Mellon Symposium: Dynamics of Pacific Coastal Upwelling Ecosystems**, Oregon State University, Corvallis, OR, 14-20 December 2000.
- Nielsen, K. J. & K.L. Van Alstyne, 1997. Ecological effects of harmful algal blooms on benthic marine communities. **Red Tides and Harmful Algal Blooms: Evidence of Ecosystem Reorganization Symposium** (Michelle Wood, organizer), **Society for Conservation Biology Annual Meeting**, Victoria, B. C., Canada, June 1997.

UNIVERSITY/RESEARCH SEMINARS

- Nielsen, K.J. & J. Largier. 2019. Monitoring ocean-shed & watershed influences on the carbonate chemistry of SF Bay, **San Francisco Estuary Institute**, Richmond, CA. March 2019.
- Nielsen, K.J., 2018. Bringing an ocean perspective to an urban estuary. **Darling Marine Laboratory, University of Maine**, Walpole, MN, May 2018.
- Nielsen, K.J., 2015. Community structure and cross-ecosystem connectivity: the ecology of sandy beaches on California's north-central coast. Department of Earth & Climate Science, **San Francisco State University**, February 2015
- Nielsen, K. J., 2012. Synoptic forcing and local scale dynamics of surfzone phytoplankton in the northern California Current Ecosystem over 9 years and 8 degrees of latitude. **Humboldt State University**, December 2013.
- Nielsen, K. J., 2012. Phytoplankton in the surfzone: more than just food for filter feeders. **California State University, Fullerton**. January 2012.
- Nielsen, K. J., 2010. Reproductive output from the intertidal: spatial and temporal variation of strongly interacting species. **Moss Landing Marine Laboratory**, April 2010.
- Nielsen, K. J. 2006. Macroalgae reveal the underappreciated role of resources in structuring benthic marine communities. **Romberg Tiburon Center for Environmental Studies, San Francisco State University**, October 2006.
- Nielsen, K. J. 2005. Making a life from marine ecology and conservation; or how I got an office with an ocean view. **Santa Rosa Junior College Biology Forum**. May 2005.
- Nielsen, K. J., F. Chan, B. Grantham, J. Barth, A. Huyer, D. Fox, B. Menge & J. Lubchenco 2005. Upwelling-driven Hypoxia and Ecological Perturbation in the California Current. **Bodega Marina Laboratory, University of California, Davis**, University of California, February 2005
- Nielsen, K. J., S.A. Thompson*, M. Parker*, K. Lehmann*, R. Kalmoni* & A. White. 2005. Sea palms and barnacles: Research on slimy and spineless seashore denizens enlivens student learning. Faculty Exposition of Scholarship & Sponsored Research, **Sonoma State University**, Rohnert Park, CA. April 2005.

- Nielsen, K. J. 2004. Nutrients, upwelling and herbivory on temperate rocky shores: Disentangling bottom-up from top-down in a marine ecosystem. **Humboldt State University** Biology Seminar Series. October 2004.
- Nielsen, K. J. 2003. Capturing the light fantastic: tidal and oceanographic influences on intertidal algae.
- **Bodega Marine Laboratory, University of California, Davis**, September 2003
 - **Sonoma State University**, Department of Biology, October 2003.
- Nielsen, K. J. 2002. Environmental context sets the stage: role reversals by invertebrate consumers in marine ecosystems. **Sonoma State University**, Department of Biology, December 2002.
- Nielsen, K. J., B. Grantham & F. T. Chan. 2002. Hypoxia, anoxia and marine 'dead zones': what's natural and what's not? **Western Oregon University**, Department of Biology, November 2002.
- Nielsen, K. J. 2002. Seaweeds, sunshine and shades: micro- and meso- scale influences on intertidal plants. **Oregon Institute of Marine Biology, University of Oregon**, November 2002.
- Nielsen, K. J. 2001. From tide pools to rocky reefs nutrient supply influences community structure in upwelling ecosystems.
- **State University of New York, Stony Brook**, December 2001
 - **Brooklyn College, City University of New York**, December 2001
- Nielsen, K. J. 2001. Bottom-up forces shape the abundance and diversity of intertidal macroalgae in upwelling ecosystems of North and South America. **San Diego State University, Department of Biology**, March, 2001.
- Nielsen, K. J. 2000. Upwelling, herbivory, and algal productivity: the influence of bottom-up forces on rocky shores in central Chile. **Departamento de Ecología, Universidad Católica de Chile**, Santiago, Chile, August 2000 .
- Nielsen, K. J., 1999. Producción Primaria en el Oceano (Primary Production in the Ocean; delivered in Spanish). *Guest lectures for Marine Ecology course* (Miriam Fernandez, Instructor), **Departamento de Ecología, Universidad Católica de Chile**, Santiago, Chile, July 1999.

PUBLIC PRESENTATIONS

- Nielsen, K.J., Boyer, K, Iselin, J., Benner, J.D., Hanson, L. 2021. Bay Visions 2021: The Power of Plants Will Protect the Bay. Piedmont Garden Club, Woodside-Atherton Garden Club, Marin Garden Club, Hillsborough Garden Club, Orinda Garden Club, and Carmel-By-the-Sea Garden Club. **Affiliates of the Garden Club of America**. Zoom webinar. January 13, 2021.
- Nielsen, K.J., 2020. Blue Carbon: Ocean Climate Connections and Blue Solutions. **Rotary Climate Action Team, San Francisco Rotary Club**. Virtual presentation (via Zoom). November 19, 2020.
- Nielsen, K.J., 2020. Moderator, *Picture A Scientist* Film Screening and Panel Discussion. **College of Science & Engineering, San Francisco State University**. Sponsored by Women in Science & Engineering (WISE), EOS Center (Estuary & Ocean Science Center), NSF IT Catalyst Grant to SF State. Panelists: Carmen Domingo, Diane Harris, Yadira Ibarra, Amanda Johnson, Tomoko Komada, Leora Nanus, Imani Robinson. San Francisco State University, virtual presentation (via Zoom). October 26, 2020.

- Iselin, J. & K.J. Nielsen 2020. The art and science seaweed: the beauty and intrigue of our Pacific Coast seaweeds. **Great Mother Conference, West Coast Gathering**, 2020. Saint Dorothy's Rest, Camp Meeker, CA. February 21–23, 2020
- Iselin, J. & K.J. Nielsen 2019. Seaweed Soirée! **Greater Farallones National Marine Sanctuary Association**. The Bay Model, Sausalito, CA. November 16, 2019.
- Nielsen, K.J. 2019. Hope, innovation + conservation for a changing ocean. *Keynote speaker*. **Noyo Center for Marine Science**. September 15, 2019. Fort Bragg, CA.
- Nielsen, K.J. 2019. Climate Adaptation + Conservation in San Francisco Bay: Resilience, Adaptation and Managed Retreat. **Rotary International**, Petaluma, CA. August 14, 2019.
- Nielsen, K.J. 2019. Predicting, detecting, and preparing for increasing acidification. Panel presentation moderated by Alexis Valauri-Orton. Co-panelists: Jan Newton, Nichole Price, Joseph Salisbury, Brett Veerhusen. **Capitol Hill Ocean Week, National Marine Sanctuaries Association**. June 4-6, 2019.
- Nielsen, K.J. 2016. From the Sierras to the Sea. **Golden State Waters Action Summit: San Francisco Bay and the World Ocean**, The Bay Institute, San Francisco Belle , Pier 3, Embarcadero, San Francisco, CA. April 13-14, 2016.
- Nielsen, K.J., 2015. Coastal Marine Ecosystems. Threatened Oceans – Damaged Habitat and Plastic Pollution, **Environmental Forum of Marin Lecture Series, The Bay Model**, Sausalito, CA. February 28, 2015.
- Nielsen, K.J. 2014. From Cod Packing to Climate Change: The Past, Present and Future of the Romberg Tiburon Center for Environmental Studies. **Belvedere Tiburon Library, Adult Evening Lecture Series**, Tiburon, CA. September 11, 2014.
- Nielsen, K. J. 2013. Looking After the Big Blue: Now and Seven Generations Forward. **No Name Women's Group**, Odd Fellows Pacific Hall, Santa Rosa, CA. March 27, 2013.
- Nielsen, K. J. 2011. Marine Biodiversity of California's Seashore. **Bioforum Lecture Series., California Academy of Sciences, San Francisco, CA** March 11, 2011.
- Nielsen, K. J. 2011. Coastal Waters. The Mendocino Coast: An Eco-communitarian Conference. **The Mendocino Institute**. Caspar, CA. February 18-20th 2011.
- Nielsen, K. J., 2010. What is an Ocean Ecosystem? St. Michael's Episcopal Church, Fort Bragg, CA & Humboldt Area Foundation Conference Center Eureka, CA (**sponsored by the California Ocean Science Trust & COMPASS (Communication Partnership for Science and the Sea)**), February 9 & 10, 2010.
- Nielsen, K. J., 2010. Sustainable seafood? Says who? **The Sustainability Lecture series, University Library & Schulz Information Center, Sonoma State University**, March 2010.
- Nielsen, K. J. 2007. Shifting Seascapes. **Library Lecture Series: Citizens Of The World: On Common Ground? Schulz Information Center, Sonoma State University**, May 2007.
- Nielsen, K. J. 2002. The mysterious hypoxic zone off Oregon's coast. **15th Annual Coast Conference, Oregon Shores Conservation Coalition and Coast Watch**, Newport, OR, October 2002.
- Nielsen, K. J. 2000. Ecology of intertidal seaweeds. **13th Annual Coast Conference, Oregon Shores Conservation Coalition and Coast Watch, Hatfield Marine Science Center**, Newport, OR, October 2000.
- Nielsen, K. J. 1997. Women doing science: past and present. Keynote Address, **South Coast Saturday Academy of the South-Western Oregon Youth Association Boys' and**

Girls' Club's 7th Annual Women in Science Careers Day, Oregon Institute of Marine Biology, Charleston, OR, February 1997.

UNIVERSITY ADMINISTRATION AND PLANNING MEETINGS

Nielsen, K.J. 2019. Climate change, sea change & solutions for our future. **SF State Campus Leadership Forum**, San Francisco State University, November 19, 2019.

Maloney, B., Nielsen, K.J., Martinez, M., and Foster, B. 2019. Designing a campus that invites underrepresented voices. **Society of College and University Planning, Pacific Regional Conference | The Role of Discourse Today**. University of Colorado Boulder, Boulder, CO, March 27-29, 2019.

Anthes, J., Nielsen, K.J., Uhlig, A., Raak, L., Maxfield, C., Foster, B., Maloney, B. 2018. What good looks like: The Living Community Challenge and campus master planning. **CSU Facilities Management Conference, Building Collaborative Communities: Navigating Challenges, Charting Innovations**. Monterey, CA, October 28-31, 2018

CONTRIBUTED PRESENTATIONS

SCIENTIFIC MEETINGS

Nielsen, K.J. and Zabin, C. Co-Chairs, Revealing San Francisco Bay's Natural and Constructed Rocky Shores: Ecological Insights to Inform Nature-Based Adaptation and Restoration. Poster Cluster Session, **14th Biennial State of the San Francisco Estuary Conference**, Oakland CA. October 21-22, 2019.

- Nielsen, KJ and Zabin, C. 2019. Revealing San Francisco Bay's natural and constructed rocky shores: ecological insights to inform nature-based adaptation and restoration
- Barceló Rosario, D[^], E. Max⁺, C. Zabin & KJ Nielsen. 2019. Distributional limits of San Francisco Bay rockweed populations are influenced by substratum slope and tidal height*
- Riggins, B⁺, C. Wegener⁺, D. Barceló Rosario[^], C. Zabin & KJ Nielsen. 2019. Rockweed beds of San Francisco Bay are habitat for abundant invertebrate prey for fishes and birds.
- C. Wegener⁺, B. Riggins⁺, and KJ. Nielsen. 2019. Reproductive phenology of the rockweed, *Fucus distichus*, in San Francisco Bay.

○ [^]NSF REU summer intern, ⁺IMES MS student, *Student Poster Award, 2nd Place

Nielsen, K.J. Dugan, J., Wood, M.E.*, Hubbard, D., Mulligan, T., Craig, S., Laucci, R., Schooler, N. Geographic variation in the structure of California's sandy beach ecosystems.

Western Society of Naturalists, Monterey, CA. November 10-13, 2016.

Saarman, E.T., Owens, B., Ambrose, R.F., Carr, M.H., Field, J.C., Murray, S.N., Nielsen, K.J., Weisberg, S.B. Research and education in protected areas: a novel ecologically-based permitting decision framework. **Western Society of Naturalists**, Monterey, CA. November 10-13, 2016.

Hettinger, A.,* Chan, F., Hacker, S., Nielsen, K.J., Barner, A., Menge, B. Missing the full story: examining responses of coralline algae to environmental variability in the context of ocean acidification. **Western Society of Naturalists**, Monterey, CA. November 10-13, 2016.

Succow, M.L., Barrett, D.R., Mulligan, H.L., Mulligan, T.J., Nielsen, K.J., Craig, S.F. Where the surf meets the sand: predation by redbait surfperch on pacific sand crabs within northern California sandy beaches. **Western Society of Naturalists**, Monterey, CA. November 10-13, 2016.

- Hartnett, R.J.,* Nielsen, K.J., Wilkerson, F., Elliott, M., Nur, N., & Jahncke, J. Developing marine food web models to evaluate blue whale, Cassin's auklet and salmon responses to long- and short-term changes in oceanography in the California Current. **North Pacific Marine Science Organization Annual Meeting (PICES)**, San Diego, CA, November 1-13, 2016. **BEST POSTER AWARD**
- Hartnett, R. J.*, Nielsen, K.J., Wilkerson, F. P., Nur, N., Jahncke, J. Connecting the dots in the Gulf of the Farallones: linking physical ocean conditions and nutrients to the ecological success of planktivorous predators. **Ocean Sciences Meeting**, New Orleans, Louisiana, February 21-26, 2016.
- Nielsen, K.J., Mulligan, T., Dugan, J., Craig, S., Laucci, R. Connecting communities, building capacity and creating ecosystem resilience through MPA monitoring in northern California. **Western Society of Naturalists**, Sacramento CA. November 5-8, 2015
- Freiwald, J., Caselle, J., Meyer, R., Blanchette, C., Hovel, K., Neilson, D., Dugan, J., Altstatt, J., Nielsen, K.J., Bursek, J. Challenges and opportunities for citizen science monitoring of MPAs in California: case studies and recommendations. **Western Society of Naturalists**, Sacramento CA. November 5-8, 2015
- Succow, M.L.*, Barrett, D.R., Mulligan, H.L., Mulligan, T.J., Nielsen, K.J., Craig, S.F. Got crabs? Predation by redbait surfperch on pacific sand crabs on northern California sandy beaches. **Western Society of Naturalists**, Sacramento CA. November 5-8, 2015
- Maguire, A.K.*, Nielsen, K.J., Rogers-Bennett, L. The blood sucking ectoparasitic snail (*Evalea tenuisculpta*) and its red abalone host (*Haliotis rufescens*): A cryptic infestation of concern on wild and aquacultured abalone in California. **National Shellfisheries Association 107th Annual Meeting**, Monterey, California March 22-26, 2015
- Liebowitz, D.M., Nielsen, K.J., Dugan, J.E., Morgan, S.G., Malone, D.P., Largier, J.L., Hubbard, D.M., Carr, M.H. Ecosystem connectivity and trophic subsidies of beaches. **Western Society of Naturalists**, Tacoma, WA. November 13-16, 2014
- Maguire, A.K.*, Nielsen, K.J., Rogers-Bennett, L. The blood sucking Vampire snail, *Evalea tenuisculpta*, Infects red abalone, *Haliotis rufescens*, in northern California. **Western Society of Naturalists**, Tacoma, WA. November 13-16, 2014
- Gül, M.R.*, Nielsen, K.J. Invasion success of *Botrylloides violaceus* under contrasting conditions of temperature, food availability and species richness. **Western Society of Naturalists**, Tacoma, WA. November 13-16, 2014
- Hartnett, R.H.*, Nielsen, K.J., Wilkerson, F.P., Jahncke, J. Connecting the dots in the Gulf of the Farallones: from physical ocean conditions to ocean productivity to the top of the food web. **Western Society of Naturalists**, Tacoma, WA. November 13-16, 2014
- Nielsen, K. J. 2013. Contrasting community structure, trophic links and ecosystem connectivity of long versus pocket beaches along California's north-central coast.
- **Coastal and Estuarine Research Federation**, San Diego, CA. November 3-7, 2013.
 - **Western Society of Naturalists**, Oxnard, CA, November 7-10, 2013.
- Barner, A. K.*, S. D. Hacker, B. A. Menge, K. J. Nielsen & F. Chan. Context-dependent spatial variation of interaction between kelp canopy and understory in a coastal upwelling system. **Ecological Society of America Annual Meeting**, Minneapolis, MN, August 2013.
- O'Kelly, C. J., G.J. Mottet, A. Paquin & K.J. Nielsen. The *Gonyaulax* shell game: Deducing the identity of a putative emergent HAB along the central California coast. **Harmful Algal Blooms in the California Current Symposium, CALCOFI Conference**, Asilomar Conference Center, Pacific Grove, CA, 4-6 December 2012.

- Nielsen, K. J., T. C. Goughier, B. A. Menge, F. T. Chan, E. E. McPhee-Shaw, J. L. Largier & P. T. Raimondi. Synoptic forcing and local scale dynamics of surfzone phytoplankton in the northern California Current Ecosystem over 9 years and 8 degrees of latitude. **Eastern Pacific Ocean Conference**, Mt. Hood, OR, 19-22 September 2012.
- Close, S. L.*, F. T. Chan, K. J. Nielsen, S. D. Hacker, B. A. Menge. Nutrient content of rocky intertidal macrophytes and its relation to environmental variability across a large biogeographic region. **Ecological Society of America Annual Meeting**, Portland, OR, August 2012.
- Stokes, J. A*. & K. J. Nielsen. Don't bully the bullate: A new wrinkle on how two forms of an intertidal kelp enable it to cope with environmental stress. **California State University (CSU) – Council on Ocean Affairs Science and Technology (COAST) Faculty-Student Poster Reception**. CSU Board of Trustees Meeting, Long Beach, CA, January 2012.
- Close, S. L.*, F. T. Chan, K. J. Nielsen, S. D. Hacker, B. A. Menge. Linking nutrient content of intertidal macrophytes to ambient nutrient availability across a large biogeographic region. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Malm, P. D.*, Nielsen, K. J. The role of grain size and wrack composition in structuring talitrid amphipod populations on northern California beaches. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Nielsen, K. J., S. G. Morgan, J.E. Dugan. Sand crab population monitoring in MPAs: a methodological comparison to inform development of ecosystem indicators. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Paquin, A. L*, K. J. Nielsen & J. L. Largier. An abundance of nearshore phytoplankton: unraveling what drives the 'green ribbon' along an upwelling coast. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Stokes, J. A*, K. J. Nielsen. Blade morphology variation ameliorates emersion stress and photosynthetic performance of the intertidal kelp *Saccharina sessilis*. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Tait, L. W. B. A. Menge, S. D. Hacker, F.T. Chan & K. J. Nielsen. Impacts of climate change on the primary productivity of macroalgae: effects of pH and temperature on net productivity. **Western Society of Naturalists Annual Meeting**, Vancouver, WA, November 2011.
- Nielsen, K. J., S. D. Morgan & J. E. Dugan. Baseline characterization and monitoring of sandy beaches in California's north central coast MPAs. **Beyond the Golden Gate Research Symposium**. San Francisco, CA November 2011.
- Schneider, L.*, T. Nguyen*, & K. J. Nielsen. Coralline algal turf communities in northern California: Community structure and potential as a bioindicator of local seawater carbonate saturation state. **Beyond the Golden Gate Research Symposium**. San Francisco, CA November 2011.
- Stokes, J. A*, K. J. Nielsen. Variation in blade morphology ameliorates emersion stress and photosynthetic performance of the intertidal kelp *Saccharina sessilis*. **Beyond the Golden Gate Research Symposium**. San Francisco, CA November 2011.
- Malm, P. D.* & K. J. Nielsen. Do macrophyte wrack species composition and input rates influence the distribution and abundance of talitrid amphipod (*Megalorchestia* spp.) populations on northern California beaches? **Beyond the Golden Gate Research Symposium**. San Francisco, CA November 2011.

- Paquin, A. L.*, K. J. Nielsen & J. L. Largier. An abundance of nearshore phytoplankton: what drives formation and oscillations of the 'green ribbon' over short time scales? **Beyond the Golden Gate Research Symposium**. San Francisco, CA November 2011.
- Paquin, A., M. Tift, D. Crocker, K. Nielsen & E. McPhee-Shaw. Phytoplankton to predators: marine ecology, physiology and oceanography at Sonoma State University (SSU). **California State University (CSU) – Council on Ocean Affairs Science and Technology (COAST) Faculty-Student Poster Reception**. CSU Board of Trustees Meeting, Long Beach, CA, January 2011.
- McPhee-Shaw, E.E., K. J. Nielsen & J. Largier. Near-coast chlorophyll *a* events and wave-driven transport. **57th annual Eastern Pacific Ocean Conference**, Mount Hood, OR, September 22-26 2010.
- Nielsen, K. J., S. A. Thompson, C. A. Blanchette & H. Knoll. Save the seaweeds: Applying ecological insights to avoid "boom and bust" commercial exploitation of wild populations. **International Temperate Reef Symposium**, Adelaide, Australia, January 2009.
- Thompson, S.A., K. J. Nielsen, C.A. Blanchette, B. Brockbank & H. Knoll. Effects of commercial collection on growth and reproductive output of *Postelsia palmaeformis*. **Ecological Society of America**, San Jose, CA August 2007.
- Lubchenco, J., F. Chan, J. Barth, B. Menge, J. Bane, D. Fox, A. Kirincich, M. McManus, K.J. Nielsen, C. Peterson, J. Pierce, L. Washburn, and H. Weeks. Arrhythmias in the coastal ocean off the west coast of the US. **Ecological Society of America**, San Jose, CA August 2007.
- Nielsen, K. J., S.A. Thompson & C.A. Blanchette. Deficits in biological knowledge and literacy impede management and protection of the Sea Palm, *Postelsia palmaeformis*. **International Temperate Reef Symposium**, Santa Barbara, CA 2006.
- Thompson, S. A. & K. J. Nielsen. Assessing the impact of commercial collecting on *Postelsia palmaeformis*. **Western Society of Naturalists 86th Annual Meeting**, Monterey Bay, CA, November 2005.
- Nielsen, K. J., P. Halpin, T. Freidenberg, B.A. Menge and J. Lubchenco. 2004. A biogeographic meta-analysis of herbivore effects on intertidal macroalgae. **Western Society of Naturalists 85th Annual Meeting**, Rohnert Park, CA, November 2004.
- Kavanaugh, M.T., K. J. Nielsen and B.A. Menge. Phytoplankton shading of marine benthic macrophytes: implications for community structure. **Western Society of Naturalists 85th Annual Meeting**, Rohnert Park, CA, November 2004.
- Nielsen, K. J., C.A. Blanchette, B.A. Menge, B. Grantham & J. Lubchenco. Capturing the light fantastic: oceanographic and tidal influences on intertidal algae. **Phycological Society of America**, Gleneden, OR 2003.
- Bracken, M. E. & K. J. Nielsen. Nitrogen loading by invertebrates increases growth and diversity of intertidal seaweeds. **Phycological Society of America**, Gleneden, OR 2003.
- Chan, F., B. A. Menge, K. J. Nielsen, and J. Lubchenco. Nutrient use efficiency and coastal productivity: comparative perspectives on ecosystem structure and mechanisms of control. **Phycological Society of America**, Gleneden, OR 2003.
- Menge, B. A., G. Allison, T. Freidenburg, M. Kavanaugh, J. Lubchenco, K. J. Nielsen, C. Schoch, and S. Wood. Local to coastal-scale macrophyte community structure: surprising patterns and possible mechanisms. **Phycological Society of America**, Gleneden, OR 2003.

- Nielsen, K. J., B.A. Menge, B. Grantham & J. Lubchenco. Macrophytes, phytoplankton, and upwelling: light limitation in the intertidal zone? **International Temperate Reef Symposium**, Christchurch, New Zealand January 2003.
- Nielsen, K. J., C.A. Blanchette, B.A. Menge & J. Lubchenco. Fluorescing sea palm fronds: do snapshots of physiological state reflect ecological performance? **Western Society of Naturalists**, Monterey, CA November 2002.
- Nielsen, K. J., F. Chan, B.A. Grantham, D. Fox, M. Amend, R. Davis-Born, J. Lubchenco & B. A. Menge. Unusual Die-Off off Oregon's Coast Associated with a Persistent Low-Oxygen Zone.
- **Ecological Society of America**, Tucson, AZ August 2002.
 - **International Temperate Reef Symposium**, Christchurch, New Zealand January 2003.
- Nielsen, K. J., B.A. Menge, B. A. Grantham, & J. Lubchenco. Light attenuation, upwelling, and community structure on rocky shores: can persistent phytoplankton blooms limit macrophytes? **Ecological Society of America**, Tucson, AZ August 2002.
- Nielsen, K. J., B.A. Menge, & J. Lubchenco. Fluorescing fronds: Snapshots of the physiological state of intertidal macrophytes. **Society for Integrative and Comparative Biology**, Anaheim, CA. 2002.
- Nielsen, K. J., B.A. Grantham, B.A. Menge & J. Lubchenco. Rocky Intertidal Oceanography: Local Scale Modification of a Large Scale Template. **Western Society of Naturalists**, Venture, CA 2001.
- Nielsen, K. J. & S.A. Navarrete 2000. Do bottom-up factors drive variation in algal assemblages on rocky shores? Upwelling and herbivory along the central Chilean coast. **Ecological Society of America**, Snowbird, UT, August 2000.
- Nielsen, K. J. 1997. Nutrients and grazing in tidepools: bottom-up and top-down forces generate structure in a marine community.
- **International Temperate Reef Symposium**, Santiago, Chile, July 1997.
 - **Western Society of Naturalists**, La Paz, Mexico, January 1997.
 - **Ecological Society of America**, Providence, RI, August 1996.
- Van Alstyne, K.L. & K. J. Nielsen, 1996. The use of randomization methods to analyze data from multiple-choice feeding-preference experiments. **Ecological Society of America**, Providence, RI, August 1996.
- Nielsen, K. J. 1996. Nutrients and grazing in tidepools: an experimental evaluation of bottom-up and top-down forces in a marine community. **Biology Graduate Student Symposium**, Hatfield Marine Science Center, South Beach, OR, March 1996.
- Nielsen, K. J. 1993. The role of adult conspecifics and recruitment variability on the horizontal distribution of ribbed mussels in Jamaica Bay, NY. **Western Society of Naturalists**, Otter Crest, Newport, OR January 1993.
- Nielsen, K. J. 1992. Ribbed mussel (*Geukensia demissa*) recruitment in Jamaica Bay, NY. **New England Estuarine Research Society**, May 1992.
- Franz, D.R. , P. Ficara, K. J. Nielsen, & J.T. Tanacredi 1991. Can ribbed mussels be used to monitor environmental quality in Jamaica Bay (Gateway National Recreation Area)? Preliminary results. **2nd National Park Service Conference on Science and Natural Resource Management in the North Atlantic Region**, November 1991.

COMMUNITY SERVICE

March 2021 -present, science advisor. **Above Below: A story of the Disappearing Kelp forests of northern California**. An Art + Science Catalogue. A community project.

February 2020. Estuary & Ocean Science Center research and tour of SF State's Romberg Tiburon Campus. **Marin County Civil Grand Jury**. SF State- Romberg Tiburon Campus, Tiburon, CA. February 3, 2020.

Summer 2011, Faculty Mentor (to Katie Azcárraga, Maria Carrillo High School), **Summer High School STEM Internship Program (SHIP)**; a partnership between the School of Science and Technology (SST) at Sonoma State University and the Sonoma County Office of Education (SCOE).

Spring 2009, 2011, Fall 2008, 2007, Squid Anatomy & Biology (one-day classroom science activity with SSU Department of Biology MS students), **Austin Creek Elementary School**, Santa Rosa, CA

August 2008, March 2006, Tidepool Life Activity, **The Living Room: A Daytime Shelter for Homeless Women & Children**, Santa Rosa, CA

July 2007, Tidepool Life Activity, **Excel: A Unique Enrichment Program for Grades 4-9**, Sonoma State University, Rohnert Park, CA

Spring 2007, Supervision, training & placement of 14 Sonoma State University students into 7 **Sonoma County Public Elementary Schools** to teach Ocean Science Lessons.

Spring 2006, Supervision, training & placement of 12 Sonoma State University students into 6 **Sonoma County Public Elementary Schools** to teach Ocean Science Lessons.

December 2002, volunteer presentation and lab activity, "Intertidal Zone Ecology and Field Experiments," for Marine Science class, **Corvallis High School**, Corvallis, OR

October 2002, invited speaker, **Oregon Sea Grant, Scientist and Fishermen Exchange (SAFE)**. Review of onshore, subtidal and nearshore research in progress by PISCO. Englund's Marine Supply, Newport, OR.

November 2000, presenter, **The 24th Annual Science and Engineering Workshop for Middle School Girls**, organized by the **Association for Women in Science**. Lab tour and hands-on demonstration of methods used to sample phytoplankton abundance in the nearshore environment

1995- 2002, Job Shadow and Mentor, **School-to-Career Program, Corvallis School District 509J**, Corvallis, OR

REVIEWER

Biogeosciences, Biological Bulletin, California Sea Grant, Deep Sea Research, Ecology, Ecological Monographs, Ecology Letters, Estuarine, Coastal & Shelf Science, Inter-American Institute for Global Change Research, Journal of Phycology, Journal of Experimental Marine Biology and Ecology, Limnology and Oceanography, Limnology and Oceanography Methods, Marine Ecology Progress Series, National Estuarine Research Reserve, National Oceanographic and Atmospheric Administration, National Science Foundation, People and Nature, Revista Chilena de Historia Natural, University of California Press

PROFESSIONAL SOCIETIES

Coastal and Estuarine Research Federation, Ecological Society of America, Western Society of Naturalists, Phycological Society of America, American Institute of Biological Science, American Geophysical Union, Sigma Xi

PROFESSIONAL DEVELOPMENT & ADVANCED COURSES

Leading Change for Diversity, Equity and Inclusion. Oregon State University Academic Leadership Academy program. Fall 2022. Prepares academic unit leaders to effectively: Lead organizational change toward achievement of diversity, equity and

inclusion goals; Build coalitions to develop and advance strategic priorities; Facilitate organizational learning at individual, team and systems levels; Respond with care to communities in conflict and crisis.

<https://diversity.oregonstate.edu/main/leading-change>

Search Advocate Foundations workshop series. Summer 2022. Establishes a theoretical foundation of current research about implicit bias and diversity, information about the changing legal landscape in hiring, and an overview of inclusive employment principles. <https://searchadvocate.oregonstate.edu/about>

Openscapes Champions Program (CSU COAST Cohort). An open data science mentorship program for science teams. Nielsen Lab group team. May 7 – June 18, 2021. <https://www.openscapes.org/champions/>

Climate Action Pursuit: Toward Justice and Resilience. Second Nature and Intentional Endowments Network. Climate Action Pursuit. Conference/workshops for learning, planning, acting, and leading on equity and climate in our campuses and communities. February – December 2021.

<https://secondnature.org/climateactionpursuit-2/>

Science Coding Immersion Program, San Francisco State University. 1 June – 9 July 2021. <https://pleunipennings.wordpress.com/science-coding-immersion-program>

Building Gender Equity in the Academy: Institutional Strategies for Change, AAAS Sea Change. February – May 2021. <https://seachangeinstitute.aaas.org>

Undoing Racism in the GeoSciences, a community-wide journal-reading and policy-design curriculum to help Geoscientists unlearn racism and improve accessibility, justice, equity, diversity, and inclusion. NSF and Woods Hole Oceanographic Institute. January – May 2021. <https://urgeoscience.org>

Academics for Black Survival and Wellness. Training for non-black participants to make actionable change to address anti-black racism in their personal lives and academia. June 2020. <https://www.academics4blacklives.com/>

Communicating Ocean Science, California Center for Ocean Sciences Education Excellence (COSEE), The Lawrence Hall of Science, University of California – Berkeley; June 6-8, 2005.

<http://www.coseeca.net/programs/communicatingoceansciences/>

Biomechanics and Ecological Physiology of Intertidal Communities, Mark Denny and George Somero, instructors, Hopkins Marine Station, Stanford University, Summer 1999

Invertebrate Zoology, Stan Rachootin and Patricia Morse, instructors, Friday Harbor Laboratories, University of Washington, Summer 1993

Marine Phycology, Tom Mumford and Sandra Lindstrom, instructors, Friday Harbor Laboratories, University of Washington, Summer 1993

LANGUAGES

English - *fluent*

Spanish- *proficient in reading, listening, and writing; conversational in speaking*

Good Morning Ms. Safina-Massey:

Attached are several documents that can be used in review of my candidacy for the membership openings on the OOST. These are fairly general and not targeted specifically to OOST, but detailed enough to provide a comprehensive history of my education, experience, training, accomplishments, and how these clearly fit into the core mission and objectives for this OOST. References and other materials are also attached.

My history of Board and Commission experiences, and importantly, my background serving the public as a professional scientist and engineer, and as a leader in volunteerism across many OR and other coastal environments, economies, and my current work as a NOAA Ambassador, and the American Fisheries Society, publically serving future generations, is found in these materials.

Summary for initial review:

- I have over three decades working on ocean issues in OR, WA, ID, AK, Canada and California.
- I worked for 12 years with William (Bill) Ruckleshaus in the formation and execution of the Oregon Watershed Enhancement Board, the Washington Salmon Recovery Board. In both, I also was a leader in developing and supporting the OR Watershed Counsels, and WA. Lead Entities and Regional Boards, where I also held staff and Board positions.
- My background is significant, in grant programs, including the Pacific Coastal Salmon Recovery Fund, since its inception, NOAA SeaGrant, and others, is meritorious.
- Additionally, I am currently working with the Ruckleshaus Family on two documentaries that feature work done by Bill under appointment by President Bush to the United States Commission on Ocean Policy, and An Ocean Blueprint for the 21st Century, in 2004, and since June 2010, until his death, when he became co-chair of the Joint Ocean Commission Initiative.
- I am currently part of NOAA's West Coast Climate Change Team's and work on various ocean ecosystems initiatives.
- I had a long association with Governor Kitzhaber and Governor Christine Gregoire and Insley during the formation of many ocean policies
- In addition to NOAA, I have 14 years working as a policy representative and science program manager for North Central tribes, and with 52 additional WA/Canadian Tribes over my career, including a close working relationship with Billy Frank, Jr., as part of my 12 year tenure as President of the US/ Canada International Chapter of the American Fisheries Society.

Please contact me if you, or anyone at the Trust, or State Land Board, has questions.

Respectfully,

Keith Wolf, Ph.D.

U.S. Department of Commerce, NOAA Fisheries
Oregon Washington Coastal Office

Email: keith.wolf@noaa.gov

Office: 425.666.9183

Mobile: 206.713.8445

www.fisheries.noaa.gov

<https://www.fisheries.noaa.gov/region/west-coast>



KEITH S. WOLF

7036 S Virginia Ave | Portland, OR 97219 | 509.881.9102 | US Citizen

keith.wolf@noaa.gov

Senior level natural resources and program/policy manager in complex, high-energy, international/national and local dynamic change environments. Qualifications and knowledge base spans co-management for federal, state, private, NGO, and tribal natural resources. Expertise in facilities and program management, research, monitoring and evaluation (RME) and permitting, marine and freshwater species and habitats, genetics and natural resources management and law.

SUMMARY OF CURRENT EMPHASIS

- Current: NOAA Section 7 ESA and Magnusson Stevens Essential Fish Habitat biologist.
- Climate Change Sec. 7 policy for Essential Fish Habitat (in review).
- Resilient Design for Fish Passage guidance and policy for Sec. 7 Biological Opinion.
- Salish Sea Nearshore Programmatic Biological Opinion.
- Climate and Fisheries Ecosystem Initiative. Science, decision-support and management processes.
- Climate Ready Nation. Science, decision-support and management processes.
- NOAA West Coast Climate Team

Bachelor of Science degree in Natural Resources and Biology, and a Ph.D. in Environmental Engineering. Multiple certificates. Over twenty-five years of experience at the GS-12-15/ ZP-3-4 federal levels executing the following program duties:

- Extensive and expanded working relationships with relevant representatives from tribal, state and federal governments and natural resources management programs;
- Experienced in presenting, advising, navigating challenges, and communicating to staffs, leaders, boards, commissions, stakeholders, and the public;
- Extensive legislative analysis, congressional and legal policy coordination, and regulatory management.
- Staff Development, Management, Budget Development and Management, Policy, Strategy, and Procedure development, implementation, analysis, and management.

EDUCATION

- Sheppard University – 2021. NOAA+Department of Interior, Climate Change Scenario Planning Certificate.
- Bellevue College, 2015 – Major: AAS., Business Management, Minor: Project Management Certificate.
- Warren National University - 2005-2009. Degree: Ph.D., *Suma Cum Laude* Environmental Engineering. Dissertation: *Remote Sensing Analysis and Environmental Sensor Design - Decision Support Systems Using Vector Transformation*.
- Pacific Lutheran University – 1990-1991. Degree: B.S., Biology. Minor: Natural Resource Science.
- Western Washington University – 1989-1990; Marine Biology and Ecology.
- Whatcom Community College – 1988-1989; Physical Oceanography, Russian History, General Studies.

CERTIFICATIONS AND MEMBERSHIPS

- American Society of Civil Engineers NO. 485162
- American Fisheries Society (three-term, international chapter President).
- Appointed IUCN-Shark Specialist Group Member
- Union of Concerned Scientists
- Institute of Fishery Research Scientists.

- Institute of Biological Sciences.
- Hazardous Waste and Marine Sediment Sampling Certifications (e.g., HAZWOPPER, MTCA via CERCLA/RCRA Superfund Programs w/5 annual re-certifications).
- Hazardous Materials Certification - 5-year 40-hour reissue (2019).
- GIS Remote Sensing and Earth Observation, Spatial Analyst certificates x3
- Federal Contractor Registration – Bonneville Power Administration, US Army Corps. of Engineers, US Navy and US Coast Guard. AOR, CFDA certifications.
- NAUI Scuba Instructor (1993) No. 14984.
- NAUI Dive Master No.16896
- TDI Certified Nitrox Diver No. 70329
- PADI Research Diver
- NAUI Rescue Diver
- NAUI Advanced Diver
- SSI Open Water I and II Diver

AWARDS

- Meritorious Service Award - American Fisheries Society International Chapter
- Continuing Leadership and Responsiveness to Mission and Goals – American Fisheries Society.
- National Environmental Registrar - Significant Achievement in Program Development.
- Certificate of Appreciation, the Washington Salmon Recovery Funding Board, William D (Bill). Ruckelshaus, Chair, and former EPA Administrator.
- Two Awards of Project Excellence from Secretary Bruce Babbitt, US Department of the Interior.

EXAMPLE POSTS AND RECENT PROFESSIONAL APPOINTMENTS

- Board Member, The International Imaging and Geospatial Information Society Region # 53058
- President, American Society of Photogrammetry and Remote Sensing, Puget Sound.
- President, North Pacific International Chapter, American Fisheries Society (three terms).
- Western Division, Executive Committee – American Fisheries Society.
- Research, Monitoring and Evaluation Chair, International Chapter, American Fisheries Society.
- Pacific Coastal Salmon Recovery Fund grant award process consultant for the WA and OR Salmon Recovery and Watershed Enhancement Boards.
- Chair, ESG, Sustainability and Climate Change Task Force. Cardno/Stantec Global.
- Out-of-Basin (Climate Change) Effects Technical Committee Member – Bonneville Power Administration and the Northwest Power and Conservation Council.
- Member of the US/Canada Bilateral Okanogan/Okanagan Basin Tech. & Policy Working Group.
- Regional Assessment Advisory Committee-Bonneville Power Administration and Northwest Power and Conservation Council.

VOLUNTEER WORK

Dr. Wolf served three terms (12 years) as President of the American Fisheries Society's International Chapter in British Columbia, Canada, and Washington State. He also served another two years as President of the American Society of Photogrammetry and Remote Sensing, Puget Sound, and as a Board Member of The International Imaging and Geospatial Information Society. He is an active NOAA Ambassador bringing natural resources and climate change curriculum to K-8 student in Portland Oregon and Seattle Washington and has been involved in nature documentary film writing and production for over 30 years.

RELEVANT EXPERIENCE

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NMFS) – (09/2021-Current)

40 hours/week.

Puget Sound, WA. Federal Contractor for National Marine Fisheries Service, West Coast Region. Provides technical, regulatory, engineering, and operational services to federal, state, and local agencies on a range of natural resource environmental laws and regulations.

Emphasis in on ESA Section 7 consultation and climate stressors, and project related determinations for mitigation, effects, construction, and other components to comply with a broad portfolio of NEPA, ESA, EPA and US Army Corps of Engineers, USFWS, FHWA and other federal agency consultations. Works with state, local, tribal agencies, the public, legislators, Boards, Counties, and varied stakeholder constituencies to deliver project compliance permits, documentation, agreements, and design.

Project Accomplishments and Experience from this appointment include:

- Coordination with Sec. 7 - inclusion of climate change science and regulatory language development.
- Climate, Stormwater and Programmatic Biological Opinion guidance and development for Sec 7. and Magnusson Stevens Act consultations.
- Resilient Design for Fish Passage guidance and policy for Sec. 7 Biological Opinion.
- Salish Sea Nearshore Programmatic Biological Opinion. Nearshore Calculator use and development.
- NOAA Ambassador Program – Curriculum delivery and international collaboration with K-8 grade science and art students.
- West Coast Climate Team. Cross Division Team, science, decision-support and management processes.
- Climate Change Sec. 7 policy for Essential Fish Habitat (in review).
- Climate Scenario Planning (DOI training, 2021).
- 5th Annual National Climate Assessment, reviewer and commenter
- Climate and Fisheries Ecosystem Initiative. Science, decision-support and management processes.

SCIENCE PROGRAM MANAGER / FISH & WILDLIFE POLICY REPRESENTATIVE-Confederated Tribes of the Colville Reservation – 08/1998-06/2014. 40 hours/week.

Coordinated policy and science activities and led program and staff reviews, hiring and supervision of 29 FTEs, workload and resource planning, and office and field facilities management and training. Developed multiple biological and habitat-based research and project implementation programs including Endangered Species Act Recovery Plans, Northwest Power Act mitigation, Subbasin Plans and Artificial Production Master Planning.

STATE OF WASHINGTON, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE 08/1991-06/1998). 40 hours/week.

Positions included: Fish Program Manager, US/Canada Technical Representative, Columbia River Policy Coordinator, Western Washington Management Biologist, Puget Sound Harvest Coordinator, and Mid-Columbia Predator Index Study Biologist.

SENIOR ENVIRONMENTAL MGR, ESG, SUSTAINABILITY- CLIMATE TASK FORCE.

CARDNO/STANTEC: (06/2019-11/2020). 40 hours/week.

As a founding member of the ESG and Sustainability Task Force, Dr. Wolf led teams in Asia Pacific, 48 developing countries, and the Americas, serving on the ESG and Sustainability Task Force and acted as co-chair of the Global Client Services Business Development work group.

SENIOR MARINE BIOLOGIST and ECOLOGIST – 03/1988-08/1991 Ardea Enterprises, Inc. Puget Sound, Washington. 40 hours/week.

Duties included application of marine biological assessments and regulatory compliance. Extensive underwater video, SCUBA, and other methods in support of sampling programs throughout Puget Sound and the West Coast of the US.

PUBLICATIONS

Wolf, K.S. and O’Neal, J.S., eds., 2010, *PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations—A compendium of new and recent science for use in informing technique and decision modalities*: Pacific Northwest Aquatic Monitoring Partnership Special Publication 2010-002, 194 p.

Tetra Tech EC, Inc., KWA Ecological Sciences 2004-2008. WITH: University of Washington, Terraqua, Inc. Environmental Consulting, Terrastat Consulting Group, and BioAnalysts, Inc. *Annual Progress Reports for Benefit/Cost Analysis of Salmon Habitat Restoration Projects*: Prepared for the Washington Salmon Recovery Funding Board, Olympia, WA.

Tiffin, K.F, P.W. Wagner and K.S. Wolf, 2009. *The Use of SHOALS Remote Sensing for Estimating Hydroelectric Power Peaking Impacts on Juvenile Fish Populations in the Hanford Reach. Science and Policy Processes*. IN: PNAMP Special Publication: Remote Sensing Applications for Aquatic Resource Monitoring, Pacific Northwest Aquatic Monitoring Partnership, Cook, Washington

Wolf, K.S., P. E. Phillips, A.M. Pearl, M.B. Laramie (CCT/USGS), and J.P. Rohrback, 2014. The Chief Joseph Hatchery Program – 2013 Annual Report. BPA Project No. 2003-023-00, (137) pages.

Baldwin, C. M., A.M. Pearl, M. B. Laramie, J. P. Rohrback, P. E. Phillips and K. S. Wolf 2016. The Chief Joseph Hatchery Program 2013 Annual Report. BPA Project No. 2003-023-00, 148 pages.

Wolf, K.S. IN: J.M., Bayer and Schei, J.L., eds., 2009. PNAMP Special Publication: *Remote Sensing Applications for Aquatic Resource Monitoring*, Pacific Northwest Aquatic Monitoring Partnership, Cook, Washington, chap. 3, p. 17-26. Executive Summary, Chapter Author and initiator of proceedings papers.

Wolf, K.S. and seven anonymous authors 2006: *Review of the Federal Columbia River Power System Biological Opinion*. Expert testimony for the Columbia River Intertribal Fish Commission in support of Judge Redden in U.S. v. nine plaintiffs. Adjudication processes for the FCRPS NOAA Biological “No Jeopardy” Determination. Case No. 223435–0098

J Arterburn, K Kistler, P Wagner, J Nugent, R Dasher – 2006 _ IN: KWA Ecological Sciences, Inc. *Field Manual Okanogan Monitoring and Evaluation Program Physical Habitat Protocols*.

Wolf, K.S. 2006. Mentoring the Next Generation—Growing a Viable and Sustainable Population of Fisheries Experts. In: Fisheries Vol. 31 No. 10

Johnson, D.H. et. al. 2007. *The Salmonid Field Protocols Handbook*, 2007. The American Fisheries Society, Bethesda Maryland. ISBP 978-1-88569-92-6. Expert peer-review team leader for (PNAMP) publication assistance with 100 authors (Expert Contributor and Peer Reviewer).

Clements, S., Wolf, K.S., et. al., Review Summary and Conclusions. *The Editorial and Review Subcommittee of the PNAMP Fish Population Monitoring Workgroup* In: PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations—A compendium of new and recent science for use in

informing technique and decision modalities: Pacific Northwest Aquatic Monitoring Partnership Special Publication 2010-002, chap. 10, pages 145-146.

Wolf, K.S. 2003. Defining Reach Structure for Subbasin Planning in the Okanogan Watershed. IN: Proceedings. International Conference: Making Ecosystem Connections: Partnerships for a Restored Okanogan Basin Habitat.

Wolf, K.S., 2005. The Economics of Salmon and Steelhead Recovery. Report to the Washington State Salmon Recovery Funding Board and the Northwest Power and Conservation Council.

Wolf, K. S., R. A. Anderson and R. C. Craig, 2000. Capability Building for Locally Based Watershed Salmon Recovery Planning – Paper presented to the American Fisheries Society Annual Meeting, St. Louis MO.

Wolf, K. S., 2000. Successful Watershed Planning for Salmon Habitat Recovery. Seattle Daily Journal of Commerce.

Vaughn, L, K.S. Wolf and A.Q. Kammereck, 2000. The Ecological Processes of Sediment in Streams and Their Role in Salmon Habitat Recovery Planning. Seattle Daily Journal of Commerce.

Wolf, K. S., 1998. Under Puget Sound. Professional environmental education video documentary featuring comprehensive aspects of underwater ecosystem in Washington State. The Emerald Oceans Production Group Inc.

Wolf, K.S., et. al. 1996. Seabird Mortality in Puget Sound Commercial Salmon Fisheries. In: Proceedings, Solving Bycatch, Solutions for Today and Tomorrow. Alaska Sea Grant Program Symposium Proceedings.

Wolf, K. S., 1993. Finning and Other Destructive Modes of Inefficient Development in the Shark Fishery. In *Chondros*. Volume 4: Number 3.

Wolf, K.S., and Waste, Stephen M, 2010: Introduction: Tagging, Telemetry, and Marking Compendium Project. in: Wolf, K.S., and O’Neal, J.S., eds., PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations—*A compendium of new and recent science for use in informing technique and decision modalities: Pacific Northwest Aquatic Monitoring Partnership Special Publication 2010-002*, chap. 1, p. 1-4.

Senior or junior authorship of over 160 reports to Congress (U.S. and State), federal, state, tribal and private and public entities representing a broad range of environmental issues, analyses, and policy.

CONTACT:

Keith S. Wolf, Ph.D.
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keith.wolf@noaa.gov

FROM: Keith Wolf, Ph.D.
NOAA Fisheries Office of Oregon and Washington
U.S. Department of Commerce
Email: keith.wolf@noaa.gov
Mobile: 509-881-9192
www.fisheries.noaa.gov
<https://www.fisheries.noaa.gov/region/west-coast>

RE: Executive Service

DATE: Summer/Fall, 2023

The following provides my responses for posted positions with the United States Federal Government. This includes experience in and out of Federal service reciting my abilities to perform the duties of this key position(s). I have also listed evidence of my specific successes, and provide explicit examples of significant accomplishments, awards received, the organizations I have worked with, the goals or funding procured, and the problems that were solved.

This submission follows the Executive Core Qualifications template, the Challenge-Context-Action-Results model, and identification of Mandatory Technical Qualifications. The relevant experiences are presented in a general order specific to the position(s) duties, not in a strict chronological sequence.

Respectfully,
Keith Wolf

Introduction:

I have dedicated more than 25 years of my career serving in senior and executive roles including leadership positions in state, federal, and tribal governments, NGO's, and private industry. Currently, I'm actively engaged as an Endangered Species Act Specialist and climate change scientist at NOAA/NMFS. Over the course of my career, I've been privileged to lead and make substantial contributions to the development, operation, and management of a wide range of programs in diverse roles and complex environments.

In this responsive document, I provide examples that corroborate and underscore my position-specific Executive Core Qualifications (ECQ), and substantiate the conforming Mandatory Technical Qualifications (MTQ). The following ECQ and MTQ attributes are also used to categorize the components of my education, experience, training, and accomplishments within the Context, Challenge, Action and Result structure.

¹1: **Leading Change:** Ability to bring about strategic change, both within and outside the organization, to meet organizational goals and establish an organizational vision and to implement it in a continuously changing environment.

2: **Leading People:** Ability to lead people toward meeting the organization's vision, mission, and goals and provide an inclusive workplace that fosters the development of others, facilitates cooperation and teamwork, and supports constructive resolution of conflicts.

3: **Results Driven:** Ability to meet organizational goals and customer expectations, and make decisions that produce high-quality results by applying technical knowledge, analyzing problems, and calculating risks.

4: **Business Acumen:** Ability to manage human, financial, and information resources strategically.

5: **Building Coalitions:** Ability to build coalitions internally and with other Federal agencies, State and local governments, nonprofit and private sector organizations, foreign governments, or international organizations to achieve common goals.

1: **MTQ#1: Demonstrate knowledge** of and experience in *research and operations of scientific facilities* in the areas of biological or environmental science sufficient to serve as a principal advisor in the areas of biological and environmental sciences. This is based on formal training, extensive personal research, and work experience.

2: **MTQ#2: Demonstrate capabilities** in leadership and in *leading innovative administrative and fiscal programs for facilities, and national and international collaborations* in the areas of biological or environmental program management.

3: **MTQ#3: Demonstrate capabilities** in *formulating, developing, and executing overall policies, program emphasis, strategic planning* with the application of extensive executive knowledge, breadth of insight, and technical expertise in biological or environmental science, management and policy sectors.

¹ Explicit ECQ's and MTQ's are referenced for all senior level experiences and incorporated into of the Context, Challenge, Action and Results (CCAR) construct of this document.

Relevant Senior and Executive Level Experience

1. *Legacy Project Examples.* ECQ's 1-5/MTQ's 1-3.

Context: As a relevant and direct measure of success, the following program cases establish and validate my background in fulfilling demanding leadership and administrative responsibilities in complex and dynamic work environments.

Action: I have provided executive leadership to each of these organizations, most at the inaugural stage. Notably, all of these programs continue to function, and thrive, years and decades after launch.

Results:

- The Washington State Parks and Recreation Capital Program: <https://parks.state.wa.us/Document>
- The Upper Columbia River Salmon Recovery Board: <https://www.ucsr.org/>
- The Oregon Watershed Enhancement Board: <https://www.oregon.gov/oweb/pages/index.aspx>
- The Pacific Northwest Aquatic Monitoring Partnership: <https://www.pnamp.org/>
- The Puget Sound Partnership: <https://www.psp.wa.gov/>
- The Washington State Salmon Recovery Board: <https://rco.wa.gov/SRFB>
- The American Fisheries International Chapter WA/BC: <https://wa-bc.fisheries.org/>
- The Okanogan Basin Monitoring and Evaluation Program: <https://www.okanoganmonitoring.org/>
- The Chief Joseph Hatchery Science Program: <https://www.cct-fnw.com/program>
- Monitoring Resources.org: <https://www.monitoringresources.org/>

2. *State of Washington – Fish Program Manager.* ECQ's 1-5/MTQ's 1-3.

Context: While at WDFW, I held the following positions: Fish Program Manager, Columbia River Policy Coordinator, Western Washington Management Biologist, Puget Sound Harvest Coordinator, and Mid-Columbia Predator Index Study Biologist.

Challenge: I participated in hundreds of environmental management and research projects, rules promulgation, strategic land and natural resource recovery plans, enforcement actions and planning efforts across a diverse set of regional state, federal, tribal co-managers, and a diverse and active stakeholder and public engagement processes. Stewardship of natural resources and public service host myriad challenges and opportunities.

Action: As the Puget Sound Commercial and Recreational Fisheries Manager, and later as a Regional Fish Program Manager, I was deeply involved with many case laws, treaties, Executive Orders, state, provincial, tribal and federal environmental laws including US v. WA (i.e., Boldt I and II), US v. Oregon, the Rafeedie and Redden courts, the Northwest Power Act and many other substantial ruling conventions that compel natural resource management.

Results: As Fish Program Manager, I served as the chief negotiator, leading a team of state, federal, and tribal representatives, to achieve and implement interim and long-term agreements to improve/mitigate habitat, water quality and natural resource base on the Columbia (US and Canada) and Snake rivers. In this multifaceted position, I was responsible for over 80 employees, five subordinate supervisor reports, and an annual budget exceeding 1m USD.

Results: I also was the developer for Special Area Fisheries (SAF) which allowed selective harvest for recreational, commercial, and importantly, tribal fishing families in Puget Sound and the Columbia River. This

occurred during the late 1980 onset, and present, significant losses of all Pacific salmon due to overharvest, habitat fragmentation and degradation, stormwater pollution, artificial production genetic practices, and the effects of the Federal Columbia River Hydropower systems' operations on fish survival.

Actions: Climate Change was cited as a limiting factor for recovery of ESA listed, and other species as far back as 1997 (at WDFW in our modeling and management enterprises) and represents a significant and ongoing challenge. In my present position at NOAA, outlined and offered in a subsequent set of examples, I specialize in policy, procedures and science programs to address climate change.

Actions: My duties included technical and policy representation for the Pacific Fisheries Management Council and North-of-Cape-Falcon annual regulatory processes, the Pacific Salmon Commission and the Northwest Power & Conservation Council, among other agencies.

Action: I was also the state representative for the development of the Cle Elum Hatchery and Supplementation Science Evaluation Program. This experience is analogous to the work described later for the Colville Tribes' Chief Joseph Hatchery Science Program.

Results: The larger encompassing program, the Yakima Klickitat Fisheries Program, began in 1997 and was co-managed by the Yakama Tribe and the State of Washington. The goal is to boost the production of wild fish through supplementation techniques and to evaluate the program's long-term success. As regional fish program manager, coordination with the Yakama Nation and federal entities were a significant part of my duties.

Action: During this posting, I also served as the state's chief negotiator for The Hanford Reach Juvenile Fish Stranding Study. Here I also led a larger multiple state, federal agency, and tribal policy team to achieve and implement interim and long-term modifications to hydroelectric operations and FERC relicensing actions.

Challenge: The policy and program objectives were to reduce fish mortality by over 11 million juvenile fall Chinook occurring annually as part of the power peaking and ramping rate actions at the hydro facility.

Results: The resulting agreement, known as the Mid-Columbia Proceeding (FERC Docket No. E-9569) emanated from a complaint that was filed in 1976 with the Federal Energy Regulatory Commission by the Washington Department of Fisheries. The result of my teams' investigations and my policy negotiation was an update to the existing Vernita Bar Agreement incorporating new ramping rates and load following procedures eliminating, or significantly reducing juvenile salmon mortality. 2022 report at: <https://www.grantpud.org/>

3. State of Washington Capital Program - Parks and Recreation Commission. ECQ's 1-5/MTQ's 1-3.

Context: In this contract position, I led a professional staff of 50 in site planning, environmental compliance, archaeology and cultural resources protection, construction management, facilities inventory, and condition assessments.

Challenge: In previous biennial budgets, the Commission left substantial requested/awarded program funding unspent and amassed a 500-million-dollar maintenance backlog. The Inspector General and Governor required that the Commission significantly improve its fiscal planning and expenditure practices. I was contracted to develop these programs and procedures to accomplish this.

Action: I was directly responsible for delivery of a 65-80-million-dollar fiscal year budget, and development of a 650-million-dollar Ten-Year Plan. I supported key staff in project Management for all life-cycle stream phases of concept, development, design, and approved all costs, bidding-to-award and project delivery.

Action: In this position, I also led project, and represented work units' negotiations and approved complex or high-risk grants, contracts, and agreements that were highly visible, politically sensitive and had multiple funding sources.

Results: The linked documents below provide the forensic history of improved project planning, prioritization, fund management, and program implementation while serving as Washington State's Interim Capital Program Manager.

118 FY 2019-21 projects for the WA. Parks and Recreation Commission

<https://parks.state.wa.us/DocumentCenter/View/11555/Item-E-8--2019-21-Capital-Budget>

<https://parks.state.wa.us/270/Current-projects>

Ten-Year Plan for WA. Parks and Recreation Commission.

<https://ofm.wa.gov/budget/state-budgets/gov-inslees-proposed-2019-21-budgets/2019-29-capital-plan/10-year-capital-plan-and-expenditures/capital-projects-by-agency/465>

4. *The Okanogan Basin Monitoring and Evaluation Program (OBMEP). ECQ's 1-5/MTQ's 1-3.*

Context: Beginning in 1999, I led all funding and grant source procurement, budget management and preparation, including participation in multiple and extensive independent science reviews for this inaugural program. I developed all research, monitoring and evaluation (RME) components of this program; supervised a staff of seven initially, and then trained over a dozen tribal members and technicians to take over management of the program in 2009.

Challenge: Before this program began conducting qualitative and quantitative status and trend monitoring beginning in 2002 and continuing through the present, evaluating viable salmonid population (VSP) criteria (abundance, productivity, spatial structure, and diversity) and identify limiting habitat factors in the Okanogan subbasin was impossible. Little was known about the effects of extinction threat, or the totality of economic, health and cultural losses to the US/Canada Colville and Okanogan tribes.

Challenge: Absent quantifiable and useable habitat and fish population data (this challenge, action and result process also is incorporated in the Endangered Species Action Recovery Plan and three Subbasin Plans noted in the following pages, funding and mitigation under the Northwest Power and Conservation Act, and the honoring of treaties and many other US government/tribal agreements went unaddressed and unrequited.

Action: Hundreds of scientifically developed and extensively reviewed research, monitoring and evaluation efforts began in the early 2000's and focused on summer steelhead *Oncorhynchus mykiss*, which are listed under the Endangered Species Act (ESA) as "threatened" as part of the Upper Columbia River Evolutionary Significant Unit (ESU).

Challenge: Prior to development and operation of the RME programs, methods and designs also did not match other basin programs, rendering the data incomparable within and outside the basins, prone to siloed interpretations, and lacking in support for decision making and basic funding.

Results: OBMEP created a comprehensive, and oft-lauded program, that includes an interactive webpage to display and share the data that has been collected over the years. All of OBMEP's reports and data links are presented on <http://www.okanoganmonitoring.org> which allows data to be queried, displayed in graphs and

tables and downloaded. These methods now provide a new template for all RM&E programs in the Columbia Basin.

Results: In total, I initiated and or designed three substantial fish and wildlife programs securing over forty, new, full-time-permanent, staff positions totaling 250m in capital funds and 14m USD in recurring annual funding from the Bonneville Power Administration, the Northwest Power and Conservation Council, with additional support from federal, Canadian and regional Public Utility District hydropower managers.

5. Fish and Wildlife Policy Representative, and Manager of The Chief Joseph Science Program. ECQ's 1-5/MTQ's 1-3.

Context: In this position, I developed and managed over two- hundred scientific monitoring and research activities for this US/Canada, transboundary, ecosystem and environmental engineering program and led multiple policy and planning programs and efforts related to Federal ESA Recovery Planning, The Canadian Species-At- Risk legislation, and Subbasin Planning and for restoration, recovery, compliance and mitigation under several international programs and projects.

Challenge: The Chief Joseph Hatchery (CJH) is the fourth hatchery obligated under the Grand Coulee Dam/Dry Falls project, originating in the 1940s. The Leavenworth, Entiat, and Winthrop National Fish Hatcheries were built and operated as mitigation for salmon blockage at Grand Coulee Dam. Planning of the Chief Joseph hatchery began in 2001, and it received its first broodstock in 2013. It took over 63 years to move the United States Bureau of Reclamation to fulfill this mitigation obligation.

Action: The hatchery Master Plan was subject to review under the Northwest Power and Conservation Council's (NPCC's) 3-Step process and assessment by the Council's Independent Scientific Review Panel. I was a founding of the executive steering committee and served as the lead for development of the monitoring and evaluation program for the Master Planning phases of this project for over 12 years.

Action: Then, beginning in 2010, I served as the Science Program Manager for the final design, construction and implementation phases for this project. The Chief Joseph Hatchery's science and operating programs and designs were structured under integrated recommendations from the Congressional Hatchery Reform Project and recommendations from the Hatchery Science Review Group since planning began.

Results: The project was a coordinated effort done in conjunction with the Colville Tribes; The Chelan, Douglas and Grant Public Utility Districts; Bonneville Power Administration and the Northwest Power Planning Council. Capital expenditures exceeded 100 million dollars with an annual operating budget of 7 million dollars supporting 35 staff.

Results: During the period 1998-2014, I initiated and designed multiple fish and wildlife RME programs securing over forty, new, full-time-permanent, staff positions totaling 250m in capital funds and 14m USD in recurring annual funding from the Bonneville Power Administration, the Northwest Power and Conservation Council, and all federal, Canadian and regional Public Utility District hydropower facilities.

Results: While serving here, I was a principal author of the Upper Columbia River Salmon and Steelhead ESA Recovery Plan. <https://www.fisheries.noaa.gov/spring-chinook-salmon-and-steelhead>

Results: Additionally, I was the principal author of three Subbasin Plans for the Okanogan, Methow and Crab Creek. <https://www.nwcouncil.org/subbasin-plans/>

Results:

Wolf, K.S., P. E. Phillips, A.M. Pearl, M.B. Laramie (CCT/USFWS), and J.P. Rohrback, 2014. The Chief Joseph Hatchery Program – 2013 Annual Report. BPA Project No. 2003-023-00, (137) pages.

Baldwin, C. M., A.M. Pearl, M. B. Laramie, J. P. Rohrback, P. E. Phillips and K. S. Wolf 2016. The Chief Joseph Hatchery Program 2013 Annual Report. BPA Project No. 2003-023-00, 148 pages.

K.S. Wolf, K Kistler, P Wagner, J Nugent, R Dasher – 2006 _ IN: KWA Ecological Sciences, Inc. Field Manual Okanogan Monitoring and Evaluation Program Physical Habitat Protocols.

6. *The Columbia River Basin Accords. Bonneville Power Administration. ECQ's 1-5/MTQ's 1-3.*

Context: Keith Wolf provided policy and technical assistance to the Colville Tribes for these Accord negotiations. These partnerships were struck to balance the agencies' needs to perform their missions of navigation, flood risk management, hydropower production, fish and wildlife mitigation and recreation, water supply and irrigation, in a manner consistent with tribal trust and treaty rights.

Challenge: This emanates from an ongoing lawsuit by multiple plaintiffs v. The National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA/NMFS), first filed in 2008. The Columbia Basin Tribes were/are represented by the United States Justice Department under existing Treaties with many of plaintiffs.

Context: The lawsuit remains unresolved, making the Accords an important part of interim and adaptive management for natural and cultural resources for many stakeholders. These agreements support interim and adaptive management measures during review of the ESA Biological Opinion for the Federal Columbia River Power Systems.

Results: Beginning in 2007, five US states and eleven Columbia Basin tribes began negotiating with the federal government to meet its mitigation responsibilities. Beginning in 2010, these signatory parties received more than \$950 million to implement projects benefiting salmon, steelhead and other fish and wildlife at on the Columbia and Snake rivers. In 2017, an extension of the Accords provided an additional 900 million dollars of funding during the Federal Columbia River Power System/NOAA v. plaintiffs, litigation.

7. *The Salmon Recovery Funding Board (SRFB), Olympia, WA. ECQ's 1-5/MTQ's 2-3*

Context: Keith assisted the State Board as it organized to distribute funds through the regional boards and develop its allocation criteria. This board was chaired by William (Bill) D. Ruckelshaus – the first and third Administrator of the US EPA. This Board, along with its analogous state agencies and or Boards (e.g., The Oregon Watershed Enhancement Board).

Challenge: Develop and operationalize a large and complex grant source program supporting the initiation for the 5-state Pacific Coastal Salmon Recovery Fund.

Action: I worked directly with the states of WA and OR, and others for over twelve years to form the Board, its funding cycles, technical review, allocation plans and Regional Boards.

Actions: I also participated in developing annual funding cycles and their administrative and logistical development. I sat on two technical committees developing allocation schemes and technical review practices.

Action: I was the contracted project manager for the Reach-Scale Effectiveness Monitoring Program. This program developed a benefit/cost model using on-the ground monitoring to determine specific categories of projects that returned the highest biological benefit for fund dollars.

Action: Led five years on on-the-ground assessments for the abovementioned program, leading field teams of engineers and biologists for this evaluation at over 90 sites in WA and OR.

Challenge: The state and team I led developed a multi-year, Before-After-Control-Impact (i.e., BACI) design to study the effectiveness of salmon and steelhead habitat recovery projects. Nine categories of projects were identified and a statistical benefit. The Board for subsequent rounds of funding review and award adopted cost approach.

Results: Dr. Wolf and his staff engaged Tetra Tech as a project partner in the program's development and its implementation across 90 sites in Oregon and Washington. As of 2015, the Washington State SRFB has funded more than 5,307 projects totaling more than \$694 million. Washington State is the leading grantor of Pacific Coastal Salmon Recovery Fund in comparison to California, Idaho, Oregon and Alaska.

Results:

Wolf, K.S., 2005. The Economics of Salmon and Steelhead Recovery. Report to the Washington State Salmon Recovery Funding Board and the Northwest Power and Conservation Council.

Tetra Tech EC, Inc., KWA Ecological Sciences 2004-2008. WITH: University of Washington, Terraqua, Inc. Environmental Consulting, Terrastat Consulting Group, and BioAnalysts, Inc. Annual Progress Reports for Benefit/Cost Analysis of Salmon Habitat Restoration Projects: Prepared for the Washington Salmon Recovery Funding Board, Olympia, WA.

8. The Upper Columbia River Regional Recovery Board. [ECQ's 1-5/MTQ's 2-3](#)

Context: I served as a founding member of this state, federal and local group. At inception, I organized the structure, bylaws and missions for this Board and its staff. I then served for five years as a staff representative and alternate board member for the Colville Tribes.

Challenge: The Upper Columbia Salmon Recovery Board (UCSRB) required inauguration of a five-member board with representatives from Yakama Nation and Colville Confederated Tribes and a County Commissioner from each of the three counties. The UCSRB is one of seven regional salmon recovery organizations in the state created by the Washington Legislature and working in partnership with the Governor's Salmon Recovery Office and facilitates distribution of project approvals and awards from the Washington State Salmon Recovery Funding Board's oversight of the congressional appropriated Pacific Coastal Salmon Recovery Fund.

Action: I was a founding member of this state, federal and local group and organized the structure, bylaws and missions for this Board and its staff. I then served for five years as a staff representative and alternate board member for the Colville Tribes.

Results: While serving here, I was a principal author of the Upper Columbia River Salmon and Steelhead ESA Recovery Plan. <https://www.fisheries.noaa.gov/spring-chinook-salmon-and-steelhead>

Results: Additionally, I was the principal author of three Subbasin Plans for the Okanogan, Methow and Crab Creek. <https://www.nwcouncil.org/subbasin-plans/>

9. *The Oregon Watershed and Enhancement Board.* ECQ's 1, 2, 3 and 5/MTQ's 2-3

Context: My work with the Oregon Watershed Enhancement Board (OWEB) began at its inception. This board was generally modelled after the WA. State Salmon Recovery Board to participate in the Pacific Coastal Salmon Recovery Fund process. I provided workshop input into governance, timelines, grant structure etc.

Challenge: OWEB is a state agency that provides grants to help Oregonians take care of local streams, rivers, wetlands, and natural areas. Community members and landowners use scientific criteria to decide jointly what needs to be done to conserve and improve rivers and natural habitat in the places where they live

Action: In 2008, as an Executive Committee member of the American Fisheries Society, President of the WA/BC International Chapter and on behalf of AFS's Western Division (13 US States, Canada and Mexico), I awarded the WA. and OR. Boards with honored recognition for continued coordination across state lines on coterminous waters and jurisdictions.

Results: OWEB grants are funded from the Oregon Lottery, federal dollars, and salmon license plate revenue. The agency is led by an 18-member citizen board drawn from the public at large, tribes, and federal and state natural resource agency boards and commissions.

10. *The All-H Analyzer (AHA) Project.* Omak, WA. ECQ's 1-3/MTQ's 1-2

Context: As the Project and Program Leader for the Colville Tribes, Keith Wolf worked with the Northwest Power and Conservation Council and its Advisory Group members and served as the primary analyst for the Okanogan River Basin. These positions develop decision support tools for a broad cross-section of planning, policy, and technology. The All-H Analyzer model, and its group-led analytical processes, are an integral component of the existing FCRPS Adaptive Management Plan and the Northwest Power and Conservation Council's Power Plan(s).

Challenge: The All-H Analyzer (AHA) tool is a Microsoft Excel-based application and consists of a battery of interconnected modules for each H incorporating the equations described previously to estimate total recruits, escapement, and harvest for populations and hatchery programs. This tool is used to illustrate the implications of alternative ways of balancing the four "Hs" to facilitate informed decisions. This model is a derivation of the Ecosystem Diagnosis and Treatment Model. Making this tool accessible to a broad group of scientists and managers required significant development, training and deployment support.

Action: At the third annual Chief Joseph Hatcher Review in 2013, I introduced this model for use on all future hatchery/genetic management planning (regulatory and science requirement) and production programming

Results: This model, and its subsequent upgrades and complimentary decision support systems, remain in effective use today.

11. The Pacific Northwest Aquatic Monitoring Partnership, Portland OR. [ECQ's 1, 2, 3 and 5/MTQ's 1-3](#)

Context: I was one of the founding members of this USFWS-led and supported consortium and served on the Executive Steering Committee with regional group of state, tribal and federal representatives for five years. The PNAMP focused on integrating fisheries and aquatic monitoring methods, data management and reporting to ensure consistency and transparency in science and evaluation.

Challenge: PNAMP was formed to facilitate collaboration around aquatic monitoring topics of interest, promote best practices for monitoring, and encourage coordination and integration of monitoring activities across the Pacific Northwest.

Action: The forum's activities were, and continue to be, conducted by participant working groups and teams as endorsed by the partner-based steering committee. The coordinating staff serves to enhance and support PNAMP collaboration on topics of importance and develop and execute on priority initiatives (see publication below as an example).

Action: In this forum, I represented the Colville Tribes, the first tribal entity to sign the Charter and chaired the Fish Monitoring Technical Group which authored the first major peer-reviewed publication on tagging and telemetry science.

Result: I initiated a Remote Sensing and Photogrammetry initiative and introduced the Monitoring Methods web-based information system concept.

Action: I also served Fish Population Monitoring Committee Chair, Pacific Northwest Aquatic Monitoring Partnership and was Senior Editor and Chapter Author for PNAMP's first peer-reviewed publication.

Result:

Wolf, K.S. and O'Neal, J.S., eds., 2010, PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations - A compendium of new and recent science for use in informing technique and decision modalities: Pacific Northwest Aquatic Monitoring Partnership Special Publication with USFWS 2010-002, 194 p.

12. West Coast Climate Team (multiple NOAA projects in this section). [ECQ's 1, 2, 3 and 5/MTQ's 1-3](#)

Context: As a member of the West Coast Team, I currently work directly on the Western Regional Action Plan – NOAA's Fisheries Climate Science Strategy. The Western Regional Action Plan (WRAP) outlines efforts underway to increase the production, delivery, and use of the climate-related information required to fulfill NOAA's mission.

Challenge: This work is part of a proactive approach to increase the production, delivery, and use of climate-related information needed to fulfill NOAA Fisheries mandates. By operatively engaging specific knowledge, skills, and technical abilities, I perform this work in an integrated and collaborative way. Our success is measured in producing the best science and policy, and incorporation of its findings into actionable policy.

Challenge: Further, and as part of the NOAA Fisheries Climate Science Strategy (NCSS), the WRAP conforms to a nationally consistent framework that guides efforts by NOAA Fisheries and partners to address the agency's climate-related information needs. The WRAP identifies strengths, weaknesses, priorities, and actions to implement the NCSS on the U.S. West Coast over the next 3–5 years. This work is on progress and will be delivered in early 2023.

Action: Our planning includes marine minerals; and coastal and ocean ecosystem function to fulfill the broadest objectives of the NOAA Fisheries Climate Science Strategy (NCSS). And finally, the Strategy identifies seven objectives which will provide decision-makers with the information they need to reduce impacts and increase resilience with changing climate and ocean conditions.

Action: Additionally, I support NOAA Fisheries Science Centers and Regional Offices are currently developing updated Climate Science Regional Action Plans (RAPs). These plans identify actions that each region intends to take over three years (2022 - 2024) to address regional climate science needs such as sea level rise, storms, and coastal erosion, vulnerability, nature's solutions, and designing for resilience. These RAPs also include describing and developing mitigation strategies to protect and strengthen the role of coral reefs, barrier islands, and wetlands in protecting coastlines; prepare for offshore earthquakes, tsunamis, and submarine slides.

Result: NOAA funding awards to Pacific Northwest Tribes are helping relocate many villages and facilities out of these earthquake, coastal erosion, sea level rise, tsunami, and submarine and landslide threat zones. In 2016, I helped the Quinalt Tribe in Washington State develop preliminary plans for relocation of their villages, people and their ancestral remains.

Result: Recent Accomplishment in training: *Sheffield University, Climate Scenario Planning, Certificate 2022*

Result: See: <https://www.fisheries.noaa.gov/> for a complete description of climate programs the West Coast Climate Team is supporting.

13. ²Climate Science Needs – NOAA, West Coast Region (WCR) ECQ's 1, 3 and 5/MTQ's 1-3

Context: The purpose of this collaborative effort with the West Coast Climate Team is to help focus our dialogue with Science Centers, data calls from HQ and others, and to inform the Western Regional Action Plan (WRAP 2.0) implementing the NMFS National Climate Science Strategy. Importantly, this collaboration evolves as dialogue with the Centers continues.

Challenge: WCR climate science needs are organized into five subject areas below: freshwater, nearshore and estuaries, oceans, integration across ecosystems and management regimes, and use of climate science. Within these subject areas, tools are needed that would help the region address climate change impacts on trust resources. Some of these tools may already exist, highlighting the need for continued communication between the Region, Centers, and others (academia, other government agencies, etc.).

Actions: Projections and best practices for modeling future climate change impacts into predictions and projections at a variety of scales and time-steps.

Results: Best practices for modeling stream flows, temperatures, sediment transport, fish disease outbreaks, and invasive species (informed by reservoir cold water pools, hyporheic flows, ground water, glaciers, etc.) in a changing climate.

Results: Irrigation season, duration and volume tracking over time, and its effects on base flow/no flow periods.

Results: Improved prediction and modeling approaches to assess impact from sea-level rise and watershed hydrology changes over time on the quantity and quality of large river floodplains, and the population level

² This series of responses outlines the WCR Climate Team's summary of ongoing climate science needs and discussions collected from the divisions and the NOAA Restoration Center and supplemented by ongoing discussions with the Science Centers.

effects on salmonids from habitat loss/gain. Impacts from cumulative loss of small high elevation flood plains in forested environments.

Results: Analysis tools to evaluate how climate change may alter project impacts on instream habitat, habitat, flows, and water temperatures across a range of eco-regions, and time periods.

Results: Decision/analysis support tools for effects analyses for long-term medium-scale projects/structures such as fish passage, levees, other forms of channelization, and long-term water storage and use on listed fish and their habitat in a changing climate.

14. Climate Guidance and Consultation for ESA Sec. 7 and Magnuson-Steven Act, ECQ's 1, 3 and 5/MTQ's 1-3

Context: Delisting species, and protecting and restoring Essential Fish Habitat has helped to maintain productive fisheries and rebuild depleted fish stocks in the United States. NOAA Fisheries has used the Endangered Species Act, and Essential Fish Habitat authorities to support the \$200 billion U.S. fishing industry while protecting more than 800 million acres of habitat and multiple fish and wildlife species.

Challenge: My current emphasis is on ESA Section 7 consultation and climate stressors, and project related determinations for mitigation, effects, construction, and other components to comply with a broad portfolio of NEPA, ESA, EPA, CORPs regulations. All federal agencies are required to consult with NOAA prior to funding or permitting activities that may affect listed species and or critical and essential habitat.

Action: I coordinate directly with the US Fish and Wildlife Service, other federal agencies and experts at NOAA Science Centers and Academia, on consultations under the Endangered Species Act, Magnuson-Stevens Act. and the Marine Mammal Protection Act. I also work directly with state, local, tribal agencies, the public, legislators, Boards, Counties, and varied stakeholder constituencies to deliver project compliance permits, documentation, agreements, and design.

Result: As a member of the West Coast Climate Team, I prepare and advance technical guidance, develop training, and as a cross-program representative to the Oregon Washington Coastal Office and Division, disseminate materials to practitioners and provide training opportunities and discussions.

Result: Specific goals and objectives tied to delisting species and critical habitat resulted from these efforts and follows newly developed (2023) NOAA Mitigation Policy elements. In general, these are:

- Employ the best scientific information available.
- Apply a holistic landscape and/or seascape approach.
- Promote mitigation strategies that have a high probability of success.
- Implement mitigation that is proportional to impacts to NOAA trust resources and fully offset impacts.
- Use preservation of intact habitat as compensation appropriately, considering the high risk of habitat loss in many rapidly developing coastal and marine landscapes and seascapes.
- Collaborate with partner agencies and stakeholders.
- Consider climate change and climate resilience when evaluating and developing mitigation measures.
- Incorporate Climate Change procedures, best science and new tools into consultations.

15. The Fifth National Climate Assessment, NOAA, Portland, OR. ECQ's 1, 3 and 5/MTQ's 1-2

Context: The West Coast Climate Team is working collaboratively on review of specific chapters (I am commenting on the following chapters: Coastal effects, Ecosystems, Ecosystem Services and Biodiversity) of this assessment and encouraging public comment and review through January 2023. I have contacted over

7,200 peers and colleagues encouraging review and comment on specific chapters as Subject Matter Experts.

Challenge: This report used specific knowledge, skills, and technical abilities, to perform this work in an integrated and collaborative way. Our success is measured in producing the best science and policy, and incorporation of its findings into actionable policy.

Actions: The US Global Change Research Program has four major sets of responsibilities: (a) coordinating global change research across the Federal Government, (b) developing and distributing mandated products, (c) helping to inform decisions, and (d) facilitating international research coordination. I am a reviewer and commenter for the Oceans Chapter.

Results: My work is focused on helping the Program coordinate this work with the NOAA West Coast and Western Division Climate Teams, and facilitate peer review and comment on the draft plan.

16. The Salish Sea Nearshore Programmatic Biological Opinion and Calculator. ECQ's 1, 3 and 5/MTQ's 1-3

Context: The U.S. Army Corps of Engineers and NOAA Fisheries collaborated to develop the programmatic action to help stop the net loss of nearshore habitat. This is where young salmon have their last chance to grow before migrating to the ocean. Their growth in the shoreline marsh and wetlands improves their odds of returning from the ocean as adults.

Challenge: Adult salmon support tribal, sport, and commercial fisheries and provide food for endangered Southern Resident killer whales. These species are all at risk of extinction; most are listed under the ESA.

Action: In my current position, I work to develop, review and deploy the best available science and update the Nearshore Calculator. This multifaceted, 2-model tool included sophisticated routines on Sea Level Rise, estuarine and nearshore habitat processes, natal and foraging habitats, drift cells, longshore transport, ecological, et. cetera. The goals and objectives clearly linked to delisting these species uses the nearshore calculator metrics and benchmarks.

Results: The resulting calculator tool applies broadly to the nearshore environment and to Blue Carbon projects often seen as a higher quality carbon credit. The tool is also useful for analyzing impacts and mitigation actions for ocean- based ecosystems like kelp forests, bays, estuaries, and tidal marches, and to a host of other co-benefits like biodiversity, oxygen production, absorption of excess nitrogen from agricultural runoff, reduced ocean acidification and protection from wave- related erosion.

17. Southern Resident Killer Whale Population Management. ECQ's 1, 3 and 5/MTQ's 1-3

Context: Since 2006, this population has generally declined and has not shown signs of recovery, with only 74 individuals as of December 2020.

Challenge: This trend, along with biological condition of the Southern Resident Killer Whale population, acoustic stressors, vessel impacts, the consistently low availability of Chinook salmon, and exposure to contaminants, indicate that this population is facing increasing threats to its survival and recovery.

Action: As part of the Section 7 consultation process, I evaluate projects for their possible impacts to this ESA listed population in the San Juan Island, Puget Sound/Salish Sea and the US West Coast. Southern Resident Killer Whales have been listed as endangered species in both the U.S. and Canada, and their population is closely tied to the overall health of the entire west coast marine ecosystem.

Results: Threats to SRKW continue to be mitigated across a broad portfolio of marine and nearshore activities. The goal is to mitigate all threats in the “avoid, minimize, or offset sequence recently updated.

18. Management of Marine Predators – Ecological Modeling and Quantitative Systems. [ECQ's 1, 3 and 5/MTQ's 1-3](#)

Context: Development of an ecosystem approach for management of marine mammal, avian and invasive species predators on outmigrating juvenile salmonids. In its May 2019 report titled: A Review of Predation Impacts and Management Effectiveness for the Columbia River Basin (ISAB 2019-1)

Challenge: The Independent Scientific Advisory Board (ISAB) responded to The Northwest Power and Conservation Council's (Council) request to provide a review of the biological and economic impacts of native and nonnative predators. The report identified the ineffectiveness of predator management control efforts currently implemented, and the potential impacts listed and non-listed salmonid species, avian and marine mammal metapopulations. The general conclusion was that the programs were not coordinated and failed to utilize an ecosystem level measures approach that provided a better decision support tool and process.

Action: To address these threats, I provided comments and recommendations for Council to review and share with the Federal Caucus and others, to 1) establish a technical working group and expert panel tasked to describe and develop a decision-support and ecosystem-based planning process, and 2) develop an analytical framework and the necessary tools to address native and nonnative predation management actions in a systemwide and comprehensive manner.

Action: Specifically, my project partners and I developed the Comprehensive Aquatic Systems Model (CASM) and framework. Our work also included routines and computer analysis using Ecosystem-based fisheries management (EBFM) as a key element to incorporate these elements into a comprehensive interspecies, interrelationships solutions matrix. EBFM is beneficial in decision-making and improves the ability to predict the impact of those decisions. This approach is also cost-effective and designed to be adaptive.

Results: The EBFM is being considered for use to forecast pressures and impacts on both single and aggregated components of a marine ecosystem and provides a better understanding of how ecosystems and their components respond to multiple stressors. CASM and EBFM further facilitate trade-offs between different stakeholder priorities, balancing social and ecological needs and provide more stability of ecosystem level measures.

19. Removal of the Klamath River Dams. [ECQ's 1-5/MTQ's 1-3](#)

Context: The Klamath River was the second highest salmonid producing river on the West Coast for centuries. The California nearshore and beach ecosystems at Arcada and the entire OR/ CA. watershed, have been impacted by the presence and operation of these fish passage barriers. Habitat from the mouth to the Pacific Ocean has been disrupted for over 100 years. A fundamental step to moving forward on dam removal required the USFWS and Tribes to acquire sufficient population data at the proper geographic scale and extent to support near-term and future management decisions and actions.

Challenge: According to the NFWF Klamath Basin Restoration Program, the primary objective is “...[to] restore water quality, water quantity, and the aquatic and terrestrial habitats of the Klamath Basin for the benefit of fish and wildlife, and the health of local communities. The program is supported by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Reclamation (Reclamation).”

Further, the stated goals include the following elements: “...address limiting factors facing steelhead, Chinook

salmon, coho salmon and Pacific lamprey; support restoration actions to benefit resident fish populations of Lost River and shortnose suckers, bull trout and redband trout; and to undertake activities that will ultimately lead to successful reintroduction of anadromous fish to the upper Klamath Basin.”

Action: This work reflects work by my staff (13) and I at Cardno (now Stantec) in coordination with the National Fish and Wildlife Foundation (NFWF), the United States Fish and Wildlife Service (USFWS), and the Yurok Tribe and Karuk tribes of California.

Action: The work I led consisted of a summary of project outcomes and work performed as part of this project with a sequencing plan for possible future actions in support of studies on the four Klamath River dams to be removed beginning in 2024.

Results: This project addressed a key data gap in current fish monitoring programs for juvenile Chinook salmon by delivering a juvenile fish collection system and selecting a new site in the lower river and to develop a robust and effective monitoring approach and design. Final design, costs, and permitting needs were also provided.

20. Founding member of the Asia Pacific and Americas ESG and Sustainability Task Force. ECQ's 1-5/MTQ's 1-3

Context: Dr. Wolf led teams in Asia Pacific, 48 developing countries, and the Americas, serving on the ESG and Sustainability Task Force and acted as co-chair of the Global Client Services Business Development work group.

Challenge: Practice Areas are technically sophisticated, apart and required significant and disruptive change. These areas include: Climate, sustainability, and natural resources resiliency sectors and technical centers of excellence for greenhouse gas reduction and assessment, renewable energy, green infrastructure, public health, social and economic effect, co-benefits and offsets, extreme weather, coastal, estuary, river and floodplain resilience, and environmental justice and equity.

Action: To measure success, the Task Force I co-lead developed and conducted a Key Client and Competitor Analysis -- To develop the recommendations and plans, the Sustainability Task Force conducted a desk top analysis of the ESG/Sustainability programs for key clients and key competitors. The benefits of this work are multi-faceted: to competitive positioning in the marketplace; to employees and their job satisfaction; and importantly, to contributions to a sustainable global economy which emphasizes health equity and environmental equity and justice.

Action: This work provided the foundation for two critical Environmental, Social & Governance (ESG)/Sustainability initiatives:

- A global ESG plan and
- Business development and client services strategy for ESG, Sustainability and Climate Science.

Result: The data, analysis, and planning information in these reports and strategic planning documents served as the foundation for the briefing to an ownership Board in November 2020 as well as for future planning, investment, and communication efforts.

21. The Use of Remote Sensing for Environmental Assessments. ECQ's 1-5/MTQ's 2-3

Context: Each year millions of dollars are spent to monitor the status and trend of natural resources and

determine the effectiveness of restoration programs in the Pacific Northwest. Although there is increasing consensus among regional, Federal, private, State, Tribal, and stakeholder organizations with respect to the need for integrated and standardized monitoring information, funding for these activities is stagnant or decreasing. As a result, there is an increasing need to improve the efficiency and cost effectiveness of monitoring programs.

Challenge: Natural resource managers currently largely rely on traditional assessment methods to determine watershed health, habitat condition and the behavior and status of individual animals or groups of animals. The information collected is then used in many diverse biological and ecological science and policy forums, often with significant management implications.

Challenge: Similarly, these programs are unable to provide regionally comparable or spatially relevant information. We believe it is essential to improve our ability to gather comparable data, examine the suitability of current designs and methods to address regional monitoring needs, and to consider new tools and resources to complement traditional approaches. Thus, the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) has recognized a need to improve the availability of information about remote sensing applications that are used in the monitoring arena.

Action: Although current programs use various techniques to assess population status and trends and habitat condition, the statistical design and methods associated with these programs often address a limited number, or, individual hypotheses. In some cases, the information provided using these methods is not sufficient to understand sources of data variability or causative mechanisms, or to aid in the selection of corrective actions if needed. We convened dozens of experts at a USGS sponsored symposium to develop solutions to these challenges, identify new and innovative technology, and application use scenarios.

Results: *Facilitation and Initiating Concept. Taken from the acknowledgements: “Special thanks to Keith Wolf for proposing and facilitating the collaboration between PNAMP and the ASPRS Puget Sound Region that yielded not only this product but also a great start to future collaborations and also for his assistance with the executive summary.”*

Results: My work consisted of facilitation of the enabling discussion, need, value and the process to develop a way to address the abovementioned goals and objectives. In addition to leading this, I also participate in the first symposium and its report, and then developed and led a second symposium on Remote Sensing at an annual American Fisheries Society Chapter meeting.

Result:

Wolf, K.S. and O’Neal, J.S., eds., 2010, PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations - A compendium of new and recent science for use in informing technique and decision modalities: Pacific Northwest Aquatic Monitoring Partnership Special Publication with USFWS 2010-002, 194 p.

Tiffin, K.F, P.W. Wagner and K.S. Wolf, 2009. The Use of SHOALS Remote Sensing for Estimating Hydroelectric Power Peaking Impacts on Juvenile Fish Populations in the Hanford Reach. Science and Policy Processes. IN: PNAMP Special Publication: Remote Sensing Applications for Aquatic Resource Monitoring, Pacific Northwest Aquatic Monitoring Partnership, Cook, Washington.

Wolf, K.S. IN: J.M., Bayer and Schei, J.L., eds., 2009. PNAMP Special Publication: Remote Sensing Applications for Aquatic Resource Monitoring, Pacific Northwest Aquatic Monitoring Partnership, Cook, Washington, chap. 3, p. 17-26. Executive Summary, Chapter Author and initiator of proceedings papers.

22. Regional Assessment Advisory Committee Member, Northwest Power Planning Council. ECQ's 1-5/MTQ's 1-3

Context: The Regional Assessment Advisory Committee advises the Council and the region on technical aspects of the biological assessment of subbasins under the subbasin planning program. The Committee's primary function was to advise the Council on how to conduct subbasin assessments that are technically sound, and that are understandable and useful to planners.

Challenge: In performing this function, this Committee coordinated, synthesized, and reconciled the various assessment tools including those being used by the Council, National Marine Fisheries Service, the US Forest Service, and state, tribal, or other grant awardees.

Action: I was a lead author for three of these plans and participated in the development of subbasin plans implementation processes. <https://www.nwcouncil.org/subbasin-plans/>
<https://www.nwcouncil.org/subbasin-plans/methow-subbasin-plan/>

Results: 57 Subbasin plans were authored and ratified by the Council and guide all expenditures for mitigation under the Northwest Power Act. <https://www.nwcouncil.org/subbasin-plans/>

23. The Willapa Bay Salmon Enhancement Board. ECQ's 1-5/MTQ's 3-3

Context: The federal Endangered Species Act requires the federal government to develop recovery plans for salmon determined to be at risk of extinction. At the heart of that work are regional salmon recovery organizations. They prepare locally-based recovery plans, oversee and monitor implementation, and track and report on accomplishments. During my 12-year tenure working with the State of Washington, in private practice and for the tribes, I provided services to three of these organizations and hundreds of project sponsors.

Challenge: Regional Boards do not have the technical capability to develop biological and engineering level project proposals or incorporate ecosystem planning into a strategic long-term approach.

Action: I developed the Golder Associates Inc., Ecosystem Program, at inception, and was responsible for hiring and training 15 staff, developing a business model, overseeing all projects, and procuring grant source and other funds for a variety of clients. Members of this group, under my supervision and participation, provided expert planning, and design services for several of the regional recovery groups.

Action: One project example was the Salmon Habitat Recovery Planning for Pacific County. South Bend Washington. My staff and I at Golder Associates (now WSP) were retained by the Willapa Bay Fisheries Enhancement Group to perform planning, design, engineering, construction, monitoring and reporting for multiple salmon recovery projects in southern Willapa Bay.

Results: Over 118 projects were identified and developed as an integrated and prioritized plan to implement and fund these projects over a ten-year period. To date, 46 of these projects have been funded and constructed.

Results: Two projects from this effort received awards from the Secretary of the Interior, Bruce Babbitt.

VOLUNTEER WORK

I am an active volunteer member of the leadership committee of the Portland Oregon Chapter of the Climate Reality Project, and he served three terms (12 years) as President of the American Fisheries Society's International Chapter in British Columbia, Canada, and Washington State. I also served another two years as President of the American Society of Photogrammetry and Remote Sensing, Puget Sound, and as a Board Member of The International Imaging and Geospatial Information Society.

I am also part of the following NGO's and Service Groups:

- NOAA Ambassador Program.
- The Renaissance School of Arts and Sciences—Science Faculty.
- The American Elasmobranch Society—IUCN Appointed Shark Specialist.
- YMCA Camp Orkila Environmental Programs.
- Whatcom Family YMCA – former Teen Program Director.
- Catholic Community Services, Adoption Program Advisor.
- American Cancer Society Volunteer.
- Foster and Adoptive parent of two.

Oceans – A Climate Crisis Series.

This project's predecessor films were privately funded by myself and a small production team. In 1997 and 2022, I filmed, wrote, directed, and produced an original film title: *Under Puget Sound*. This was then remastered and re-released as an expanded version of the original documentary to examine the effects of climate change over the 25-year period between, throughout the Salish Sea in the Pacific Northwest.

We are currently in pre-production, post-development on the new "Oceans" 8-part series, documenting the effects of climate change on the ocean's biological, physical, and chemical environments. *A Climate Crisis Series* will be released in 2023-2024, and its sequel "Innovations and SuperHuman Solutions, a 6-part series, will air in 2024-25.

As a professional biologist, climate scientist and filmmaker, my colleagues and I have been involved in documentary film and production for over thirty years. These films can be seen at: kwaecosciences.com and on global streaming services in the near future.

MANAGEMENT APPROACH AND PHILOSOPHY

In closing, to explain how I approach collaborative decision-making and program management in complex and sometimes disruptive environments, I offer the following context:

I deeply respect the responsibility and authority of our federal family, including government bodies, agencies, and departments. My commitment lies in facilitating teamwork to create shared solutions and enhance problem-solving capabilities. This involves forging strategic partnerships with federal, state, and local government entities, universities, tribal groups, and others.

Throughout my career, I've supported hundreds of students, managers, executives, researchers, and staff in their endeavors, and executed projects that align with the agency's mission of addressing environmental challenges, taking actions, achieving results, and finally, managing critical resources. To achieve this, I prioritize collaboration with partner organizations to better comprehend, initiate, participate in, and lead joint efforts in

science and public policy. This underpins my approach, where successful outcomes thrive on the participation of people from diverse backgrounds with varying perspectives in constructive problem-solving.

I owe much of this perspective to my experience working closely with William (Bill) Ruckelshaus for 12 years, during which we collaborated on many of the programs mentioned here. Bill remained dedicated to environmental causes throughout his entire career. He established the Pacific Salmon Recovery Fund, and was again appointed to numerous Presidential posts, and finally, having two University programs and halls bear his name and legacy. I am proud to have considered Bill a friend, colleague, and most importantly, a mentor, as have thousands of others. While we miss Bill, we can honor his legacy in various ways.

These lessons, among others I've learned, are transformative, turning effective managers into impactful leaders. Hence, my tenure in the subject position will be driven by an unwavering commitment to purpose and results, supported by the best available science, management approaches, innovation, and information.

KW – September, 2023



In the late fall of the 2022-2023 school year, we were introduced to Dr. Keith Wolf. When we first connected, it became immediately apparent that this was a man driven by a particular passion for the climate, our oceans, and finding ways to communicate the necessity of change. We were intrigued when he offered an episode of his documentary series. Unlike other auteur documentarians, Keith sought our expertise and advice that would help craft his message. He is not a proprietary individual with a singular vision, but an inclusive mind who wants to challenge his own understanding through collaboration. Keith operates with a high level of respect, receptive and welcoming the perspectives and input of others.

Not only did Keith meet and discuss his ideas with us, but he quickly shifted into action, giving his time to plan and teach the associated environmental sciences to multiple groups of scholars throughout the school. He arranged for zoom conversations with activists overseas and has shared his technical expertise alongside his passion for educating others about climate change. His enthusiasm and demeanor is approachable and infectious. While many activists attend A Renaissance School, learning how to seek solutions to the problems of the world, that interest has substantially grown since Keith entered our lives.

An aspect that truly sets him apart from many other working professionals that come to work with our scholars is that Keith moves beyond the “conveyance of information.” He is not there to just spout facts and lament about the increasingly distressing state of the climate. Rather, there is a positive angle, a look at solutions, and most importantly an examination of how we begin to address these larger issues in the first place. The children, eagerly taking notes and participating in lively discussion, are not just working automatically, simply going through the motions of education. They feel heard, they participate from their hearts, and they feel the hope that Keith brings to every session. We now have informed, genuinely motivated scholars who will take what has been offered to them and work to teach that back out as they enter into the cycles of systemic change to make a real difference in the fight against climate change.

On Keith’s behalf, I will say I have rarely come across one so naturally and joyfully dedicated to their message of hope and change. Keith leaves real footprints in his wake, and we watch the children, the teachers, and the adults who have sat in sessions, trying to walk in them. He is a person beyond the message, and a man of messaging. He not only understands what needs to be heard, but *how* it needs to be heard.

If you have other questions or if I can be of assistance in any other way, please feel free to reach out.

Adam Heller
Director
A Renaissance School of Arts & Sciences
234 S Bancroft St.
Portland, OR 97239
adam@renpdx.org
971.221.2311



Dear Committee,

Summer, 2023

Keith is our Oceans teacher. He is an oceanographer and his work and ideas come from many sciences. He is helping us see the connections of biology, geology, meteorology, environmental science, physics, and chemistry. "Oceans" highlights issues of social justice, politics, and world cooperation.

Keith is dedicated to what he does and has a passion. You don't see that in many people. He has created excitement about learning and teaching, and we can feel the effects already. He is professional and engaging with all age groups. It's cool that he is teaching us and allowing us time to learn and understand the impacts of global climate change, putting the puzzle pieces together.

In the world, there is despair when people think about what is happening to the Earth. In class, there may be despair in the beginning, the worry that there is no way out... But Keith brings a sense of hope, points out things that we do know and things we are already doing. We feel like we are getting ready to take on a challenge and change the world. The subjects are interesting, but the depth and connections are most valuable as we see for ourselves how small changes influence so much and become big, how big changes are needed, and how people can and will "change climate change." He likes to say that. And we believe it is true.

Hope is the biggest key. If we don't have that, we won't be able to do anything with information. He is inspiring the next generation to deal with the challenges in front of us, and climate change is the biggest challenge we face. Keith creates enthusiasm, for himself, for us. We are really thinking about our futures and the ways our education and careers will make a difference. Growing up and into this crisis with understanding puts trust in the younger generations. He could have chosen to teach older people; instead, he chose children, a new generation, the people who are going to be here to deal with what comes. He is giving us time to learn and understand the impacts of global climate change. Our learning won't just stop or go away. We are finding ways to use it. Keith understands the importance of our voices and commitment to this crisis.

Many documentaries focus on the older generations, when mistakes were made, and opportunities were missed. We have known for at least 25 years that we are heading for trouble, and little was done. We must focus on the younger generations now as these are the people who will spend their lives solving problems of global emissions and endangered species. Each hole we create will make the problem worse. We can see that, and we need to know how to tackle it as it will only get worse if we don't think about how we can act. When we come out of his class, we feel like there are ideas and we can change the world. He decided to teach us so that we know where we stand and why, and we can make a plan for where we are going... being strategic rather than only reactive.

We are listening, this doesn't scare us. We are nearing the edge of not being able to make the changes we need to make. When we get past fear, we have better ideas and new perspectives based on science. There are consequences of decisions and past mistakes. We are the ones who will be feeling the pain. Keith is giving us power to talk to people in the world, people who can make the changes that are needed, people who will work together, and people who will create innovations. Knowing makes us stronger and alert to consequences so we can mitigate the effects of decisions and actions in the future. We all affect the planet. No blame, no guilt, no freezing, just looking forward and helping.

Today, the world is more open; we are open. We are learning now, in a school with Keith, where we can be the change.

Sincerely,

Brooklyn, Charlie, Ajay, Daylin, McKenna, Lucy, Maya, and Robby - Ren scholars in the middle school

March 2, 2006

Joseph M. Wahl
Executive Search Services
Oregon Department of Administrative Services
155 Cottage Street NE
Salem, OR 97301-3968

RE: Office of the Director, Oregon Department of Fish and Wildlife
Announcement Number: ES635006

Dear Mr. Wahl and Members of the Selection Committee:

I appreciate the opportunity to provide this letter of support on behalf of Mr. Keith Wolf who has submitted his application for the position of Director of the Oregon Department of Fish and Wildlife. I have had the opportunity to know and work with Keith Wolf for about fifteen years under a variety of circumstances and believe I can offer a unique perspective.

I had the pleasure of serving on Washington's Fish and Wildlife Commission from 1994-2005. This provided me many opportunities to work on many challenging issues with the staff of the Department of Fish and Wildlife (WDFW) in both Olympia and the regional offices and I also participated in the hiring of several Directors for the Department. I came to know Keith initially through his work at WDFW.

The professionalism and depth of knowledge that Keith provided on a diversity of issues did not go unnoticed and was clearly very much appreciated by all of us on the Commission. It was clear his leadership skills brought out the best in his staff but also in helping to create solutions that were brought before the Commission for decision-making. Not only was he able to take very complex issues and problems and make them understandable to the public, legislature and Commission he excelled in making sure that all viewpoints and opinions were taken into account in terms of providing recommendations to the Commission.

One of the qualities I personally believe is so important in the position of the Director for a natural resource agency is their ability to work with an incredible diversity of people. I have watched Keith in a multitude of situations and he is remarkable at knowing how to participate and lead while making everyone at ease particularly in difficult situations. He is honest and straightforward, things people readily see in him and I believe these are two key qualities that have allowed him to be so successful and respected. There is no question in my mind that Keith would excel in representing the Department in Salem where it is so critical that a Director of an agency can work both sides of the aisle promoting both policy and budgeting issues for the Department through the legislature and Governor's office.

I am aware of the complicated nature of working Columbia River issues and I believe Oregon will be well served by having Keith as one of the key players in helping to shape and guide Oregon's role in its management. He has worked so closely throughout the years with tribes, Canada, Bonneville Power, the Northwest Power and Conservation Council and other stakeholders providing expertise and superb negotiating skills to ensure the resources unique to that system are upheld.

I am not a biologist so it has been critical in not only my work on the Commission but also in my job as an Executive Director for a statewide conservation organization working to restore streamflows in Washington to have the expertise of people like Keith to guide my work. His depth of knowledge on all things relating to fish, hatcheries and habitat has been key to our successful projects in Washington. He can clearly manage very complex projects something proven most recently by his work in North Central Washington, an area that needs skills of Job to work through very difficult issues.

While it is never easy to have a change in administration I know the staff of Oregon's Department of Fish and Wildlife and the Commission will find Keith an excellent leader and I urge your consideration of him for the Director. Again, thank you for this opportunity and if you have any additional questions please don't hesitate to contact me at (509) 630-0467.

Sincerely,

~ Lisa Pelly

Joseph M. Wahl
Executive Search Services
Oregon Department of Administrative Services
155 Cottage Street NE
Salem, OR 97301-3968

13 February 2006

Dear Mr. Wahl and Members of the Selection Committee:

RE: Application by Keith Wolf for the position of 'Principal Executive/Manager/H position' with Oregon Department of Fish and Wildlife (announcement Number: ES635006)

I wish to support the application by Keith Wolf for the position of Director of Oregon's Department of Fish and Wildlife. I have known and worked with Keith for many years, and I firmly believe that Keith possesses the diverse skill set that is required to successfully fulfill the challenging mandate of this position.

Over the years I have come to respect and admire Keith's ability to establish a vision, to lead and motivate, to organize, to establish constructive relationships and effective partnerships, and to possess an impressive understanding of the technical and management aspects of natural resource issues.

I have observed him using these skills in a wide variety of situations. A very good example is how he stepped into the new position of Director of Ecological Sciences with the US operations of Golder Associates (a large multi-national consulting firm), and identified a vision for the division that was aligned with corporate objectives and met external client needs, and proceeded to very successfully communicate this vision both to get commitment by others and to develop a large and vibrant practice. Moreover, his business acumen was very sharp, and his human resource management skills and his project management skills were very strong.

Another good example arises from his extensive involvement in multi-issue programs in the Columbia River Basin. I have observed Keith effectively bringing together a collaborative partnership of numerous parties from all levels of jurisdiction; this includes Federal (both in the US and Canada), State and Provincial, First Nations, Utility Districts, Watershed Alliances, Environmental Interest Groups, and a wide diversity of stakeholders. I was often impressed by how well he could identify and influence decision makers in the pursuit of complex mutual objectives. Similarly, he was also extremely adept at organizing and keeping these many parties and many people all moving towards accomplishing these mutual

objectives, and demonstrated flexibility and adaptability where necessary to ensure that dynamic, changing objectives were met. He was also remarkably adept at respecting political sensitivities, and at keeping discussions on a level head, even when dealing with emotionally charged controversial matters.

As you are no doubt well aware, good natural resource management requires not just excellent people skills, but also an in-depth understanding of:

- The biology of the natural resources being managed; and
- The multitude of tools and mechanisms that can be used to manage natural resources.

In both of these respects Keith also has incredible skills and knowledge. I consider Keith to be a solid biologist, particularly in the field of aquatic ecology, and to have the good working knowledge which is necessary to work effectively with professionals from other disciplines. At the same time, he has the understanding of how management tools can be effectively used to accomplish management goals, and a pragmatic recognition of the weaknesses of these tools.

Finally, I would note that Keith is a person whom I trust. I always found him to be honest, to live up to his word, and to fulfill his promises. His personal and professional integrity are solid and admirable, and he is a wonderful role model. He is also the type of person that others find very easy to work with.

I have no hesitation in recommending that Keith be considered for the Director position. I truly believe that he has the skills, experience, and personality to serve you well.

Please feel free to call me if you wish further details or thoughts.

Sincerely,

N. John Olyslager, M.Sc.
Senior Environmental Assessment Specialist
Western and Northern Canada, Parks Canada
1550, 645 – 8th Avenue S.W.
Calgary, Alberta, Canada
T2P 3M3

GLOBAL SEARCH

THE TECHNICAL SEARCH AND RECRUITING SPECIALISTS

1946 Kellogg Ave, Suite A, Carlsbad, Ca. 92008 760-931-2759 Fx: 760-931-5958

To: Ms Roxie Burns
State of Oregon
Selection Committee, ODFW

Re: Keith Wolf

Dear Ms Burns,

I am President of Global Technical Search, Inc., a California Executive Search firm specializing in Environmental and Natural Resource candidates nationally for our private industry and consulting clients.

I have had the pleasure of dealing personally with Mr Keith Wolf on many occasions in the past seven years, including placing Mr Wolf with one of my national clients in a senior management position. During my contact with Mr Wolf, I have found him to be one of the finest professionals and someone that maintains the highest personal and professional ethics and standards. He is a warm and likeable man, with excellent interpersonal skills. He is a natural leader with vision and understanding, someone that can also see the "big picture". His skill with big complex projects and budgets is widely recognized as being one of his finest attributes and has served him well in his career, including his successful company and many major clients. Mr Wolf thrives on challenge and isn't afraid of hard work.. Keith will do what it takes to complete a job or project on time and on budget. In short, he is the real deal and the complete management package.

Obviously I recommend him highly to you for the Director of Fish and Game for the great State of Oregon.

Even though Mr Wolf did not ask me to send you this letter, I do so because of my strong belief in Keith and his abilities. Additionally, I hope that this letter will reinforce and influence your decision that he is the perfect choice for the ODFW.

Warmest Regards,

Michael Burnett
President
Global Technical Search, Inc.
Mbglobalsc@aol.com



Colville Confederated Tribes
Fish & Wildlife Department
P.O. Box 150
Nespelem, WA 99155
Phone: 509-634-2110
Fax: 509-634-2126



January, 20, 2007

To Whom It May Concern:

KWA Ecological Sciences has assisted the Colville Tribes for many years with literally hundreds of multifaceted natural resource issues. Their work has been of the highest-quality and they have been exceptionally responsive to any request.

KWA has also represented the Colville tribes expertly in many technical and policy forums, working under tight timelines and complicated circumstances. Their capability is unmatched in our view and most importantly, they have a level of integrity we find indisputable

Sincerely,

CONFEDERATED TRIBES OF THE COLVILLE RESERVATION

Joe Peone, Director
Fish and Wildlife Department

CHRISTINE O. GREGOIRE
Governor



STATE OF WASHINGTON
OFFICE OF THE GOVERNOR

P.O. Box 40002 • Olympia, Washington 98504-0002 • (360) 753-6780 • www.governor.wa.gov

January 18, 2006

Keith Wolf
P.O. Box 1017
Duvall, WA 98019

Dear Mr. Wolf:

Thank you for your thoughtful comments on the economic benefits of salmon and steelhead recovery. I share your views that fish recovery is important to the region, both economically and in terms of quality of life.

As you are aware, reauthorization of the Endangered Species Act is under consideration by the U.S. Senate. I took the liberty of sharing your message with Senators Murray and Cantwell. (If you would like to contact them directly, their telephone number and address is available on line at www.leg.wa.gov.)

I also want you to know that I appreciate your involvement in the draft salmon recovery plan for the upper Columbia River. I know that this required a tremendous amount of hard work and personal commitment on your part and that of many others. Clearly, this "bottom up" approach is exactly what we need to be successful. Please know that, while salmon recovery may still be in the beginning stages, completion of the draft plan is a major step forward.

My hope is that we will continue to move closer to the goal of full salmon recovery and bring about the economic benefits you have noted.

Thank you again for contacting me.

Sincerely,

A handwritten signature in cursive script that reads "Chris".

Christine O. Gregoire
Governor

cc: Senator Maria Cantwell
Senator Patty Murray
Bob Nichols, Senior Advisor, Governor's Salmon Recovery Office



February 25, 2009

Regarding: Professional Recommendation for Keith Wolf

Dear Sir or Madam,

It gives me great satisfaction to provide a professional recommendation for my colleague, Keith Wolf. As President of Warren National University, I have come to know Keith Wolf quite well. I have come to know Keith during his tenure as a graduate student in the doctoral program in environmental engineering. Members of his faculty have provided recognition that Keith's research into environmental sensor technology is innovative and exceptionally well supported by meticulous data collection and analysis. Warren National University is proud to host the research conducted by Dr. Wolf as he earned his doctoral degree with distinction.

While I do not share his background in environmental sciences, Keith has taken the time to present his research to this layman. I was impressed by the practical application of the technology. Keith exhibits a grounded pragmatism that I believe is an important attribute for a research scientist and businessman.

Dr. Wolf has been a very important contributor to the University in our effort to earn accredited affiliation through the Higher Learning Commission of the NCA. He participated in many committee activities and student leadership panels. Keith is a leader and a contributor. I greatly appreciated the attention to detail and practical approach that he evidences in his feedback to the University. As a creative thinker, Keith often is ahead of his group. However, he has the patience and discipline necessary to ensure that the sense of team is preserved as his ideas are shared and developed.

Keith is an excellent communicator. One thing that I have learned to really appreciate about him is his professionalism. He is always dependable with a commitment, available with critical feedback, and encouraging to progress. I am privileged to count Dr. Wolf as my peer and colleague.

Sincerely,

~Robert Patterson
President and CEO
Warren National University

cc: Dr. Lisa Wallace, Chief Academic Officer

Client Testimonial

Keith Wolf - and his company, KWA - have worked within the professional fish and wildlife communities throughout the Pacific Northwest for many years.

He has worked closely with watershed councils, Washington State natural resource agencies, the Washington Governor's office, tribal governments and a number of other regional resource management agencies and environmental organizations.

Keith and his staff at KWA are well known and respected for their ability to work in a positive and respectful manner with a diversity of stakeholders. I have worked with Keith for well over a decade.

He and his staff are hard working professionals with unique leadership and work ethic talents.

-- Lynn Hatcher

Regional NOAA Recovery Coordinator



Cristen Don
11770 SE Acacia St.
Newport, OR 97366
cristenH2O@gmail.com
(541) 961-1556

September 25, 2023

Oregon Ocean Science Trust
Linda Safina-Massey (Linda.Safina-Massey@dsl.oregon.gov)

Dear Review Committee Members,

I am writing to express my strong interest in serving as a member of the Oregon Ocean Science Trust (OOST). With a deep commitment to advancing stewardship and knowledge of Oregon's ocean and coastal resources, coupled with over 19 years of experience in marine policy, management, and research I believe I am well-suited to contribute meaningfully to OOST's mission and objectives.

My work in Oregon over the last two decades has spanned a variety of ocean policy and management topics ranging from wave energy, to fisheries management, to marine reserves and protected areas. My expertise extends to administering long-term ocean and socioeconomic monitoring programs, aligning research and monitoring initiatives with natural resource management priorities, and managing contracts for research and community engagement. Over the years, I have developed enduring partnerships with universities, research institutions, the fishing industry, non-governmental organizations, philanthropic foundations, state and federal agencies, and local coastal community groups.

For 12 years, I led the Marine Reserves Program at the Oregon Department of Fish and Wildlife. This position required me to lead an interdisciplinary team that integrated marine science, social science, communications, public policy, and resource management to implement Oregon's marine reserve sites, fulfilling the mandates established by the Oregon Legislature. In this capacity, I managed strategic planning and coordination, administered program budgets and staff, oversaw ecological monitoring and human dimensions research, coordinated outreach programs, and served as the primary spokesperson for ODFW's marine reserves initiatives.

These experiences have equipped me with the necessary qualifications and expertise to contribute effectively to the goals and mission of the Oregon Ocean Science Trust, particularly in enhancing the availability of reliable science and advancing essential ocean research for the betterment of our environment and economy. I fully support the OOST's goals of increasing the availability of reliable science and investing in essential ocean research for the betterment of our environment and economy.

In conclusion, I am enthusiastic about the prospect of serving as a member of the Oregon Ocean Science Trust and contributing my knowledge, skills, and experience to advance its mission. Please find enclosed my resume. Thank you for your consideration.

Sincerely,
Cristen Don

CRISTEN DON



CONTACT INFORMATION

Cristen Don (she/her)

cristenH2O@gmail.com

(541) 961-1556

11770 SE Acacia St., South Beach, Oregon 97366

CITIZENSHIP U.S. Citizen

LINKEDIN [Cristen-Don](#)

I enjoy applying my expertise and skills to effect positive changes in ocean policy and management. With over 19 years of experience, I have worked on a variety of ocean policy and management topics including ocean renewable energy, fisheries management, and the planning and implementation of Marine Protected Areas (MPAs). I am results driven and energized by working with creative people and interdisciplinary teams.

EXPERTISE

- Marine Protected Area (MPA) management
- Ocean policy and management
- Marine ecology
- Aligning research program with natural resource management priorities
- Science communications

STRENGTHS

- Leading interdisciplinary programs
- Strategic thinking and planning
- Organizing and visualization of information
- Writing for non-technical audiences
- Humor, creativity, and sound judgment

EDUCATION

Master's Degree, Marine Affairs - University of Washington

2000 - 2002

Bachelor's Degree, Marine Biology - University of California Santa Cruz

1992 - 1996

EXPERIENCE

Coastal Quest

Director

30 Hours/Week

Jul 2023 - Present

Coastal Quest is a service-oriented, non-profit organization that partners with communities and governments to help them achieve their coastal resilience goals for the benefit of people, nature, and the climate. The organization provides technical expertise and services, funding, and financial support to local governments, government agencies, community-based organizations, tribal organizations, and individuals to help increase capacity for coastal resilience work and accelerate getting coastal solutions on the ground. Expertise is in project planning and management, piloting and scaling new approaches, developing public-private partnerships,

administering grant programs, fiscal sponsorship, and non-profit administration. The work of Coastal Quest is focused in coastal and ocean areas – from white water to blue water, terrestrial and aquatic, in rural and urban communities in the U.S. and internationally.

Oregon Department of Fish and Wildlife (ODFW) – Newport, Oregon

Marine Reserves Program Leader

Sep 2009 – Jun 2022

40 Hours/Week

Built and led the Marine Reserves Program for the state of Oregon. The program is responsible for overseeing the management and scientific monitoring of Oregon's five marine reserve (MPA) sites -- areas in the ocean reserved for conservation and scientific research.

- **LEADERSHIP**
Developed strategic plans to meet marine reserve legislative mandates and long-term conservation and research goals. Built partnerships with universities, non-governmental organizations (NGOs), foundations, state and federal agencies, and the fishing industry to support marine reserves implementation. Developed novel ways to leverage state resources and capacity. Advised and reported to state decision makers.
- **PROGRAM ADMINISTRATION: BUDGET AND STAFF**
Managed \$1.8 M biennial budget. Managed multiple grants and 30+ contracts each biennium. Supervised five permanent staff. Hosted post-graduate fellows and student interns. Created a joint fellowship position between ODFW and Oregon State University.
- **AGENCY RULEMAKING**
Coordinated marine reserves rulemaking across three state agencies. Led public process for rulemaking. Oversaw writing of rules language. Worked with economists to develop economic impact statements. Presented rules to the Oregon Fish and Wildlife Commission for adoption in Dec 2009 and Aug 2012.
- **SYNTHESIS REPORT AND MANAGEMENT PLANS**
Led development of the [Marine Reserves Program Synthesis Report: 2009-2021](#) -- a comprehensive overview of the ODFW Marine Reserves Program and first 10 years of marine reserves implementation -- as part of a legislatively mandated evaluation of the program. Led the development, public process, and writing of five marine reserve site management plans: [Cape Falcon](#) (2021), [Cape Perpetua](#) (2020), [Cascade Head](#) (2017), [Otter Rock](#) (2013), and [Redfish Rocks](#) (2012).
- **SCIENTIFIC RESEARCH**
Oversaw long-term ecological and human dimensions (social science and economics) monitoring programs and staff. Built and institutionalized collaborative research partnerships with academic researchers and institutions. Found opportunities for program data and findings to [support ocean policy and management](#) beyond marine reserves.
- **COMMUNICATIONS AND OUTREACH**
Served as the Department's marine reserves spokesperson. Directed strategic communications plans, program branding, and communications staff. Delivered public presentations. Developed and edited content for monthly electronic [newsletter](#), with 1300+ subscribers. Managed development and wrote content for the state's marine reserves website [oregonmarinereserves.com](#), launched in Mar 2016.
- **COMMUNITY ENGAGEMENT**
Developed engagement opportunities for commercial fishing and charter businesses, NGOs, local marine reserve community groups, and volunteers to support marine reserves implementation. Opportunities included participation in research, local outreach and education events, and local economic development projects.
- **COMPLIANCE AND ENFORCEMENT**
Coordinated compliance and enforcement efforts with Oregon State Police and Oregon Parks and Recreation Department. Supported development of communications and outreach materials to promote compliance of marine reserve site regulations.

Marine Reserves and Alternative Ocean Energy – Special Assignment

May 2008 – Aug 2009

40 Hours/Week

- **MARINE RESERVES PLANNING**

Provided critical staff support to the public planning process that led to the establishment of Oregon's five marine reserve sites. Led the state's outreach and aided members of the public developing marine reserve site nominations. Coordinated the state's technical analysis of marine reserve site nominations. Presented the state's analysis of site nominations to the Ocean Policy Advisory Council, the group responsible for forwarding final site recommendations to the Governor.

- **2009 OREGON LEGISLATIVE SESSION**

Provided analyses and recommendations to Department leadership on statutes pertaining to marine reserves, alternative ocean energy, and nearshore ocean resources.

- **ALTERNATIVE OCEAN ENERGY**

Represented the Department on the Territorial Sea Plan (TSP) Advisory Committee, recommending state policies for development of alternative ocean energy projects in Oregon state waters.

Nearshore Assistant Project Leader

Mar 2004 – May 2008

40 Hours/Week

- **ALTERNATIVE OCEAN ENERGY**

Represented the Department on the Federal Energy Regulatory Commission (FERC) settlement group negotiating acceptable study methodologies, mitigation alternatives, and project designs for the first proposed alternative ocean energy project off Oregon.

- **HABITAT RESEARCH**

Assisted in remotely operated vehicle (ROV) surveys, in collaboration with Oregon State University researchers, to study effects of nearshore hypoxia (low oxygen) events.

- **NEARSHORE STRATEGY DEVELOPMENT**

Led an interdisciplinary team in developing the *Oregon Nearshore Strategy*, a part of the state's Wildlife Action Plan approved by the U.S. Fish and Wildlife Service.

- **FISHERIES MANAGEMENT**

Led an interdisciplinary team of scientists and resource managers to develop a nearshore fisheries management plan framework for Oregon. Assisted in the management of the commercial nearshore fishery including spatial data analysis of logbook data (ArcGIS) and annual meetings with the fleet.

NOAA Fisheries – Seattle, Washington

Jun 2003 – Dec 2003

Oak Ridge Institute for Science and Education Fellow

40 Hours/Week

Provided analyses and recommendations for designation of critical habitat in the ocean for Pacific salmon populations listed under the Endangered Species Act. Analyzed high seas salmon tagging data from fisheries database to determine ocean migration ranges. Identified marine habitats in the ocean important to the survival and recovery of listed salmon. Delivered report recommending critical habitat designations to principal investigator.

SELECTED WORKS

Lead Author

ODFW. 2022. *Marine Reserves Program Synthesis Report: 2009-2021*. Oregon Department of Fish and Wildlife. Newport, Oregon. 165p.

ODFW. 2021. *Cape Falcon Marine Reserve Site Management Plan*. Newport, OR: Oregon Department of Fish and Wildlife. 97p.

ODFW. 2012. *Oregon Marine Reserves Ecological Monitoring Plan*. Newport, OR: Oregon Department of Fish and Wildlife. 27p.

ODFW. 2005. *The Oregon Nearshore Strategy*. Newport, OR: Oregon Department of Fish and Wildlife. 283p.

Don, C. 2002. Could the San Juan Islands National Wildlife Refuge serve to protect marine areas? Building on existing institutions and legal authorities to create marine protected areas. *Coastal Management* 30: 421-426.

Co-Author

Mazur, E., Walker, S.E., Don, C., and Conway, F.D.L. 2021. Designing and Delivering Webinars to Improve Science Communication and Engagement Between Environmental Researchers and Natural Resource Practitioners. *Coastal Management*, DOI: 10.1080/08920753.2021.1928458

EXAMPLE PUBLIC PRESENTATIONS

- Oregon Sea Grant, Coffee with Colleagues. [Diving Into Oregon's Marine Reserves Program](#). Apr 2021.
- The Nature Conservancy, Oregon Size and Spacing Workshop 2.0. [Overview of Oregon's Marine Reserves Program, Sites, and Mandates](#). Mar 2020.
- Oregon Legislature, House Natural Resources Committee. *Diving Into Oregon's Marine Reserves*. Apr 2019.
- Management Plan Workshops. *Cape Falcon Marine Reserve: A Deeper Understanding*. Nov 2018.
- Oregon Coast Visitors Association, People's Coast Summit. *Oregon Doesn't Stop at the Beach: A Virtual Underwater Tour of Oregon's Marine Reserves*. Oct 2018.
- Ocean Policy Advisory Council. [2017 Marine Reserves Program Highlights](#). Nov 2017.
- Oregon Community Foundation. *Oregon's Marine Reserves: Conservation Opportunities and Challenges*. Nov 2017.
- MPA Federal Advisory Committee. *Oregon Doesn't Stop at the Beach*. Jun 2015.

ACADEMIC APPOINTMENTS AND VOLUNTEER POSITIONS

Oregon State University – Corvallis, Oregon Apr 2018 – Present
Courtesy Faculty Appointment - College of Earth, Ocean, and Atmospheric Sciences (CEOAS)

Have served on two graduate student committees. Provide advice on graduate student projects and class curriculum. Occasionally give class lectures.

Samaritan House – Newport, Oregon Apr 2021 – Present
Board Member and Treasurer

Mission: Sheltering, educating, and guiding homeless families with children toward independent living.

Lincoln County Budget Committee – Newport, Oregon May 2022 – Present
Committee Member

Dear Ms. Safina-Massey,

I am writing to convey my interest to serve as a member of the Oregon Ocean Science Trust. I am very interested in seeing that excellent and relevant scientific research being conducted on Oregon's ocean resources upon which coastal, state, regional, and national communities depend. I spent my professional career (1985-2022) conducting applied ecological research on coastal ocean and estuarine ecosystems, and most of that was leading research for the US Environmental Protection Agency. In that capacity, I led and managed EPA's multi-laboratory research teams focused on ecosystem services science, received numerous awards from the Agency for my research and service, and I served as the chief of the Pacific Coastal Ecology Branch laboratory in Newport, OR, for several years. I have attached my CV that further describes my scientific career and productivity.

I am also a strong advocate for developing new scientists who will lead the research of tomorrow, and in that regard I advised or mentored 50 undergraduate, graduate, or post-doctoral students as research interns, thesis researchers, or collaborators. In addition to working for EPA, I have held courtesy faculty positions in several departments at Oregon State University and I have served as president of two regional science societies (Pacific NW Society of Environmental Toxicology and Chemistry; Pacific Estuarine Research Society) and on the board of directors for those societies and the international Coastal and Estuarine Research Federation.

As of July 2022, I am retired from EPA. I still have a courtesy faculty appointment with the Department of Integrative Biology at OSU so that I may serve on a student's PhD committee. I am presently not employed, by my choice, and have no plans to seek employment. Thus, my calendar is open and I would be generally available to serve as an OOST member. I hope that my experience conducting and leading ocean-related scientific research both qualifies me for consideration as a board member and compliments the talents of the OOST member team. Thank you for your consideration of my application. I would be happy to answer any questions you, DSL or OOST members might have.

Kind regards,

Ted DeWitt
Seal Rock, OR
541-961-2057

CURRICULUM VITAE

Name Theodore Howes DeWitt

Contact 13994 NW Kona St.
Seal Rock, OR 97376
541-961-2075
thdsln88@gmail.com

Education

1973-1977 B.A. Biology, New College of Florida, Sarasota, FL
1977-1985 Ph.D. Biology, Department of Ecology and Evolution, Stony Brook University, Stony Brook, NY

Employment

1985-1987 Postdoctoral Research Associate, Oregon State University, Newport, OR
1987-1988 Postdoctoral Fellow, Smithsonian Institution, Edgewater, MD
1988-1991 Research Associate, Oregon State University, Newport, OR
1991-1993 Marine Ecologist, ASCl Corporation - USEPA Laboratory, Newport, OR
1993-1994 Senior Research Associate, National Research Council (USEPA, Newport, OR)
1994-1997 Senior Research Scientist, Battelle/PNNL Marine Science Laboratory, Sequim, WA
1997-2022 Principal Investigator (Ecologist), US Environmental Protection Agency, Newport, OR
2015-2021 Chief & Supervisory Ecologist, PCEB, PESD. CPHEA, US EPA, Newport, OR
2021-2022 Special Assistant to the Director of PESD, US EPA, Newport, OR

US EPA Office of Research & Development Leadership & Management

2011-2014 Leader, Ecosystem Goods and Services Production and Benefit Functions Project (Sustainable & Health Communities (SHC) Research National Program Project 2.1.2)
2011-2014 Leader, Uncertainty, Scalability & Transferability of Ecosystem Goods & Services Task (SHC Project 2.1.2)
2014-2019 Deputy Leader, Community-Based Final Ecosystem Goods and Services Project (SHC Project 2.61)
2018 Member, SHC Strategic Research Action Plan development and writing team, SHC Immediate Office
2019-2022 Product Lead, Air and Energy National Research Program Output 6.4
2019-2022 Sub-Product Lead, SHC Output 9.1

Research Interests

Effects of natural and anthropogenic stressors on estuarine ecosystems and the ecosystem goods and services they produce. Including: 1) developing a framework and methodology to assess the transferability of ecological models and data; 2) field research to measure critical ecosystem services of coastal estuaries and wetlands; 3) development of ecological models to estimate the stock or production of estuarine ecosystem services; and 4) development and demonstration of practical tools for measuring or estimating ecosystem services in support of environmental decision-making.

Honors and Awards

- 1987 Postdoctoral Fellowship, Smithsonian Institution, Edgewater, MD
- 1993 Distinguished Visiting Scientist, National Institute for Water and Atmospheric Research, Hamilton, New Zealand
- 1993 Senior Research Associateship, National Research Council, National Academy of Sciences
- 1996 Distinguished Visiting Scientist, National Institute for Water and Atmospheric Research, Hamilton, New Zealand.
- 1999 Bronze Medal Award, US Environmental Protection Agency – for “Developing Standard Chronic Sediment Toxicity Test Methods”
- 2005 Scientific and Technological Achievement Award, Honorable Mention, US EPA, NHEERL
- 2005 Outstanding Leadership and Contribution to the Estuarine Research Federation Award
- 2007 Volunteer of the Year, Lincoln County School District, Newport, Oregon
- 2007 NHEERL Community Service Award, US EPA, National Health and Environmental Effects Research Laboratory
- 2008 Special Recognition for Service, Pacific Estuarine Research Society
- 2009 NHEERL Goal 4 Award, Science Integration-Interdivisional Laboratory Research, National Health and Environmental Effects Research Laboratory, US EPA
- 2010 NHEERL Team Award – for “Support for EPA Response to Deep Water Horizon Oil Spill”
- 2010 HMSC Service Award, Hatfield Marine Science Center, Newport, OR
- 2011 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “Sustainable & Healthy Communities Research Matrix Interface & Project Action Leadership”
- 2013 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “Pacific Northwest Pacific Estuarine Classification Team”
- 2015 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “Sustainable and Healthy Communities National Research Program Team”
- 2016 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “ORD Community-Based Decision Support Team”
- 2018 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “EcoService Models Library Team”
- 2019 Bronze Medal Award - Teams, Office of Research & Development, US Environmental Protection Agency – for “EPA’s Sustainable and Healthy Communities 2019-2022 Strategic Research Action Plan Team”
- 2019 EPA Impact Award, Office of Research & Development, US Environmental Protection Agency – for “EPA’s Sustainable and Healthy Communities Final Ecosystem Goods and Services Research & Application Leadership Team”
- 2020 Bronze Medal Award – Teams, Office of Research & Development, US Environmental Protection Agency – for “Ecosystem Services for Ecosystem-Based Management Team”
- 2020 Bronze Medal Award – Teams, Office of Research & Development, US Environmental Protection Agency – for “Final Ecosystem Goods & Services Metrics Team”

Bibliography

Journal Articles, Books, Book Chapters

Levinton, J.S., S. Stewart, and **T.H. DeWitt**. 1985. Field and laboratory experiments on interference between *Hydrobia totteni* and *Ilyanassa obsoleta* (Gastropoda) and its possible relationship to seasonal shifts in vertical zonation on mudflats. *Marine Ecology Progress Series* 22:53-58.

DeWitt, T.H. and J.S. Levinton. 1985. Disturbance, emigration, and refugia: how the mudsnail, *Ilyanassa obsoleta*, affects the distribution of an epifaunal amphipod, *Microdeutopus gryllotalpa*. *Journal of Experimental Marine Biology and Ecology* 92:97-113.

DeWitt, T.H. 1987. Microhabitat selection and colonization rates of a benthic amphipod. *Marine Ecology Progress Series* 36:237-250.

DeWitt, T.H., G.R. Ditsworth, and R.C. Swartz. 1988. Effects of natural sediment features on the phoxocephalid amphipod, *Rhepoxynius abronius*: implications for sediment toxicity bioassays. *Marine Environmental Research* 25:99-124.

Chase, I. and **T.H. DeWitt**. 1988. Vacancy chains: a process of mobility to new resources in humans and other animals. *Social Science Information* 27:83-98.

Chase, I., M. Weissburg, and **T.H. DeWitt**. 1988. The vacancy chain process: a new mechanism of resource distribution with application to hermit crabs. *Animal Behavior* 36:1265-1274.

Levinton, J.S., and **T.H. DeWitt**. 1989. Relation of particle-size spectrum and food abundance to particle selectivity in the mud snail *Hydrobia totteni* (Prosobranchia: Hydrobiidae). *Marine Biology* 100:449-454.

DeWitt, T.H., R.C. Swartz and J.O. Lamberson. 1989. Measuring the acute toxicity of estuarine sediments. *Environmental Toxicology and Chemistry* 8:1035-1048.

American Society for Testing and Materials (ASTM). 1990. Guide for conducting 10-day static sediment toxicity tests with marine and estuarine amphipods. *Annual Book of ASTM Standards, Vol. 11.04 Water and Environmental Technology*. (Co-authored by J.O. Lamberson, R.C. Swartz, **T.H. DeWitt**, M.S. Redmond, and D.J. Reish). American Society for Testing and Materials, Philadelphia, PA.

Swartz, R.C., D.W. Schults, **T.H. DeWitt**, G.R. Ditsworth, and J.O. Lamberson. 1990. Toxicity of fluoranthene in sediment to marine amphipods: a test of the equilibrium partitioning approach to sediment quality criteria. *Environmental Toxicology and Chemistry* 9:1071-1080.

Chapman, P.M., E.R. Long, R.C. Swartz, **T.H. DeWitt**, and R. Pastorok. 1991. Sediment toxicity tests, sediment chemistry and benthic ecology *do* provide new insights into the significance and management of contaminated sediments - a reply to Robert Spies. *Environmental Toxicology and Chemistry* 10:1-4.

DeWitt, T.H., R.J. Ozretich, R.C. Swartz, J.O. Lamberson, D.W. Schults, G.R. Ditsworth, J.K.P. Jones, L. Hoselton, and L.M. Smith. 1992. The effects of organic matter quality on the toxicity and partitioning of

sediment-associated fluoranthene to the infaunal amphipod, *Rhepoxynius abronius*. *Environmental Toxicology and Chemistry* 11:197-208.

Lamberson, J.O., **T.H. DeWitt**, and R.C. Swartz. 1992. Assessment of sediment toxicity to marine benthos. In: G.A. Burton (ed.), *Contaminated Sediment Toxicity Assessment*, Lewis Publ., Boca Raton, FL. pp. 183-212.

Swartz, R.C., D.W. Schults, R.J. Oztretich, J.O. Lamberson, F.A. Cole, **T.H. DeWitt**, M.S. Redmond, and S.P. Ferraro. 1995. ΣPAH: a model to predict the toxicity of polynuclear aromatic hydrocarbons mixtures in field-collected sediments. *Environmental Toxicology and Chemistry* 14: 1977-1987.

DeWitt, T.H., R.C. Swartz, D.J. Hansen, D. McGovern, and W.J. Berry. 1996. Bioavailability and chronic toxicity of cadmium in sediment to the estuarine amphipod *Leptocheirus plumulosus*. *Environmental Toxicology and Chemistry* 15: 2095-2101.

DeWitt, T.H., D.J. Morrissey, D.S. Roper, and M.G. Nipper. 1996. Fact or artefact: the need for appropriate controls in ecotoxicological field experiments. *SETAC News, Learned Discourses* 16: 22-23.

Burton, G.A. Burton, Jr., C.W. Hickey, **T.H. DeWitt**, D.S. Roper, D.J. Morrissey and M.G. Nipper. 1996. In situ toxicity testing: teasing out the environmental stressors. *SETAC News, Learned Discourses* 16: 20-22.

Day, K.E., W.H. Clements, **T.H. DeWitt**, W.G. Landis, P. Landrum, D.J. Morrissey, M. Reiley, D.M. Rosenberg, and G.W. Suter II. 1997. Workgroup summary report on critical issues of ecological relevance in sediment risk assessment. In: C.G. Ingersoll, T. Dillon, and G.R. Biddinger (eds.), *Ecological Risk Assessment of Contaminated Sediments*. SETAC Press, Pensacola, FL. pp. 167-198.

DeWitt, T.H., C.W. Hickey, D.J. Morrissey, M.G. Nipper, D.S. Roper, R.B. Williamson, L. Van Dam, and E.K. Williams. 1999. Do amphipods have the same concentration-response to contaminated sediment *in situ* as *in vitro*? *Environmental Toxicology and Chemistry* 18(5):1026-1037.

Ingersoll, C.G., T. Hutchinson, M. Crane, S. Dodson, **T.H.. DeWitt**, A. Gies, M. Huet, C.L. McKenney, E. Oberdorster, D. Pascoe, D.J. Versteeg, O. Warwick. 1999. Laboratory toxicity tests for evaluating potential effects of endocrine-disrupting compounds. Chapter 3. In: P.L. DeFur, M. Crane, C. Ingersoll, and L. Tattersfield (eds.), *Endocrine Disruption in Invertebrates: Endocrinology, Testing, and Assessment*. SETAC Press, Pensacola, FL.

Morrissey, D.J., **T.H. DeWitt**, D.S. Roper, and R.B. Williamson. 1999. Variation in the depth and morphology of burrows of the mud crab, *Helice crassa*, Among different types of intertidal sediment in New Zealand. *Marine Ecology Progress Series* 182: 231-242.

Chotiros, N. and **TH. DeWitt**. 2000. Acoustic sediment properties and the abundance of burrowing shrimp in marine sediments from reflection measurements. *Proceedings of the 5th European Conference on Underwater Acoustics*, Lyons, France.

Cole, F.A., B.L. Boese, R.C. Swartz, J.O. Lamberson and **T.H. DeWitt**. 2000. The effects of sediment storage on the toxicity of fluoranthene to the amphipod *Rhepoxynius abronius*. *Environmental Toxicology and Chemistry* 19: 744-748.

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- Lewis, NS, DR Young, CL Folger, and **TH DeWitt**. 2020. Assessing the Relative Importance of Estuarine Nursery Habitats – a Dungeness Crab (*Cancer magister*) Case Study. *Coasts and Estuaries*. doi.org/10.1007/s12237-020-00821-1
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State Land Board

M E M O R A N D U M

Tina Kotek

Governor

LaVonne Griffin-Valade

Secretary of State

Tobias Read

State Treasurer

Date December 12, 2023

To: Governor Tina Kotek
Secretary of State LaVonne Griffin-Valade
State Treasurer Tobias Read

From: Vicki L. Walker
Director

Subject: Aquatic Resource Management Annual Report

The Department of State Lands Aquatic Resource Management program protects waters and wetlands for their many contributions to Oregon – streams for swimming and fishing, wetlands to clean water and reduce flooding, and rivers where commerce thrives. The program also manages uses of Oregon-owned waterways, such as docks, marinas, and utility crossings, which send money to the Common School Fund and benefit our K-12 public schools.

The Managing Oregon's Waters and Wetlands: Aquatic Resource Management Program Annual Report for July 1, 2022, to June 30, 2023, reviews our annual permitting and authorization activities, details specific management efforts, and highlights recent and upcoming activities.

The purpose of the report is to provide current information about the Department's management of Oregon's waters and identify achievements, progress, and changes needed. This report also fulfills reporting requirements required by the legislature in ORS 196. The report can be measured against previous performance and used to identify and address factors affecting performance.

APPENDICES

Appendix A – Managing Oregon's Waters and Wetlands: Aquatic Resource Management Program Annual Report



Annual Report of the Aquatic Resource Management Program
OREGON DEPARTMENT OF STATE LANDS

TABLE OF CONTENTS



3

Report At-A-Glance

5

ARM Program Overview

8

Wetland and Waterway Development Permitting

16

Use of Waterways: Proprietary Authorizations

19

Hazardous Vessels and Long-Term Camping

23

Portland Harbor Superfund Site

25

Territorial Sea of Oregon

27

Assistance for Communities

30

Compensatory Mitigation Opportunities

35

Future Projects and Priorities

38

Appendix A

41

Appendix B

REPORT

AT-A-GLANCE

The Department of State Lands Aquatic Resource Management program protects waters and wetlands for their many contributions to Oregon – streams for swimming and fishing, wetlands to clean water and reduce flooding, and rivers where commerce thrives. The program also manages uses of Oregon-owned waterways, such as for docks, marinas, and utility crossings, which sends money to the Common School Fund and benefits our K-12 public schools.

This **Managing Oregon's Waters and Wetlands: Annual Report of the Aquatic Resource Management Program** for July 1, 2022, to June 30, 2023 (FY23) reviews our annual permitting and authorization activities, details specific management efforts and highlights recent and upcoming activities.

The goal of this report is to provide FY23 information about the Department's management of Oregon's waters and identify achievements, progress and changes needed. This report also fulfills reporting requirements required by the legislature (ORS 196).



Key takeaways include:

Development of a statewide Abandoned and Derelict Vessel Program.

House Bill 2914, passed in the 2023 legislative session, established an Oregon Abandoned and Derelict Vessel Program within DSL and created the Oregon Abandoned and Derelict Vessel Fund in the State Treasury. These resources are critical in supporting the Department's participation in collaborative efforts to address hazardous boats, ships, and other vessels long-term.

Path to financial self-sufficiency for the regulatory program.

House Bill 2238 requires the Department Director to adopt rules establishing fees related to removal or fill permit applications, wetland delineation reports, and general authorizations. Passage of this bill will enable the wetland and waterway programs to attain financial self-sufficiency while ensuring that critical services continue to be provided.

Funds awarded to remove hazardous boats, ships, and other vessels.

Before House Bill 5029, the Common School Fund was paying for the removal of hazardous vessels from waterways. This bill awarded \$18,763,236 from the Polychlorinated Biphenyls Remediation and Restitution (Monsanto) Account to DSL for deposit into the Oregon Abandoned and Derelict Vessel Fund.

Development of new training programs for natural resources professionals.

DSL staff developed new training – the Oregon Rapid Wetland Assessment Protocol and the Stream Function Assessment Method – that provides helpful information for making removal-fill permit decisions. Staff held training courses for city and federal government agencies and forged a partnership with Clackamas Community College to offer training through their continuing education program.

Recognizing a growing need for additional staff.

DSL has a combined 11 staff who review and issue decisions on the presence and/or use of wetlands and waterways. The Department currently prioritizes certain work activities over others due to a lack of staff capacity. Furthermore, DSL anticipates a 66% increase in waterway authorization renewals in FY24, followed by a significant increase in other authorization use types through 2040. Weighing the permitting and authorization needs of the public with DSL's current staff capacity, additional staff are needed to ensure continued protection of Oregon's wetlands and waterways.



ARM PROGRAM OVERVIEW

The Department's Aquatic Resource Management (ARM) program protects Oregon waters and wetlands by administering the state's removal-fill and wetlands conservation laws and protecting public use and enjoyment of Oregon-owned waterways. Some uses of Oregon-owned waterways benefit the Common School Fund and support local Oregon economies.

Removal-Fill And Wetlands Conservation

Oregonians take wetland and waterway protection seriously because these areas maintain water quality, protect fish and wildlife habitat, and minimize flooding. Due to the large number of wetlands and waters that have been lost, and interest in conserving what remains, the legislature enacted various laws to regulate further development.

Specific to DSL, the Removal-Fill Law was first enacted in 1967 (removal) and then in 1971 (fill). This law applies to all landowners, whether private or public entities, and requires those who plan to remove or fill material in wetlands and waterways to obtain a permit from the Department. In 1989, legislation enlarged DSL's role in protecting and managing wetlands, requiring a statewide wetlands inventory, coordinated land use notices with local governments, and wetland conservation planning.

The Removal-Fill and Wetlands Conservation function of the ARM Program:

Provides information about the presence of wetlands and waterways. DSL maintains a [Statewide Wetlands Inventory](#) to help communities and the public screen for potential wetlands and waterways. City and county planners check the Statewide Wetlands Inventory when reviewing a land use application and, if a project area is near mapped wetlands, waters, or on certain soils, the planner sends DSL a Wetland Land Use Notice. Landowners may also request information about the likely presence of wetlands. DSL responses help local governments and landowners understand next steps if these resources are to be developed. This helps prevent unintentional violations of the Removal-Fill Law and is provided at no cost.

Ensures wetlands and waterway boundaries are correctly identified. DSL staff review reports from consultants hired by property owners looking to work in wetlands or waterways. These reports are reviewed by the Department for a fee, and they establish the boundaries of wetlands and waterways and provide other information needed for permitting.

Supports local governments in wetland and waterway conservation planning. An Aquatic Resource Planner provides technical assistance to local governments that are completing inventory and protection for wetlands and waterways under Oregon's land use planning goals. This includes review of Local Wetlands Inventories and local ordinances implementing wetlands and waterway protections. This position also supports local governments and communities with wetland conservation planning through Advance Aquatic Resource Plans. Local Wetlands Inventories are reviewed for a fee but there is no cost established in rule for review of local ordinances or Advance Aquatic Resource Plans.

Ensures wetlands and waterways are responsibly managed for the benefits they provide. Permitting removal and fill activities seeks to balance conservation of wetlands and waterways for the benefits they provide Oregonians with responsible, sustainable economic development and private property interests. Permitting seeks to authorize the minimum amount of impact to wetlands and waterways possible while still meeting the project purpose and need.

Supports replacement of wetlands and waterways that are developed. Losses from development may need to be replaced through an action called compensatory mitigation, which involves activities to create, restore, enhance, or preserve other wetlands and waterways. DSL supports the development of third-party projects called mitigation banks that generate salable “credits” for purchase by developers, accepts payments that are consolidated within an area and funds compensatory mitigation projects, and provides plan review and monitoring when developers want to perform their own compensatory mitigation.

There are five DSL staff positions that provide information about the presence of wetlands or waterways and review reports from on-site investigations of their boundaries. Another ten staff review permit applications, monitor permit compliance, and handle enforcement. These staff are assigned to specific counties. Other positions include a liaison with Oregon Department of Transportation who works on transportation-related projects statewide, an Aquatic Resource Planner who assists local and regional governments in wetland conservation planning, and one staff who works on compliance. There are also four technical and policy specialists in the fields of jurisdiction, removal-fill, and mitigation that support the work of these staff, interpret relevant policies, and promote strategic improvements in their program areas.



DSL helps Oregonians determine if they have a wetland by sampling vegetation, soil, and hydrology. This service is free to proactively prevent violations of the Removal-Fill Law, however, with just five staff to perform these determinations throughout the state, there is an unmet backlog.

Oregon-Owned Waterways

Upon becoming a state, Oregon assumed ownership of lands underlying waterways that were used for purposes of travel or trade. Since statehood, other water bodies have been determined to be Oregon-owned through legislative, judicial, or administrative proceedings. These waterbodies include rivers, lakes, and waters on Oregon's coast, including bays, estuaries, portions of waterways subject to the ebb and flow of tides, and the Pacific Ocean to three miles offshore (i.e., Oregon's territorial sea). For more information, including a current list of Oregon-owned waterways, please visit [Use of Oregon-Owned Waterways](#).

The State Land Board holds these waterways in trust for all Oregonians, and the Department is responsible for managing and authorizing uses of these Oregon-owned waterways through the proprietary program. The public has the right to use the beds and banks of Oregon-owned waterways for boating, fishing, swimming, and any other legal activity. For uses outside of light recreation, staff at the Department of State Lands works with Oregonians in getting the right authorization for the desired use.

The Oregon-Owned Waterways function of the ARM Program:

Manages waterways to benefit current and future school kids. Authorizations for use of Oregon-owned waterways seek to maximize revenue generation for the Common School Fund while protecting waterways for fishing, navigation, recreation, and commerce.

Ensures waterways continue to thrive. Projects that enhance, improve, or protect Oregon-owned waterways require a vision – and they require funding. DSL provides grants through the Submerged Lands Enhancement Fund to eligible organizations to take actions on Oregon-owned beds and banks such as removing structures like docks and boats in disrepair and undertaking projects that improve water quality and fish and wildlife habitat. The fund is financed on a biennial basis by up to 20 percent of the revenue generated by waterway authorizations.

Develops management strategies that reduce risk. Unauthorized uses of Oregon-owned lands -- including long-term camping that results in the accumulation of trash, debris, and human waste -- and removal of large and small boats that have either sunk or are at risk of sinking can release hazardous material and pose a danger to others. Even authorized uses may pose risks to the health of Oregon-owned waterways that need to be covered through appropriate risk-management tools. Broad management strategies are guided by DSL's Strategic Plan for 2022-2027, as well as legislation during the 2023 session.

Collaborates with other agencies and organizations in managing Oregon's waterways. DSL has extended agreements with Metro Regional Government, Multnomah County Sheriff's Office, the Oregon Parks and Recreation Department, and the City of Eugene to help manage Oregon-owned lands. We continue to coordinate with the Oregon State Marine Board (OSMB) and the Metro Abandoned and Derelict Vessel working group to address abandoned boats and boats in poor condition being used as shelter. The Department also continues to engage with public partners and other stakeholders on various aspects of the Portland Harbor Superfund Site on the Willamette River.

WETLAND AND WATERWAY

DEVELOPMENT PERMITTING

Wetland and waterway permitting involves early identification of wetlands and waterways on a project site, identifying the practicable alternative with the least impact to wetlands or waterways, and planning for compensatory mitigation to replace the functions and values that will be lost because of the removal-fill activity.

Identifying wetlands and waterways is primarily accomplished through the following processes.

Wetland Land Use Notices: All counties and cities are required to notify the Department of certain development activities proposed in wetlands or waters that are mapped on the Statewide Wetlands Inventory. Local governments provide information in an online submittal form and DSL is required by statute to review the notice and provide a written response within 30 days to the applicant and local government as to whether the proposed action is likely to require a removal-fill permit and/or a more precise wetland boundary location, known as wetland delineation. The objective of the notification process is to provide coordination between local city or county development approvals and state wetland regulations. Overall, the wetland land use notice process has proven to be an effective “early warning” mechanism for landowners and developers that a state permit may be required in addition to the local approval.

Wetland delineation conducted in Klamath County



Determinations: Determination reports identify if potentially jurisdictional wetlands or other waters such as streams and ponds are present. Department staff helps by conducting free wetland determinations for the public including property owners and other interested parties. The service is usually conducted offsite by staff at their desks using available information, but occasionally they may conduct an onsite visit as part of the process.

Delineation Report Reviews: If wetlands or waters are present, a delineation report by a wetland consultant may be needed. These reports create detailed mapping and document the size, location, and other qualities of the wetlands and waters. Staff review the delineation reports submitted to the Department within 120 days and require a fee for review, per statute. Landowners, developers, and local governments use the approved delineation report and maps to avoid or minimize impacts to wetlands and waters of the state, or to determine the impacts that will require a state permit.

Identifying the number of these three types of requests (wetland land use notices, determinations, and delineation report reviews) and average response times is important for DSL to understand workload. As Table 1 shows in outlining the processes completed in FY23, work on these three request types continues to be challenging for the six staff assigned to this work. Refer to [Appendix A](#) for a five-year trend on both response time to wetland land use notices and total count of jurisdictional report reviews.

Staff prioritize delineation report reviews, as these are often needed early in project planning and require payment, followed by wetland land use notices and determinations as time allows. Wetland land use notices and determinations do not have fees established in statute or rule. Staff let inquiring customers know about this prioritization and likely wait times; some customers decide to hire a consultant rather than wait.

Table 1

TYPE OF REVIEW	NUMBER REVIEWED, FY 2023	AVERAGE RESPONSE TIME
Wetland Land Use Notices	1,004	24 days
Determinations	242	N/A
Delineation Report Reviews	360	93 days

There are four types of permits available to conduct work in wetlands and waterways.

Individual Permits (IP): Permits that generally have more than minimal adverse effects to waterways or wetlands, are more complicated, often involve more than one removal-fill activity, or involve a substantial mitigation obligation. These projects do not qualify for General Permits or General Authorizations. Per statutory requirement, the processing timeline is up to 120 days.

General Permits (GP): A streamlined permit covering activities that are substantially similar in nature, recurring or ongoing, and have predictable effects and outcomes. The processing timeline is up to 40 days for most GPs. General permits may be by order or established through rulemaking. Notably, the U.S. Forest Service and Bureau of Land Management have a general permit by order for certain restoration activities on public lands and partnering private lands in Oregon. While this counts as only one permit, many projects occur under it.

General Authorizations (GA): A streamlined permit for nine specific types of removal-fill activities that have minimal adverse effects on wetlands and waterways. General Authorizations are preapproved but require a 30-day notice to the Department prior to the removal-fill activity.



Emergency Permits (EP): Authorizations for emergencies that pose a direct threat to human health, safety or substantial property, and where prompt removal-fill action is required to address the threat. Approval is given as quickly as possible in emergency situations. Work must be limited to the minimum necessary to alleviate the threat.

No State Permit: Applications that are determined to be exempt from needing a DSL permit are provided an official “no state permit required” letter by the Department. Landowners may need this letter for various reasons. These decisions do not require an application fee but still require staff time to review and are an official decision.

Oregon provides greater protection for streams and associated wetlands that provide critical habitat for Chinook salmon, steelhead trout, and other sensitive, threatened, or endangered fish species. These areas, called Essential Salmonid Habitat (ESH), require special reporting under ORS 196.885. DSL creates a [map detailing all known ESH designations for Oregon’s waterways](#) using data provided by the Oregon Department of Fish and Wildlife. There are currently 23,021 miles of ESH designated streams statewide. This map is updated annually based on new information.



Sites like the Metolius River in the Deschutes National Forest are designated Essential Salmonid Habitat (ESH) using scientific data from the Oregon Department of Fish and Wildlife.

A permit is required to remove or place any amount of material into an ESH. Types of projects that we might be asked to permit include everything from building a dock to adding large rocks that prevent bank erosion.

Identifying the numbers of applications received—and DSL’s decision—demonstrates workload and identifies where there may need to be changes, such as if a high number of denials are issued. Table 2 shows permit applications received in FY23 as well as permit decisions made during FY23. Applications received during a fiscal year may not have a final decision from the Department in the same fiscal year, either because an application was incomplete and the Department is waiting on more information or because there the permit was received later in the fiscal year. No permits were denied during FY23; staff and applicants typically work throughout the permit process on any changes needed so that the Department can reach a favorable decision. Table 3 shows removal and fill volumes authorized, and [Appendix B](#) indicates the locations of authorized activity for FY23. Refer to [Appendix A](#) for a five-year trend on removal-fill authorizations by type.

Table 2

PERMIT TYPE	APPLICATIONS RECEIVED	APPLICATIONS APPROVED	APPLICATIONS DENIED	TOTAL DECISIONS	APPROVED IN ESH (OF TOTAL)
Individual Permit	185	416	0	416	175
General Authorizations	96	94	0	94	66
General Permit	47	98	0	98	34
Emergency Permit	18	14	0	14	7
No State Permit	64	64	0	64	25
Totals	410	686	0	686	307

Applications received and agency decisions are not aligned. Some applications received were still under review as of June 30, and some agency decisions were for applications received later in FY22.

Table 3

PERMIT TYPE	WETLAND ACRES GAINED	WETLAND ACRES LOST	NET WETLAND ACRES
Individual Permit	110.58	50.99	59.59
General Authorization	2.7	0.00	2.7
General Permit	0.00	1.97	-1.97
Emergency Permit	0.00	0.00	0.00
Mitigation Bank	87.57	0.00	87.57
Totals	113.28	52.96	60.32

Wetlands and waterways play a vital role in maintaining human and ecosystem health in Oregon such as providing clean water, and habitat for fish, birds, mammals, amphibians, reptiles, and insects. To make sure these vital functions are not lost, the Oregon legislature requires the offset of losses of functions and values when they are impacted (ORS 196.825) and seeks to maintain a stable resource base of wetlands through the adoption of mitigation standards used by federal agencies (196.672). Wetlands can be removed from the landscape entirely, whereas streams can be improved or degraded, but they generally are not removed from the landscape. DSL tracks and reports wetland area gains and losses but does not yet have a way to track function gains or losses, although improvements may be available in 2025 through DSL's work on a modern permitting and information system.

No net loss of wetland areas means that wetland acres gained through the creation or restoration of wetlands (but not enhancement or preservation of existing wetlands) should equal wetland acres lost through permitted impacts. Wetland creation involves developing wetlands at a location where there is no evidence a wetland existed historically, while wetland restoration is re-establishing a former wetland.

Table 4 shows the number of acres gained and lost in FY23 by permit type to see whether no net loss in wetland acreage goals was achieved. There was a net gain of 60.32 acres of wetlands from authorized activities. Wetland gains and losses are highly variable year to year. While wetland losses are compensated in each removal-fill authorization, this is often achieved through the purchase of credits from mitigation banks or payment to the Department through our in-lieu fee programs. Gains from mitigation banks and other Department-funded mitigation projects are recorded in the fiscal year that they are approved. In FY23, one new mitigation bank was approved for a gain of just over 87 wetland acres. This is a site that can compensate for future losses of wetlands. *See the [Compensatory Mitigation Opportunities](#) for more information on mitigation banking and in-lieu fee programs.*

Table 4

PERMIT TYPE	WETLAND ACRES GAINED	WETLAND ACRES LOST	NET WETLAND ACRES
Individual Permit	110.58	50.99	59.59
General Authorization	2.7	0.00	2.7
General Permit	0.00	1.97	-1.97
Emergency Permit	0.00	0.00	0.00
Mitigation Bank	87.57	0.00	87.57
Totals	113.28	52.96	60.32

Increasing or preserving wetland functions somewhere else is also important. These methods of protection or increasing wetland functions are called wetland enhancement and preservation.

Wetland enhancement occurs when a wetland that has been altered by ditching or other drainage, berms or dikes, or additional water inputs is repaired through a mitigation project or voluntary habitat project.

Wetland preservation permanently protects high functioning wetlands under threat of development by restricting development through a conservation easement.

Enhancement and preservation projects do not result in acreage gains, so they are not included in Table 4. In FY23, the Department recorded 686 acres of wetland enhancement gains mostly from voluntary projects approved through general authorization notices. No wetland preservation projects occurred.

Monitoring

Once permits are issued, the Department monitors for compliance with the type of permit issued and conditions described in the permit. Compliance is important because it highlights potential issues with certain permit types that may require changes or additional guidance. Table 5 shows there was a 90% overall compliance rate for permits monitored in FY23; however, only 71% of individual permits were compliant. Some reasons for non-compliance include failure to provide required reports by the deadline, not providing an access easement to the Department, working outside of the in-water work window, and not meeting all performance standards for mitigation. DSL worked with permittees to resolve these issues.

Table 5

PERMIT TYPE	NUMBER MONITORED	COMPLIANT	NON-COMPLIANT
Individual Permits	14	10 (71%)	4 (29%)
General Authorizations	20	19 (95%)	1 (5%)
General Permits	35	34 (97%)	1 (3%)
Emergency Permits	14	12 (86%)	2 (14%)
TOTAL	83	75 (90%)	8 (10%)

Staff also monitor permits that have a site restoration requirement (e.g., temporary impacts that will be restored, such as replanting vegetation) or have a compensatory mitigation site that will be monitored for success. Monitoring duration varies but is for a minimum of five years for compensatory mitigation. The Department is actively monitoring 577 projects (Table 6). The Department's goal is to keep pace by closing as many files as are opened; however, this varies from year to year. Reviewing monitoring reports is challenging for staff to accomplish because the priority for their time is issuing and renewing permits needed for development projects to move forward to construction.

Table 6

WATERWAY TYPE	NUMBER OF PERMITS WITH MONITORING REQUIREMENTS	OPENED FY23	CLOSED FY23
Wetland	273	24	31
Stream	304	49	36
Totals	577	73	67

Enforcement

DSL uses enforcement to deter and correct unauthorized impacts to wetlands and waterways using fair, transparent, and consistent methods to achieve compliance and program integrity. Types of violations that may require enforcement are:

Unauthorized removal-fill: Removal-fill activity undertaken without a permit where a permit was required.

Non-compliance with a removal-fill permit: Failure to comply with one or more substantive conditions of a removal-fill permit. Typical examples include impacts to wetlands or waterways greater than authorized; failure to comply with other substantive condition(s) of the removal-fill permit; and failure to implement, maintain, or monitor required compensatory mitigation in part or whole. Such situations may be handled inside or outside of an enforcement process depending on the scope of the non-compliance and the cooperation of the permittee in addressing the point(s) of non-compliance.

Failure to comply with a final order of the agency: This includes, but is not limited to, failure to comply with a term or condition of a Cease and Desist Order, Notice of Violation, Final Consent Order, Final Restoration Order, or an order approving a General Permit, Wetland Conservation Plan or Advance Aquatic Resource Plan.

Misrepresentation: Obtaining a permit or reporting conditions of a permit by misrepresentation or by failure to disclose known material facts.

Compliance and enforcement are important because they allow staff to explain the purpose of the Removal-Fill Law and why a permit or permit condition is required, work with the landowner on changes needed for compliance, and, ideally, provide for compensation for any permanent impacts to wetlands and waterways. Investigating complaints and compliance issues can be time-consuming because they often require site visits, research, and ongoing conversations to reach resolution.

Table 7 shows compliance and enforcement activities in FY23. It is a testament to the relationship formed between staff and permittees during the permitting process that out of 1,067 active permits, only four enforcements were opened for projects due to non-compliance with a removal-fill permit. Only one of these enforcements involved removal or fill in ESH designated waterways. In contrast, there were 42 enforcements opened for unauthorized removal-fill and 23 of them occurred in ESH.

Compliance checks, enforcement, civil penalties, and final orders do not typically occur in the same year. For example, civil penalties may be collected for enforcements in prior years, and the amount of civil penalties initially assessed may be higher or lower than the amount collected.

Table 7

	NUMBER OF COMPLIANCE CHECKS	ENFORCEMENT FILES OPENED	ENFORCEMENT FILES CLOSED	CIVIL PENALTIES ASSESSED	CIVIL PENALTIES COLLECTED	FINAL ORDERS
Non-compliance with permit	95	3	8	\$8,000	\$8,000	3
Non-compliance with permit in ESH (of total)	41	1	0	\$5,000	\$5,000	1
Unauthorized removal-fill	134	42	70	\$127,015	\$136,457	18
Unauthorized removal-fill in ESH (of total)	63	23	29	\$47,957	\$26,907	9

In FY 2023, staff conducted 11 on-site project compliance checks under the USFS/BLM General Permit.

Most enforcements are resolved through voluntary compliance (Consent Agreements and other orders) or are closed by the Department if further investigation reveals no violation occurred or there was insufficient evidence to confirm a violation.

Enforcement orders, as well as permit decisions, may be contested (appealed) and go through administrative hearings and judicial enforcement proceedings to be resolved. When this occurs, staff can spend over 100 hours on each contested case, which means staff that would normally be working on permits or monitoring cannot do so. Contested cases must also involve Department of Justice attorneys, which increases overall costs.

There were two new contested cases requested in FY23 for removal-fill, one related to a permit decision and one related to unpermitted removal-fill. The contested case regarding a permit decision was withdrawn. The contested case for unpermitted removal-fill was requested in October 2022 and the administrative hearing has been delayed until September 2023 at the defendant's request.

Of the contested case hearings requested in previous fiscal years, three progressed in FY23. Two now have draft Proposed Final Orders and a second has been closed.

USE OF WATERWAYS

PROPRIETARY AUTHORIZATIONS

The Department's waterway use program, referred to as the proprietary program, issues the following authorization types for uses of Oregon-owned waterways:

Public Facility License: Publicly owned structures and uses such as boat ramps, docks, fishing and swimming platforms, viewing structures, and navigation aids.

Registration: Non-commercial uses and smaller structures such as boat docks, or small boat houses (under 2,500 square feet), or floating recreational cabins (under 1,500 square feet), pilings, erosion control structures and voluntary habitat restorations.

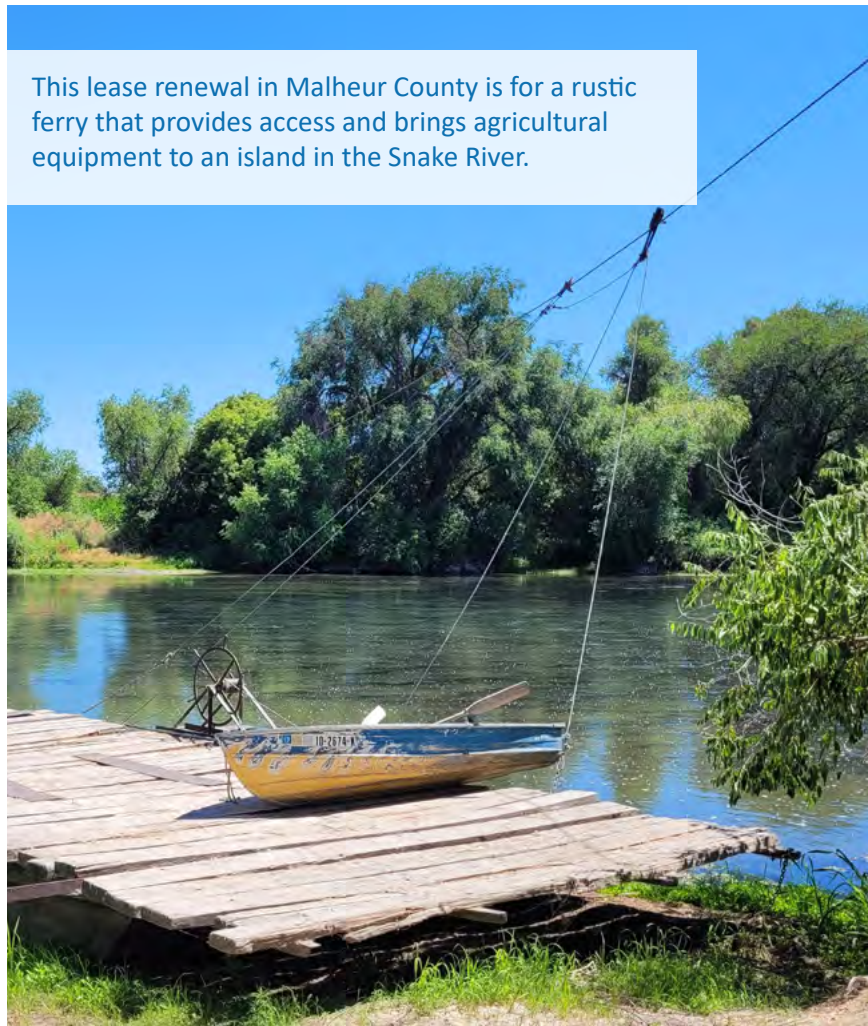
Lease: All commercial uses and structures and any recreational structure larger than 2,500 square feet. Uses can be either water or non-water dependent and include, among other uses, commercial docks, work boat and other vessel moorage, sea water desalination and fish processing plants, marinas, restaurants, hotels, warehouses, or other over-water structures.

Easements: Required for long-term or permanent structures and uses on Oregon-owned land. Types of uses include bridges and utility line crossings, erosion control structures and dredge spoils.

Sand and Gravel: May either be a lease or license for removal or sand and gravel. Revenue is unique from other authorizations because it includes royalty payments based on the volume of material extracted.

Short Term Access: These authorizations have minimal and temporary impacts on the waterway or others' ability to use it. Uses include, but are not limited to, research and education, sediment sampling, right of entry, and geotechnical and land surveys. These authorizations are for non-business purposes and do not cover commercial enterprises. They are for limited duration uses, typically for less than one year, and do not require a fee unless they are related to an order for remediation or restoration issued by the Environmental Protection Agency or Oregon Department of Environmental Quality.

This lease renewal in Malheur County is for a rustic ferry that provides access and brings agricultural equipment to an island in the Snake River.



Special Use: May be a lease or license for a variety of uses not otherwise captured above for a person to use an area under specific terms and conditions for a specific length of time. Examples include agricultural activities, communication facilities, recreational cabins, motion picture filming and set construction, and sporting events.

Each authorization represents an entity or individual(s) that the Department conducts business and maintains a contractual relationship with and results in revenue to the Common School Fund. Table 8 shows the number of active authorizations within each type, as well as new and renewed authorizations during FY23 and resulting revenue. Refer to [Appendix A](#) for five-year trends on new and renewed waterway authorizations by type. New authorizations and renewals are below the five-year average, driven by decreases in registration of waterway structures. Revenue is 28% less than the five-year average due to lower waterway easement revenue (83% less compared to the five-year average). DSL did not issue any cable easements in the territorial sea in FY23, which has generated larger revenues in previous years. Many uses authorized as easements are exempt from compensation or compensation is limited in rule. DSL is identifying potential changes in fees for certain uses. See the [Future Projects and Priorities](#) section for more information about strategic initiatives.

Table 8

AUTHORIZATION TYPE	ACTIVE AUTHORIZATIONS	ISSUED IN FY 2023	RENEWED IN FY 2023	REVENUE IN FY 2023
Public Facility License	225	0	5	\$4,500
Waterway Easement	1,264	13	7	\$38,607
Registration of Waterway Structures	2,971	18	359	\$120,400
Waterway Lease	529	4	23	\$2,299,846
Sand & Gravel	24	2	2	\$394,544
Short Term Access Authorization*	107	29	0	\$3,000
Special Use License/Permit*	13	0	0	\$2,000
Special Use Lease*	15	0	0	\$25,162
Totals	5,148	66	396	\$2,888,059
FY23 Compared to 5-Year Average	—	-41%	-32%	-28%

Staffing

For the entire state, DSL has six full-time equivalent staff that:

- Review and issue waterway use authorizations
- Conduct site visits and follow up on issues of compliance
- Invoice annually for rental and other payments
- Process applications for assignments, sublease agreements, and amendments
- Handle other contracting issues

Two additional staff support these roles. One position handles registrations of waterway structures statewide. A technical and policy specialist supports the work of these other staff, promotes consistent interpretation of policy, and focuses on strategic improvements.

DSL also has two limited duration staff who provide Portland Harbor Superfund Site coordination and support improvements in the Territorial Sea Plan in coordination with the Department of Land Conservation and Development, respectively. *See the section [Portland Harbor Superfund Site](#) or [Territorial Sea of Oregon](#) for more information on activities.*

Anticipating future renewing authorizations helps DSL anticipate staffing needs. Most authorizations have a specific term that determines when an authorization holder will apply for renewal, such as 30 years for easements, 15 years for leases and Public Facility Licenses, and 5 years for most registrations. Other authorizations issued by the Department—for example, Special Use Licenses and Sand and Gravel Authorizations—vary in term length depending on the authorized use and the length of term requested by the applicant.

We anticipate there will be 689 renewals in FY24, a 66% increase from FY23. Otherwise, the Department expects flat or reduced renewal authorizations until FY29, when the number of leases and public facility licenses requiring renewal increases markedly. Similarly, easement renewals will increase starting in 2030. These periodic peaks in renewals are linked to the Department's focus in the late 1990s to bring unauthorized uses of Oregon-owned waterways into compliance under the appropriate waterway use authorization. Additional staff will be needed to handle the increased workload, which, at the future time of hire, is not expected to lighten and return to current levels until FY49.



An interagency team visits a mitigation project site near the town of Linnton, adjacent to the Willamette River.

HAZARDOUS VESSELS

AND LONG-TERM CAMPING

Abandoned And Derelict Vessels

There are hundreds of boats using Oregon's waterways, including commercial and recreational varieties of all sizes. Sometimes these boats are not maintained and fall into disrepair, being sold for cheap or becoming abandoned instead of properly disposed of. Larger boats may be purchased with dreams of restoring them for uses such as a floating restaurant, bed and breakfast, or museum, but the costs end up being higher than expected. These abandoned and derelict vessels (ADV) are an ongoing threat to waterway health and safety with hundreds of ADVs statewide. Oregon's public waterways belong to us all, but ADVs seriously impact Oregonians' use and enjoyment of what should be safe and healthy places to boat, fish, and swim.

These vessels also impact public schools. For years, the Department has worked with state, federal, and local partners to clean up and remove commercial and recreational ADVs. While collaborative efforts have resulted in successfully removing multiple vessels from waterways, lack of a statewide ADV program with dedicated funding has led to the Common School Fund, and Oregon's schoolkids, footing the bill for vessel cleanups. Since 2017, the Common School Fund has expended more than \$18 million removing commercial and recreational vessels from public waterways.

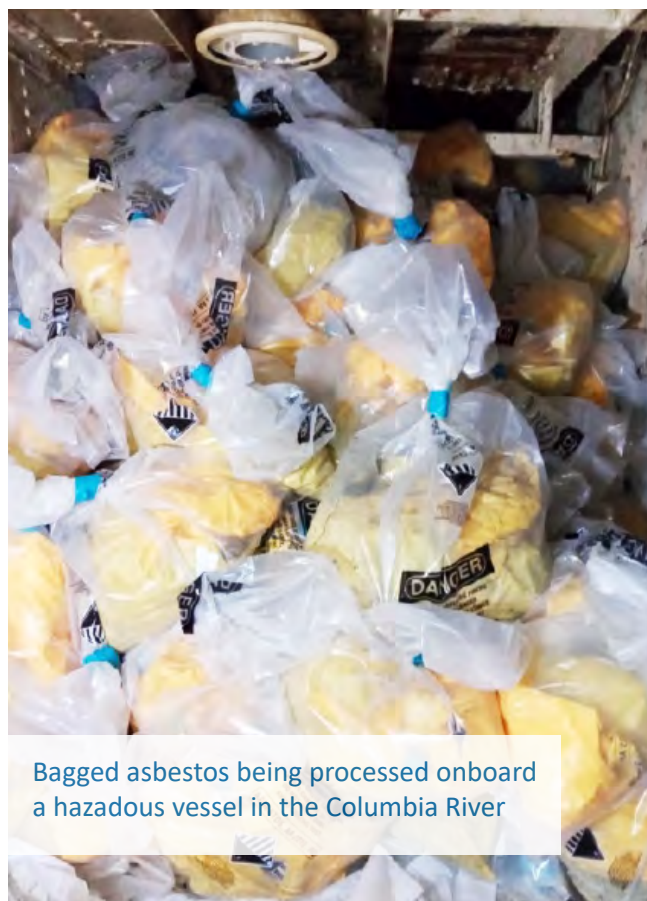
There are also logistical challenges to cleanups. In Oregon, there are no permanently authorized facilities that break down ships, which adds additional barriers and expenses. Extensive collaboration is also needed by state, federal, and local partners. Resources, capacity, and relative priorities need to align for successful removal.

In August 2022, the State Land Board directed DSL to request \$40 million in general funds during the state budget process to address the need to remove ADVs. DSL is thrilled that two bills were approved during the 2023 legislative process:

HB 2914: Established the Oregon Abandoned and Derelict Vessel Program at DSL to address abandoned and derelict vessels. Created the Oregon Abandoned and Derelict Vessel Fund at the Oregon Treasury.

HB 5029: Allocated \$18,763,236 from the Polychlorinated Biphenyls Remediation and Restitution Account (Monsanto Account) to DSL for deposit into the Oregon Abandoned and Derelict Vessel Fund.

For more information on next steps related to these two bills, see the section on [Future Projects and Priorities](#).



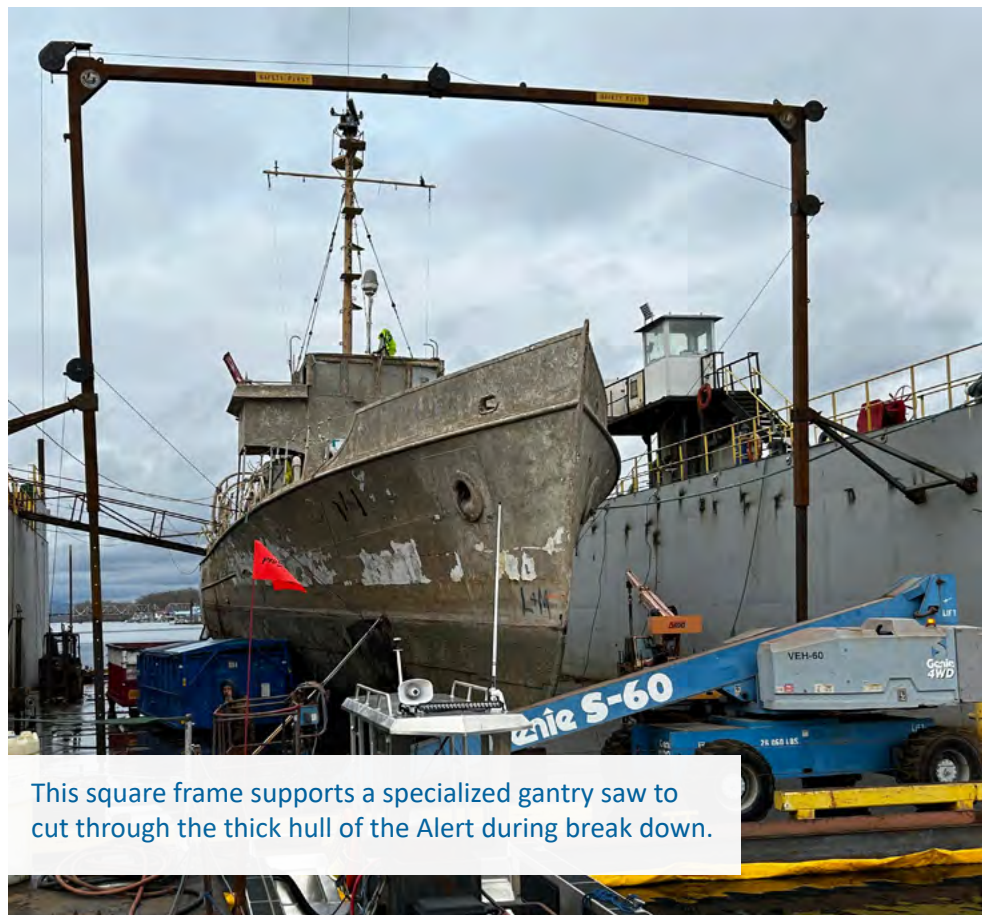
Bagged asbestos being processed onboard a hazardous vessel in the Columbia River

In the meantime, DSL continues to remove ADVs and identify ways to reduce the risks posed by ADVs. The Department has prioritized addressing larger ships such as tugboats, barges, and former military vessels because of the larger threat they pose to Oregon-owned waterways and the public's right to these waterways for recreation, navigation, and other legal activities. These ships are more likely to contain harmful quantities of oil, lubricant, and other toxic substances in the materials used to construct the vessel or in cargo on board. These chemicals can injure or kill marine mammals, waterfowl, and other aquatic life, and contaminate aquatic lands, nearby shorelines, and water bodies.

The Department coordinated the removal of three such vessels in FY23 with one in-progress:

Tourist No. 2: On July 28, 2022, a former river ferry built in the 1920s began sinking while moored near the downtown Astoria riverwalk. The vessel was visibly spilling fuel. The U.S. Coast Guard stepped in to contain and remove pollutants from the water as well as from the vessel itself. This vessel was an imminent threat to public health and safety. It had severe hull damage, extensive dry rot, a fragile shell, and was directly upstream from a fuel dock. It was also very close to the navigation channel. Not removing the vessel from the water was not an option, however, the vessel's poor condition made removal complex. The vessel was crushed in place, pulled from the water and set on a barge, with barriers in place to catch floating debris. The vessel was transported to land for safe disposal. Total cost to the Common School Fund was \$805,000.

Alert and Sakarissa: These two former military vessels were purchased years ago by an individual with aspirations to restore them in coordination with at least two nonprofits. The primary owner passed away and the nonprofits dissolved. The Alert and Sakarissa were abandoned off Hayden Island, just west of the I-5 interstate bridge. The vessels were monitored by DSL and partners and in 2020, the U.S. Coast Guard removed oil and hazardous materials from both vessels, mitigating their impacts. The Alert sank in October 2021 and the Sakarissa sank in March 2022. DSL worked with partners to raise and refloat the vessels in September 2022, then remove them from the water for salvage and deconstruction. Total cost was \$7 million, including \$2.6 million to the Common School Fund, \$2.3 million to the U.S. Coast Guard, and \$2 million from Metro. The Department anticipates receiving a lumpsum payment from one of the dissolved nonprofits to help offset the cost of disposing of the Sakarissa, though no funds have been received yet.



This square frame supports a specialized gantry saw to cut through the thick hull of the Alert during break down.

F/V Tiffany: Originally built in 1939, the F/V Tiffany was a buoy tender for the U.S. Coast Guard for nearly 30 years, then served as a fishing vessel for about another 50. The Tiffany is presently tethered to the bank of the Columbia River about five miles downstream of the city of Rainier. Despite efforts by DSL and the Department of Justice to contact the listed owner, the owner has not been located to claim responsibility for removing the vessel. In April 2021, the Tiffany sank, at which time the U.S. Coast Guard contracted a company to refloat it and remove oil and other hazardous materials onboard. The Tiffany currently remains floating; however, the Department has been advised that if left as-is, it will sink once more, causing environmental damage and increasing the cost of removal by as much as three or four times the current estimated price. DSL is contracting for the vessel to be towed by November 2023 to a site for deconstruction, hazard abatement, and disposal. Removal of the F/V Tiffany is anticipated to cost \$1.4 million, which the Department will fund via the Polychlorinated Biphenyls Remediation and Restitution (Monsanto) Account.



A cross section of the Alert being prepared for steel recycling.

Marinas are also an important part of the solution to ADVs. Marinas may require insurance and that a boat owner keep their OSMB boat registration current. ADVs are most often unregistered and keeping registration up to date is the first step in preventing ADVs. OSMB has been doing much of this important work with their Clean Marina program. DSL supports these efforts by requiring marinas to report annually (point in time summary) on boats at their marina. This requirement was added to new marina lease terms in 2021 and will be added to existing marina leases upon renewal. Reports go to OSMB, with DSL copied, and include the name and contact information of the boat owner, as well as the boat identification number, expiration date of the registration, and the boat's slip number in the marina.

Long-Term Camping

Public land can feel like the last space available for people experiencing homelessness. These lands are not healthy living options as they are exposed to extreme weather conditions, lack access to basic needs like water and sanitation, and are isolated from outreach and emergency services. Besides being unsuitable for human habitation, lands and waterways used for long-term camping often experience severe, potentially irreversible, impacts to ecological health. Staff at DSL have encountered extensive littering and dumping, reckless burning, destruction of riparian vegetation, discharge of firearms, and other health and safety issues when visiting long-term camping sites.

The Department works closely with local community partners, such as the Multnomah County Sheriff's Office Homeless Outreach Programs Engagement (HOPE), taking a cooperative approach to identify effective solutions and strategies for addressing individual camps. During FY23, the Department conducted a significant camp cleanup at Lindbergh's Beach, in Portland. This three-day cleanup removed approximately 10 tons of debris and two boats from the riparian area. DSL was assisted by local and state governments, behavioral health professionals and law enforcement.

In some cases, the State Land Board and DSL try to resolve known issues through temporary restrictions on camping, campfires, and overnight use followed by DSL rulemaking to limit uses permanently. During FY23, DSL conducted rulemaking to restrict public use of approximately 500 yards of the bank of the Columbia River along the north side of Hayden Island, between river mile 106 and 107. The rule closes the area to all uses between 10 p.m. and 5 a.m. and prohibits the establishment of fires or campsites at all times. This rule ([OAR 141-088-0240](#)) became effective on November 1, 2022. Enforcing closures and other restrictions is challenging and requires a holistic, collaborative approach.

While it's understandable that people experiencing homelessness seek shelter on public land, long-term camping along waterways is not healthy for people or the environment.

This site on Hayden Island, between river mile 106 and 107, required rulemaking to limit use permanently. DSL relies on a network of community partners to ensure use limitations are effective.



PORTLAND HARBOR

SUPERFUND SITE

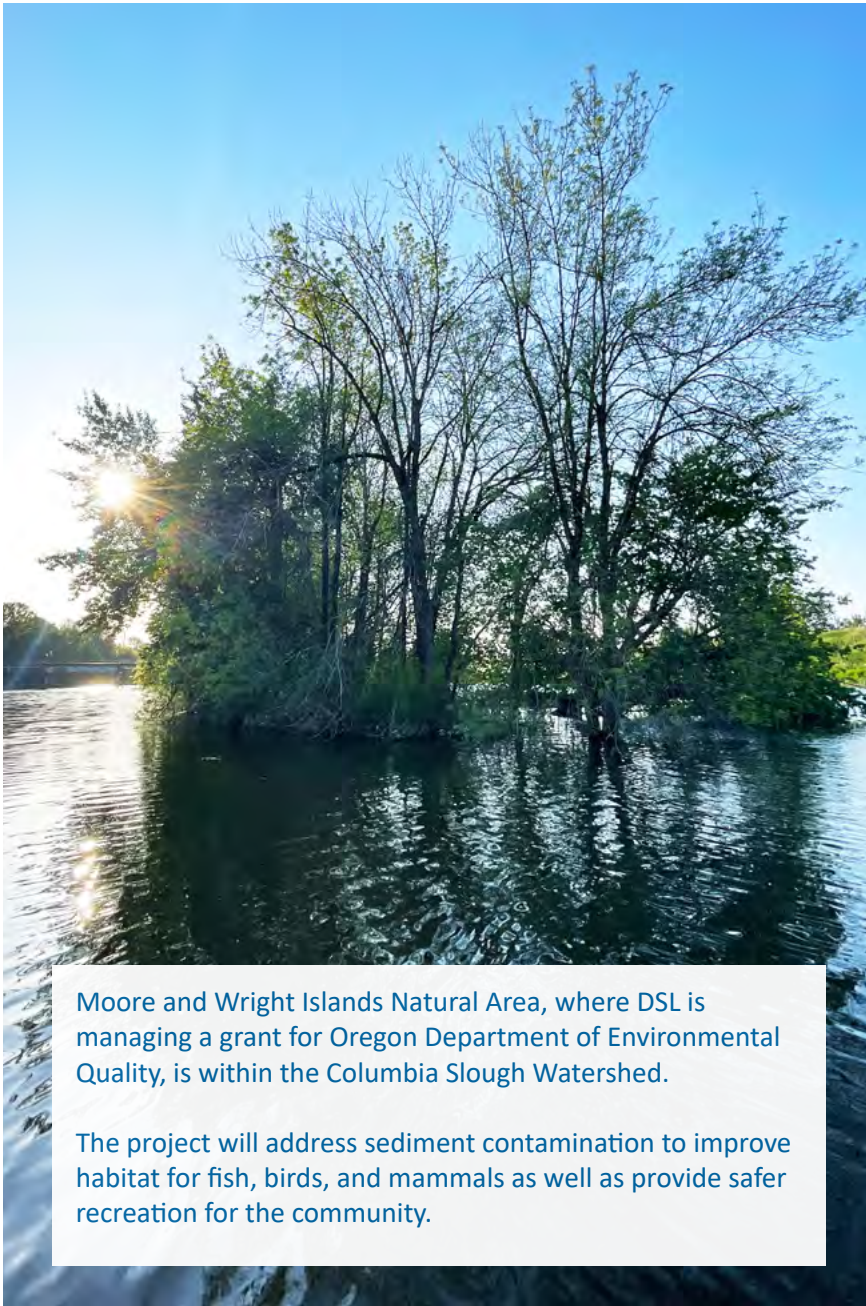
Portland Harbor is an area of the Lower Willamette River extending roughly from the Freemont Bridge to Sauvie Island in Portland, Oregon. This area was contaminated from decades of industrial use. In December 2020, the area was added to the Environmental Protection Agency's National Priorities List as a superfund site. Water and sediment are contaminated with many hazardous substances that have been found to be harmful to people and the environment. Health risks at the site are great enough for immediate and intense attention. It is one of the largest superfund sites in the United States. EPA provides quarterly updates on the status [here](#), including the [June 2023 Portland Harbor Superfund Site Updates](#).

The total cleanup costs for the Portland Harbor Superfund Site are estimated by the Environmental Protection Agency to exceed \$1.7 billion. Most of the riverbed and much of the riverbank in the 10-mile cleanup area along the Willamette River is land that was transferred to Oregon at statehood and therefore the State of Oregon is involved in Portland Harbor as a potentially responsible party for cleanup. DSL supports efforts to clarify ownership boundaries to limit the state's share of likely cleanup costs and natural resource damages. Defense costs have and will continue to be substantial. Since the area is an Oregon-owned waterway, DSL is also engaged through removal-fill permitting and authorization of proprietary use of the waterways where cleanups are likely to occur.

The State of Oregon has entered into multiple agreements with the United States Environmental Protection Agency to facilitate design work needed for cleanup of the Portland Harbor Superfund Site. Investigations and designs connected to specific cleanup areas, including environmental consulting costs and legal expenses, are ongoing.

Multnomah County, ODFW, and the Human Access Project advise the public about safe fish consumption at Duckworth Dock in Portland.





Moore and Wright Islands Natural Area, where DSL is managing a grant for Oregon Department of Environmental Quality, is within the Columbia Slough Watershed.

The project will address sediment contamination to improve habitat for fish, birds, and mammals as well as provide safer recreation for the community.

Dedicated DSL staff attention is required to participate in and be responsive to the Superfund process. DSL has one limited duration position for this work.

Key activities during FY23 included:

- DSL was awarded a \$1M Brownfields grant in May 2023 specific to the Moore and Wright Islands Natural Area in the Columbia Slough. We are developing an interagency agreement with Oregon Department of Environmental Quality to manage this project.
- Completion of a [Portland Harbor Information Management Plan](#) for the Portland Harbor Information Management System (IMS), which will provide information and data to agency personnel, other parties involved, and the public.
- Completion of the [Programmatic Informational Controls Implementation and Assurance Plan](#) for the development of the IMS. This document facilitates coordinated planning and terms for IMS implantation, maintenance, enforcement, modification, and termination.
- DSL oversaw in-water environmental sampling and biologic assessment of the Willamette Cove In-Water Project Area

- As a funding party for the Swan Island Basin Remedial Design, DSL reviewed technical reports and attended quarterly meetings related to sampling and investigation activities.

DSL's FY23-25 budget includes two budget packages to continue Portland Harbor Superfund Site activities. The first (Policy Package 101) provides \$2,722,066 in Common School Fund limitation for continued assistance from legal and environmental experts, including Department of Justice legal expenses, related environmental consulting costs, and DSL support of this work through the continued staff person. The second (Policy Package 102) provides \$2,721,125 in Common School Fund limitation for investigations and remedial design for the future cleanup at Willamette Cove; provides some funding for investigations and design work to be performed by other potentially responsible parties; and potential development of an interim database for remedial design data.



TERRITORIAL SEA

OF OREGON

Oregon's territorial sea is a 3-mile-wide strip of ocean under state jurisdiction that reaches from the shoreline out to sea. Depending on jurisdiction, state agencies (e.g., Oregon Department of Land Conservation, Department of State Lands, Department of Parks and Recreation, and Department of Fish and Wildlife) manage this area and its resources in trust for the public.

Telecommunication and other cables coming from countries across the Pacific Ocean may be authorized to construct on the territorial sea floor and land on Oregon's shoreline. In 2020, Edge Cable was landing a telecommunications cable for Facebook on an undeveloped, residentially zoned lot in Tierra Del Mar. While drilling into the seabed, the drill became damaged and Edge Cable abandoned equipment buried 40 to 70 feet

under the sea floor. Following extensive negotiations with and payments to the Department (and other agencies), cable construction was still completed. However, in response to the incident, Oregon passed [House Bill 2603](#) (2021) requiring owners or operators of undersea cables to obtain financial assurances for the installation and removal of cables placed in Oregon's territorial sea. Considering the fast pace of development in the telecommunication and renewable energy sectors (e.g., offshore wind and hydrogen), the bill also requires that the Department review and develop recommendations for amendments to [Part Four of the Territorial Sea Plan](#) that addresses the placement of telecommunication cables, pipelines, and other utilities in Oregon's territorial sea.



Siletz Bay in Lincoln County

The Oregon Department of Land Conservation and Development, in consultation with the Oregon Ocean Policy Advisory Council (OPAC), established a working group for Part Four of the Territorial Sea Plan as a technical advisory committee. The working group is tasked with conducting the review and draft amendment recommendations in response to House Bill 2603. Oregon Department of Land Conservation and Development administered nine working group meetings between May 2022 and June 2023. DSL was also granted limited Common School Fund resources to hire a limited duration staff to participate in these meetings, provide information about DSL policies and processes, and relay the agency's input.

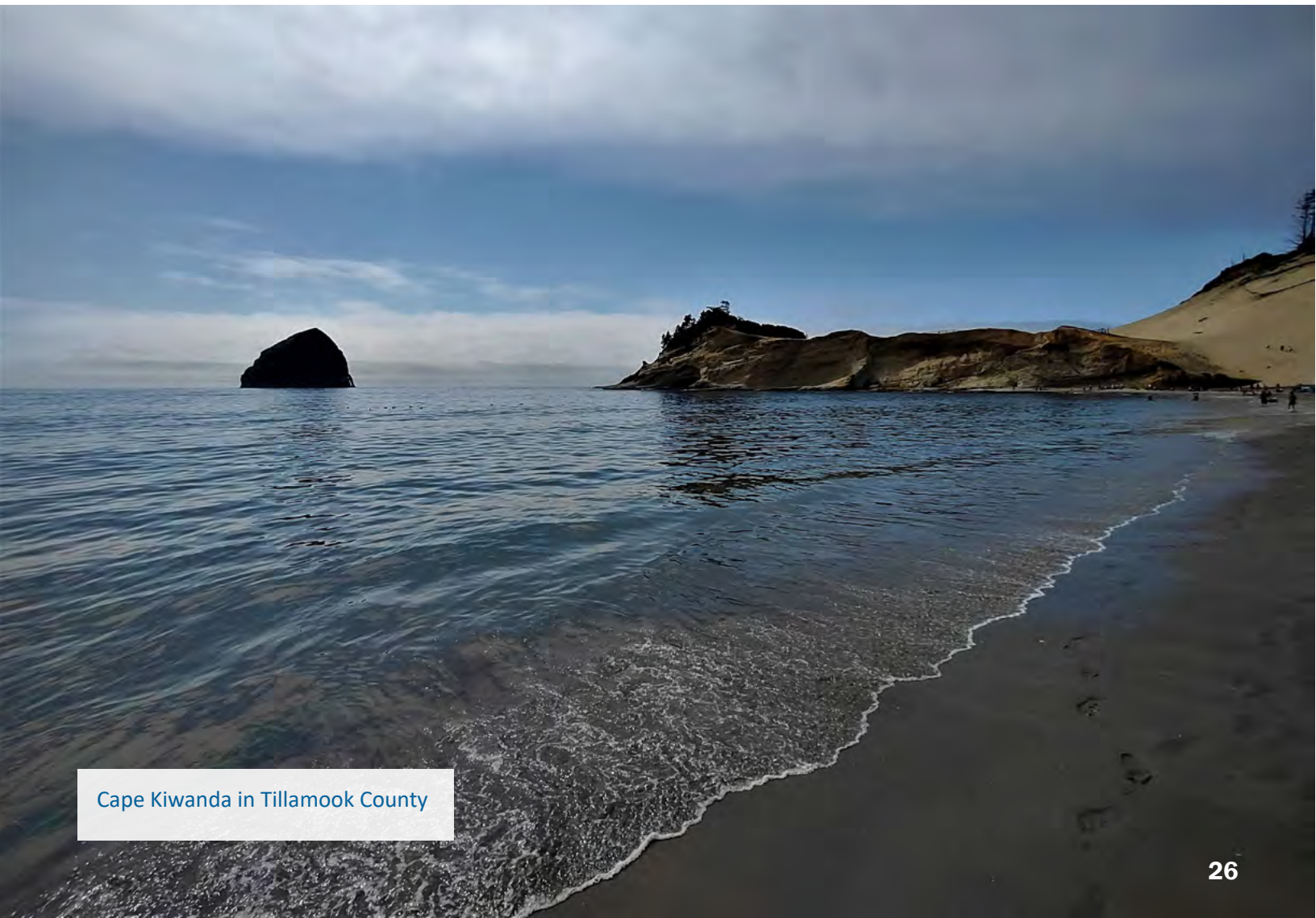
Compared to the original version, Part Four of the Territorial Sea Plan draft covers requirements not only for telecommunication cables but also for power cables, pipelines, and other utilities or fixtures.

Additionally, Part Four includes:

- The state perspectives and vision in the use of the Oregon seafloor
- International, federal, state, and local policies and requirements
- Critical infrastructure consideration
- Implementation requirements regarding state agencies' review process, communication and cooperation on routing, landing, installation, maintenance, and decommissioning and recovery of undersea infrastructure.

Following OPAC and Land Conservation and Development Commission approval of the updated Part Four, anticipated by November 2023, the Department must amend the current undersea infrastructure policy, including the regulatory permitting process. Such changes are also needed to consider the fast development and research on smart cables and renewable energy (e.g., offshore wind energy), including wave-energy devices which may populate the ocean in upcoming years.

DSL is also considering legislation in 2025 to amend ORS 273.058 and ORS 758.010 to allow DSL to charge an appropriate administrative fee (currently set at \$5,000 per ORS 273.058) and financial compensation for the Common School Fund (currently "free of charge" per ORS 758.010), for cables and other uses of the territorial sea. There are many new process requirements for DSL to ensure an easement authorized in the territorial sea is consistent with Statewide Planning Goal 19 (Ocean Resources).



Cape Kiwanda in Tillamook County

ASSISTANCE

FOR COMMUNITIES

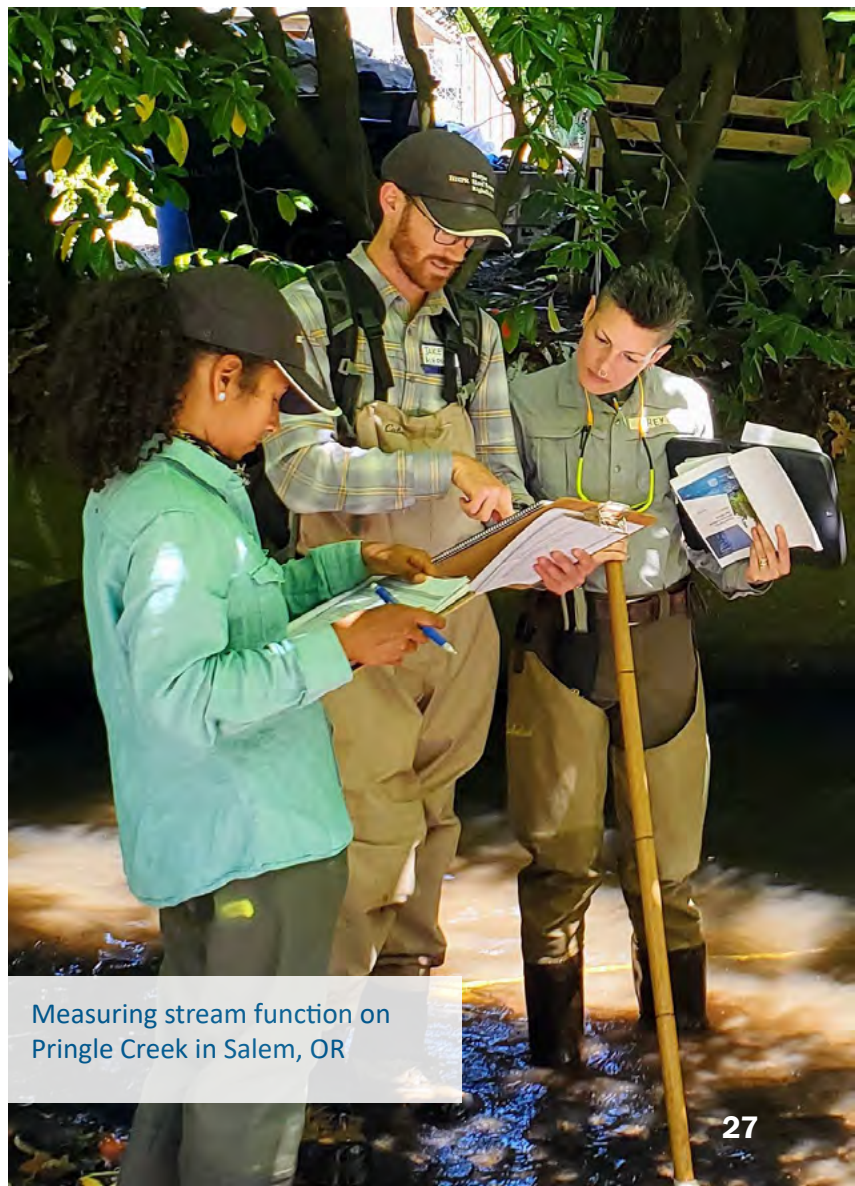
Funding For Projects That Enhance Waterways

The Submerged Lands Enhancement Fund was established in 2017 to make grants available for community-led projects that enhance, improve, or protect Oregon-owned waterways. Projects that may qualify for funding include those that remove and dispose of marine debris or vessels and structures in disrepair, projects that enhance watersheds, fish and wildlife habitat, and those that improve water quality.

For the 2021-2023 biennium, the legislature approved \$200,000 for the fund and the Department solicited projects through a competitive proposal process during FY22. Recipients included the City of Umatilla for partial reimbursement for removal of a vessel and the North Clackamas Watershed Council for a waterway enhancement project at the confluence of Boardman Creek. Funds were also used to remove a vessel in the South Slough National Estuarine Research Reserve. The Department will award up to \$200,000 for additional projects during the 2023-2025 biennium.

Training

Staff have focused training over the past year on our approved wetland and stream function assessments, the Oregon Rapid Wetland Assessment Protocol (ORWAP) and the more recent Stream Function Assessment Method (SFAM). These tools provide information necessary to make removal-fill permit decisions, including how lost aquatic resource functions will be replaced through compensatory mitigation. DSL is the educational resource on wetland and stream functions for several state partners and natural resource professionals working in Oregon. There had not been an ORWAP training since 2016 due to staff retirements and because efforts were focused on SFAM since it was new in 2018. DSL staff developed a new ORWAP training program and held the first test training for DSL staff in November 2022 using federal grant dollars, also drawing interest from the City of Salem, U.S. Fish and Wildlife, U.S. Army Corp of Engineers. A subsequent training was opened to other natural resource professionals in May 2023 for a fee. An SFAM training was also held in July 2022. Each training is led by DSL and Corps of Engineers staff over 2.5 days. The Department plans to continue these trainings in FY 2024.



Measuring stream function on Pringle Creek in Salem, OR

DSL was approached by Clackamas Community College's Environmental Learning Center to form a partnership to provide ORWAP and SFAM trainings through their professional education program. Natural resource professionals, such as wetland consultants who work with the Department, had indicated to the college administrators there was a need for more opportunities to receive ORWAP and SFAM training. However, the time and effort required for DSL to administer these trainings, including advertisement, registration, payment processing, and certificates, limits how often we can offer them. Through the agreement with the College, the Department provides the curriculum, materials, and instruction and the College provides advertising, registration, and continuing education units to attendees, in addition to a Certificate of Completion. A portion of the registration fees will reimburse DSL costs for staff providing instruction. This arrangement will provide trainees with a better experience and lessens the administrative burden on the Department.


Statewide Wetlands Inventory

DSL is responsible for developing, maintaining, and distributing the Statewide Wetlands Inventory (SWI) as a tool to help communities and the public identify and protect wetlands. The SWI currently includes the National Wetlands Inventory developed by the U.S. Fish and Wildlife Service, local wetlands inventories that cover many urban and urbanizing areas in Oregon, and other mapping that indicates likely locations of wetlands and waterways. A primary purpose of the SWI, and the associated Wetland Land Use Notice process, is to alert local planners and landowners that coordination with DSL is needed to determine if removal-fill permit may be required for development.

DSL has one Aquatic Resource Planner that oversees the SWI and provides outreach and training. Outreach and training to planners and others is critical for the SWI to be successful. Communication and training began in 2018 with the release of the SWI. DSL has been very successful, recording an increase in WLUNs received each fiscal year, to the point where additional staff resources are needed.

During FY23, staff gave five virtual trainings for local governments, several more via email, and one in-person training for the Clatsop County Realtor Association. The realtor training described how realtors and the public can gain information from DSL as part of due diligence.

Planned improvements to the SWI include adding compensatory mitigation sites and DSL-approved wetland delineation and determination study areas as mapped wetland areas by early 2025. This information is currently only available through a public records request and exists primarily as paper records. Adding these known wetland areas to the SWI increases the usability and reliability of the SWI. This improvement is supported by two limited duration staff funded through federal grants from the Environmental Protection Agency. Work to map wetland delineations and determinations is in partnership with Lane Council of Governments.

A close-up photograph of a person's hand holding a dark, moist soil sample. The soil is crumbly and has a rough, irregular shape. Numerous fine, orange-brown threads, which are plant roots, are visible extending from the soil. The background is a blurred green field of tall grass.

Orange oxidized rhizospheres threaded through this soil sample is one indication of the site being a wetland.

Local Wetlands Inventories

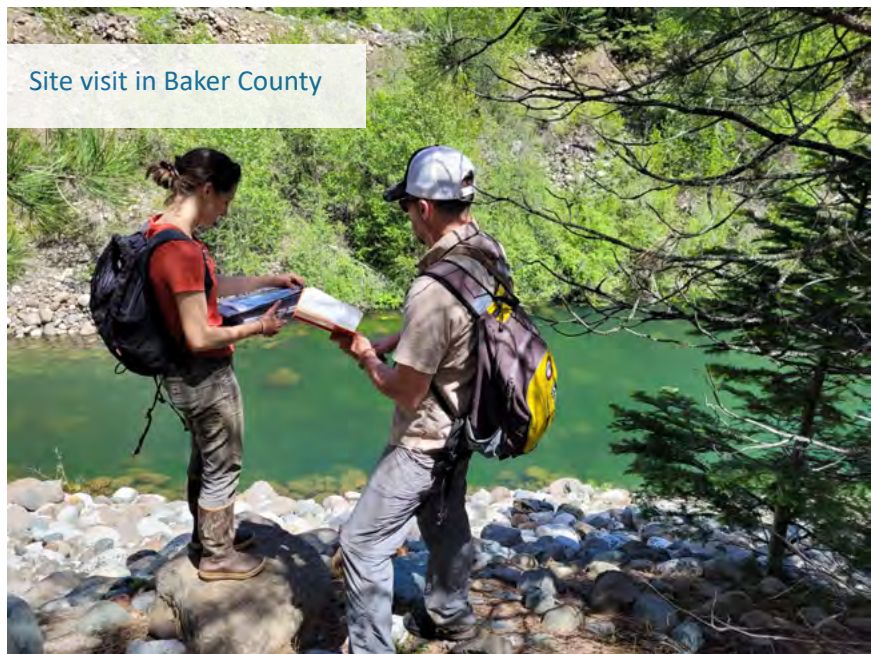
The Department's Aquatic Resource Planner works with local governments on more detailed mapping of wetlands for their communities, called Local Wetlands Inventories (LWIs). The most common reason for a community to complete an LWI is to achieve statewide planning goals. These goals are managed by DLCD and express the state's policies on land use and related topics, like citizen involvement, housing, and natural resources. For wetlands, the LWI process identifies which wetlands provide a higher quality of function and are therefore more valuable to retain and protect from development through local code ordinances (i.e., significant wetlands) and can be removed from what land is considered "buildable."

Timely approval of LWIs is needed for communities to successfully complete land use planning, including in support of urban growth boundary establishment or expansion through DLCD. In FY23, the Department's Aquatic Resource Planner provided continued support and review for inventories proposed or in-progress for Beaverton, Central Point, Dunes City, Grants Pass, Halsey, Hillsboro, Springfield, and Yachats; and approved Tigard's urban growth expansion for the River Terrace area.

Planning Assistance

DSL staff provided input to communities around wetland and waterway planning by:

- Assisting several cities and one county with local code language or reviewed analyses that would change or remove protections from certain wetlands or types of wetlands (an Economic, Social, Environmental and Energy analyses).
- Reviewing proposals for potential mitigation sites for a municipal mitigation bank.
- Participating on the Yaquina Bay Estuary Management Plan Update Advisory Committee to plan for compliance with statewide planning goals. This update was the first of several planned estuary management plans and benefited from DSL participation to help set a model for others to follow.
- Reviewing general notices of local land use actions that may intersect with wetlands or waterways; however, few of these notices were reviewed in FY23 due to lack of capacity. Notices are a good indicator of which county and city planners we can reach out to about the WLUN process. To help plan for resources for future reviews, staff simply tracked the number of notices received. In FY23, there were 750 general notices received from 26 counties and 34 cities. Another 33 notices were received from other federal, state, and non-governmental organizations. The numbers are down from previous years.
- Providing information about mitigation banking to the North Coast Regional Solutions Team.
- Presenting several times to the Cascades West Council of Governments on wetlands, mitigation banking, and wetland planning and permit streamlining. DSL present removal-fill permit alternatives analysis process and worked with the Corps to develop a comparison of various wetland planning tools and permitting types. Staff also provided written comment and a presentation of major issues on a Wetlands Mitigation Feasibility Study for Linn and Benton Counties, led by ECONorthwest.



Site visit in Baker County



COMPENSATORY MITIGATION

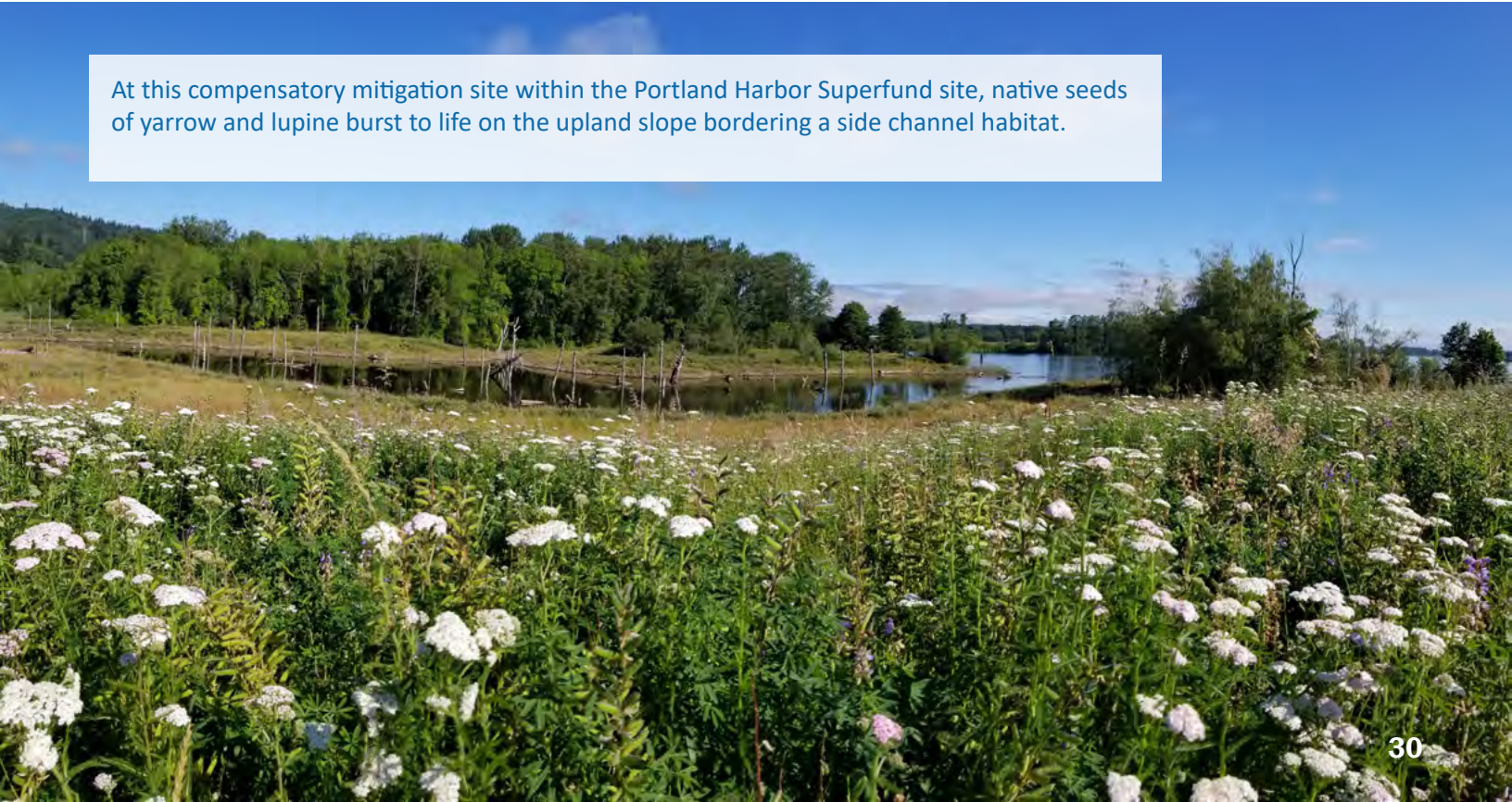
OPPORTUNITIES

Aquatic habitats such as wetlands, streams, lakes, rivers, estuaries, must be replaced when lost, damaged, or destroyed. Compensatory mitigation is the replacement of these resources. Requiring this replacement of lost aquatic habitats is how the Department can authorize impacts and still meet Oregon's goal of no net loss.

Applicants may choose from several mitigation options. They may conduct their own mitigation at the impact site or conduct mitigation nearby by either creating or restoring wetlands, enhancing degraded wetlands, or in certain limited cases, preserving high-value wetlands that are threatened. Some applicants have the option of purchasing wetland credits from a mitigation bank or an in-lieu fee project, or they may pay into the Department's Removal-Fill Mitigation Fund. The Department promotes mitigation banking because it is ecologically valuable to consolidate wetland restoration efforts and generally more efficient and cost effective to perform compensatory mitigation on a larger scale.

Mitigation Banking

Mitigation banking represents an important efficiency for both the Department and for permit applicants. Mitigation banks can provide greater ecological benefits and are more efficient for Department staff to manage than smaller mitigation sites. The economy of scale with larger mitigation projects adds to the profit margin for the bank sponsor's business venture and allows lower per-credit pricing. The purchase of bank credits is generally the preferred option for permit applicants because the costs are known up front. Additionally, because the obligation for the mitigation requirement is transferred to the bank sponsor once credits are purchased, the credit purchaser has no further responsibilities to maintain, monitor, report, or remediate their own mitigation project.



At this compensatory mitigation site within the Portland Harbor Superfund site, native seeds of yarrow and lupine burst to life on the upland slope bordering a side channel habitat.

Department staff inspect each active mitigation bank annually to evaluate whether expectations have been met, to verify information in the monitoring reports, and to discuss and resolve emerging issues. Staff have also been working with bank sponsors and new potential long-term stewards to promote the establishment of long-term stewardship plans to ensure the ecological and societal benefits provided by the mitigation bank are sustained even after all the credits are sold.

In FY23, there were 26 approved mitigation banks where applicants purchased wetland credits. Table 9 shows the cumulative sales and balances of these mitigation banks as of June 30, 2023. During the fiscal year, 13 mitigation banks made 39 separate sales totaling 30.68 credits, with an average credit purchase size of 0.79 acre. Two mitigation bank sponsors are currently working on new mitigation bank agreements that have yet to be approved. Stream mitigation program development work is nearing completion, and we expect more stream mitigation banks to enter the mitigation market soon.

In addition to the wetland banks shown in Table 9, there are two mitigation banks that have non-wetland credit types. The City of Salem operates the Salem Stream Bank, which has stream credits solely for the use of the city. The bank has had 100% of its credits released and approved for sale, and 0.3 % have been sold, but no sales occurred in FY23. The Linnton Mill River Restoration Bank is located at river mile 5 on the Willamette River. The project provided credits for both the State removal-fill and Federal Clean Water Act 404 programs, in addition to Natural Resource Damage Assessment credits already approved by the Portland Harbor Natural Resource Trustee Council. The bank has had 20% of the expected credits released and 0.6% have been sold.



Deputy Director Bill Ryan and Interim Deputy Director Chris Castelli at a mitigation site

A third mitigation bank, Dairy Creek Bank, which was approved in FY23, also has non-wetland (stream) credits. Dairy Creek is in the town of Banks and services the Tualatin watershed. The bank has had 15% of its credits released and approved for sale, but no credits were sold in FY23. Construction of Phase 1 (of 2) of Dairy Creek bank is scheduled to begin summer of 2023.

Staff began working with the Cow Creek Band of the Umpqua Tribe of Indians on a mitigation bank proposal in unincorporated Douglas County, between Myrtle Creek and Riddle. The project was unable to come to fruition largely due to access agreements with DSL and the Corps of Engineers, and difficulty obtaining a long-term agreement with a downstream owner. The Tribe withdrew its proposal in January 2022. DSL has continued to collaborate with Tribes on barriers to Tribal sponsorship of mitigation banks or in-lieu fee programs in FY23.

Table 9

MITIGATION BANK	COUNTY	TOTAL POSSIBLE CREDITS	PERCENTAGE OF CREDIT RELEASED	PERCENTAGE SOLD TO DATE (OUT OF TOTAL POSSIBLE)	BALANCE OF CREDITS REMAINING (OUT OF TOTAL POSSIBLE)
Amazon Prairie	Lane	92.81	18	6	86.82
Butler	Washington	45.60	75	74	12.01
Claremont	Clatsop	11.62	59	58	4.84
Coyote Prairie North	Lane	77.58	100	100	0
Foster Creek	Clackamas	28.1	96	96	1.25
Dairy Creek	Washington	60.72	15	0	60.72
Garret Creek	Clackamas	15.49	86	77	3.53
Long Tom	Lane	61.14	100	85	9.45
Marion	Marion	34.09	100	94	1.9
Mary's River	Benton	71.41	60	26	52.82
Mid-Valley phase 2	Benton	4.73	90	90	0.47
Muddy Creek	Benton	60.33	88	88	7.36
Mud Slough phase 4	Polk	43.80	100	86	6.0
Oak Creek	Linn	38.98	58	58	16.40
ODOT Bobcat Marsh	Washington	5.26	100	85	0.78
ODOT Crooked River	Crook	5.32	90	42	3.08
ODOT Greenhill	Lane	8.11	60	14	6.96
ODOT Lost River	Klamath	13.41	80	32	9.1
ODOT Vernal Pool	Jackson	20.95	95	55	9.48
South Santiam	Linn	50.49	62	19	40.92
Tualatin Valley	Washington	31.13	100	79	6.45
Wilbur Estuary	Lane	44.12	75	7	41.15
Yoncalla Creek	Douglas	26.49	15	13	22.97
Total Wetland Credits	—	876.38	—	—	410.55

In-Lieu Fee Programs

In-lieu fees are accepted into the Oregon Removal-Fill Mitigation Fund as a form of compensatory mitigation. The funds are used by the Department to construct mitigation sites and compensate for lost functions and values. There are two DSL in-lieu fee programs available:


- The Payment In-Lieu program allows payment for compensatory mitigation for impacts when other methods of providing compensatory wetland mitigation are not available or are inadequate. The Corps of Engineers does not accept Payment In-Lieu mitigation for their federal 404 permits.
- The In-Lieu Fee program was approved by the Corps of Engineers in 2009 and is a type of compensatory mitigation that can be used when mitigation is a requirement both for Oregon removal-fill permits and federal 404 permits. Under the In-Lieu Fee program, areas are approved to sell a maximum number of “advanced” credits, but a project must be approved and meet performance requirements before credits are released and the mitigation obligation is fulfilled.

The Department’s in-lieu programs provided 0.14 mitigation credits for 2 permit authorizations. Credits sales for Payment In-Lieu and In-Lieu Fee, and In-Lieu Fee credit sales and balances are shown in Table 10 and Table 11, respectively.

The Department has ongoing projects funded in previous years as shown in Table 11. Credits are released for sale over time, generally five to ten years, as the projects are constructed and evaluated to be successful. Three of the projects show a positive balance of credits remaining because those credits have been released but not yet sold. Three of the In-Lieu Free program areas show a negative balance of credits remaining because advance credits have been sold but mitigation projects are still being constructed and monitored.

For the Umpqua Interior Foothills, the Department is providing payments from the Oregon Removal-Fill Mitigation Fund under a contract with North Douglas Betterment for development of mitigation credits at the Yoncalla Creek Mitigation Bank. In exchange, the Department receives credits to satisfy the Department’s mitigation obligation. The Yoncalla Creek Mitigation Bank was approved in FY22 and DSL received the first credit transfer to satisfy the Department’s In-Lieu Fee obligation at that time. Additional transfers will occur with each credit release until the contracted amount is fulfilled.

The Clear Lake project has been constructed in the Lower Columbia area, but the Department has not yet requested a credit release because the site must undergo a formal delineation to confirm project mitigation acreages. The Kilchis River Preserve has been constructed in the Wilson Trask Nestucca area, and the Department is currently seeking final project approval from the U.S. Army Corps of Engineers. Credit releases will be requested for both Clear Lake and Kilchis in FY24.

A close-up photograph of native pickleweed (Sarcocolla) growing in a wetland area. The plant has thick, green, segmented stems and small, yellowish flowers. The background is a blurred field of similar vegetation.

Native pickleweed growing at
Tamara Quays mitigation project

Table 10

PAYMENT IN-LIEU (PIL) AND IN-LIEU FEE (ILF) CREDIT INFORMATION	
Number of Permits using the PIL Program	25
PIL \$ Totals	\$306,206.53
PIL Credits Sold	0.856
Number of Permits using the ILF Program	2
ILF \$ Totals	\$12,509.34
ILF Credits Sold	0.14
Mitigation Fund Deposits \$ Total	\$318,715.87
Total Mitigation Credits Sold	0.996

Table 11

SITE NAME	COUNTY	CREDITS RELEASED	CUMULATIVE CREDITS SOLD	BALANCE OF CREDITS REMAINING
Tamara Quays	Lincoln	2.16	1.81	0.34
Half Mile Lane	Washington	13.24	8.31	6.75
Pixieland	Lincoln	4.02	2.52	1.50
Lower Columbia	Clatsop	0	4.01	-4.01
Umpqua Interior Foothills	Douglas	3	7.52	-4.52
Wilson Trask Nestucca	Tillamook	0	2.43	-2.43



FUTURE PROJECTS

AND PRIORITIES

Establish Wetlands And Waterways Program Costs In Rule

Cost containment is a key component of protecting the Common School Fund, as is making strategic investments to increase revenue or reduce costs. The Department continually seeks opportunities to increase revenue by examining program operations.

A preliminary analysis of the Department's ARM program fee structure was completed in 2019 as a critical first step in achieving sustainable program funding. The analysis found that current program revenue does not cover operating expenses and is subsidized by the Common School Fund. Getting the wetland and waterway programs to a place of financial self-sufficiency safeguards Oregon's Common School Fund and ensures that critical services continue to be provided.

In alignment with the Department's 2022-2027 Strategic Plan to maintain a sustainable financial structure for the Aquatic Resource Management program, [House Bill 2238](#) requires the Department Director to adopt rules establishing fees related to removal or fill permit applications, wetland delineation reports, and general authorizations. Fee amounts currently listed in statute will be removed when the Director adopts rules establishing appropriate program fees before January 1, 2026.

Abandoned And Derelict Vessels

The Department is proud to separate the cost of vessel removals from the Common School Fund. [House Bill 5029](#) awarded \$18.7 million to DSL to remove ADVs accumulated in public waterways and [House Bill 2914](#) established an Oregon Abandoned and Derelict Vessel Program within DSL and created the Oregon Abandoned and Derelict Vessel Fund. These resources are critical in supporting the Department's participation in collaborative efforts to address ADVs long-term.

The Department is currently convening a workgroup that will help inform program development by:

- Creating a program framework to address prevention, response, enforcement, education, outreach, and long-term funding needs and sources; and to consider needs related to vessel removal, destruction, disposal, and recycling.
- Examining legal authorities and identify options for addressing legal barriers to removing ADVs.
- Exploring a vessel insurance requirement.
- Assessing operational needs such as an ADV database.

Workgroup efforts will result in the development of Department legislative concepts and policy option packages for the 2025 legislative session.

DSL will submit a report to the Legislature on its progress in implementing HB 2914 on or before February 15, 2024.

Increased Services To Address Housing Production Needs

On January 1, 2023, Governor Kotek signed Executive Order 23-04 which set housing production goals at 36,000 homes per year across the state to address Oregon's current housing shortage and to keep pace with projected population growth. This represents an 80 percent increase over current construction trends.

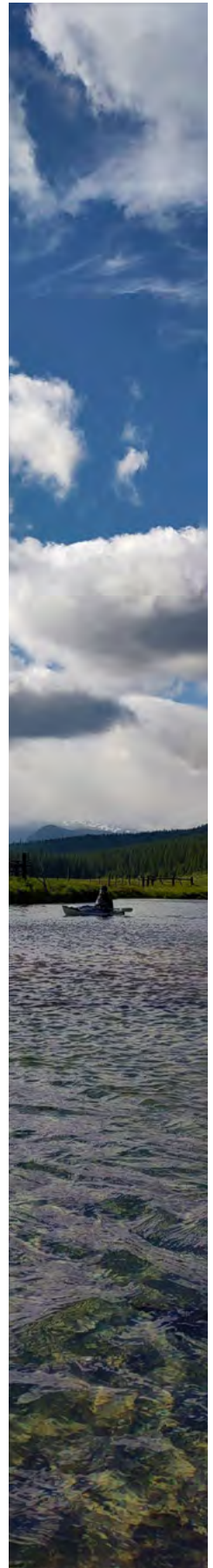
DSL anticipates this goal will increase demand for many DSL services. Primary areas of work that are likely to increase include:

- Local wetland inventories and reviews of local code ordinance or requests for changes in wetland protections. DSL currently has one Aquatic Resource Planner.
- Wetland land use notices, wetland determination requests, and wetland delineation reports reviews. DSL currently has five staff doing this work but is unable to meet existing demand. DSL is hiring an additional limited duration position in FY24.
- Removal-fill permit applications; specifically, individual permits.
- Additional compensatory mitigation options. DSL has been responsive to the Housing Production Advisory Council established under Executive Order 23-04 and has supported recommendations that will expand DSL's in-lieu fee programs in priority areas around the state. DSL anticipates needing additional mitigation staff and other resources to achieve this program expansion.

Additionally, in January 2023 the U.S. Supreme Court made a decision on *Sackett v. EPA* altering which waters are considered waters of the United States under the Clean Water Act. On September 8, 2023, the U.S. Environmental Protection Agency and the U.S. Department of the Army released the final rule conforming to the court's decision.

While this decision does not affect DSL regulations directly, it will result in additional questions from the public about federal versus state jurisdiction and how that affects their permit process. DSL staff are generally more accessible and responsive to the public than U.S. Army Corps of Engineers staff. We also anticipate an increase in mitigation payments to the Department's payment in-lieu program. As described in the [Compensatory Mitigation Opportunities](#) section, this program is not recognized by the U.S. Army Corps of Engineers. However, with an increased number of wetlands that will no longer require a U.S. Army Corps of Engineers permit, DSL anticipates greater use of payment in-lieu program.

Finally, DSL has a wetland and waterway planning mechanism in rule called Advance Aquatic Resource Plans. Planning partners can streamline removal-fill permitting by identifying wetlands and waters (similar to Local Wetlands Inventories), completing functional assessments, and even identifying compensatory mitigation opportunities. Past Advance Aquatic Resource Plans efforts have not been approved by the U.S. Army Corps of Engineers because they were unable to accept certain conclusions (e.g., consideration of alternatives to avoid or minimize impacts) outside of a specific project application. With changes in U.S. Army Corps of Engineers jurisdiction, Advance Aquatic Resource Plans may be more flexible and attractive for some communities and purposes.



2025 Legislation

Agencies do not typically propose legislative concepts for short sessions, so the Department is focused on the 2025 long session. Looking ahead, the Department will bring the following issues before the Land Board for discussion as potential legislative concepts:

Historically Filled Lands: The Department would amend or repeal parts of ORS 274.950 through ORS 274.956 to either: (a) remove the December 31, 2025, deadline for the Land Board to make a claim to historically filled lands and repeal or amend the determination and declaration language; or (b) retain the deadline and clarify in law the steps a landowner may take to clear title to historically filled lands when there is no state claim. The goal of the latter option would be to put into law the type of evidence a landowner could submit to DSL or a title company to show they should have clear title to possible historically filled lands. This would reduce time and expenses to DSL while accomplishing the legislative intent of SB 912 (2015).

Navigability: A legislative concept would amend ORS 274.406 to state: (a) the Land Board will treat any shoreline movement since statehood as accretion and therefore claiming ownership to the current submerged and submersible lands for an adopted waterway navigability study; and (b) establish Oregon law clarifying the Land Board is declaring ownership to the submerged and submersible lands as they exist today. This would help with future Land Board navigability declarations and may reduce legal fees from challenges, as well as agency expenditures on historical research and exchanging quit claims.

Easements in the Territorial Sea: The Department would amend ORS 273.058 and ORS 758.010 to allow DSL to charge an appropriate administrative fee (currently set at \$5,000 per ORS 273.058) and collect compensation for the Common School Fund (currently “free of charge” per ORS 758.010) for cables and other uses of the territorial sea subject to an easement and Part 4 of the Territorial Sea Plan, which was amended in FY 2023. There are many new process requirements for DSL to ensure an easement authorized in the territorial sea is consistent with Statewide Planning Goal 19 (Ocean Resources).



Columbia River near
Rooster Rock State Park

APPENDIX A: 5-Year Trend Data

New Waterway Authorizations by Type

AUTHORIZATION TYPE	FY19	FY20	FY21	FY22	FY23	5-YEAR TOTAL	5-YEAR AVERAGE
Public Facility License	3	1	1	0	0	5	1
Waterway Easement	20	19	16	15	13	83	16.6
Registration of Waterway Structures	82	44	15	14	18	173	34.6
Waterway Lease	6	3	2	4	4	19	3.8
Sand & Gravel	1	1	2	2	2	8	1.6
Short Term Access Authorization*	37	38	42	17	29	163	32.6
Special Use License/Permit*	17	19	13	0	0	49	9.8
Special Use Lease*	0	2	0	0	0	2	0.4
Temporary Use Permit	0	0	0	0	0	0	0
Totals	166	127	91	52	66	502	100.4

**Numbers are not comparable across all years. These types of authorizations are also used for Oregon-owned uplands, but these were not removed from the data prior to FY 2022.*

Renewed Waterway Authorizations by Type

AUTHORIZATION TYPE	FY19	FY20	FY21	FY22	FY23	5-YEAR TOTAL	5-YEAR AVERAGE
Public Facility License	11	2	2	3	5	23	4.6
Waterway Easement	8	3	2	1	7	21	4.2
Registration of Waterway Structures	557	776	412	478	359	2,582	516.4
Waterway Lease	25	15	20	10	23	93	18.6
Sand & Gravel	2	4	0	2	2	10	2
Short Term Access Authorization	0	0	0	2	0	2	0.4
Special Use License/Permit	1	3	2	0	0	6	1.2
Special Use Lease	0	2	0	0	0	2	0.4
Temporary Use Permit	0	0	0	0	0	0	0
Totals	604	805	438	496	396	2,739	547.8

Total Decisions of Removal-Fill Authorizations by Type

TYPE	FY19	FY20	FY21	FY22	FY23
Individual Permit	406	369	377	381	416
General Authorization	92	96	113	88	94
General Permit	87	70	87	76	98
Emergency Permit	29	35	38	21	14
Totals	614	570	615	566	622

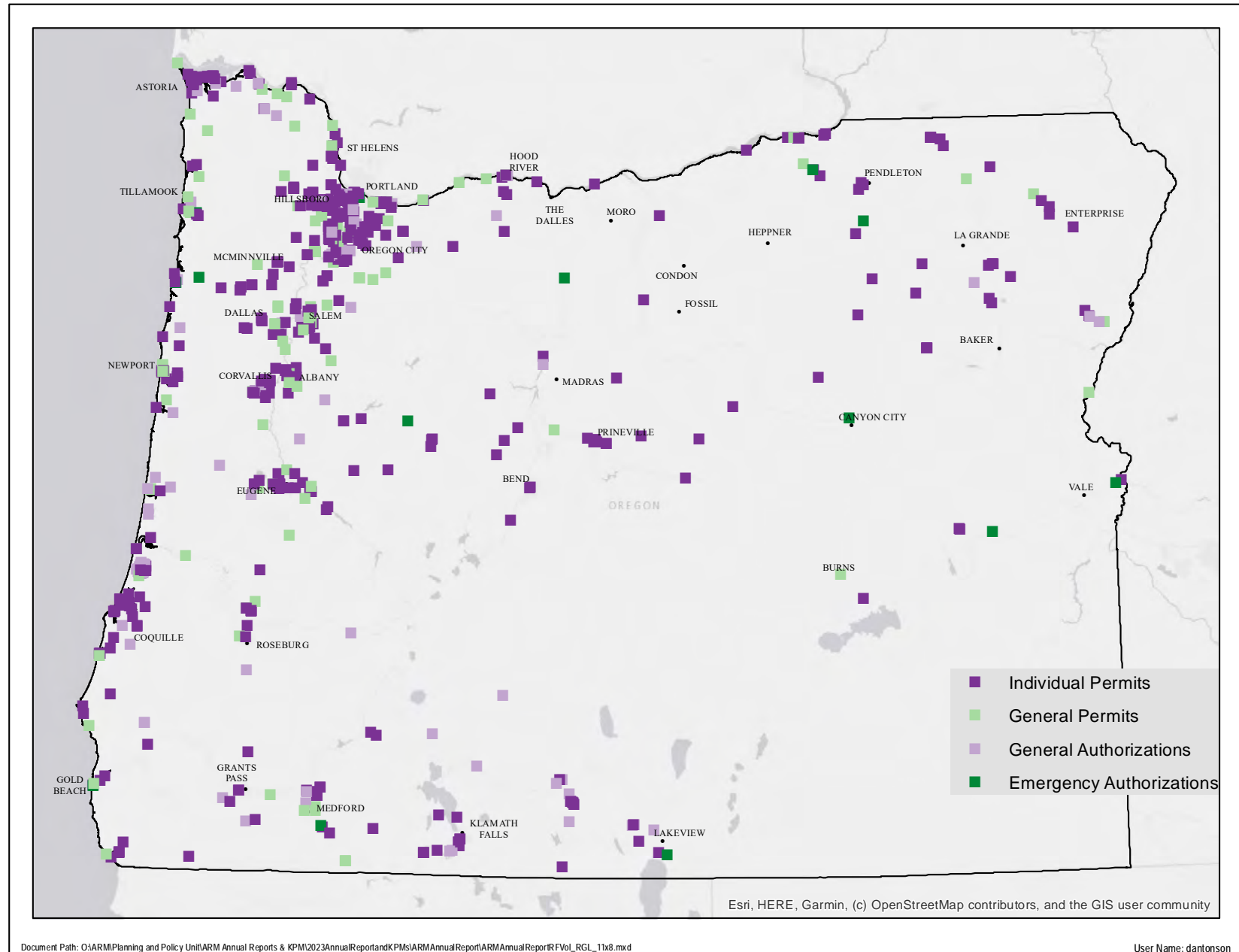
Department Response Time for Wetland Land Use Notices

RESPONSE TIME	FY19	FY20	FY21	FY22	FY23
30 Days or Less	634	761	1098	1036	849
More than 30 Days	121	43	82	192	155
Totals	755	804	1180	1228	1004

Jurisdictional Determinations and Delineation Report Reviews

NUMBER OF REVIEWS	FY19	FY20	FY21	FY22	FY23
Determination	320	317	339	321	242
Delineation	319	296	318	344	360
Totals	639	613	657	665	602

APPENDIX B





Oregon

Tina Kotek, Governor

Department of State Lands

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State Land Board

M E M O R A N D U M

Tina Kotek

Governor

LaVonne Griffin-Valade

Secretary of State

Date: December 12, 2023

To: Governor Tina Kotek
Secretary of State LaVonne Griffin-Valade
State Treasurer Tobias Read

Tobias Read

State Treasurer

From: Vicki L. Walker
Director

Subject: Elliott State Research Forest

At the State Land Board's direction, the Department of State Lands has been working since 2019 with many partners and stakeholders to establish an Elliott State Research Forest. Oregonians across the state came together in support of a research forest and collaboratively created the foundations we are continuing to work from: the Elliott as a publicly owned forest that has completed its obligation to funding schools, but will continue to contribute to conservation, recreation, education, Indigenous culture, and local economies as a research forest.

While Oregon State University is no longer able to participate in management of the forest, the Department has affirmed support of other key stakeholders for the State Land Board's vision and direction for an Elliott State Research Forest.

During the December 12, 2023, State Land Board meeting, the Department will discuss continuing work to create an Elliott State Research Forest, including:

- Review of foundational agreements and expectations for a research forest.
- Status of in-progress work, including the habitat conservation plan, forest management plan, and financial assessment.
- Near-term steps for exploring management and oversight structures.
- Ensuring ongoing engagement of stakeholders and Tribes.