

**SOUTH SLOUGH RESERVE MANAGEMENT COMMISSION**

**March 17, 2022**

**161st REGULAR MEETING 1:00 P.M. – 4:00 P.M.**

**\*\*\* Due to COVID-19 restrictions, this meeting will occur virtually. Commissioners will receive a link by email to join the meeting.**

**PUBLIC PARTICIPATION:**

To receive the Zoom link, please email Katherine Andreasen, South Slough Reserve Administrative Assistant, at [katherine.andreasen@dsl.oregon.gov](mailto:katherine.andreasen@dsl.oregon.gov) by noon on March 16. If you would like to testify, please provide your name, address, and organization/affiliation, if any. Testimony will be heard in the order that requests for the meeting link are received.

Written comments may be submitted until 12 p.m. on March 16, 2022, by emailing them to: [katherine.andreasen@dsl.oregon.gov](mailto:katherine.andreasen@dsl.oregon.gov)

**AGENDA**

**I. Call-to-Order**

**II. Introductions**

**III. Review of Meeting Minutes**

1. 160<sup>th</sup> regular meeting minutes from December 7, 2021

**IV. Public Input\***

**V. Old Business**

1. Land Acquisition Update – verbal report

**VI. New Business/Presentations**

1. Biennial Review of Fees – *Action Item*
2. Approval of federal funding proposals – *Action Item*
3. Other – verbal report

**VII. Information Reports**

1. Administration/Facilities
2. Education
3. Coastal Training
4. Science
5. Stewardship
6. Friends of South Slough

**VIII. Next scheduled meeting:** Thursday, July 21, 2022 at 1pm

**IX. Adjourn**

\*Limited to 5 minutes each unless arranged in advance of the meeting.

## Table of Contents

Minutes of the previous meeting	3
Old Business	
Land Acquisition Update	verbal report
New Business	
Biennial Review of Fees	9
Federal Funding Proposals	13
Informational	
Administration and Facilities	16
Education	23
Coastal Training	30
Science	32
Stewardship	43
Friends of South Slough	50

**SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE  
MANAGEMENT COMMISSION**

*\*\*\* Due to COVID-19 restrictions, this meeting occurred virtually.*

Minutes of the 160th Regular Meeting  
December 7, 2021

**Commission members present:**

Vicki Walker, Chair  
Kris Wall  
Chief Warren Brainard  
John Burns

Maya Watts  
Trent Hatfield  
Bob Cowen

**South Slough NERR staff and others present:**

Bree Yednock  
Sabra Comet  
Alice Yeates  
Ed Oswald  
Kathy Andreasen  
Deborah Rudd  
Christine Moffitt, FOSS

Rebecca Muse  
Shon Schooler  
Jaime Belanger  
Ali Helms  
Mike Allman  
Adam DeMarzo  
Jenni Schmitt

**The meeting was called to order at 9:03 a.m. by Vicki Walker Director of the Department of State Lands and Chair of the Commission.**

**INTRODUCTIONS**

Meeting participants introduced themselves. Chair Walker thanked members of the Board for their service.

## **APPROVAL OF THE MINUTES OF THE PREVIOUS MEETING**

**Chair Walker asked if there was a motion to approve the minutes of the previous meeting. Commissioner Brainard moved to approve, and Commissioner Hatfield seconded. The motion carried.**

## **PUBLIC INPUT**

A letter addressed to the Management Commission was received prior to the meeting from landowners who own property adjacent to the Reserve. Chair Walker said that Bree Yednock would introduce the letter when the Reserve's hunting policy is discussed under New Business.

## **OLD BUSINESS**

### **Land Acquisition Update**

*Informational Item*

Bree Yednock provided an update on the status of the land acquisition. The Reserve has closed on the 1.14-acre property located at the entrance to the Visitor Center. The purchase was funded by NOAA, with the match being provided by the Friends of South Slough Reserve, Inc. (FOSS). Plans will soon be underway to develop and enhance the entrance. Chair Walker thanked State Lands staff for their considerable assistance in ensuring the purchase of the property.

## **NEW BUSINESS**

### **Recommended Hunting Policy Update Approval for No Hunting Buffer**

Bree Yednock introduced the agenda item. The South Slough Reserve acknowledges the importance of its lands to the hunting community and provides over 5,000-acres of land for Coos Bay residents and visitors to hunt wildlife. The Reserve also has a responsibility to protect the safety, health, and welfare of Reserve visitors and recognizes the value of being a good neighbor to surrounding landowners.

To protect the safety of hunters and neighboring residents and their livestock, the Reserve recommends establishing a buffer in which hunting is prohibited along private property, excluding commercial timberlands. This buffer would allow ample space between hunting activities and property lines and prevent inadvertent trespassing due to GPS positioning errors.

Landowners submitted a letter to the Commission in support of the proposed buffer, but also requested the Commission consider closing the Salal Lane Uplands area to all hunting. They noted that their property is between two tracks of land owned by the Reserve that had previously been closed to hunting when they were under ownership of commercial timber companies, prior to the Reserve acquiring the land. They've seen increased hunting pressure and trespassing on their property in recent years and noted that hunting is open for a large part of the year; and they also noted concerns that with hunting open on these lands, wildlife may not have enough protected area.

The Commission discussed the problems with the existing hunting map boundaries identified by the neighboring landowners. Commissioners expressed concern the 100-foot buffer along property lines proposed by the Reserve to mitigate the problem might not be adequate. Several Commissioners reside on rural properties and while they agree that most hunters are responsible and will respect a buffer, there is a small percentage who do not.

Chair Walker acknowledged the Commission's discussion favored expanding the proposed buffer of 100-feet to 250-feet and suggested deferring the item to the March regular meeting so neighboring property owners can receive notification in advance of the meeting. Stewardship Coordinator Alice Yeates additionally recommended that Commissioners re-assess the current buffer around the hiking trails of the Reserve and increase that as well.

**Chair Walker asked if there was a motion to move the agenda item to the March 2022 regular meeting, and at that time propose a policy to prohibit hunting within 250 feet of private property, excluding commercial timberlands and increase the current buffer around the hiking trails of the Reserve. Commissioner Brainard moved, and Commissioner Cowen seconded the motion. The motion carried with no opposition.**

### **Tree Removal Proposal**

Stewardship Coordinator Alice Yeates introduced the tree removal proposal as an attempt by staff to protect important trail infrastructure and to address public safety issues by proactively managing the removal of identified problem trees along trails at South Slough Reserve.

Reserve staff requested approval from the Management Commission to remove nine trees along the Reserve trail system. Six trees are causing trail obstruction (3 cascara, 3 red alder), two are a potential risk to bridge infrastructure (1 cascara, 1 red alder); and one is a potential safety hazard to trail maintenance teams (red alder, dead).

In addition to the approval request described above, Reserve staff proposed the following process for future approval requests for tree removal. Staff proposed to:

- 1) document potential problem trees throughout the year using a data collecting application,
- 2) bring safety concerns to the Reserve Manager for immediate action,
- 3) compile a list of trees to be reviewed by experts, and
- 4) submit requests to the Management Commission on an annual or as needed basis.

Experts who may be consulted in this process include representatives from State Parks, Trail Keepers of Oregon, Oregon State University Extension, local Tribes, and representatives from other natural resource groups.

The Commission was assured that any immediate emergencies due to winter storms, etc. could be dealt with in an expedited manner by bringing the problem to the attention of the Reserve Manager.

**Chair Walker asked if there was a motion to approve the staff recommendation to remove the nine identified trees as presented and to approve the proposed process as listed above for future approvals. Commissioner Brainard moved, and Commissioner Watts seconded to approve the staff recommendation. The motion carried with no dissents.**

### **Information Reports**

Staff shared highlights and progress within their program areas, and they voiced their appreciation for the assistance of agency communications staff with media outreach informing the public on what's current with Reserve research and other projects.

**Christine Moffitt, President of FOSS** shared a report of current activities and future planning from the FOSS Board. An excerpt from the report:

There may be opportunities to help direct support to benefit the reserve with FOSS partnerships. A FOSS planning team is exploring the opportunity and potential for additional partners and is working toward providing a white paper that will align our efforts with the strategic plan

and FOSS mission: *“to support protection and stewardship of estuaries by being a trusted voice on estuary policy and enhancing the work of the SSNERR.”*

Chair Walker thanked Christine for the effort of the Board in offering support to the South Slough Reserve.

Bree Yednock had the following updates for the Commission:

**312 Evaluation** – Section 312 of the CZMA has a requirement that NOAA evaluate a NERR every 5 years. Staff have begun the process for the next 312 evaluation that covers October 2015 through September 2021. Part of the evaluation process is getting input from a reserve’s stakeholders and partners, so staff have sent the NOAA evaluation team a list of stakeholders and partners, including the commissioners who have served on the Reserve’s management commission during the evaluation period. NOAA may be reaching out to those individuals during the process and staff look forward to sharing the results of the evaluation at some point next year.

**Management Plan Update** – Another large administrative task staff are working on is an update of the reserve’s management plan, which is a requirement for NOAA funding. The current plan covers the period of 2017 through 2022. Updates typically take a year to 18 months, so staff have begun the process with NOAA for a plan update and are currently working on revising the strategic plan, which includes the reserve’s overarching priorities, goals, and objectives for the five-year plan. Staff will share an update at the Commission meeting in March.

**Deal Property** –This property is owned by Coos County and is adjacent to the southern boundary of the Reserve. The property is located in the area of highest priority for the Reserve for acquisition as specified in the reserve’s management plan, primarily because of its direct influence on Reserve lands and waterways and its location on Winchester Creek, which is the largest freshwater source for the South Slough estuary and home to important anadromous fish species like coho salmon and Pacific lamprey. The property is largely composed of pastureland (currently) – historically the pasture was wetland, so the property provides great potential for restoration work to create valuable fish habitat by converting the pastureland on the property back to a fully functioning wetland habitat.

The Deal Property was part of the potential land trade the Reserve was working on with Coos County in 2019 to enhance riparian protection along Winchester Creek. While the land trade is no longer an option, the Reserve has remained interested in acquiring the Deal Property and has looked to partners for support in acquiring the property. The Wild Rivers Land Trust is one such

partner who has an interest in the conservation value of the property and has submitted a grant proposal to help acquire the property for the Reserve.

**Hinch Road** - Rebecca Muse and Mike Allman reported on some of the recent activity and problems with the Hinch Road access area. Large amounts of trash are being dumped daily along the road and in the paddle launch parking lot at the end of Hinch Road. The dumped garbage often contains bio-hazard waste. The site is also becoming a drop-off for abandoned vehicles. There is documentation of numerous vehicles entering the road at all hours of the night – many parking illegally and setting up camp. Reports of crime and trespass are accelerating in this problem area.

This is being brought to the attention of the Commission because of the risk and the considerable cost in staff time and dump fees charged to the Reserve to ensure daily that the area is safe, accessible, and clean for visitors and others.

Commission members offered helpful suggestions on working with Coos County to alleviate some of the problems with dumping trash. Chair Walker said she will be looking forward to further conversation on the issue.

**Next scheduled meeting:** Thursday March 17, 2022, from 1 – 4 pm.  
Chair Walker hopes to have an in-person meeting.

## **ADJOURNMENT**

**A motion to adjourn was requested by the Chair. Commissioner Brainard moved, and Commissioner Watts seconded. The meeting was adjourned at 11:07 a.m.**



**New Business**

**Agenda Item 1: Report on Fees Collected in 2020 and 2021**

**Subject**

Review by the Management Commission of the Reserve’s fee schedule and report from 2020-2021, and consideration of staff recommendation for fees in 2022 and 2023.

**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’s to adopt rules necessary to carry out ORS 273.553

OAR 142-015-0040; relating to the biennial review of fees by the Management Commission.

**Summary**

Per OAR 142-015-0040, the Reserve Manager must prepare a report and recommendations on fees to be considered by the Commission at its first meeting of each even-numbered year. At this meeting, the Commission shall review the report and adopt a new fee schedule.

The last time the fee schedule was reviewed was in March 2020. The statistics below cover the period of January 1, 2020, through December 2021. The Reserve closed its doors to the public on March 24, 2020, due to the COVID-19 pandemic. Due to this closure, the Reserve only received fees for January through March 24, 2020.

**I. Spruce Ranch**

<b><u>Current Rates:</u></b>		
Spruce Ranch House	\$25/night	\$250/month
Spruce Ranch Yurts	\$25/night	\$250/month
Spruce Ranch Camping	\$15/night	n/a

Residents typically include South Slough interns, visiting researchers on SSNERR projects, visiting researchers on non-SSNERR projects, partner staff and DSL/SSNERR staff

Income generated from Spruce Ranch: \$750 (decreased from last report by \$3,425)  
 Total utility costs for Spruce Ranch: \$2,168.78 (increased from last report by \$846.81)  
 Net loss: \$1,419.78

Spruce Ranch closed March 24, 2020, due to COVID 19 closures

Residents during 2020-2021:

Paying Residents

**Interns from partners that needed housing**

- 2 Bureau of Land Management staff

Non-paying Residents

**Residents not required to pay due to SSNERR related research, agreement, or internal Department of State Lands (DSL)**

- 6 DSL staff

**II. Auditorium Statistics**

**Current Rate: \$100.00 for up to 4 hours/ \$150 for up to 8 hours**

- Income generated from Auditorium rental: \$250.00
- Utility costs are integrated with the Interpretive Center so no way to breakdown
- Multiple different renters, including:  
 General public  
 Coos Watershed Association

**III. Cost Comparison – local rates as of March 2022**

*\*Most local rental rates have not changed due to COVID-19*

<b>Housing Rate Comparisons</b>			
SOCC Housing	Private Room	\$2857-2987/term	\$37-39/day average
(include meals/11 wk)	Double Room	\$2462-2589/term	\$32-34/day average
**New arrivals prior to the scheduled move-in dates each term are charged \$100 per day  **\$250.00 housing deposit for long term residents			
OIMB Housing	Single room	\$25/night \$125/week \$250/month	

Meeting Room Rate Comparisons				
Coos Bay History Museum	\$20-50/hour Dependent on room	\$15-40/hour Non-Profit discount	\$50/hour for after-hours Staffing	5% discount for Friends Members
Mill Casino	Sets custom rates depending on number in group and needs			
Coos Art Museum	\$115-190/hour Dependent on room	\$25-35/hour classroom	\$15-25/hour Prefontaine Meeting room	
North Bend Public Library	\$60/3 hours room for 96	\$80/4 hours	\$120/6 hours	\$120/8 or more hours
South Coast Hospice	\$25/ 1-3 hours	\$50/4-7 hours	\$8.50/add'l for host	

**Recommendations for Fee Schedule for 2022**

Reserve staff recommend the Commission maintain the existing fee schedule. Due to the COVID-19 pandemic, income was limited since the Reserve was closed to the public for most of 2020 and 2021. The existing fees are still comparable to local rentals.



**New Business Agenda Item 2 – Action Item**  
**Applications for Federal Funding through the Infrastructure Investment and Jobs Act**

**SUBJECT**

Protecting and restoring upland forests and lowland habitats within the South Slough watershed.

**ISSUE**

Whether the Management Commission should authorize the South Slough Reserve to apply for federal funding available to the National Estuarine Research Reserve System through the Infrastructure Investment and Jobs Act for land acquisition and habitat restoration projects.

**AUTHORITY**

ORS 273.553; relating to the management policy of the Reserve and the authority of the Management Commission

ORS 273.554; relating to the authority of the Management Commission to conduct day-to-day operation and management of the Reserve

**SUMMARY**

The Infrastructure and Investment in Jobs Act (IIJA) was passed by Congress in 2021 and provides \$77M for the National Estuarine Research Reserve System to be administered through the National Oceanic and Atmospheric Administration (NOAA). This funding will be administered over the next five years through non-competitive capacity-building funds and annual competitive grants.

The funds can be used for acquisition, conservation, and habitat restoration projects (including planning, engineering, and design). Projects must be on public land, within a reserve boundary or targeted watershed, and should allow for public access unless there's good reason not to (e.g., critical habitat, presence of endangered species). Funding will support on-the-ground projects up to three years in length, with a possible additional year of funding for monitoring.

Reserves may submit up to three letters of intent for the first competitive grant cycle, which is expected to begin in April 2022. South Slough Reserve is requesting approval from the Management Commission to submit letters of intent and subsequent grant proposals for the two projects outlined below.

**Project 1: Restoration of the Wasson Creek Watershed**

The Wasson Creek Watershed is a 530-acre area in the southwestern portion of South Slough Reserve (Figure 1). It is bordered by Hinch Road to the northeast, Seven Devils Road to the northwest and West Beaver Hill Road to the southwest. The watershed contains about 500 acres of forested areas, 376 acres of which will be targeted for restoration over the next few years and 30-acres of lowlands. Before these lands were acquired by the Reserve, the forests were logged and the floodplains converted for agriculture. In the uplands, replanting at high densities without thinning has resulting in dense stands of trees that compete for resources and crowd out native plant life. In the lowlands, diverting the stream to side ditches and other activities has resulted in a loss of native wetlands and poor habitat.

Initial restoration plans were developed in 2018 and the upland plans portion were approved by the Commission in April 2021. The remainder of the plan is currently under revision by the Technical Advisory Team and final plans will be submitted to the Commission in July 2022. Partial funding for this project has been acquired. Friends of South Slough, Inc. received a \$64,203 Cooperative Agreement from U.S. Fish and Wildlife Service in July 2021 to implement restoration within the uplands. Secondly, Coos Watershed Association received \$5,000 from the Coquille Tribal Community Fund in December 2021 to start planting the upper Wasson Creek valley with native willows. The proposed IJA funding request will include restoration of both the lowlands stream/floodplain component and the upland forests component.

The project is following best management practices and using innovative approaches developed in consultation with a team of local, state, and tribal experts. The uplands component includes variable density thinning and planting a diversity of native species including, disease resistant Port-Orford-cedar and several culturally important species. The lowlands component uses multiple restoration strategies to reestablish a healthy stream-wetland system while protecting cultural resources and allowing anadromous fish passage. There is currently a public trail which crosses the lowlands area, this will be upgraded to allow continued access while limiting impacts on the restored system.

**Estimated project budget:** \$1,600,000 (Lowlands= \$1,100,000, uplands = \$500,000)  
SSNERR staff will provide approximately \$280,000 of in-kind support.

**Estimated length of project:** 3 years

### **Project 2: Winchester Upland and Tributaries Acquisition**

The Winchester Tributaries parcel is 80 acres of forested uplands adjacent to the southeastern boundary of the Reserve (Figure 2). The parcel has been considered for inclusion in the Reserve since it was established in 1974 and is located in the highest priority area for acquisitions as documented in the 2017-2022 South Slough Reserve Management Plan. The parcel comprises two headwater streams to the South Slough and some of the last remaining mature forests in the watershed, along with associated riparian habitat. The land is owned by Oregon Department of State Lands as an asset of the Common School Fund and managed by Oregon Department of Forestry for timber production. A timber harvest was planned for 2015; however, detections of the threatened marbled murrelet in 2014 and 2015 halted harvest plans.

In January 2017, the Reserve submitted a proposal to the NOAA Procurement, Acquisition, and Construction (PAC) funding program for funds to acquire fee simple title of the parcel. The proposal received a high ranking and was recommended for funding, but the Reserve was unable to secure the required 1:1 match of non-federal funds for the project. Because IJA funds do not have a non-federal match requirement, this funding program provides an ideal opportunity for the Reserve to secure funding for this acquisition.

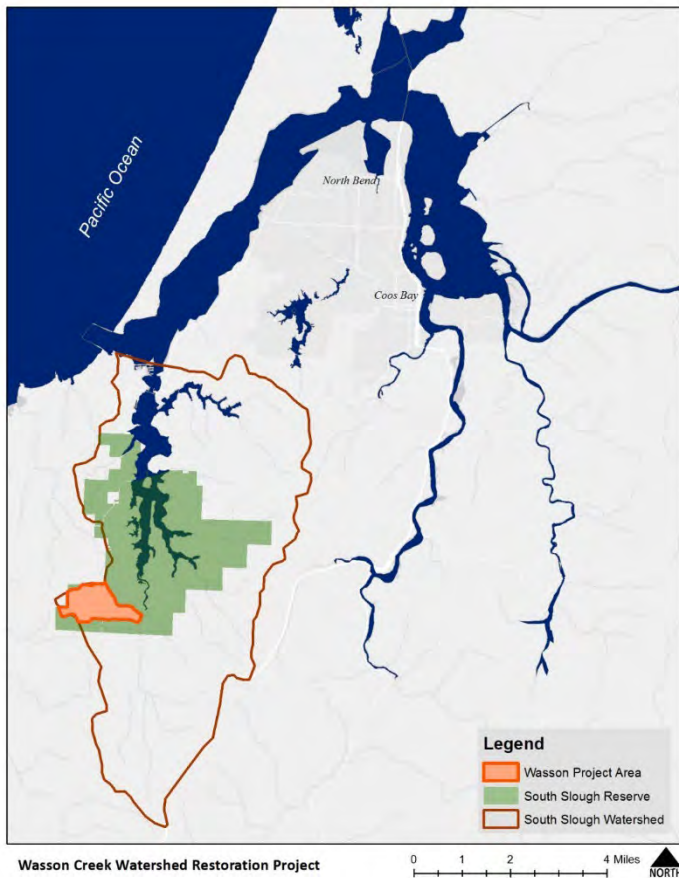
**Estimated project budget:** At least \$1,500,000

This estimate is based on the budget from the 2017 PAC proposal; an appraisal will be included in the IJA proposal to update the land valuation.

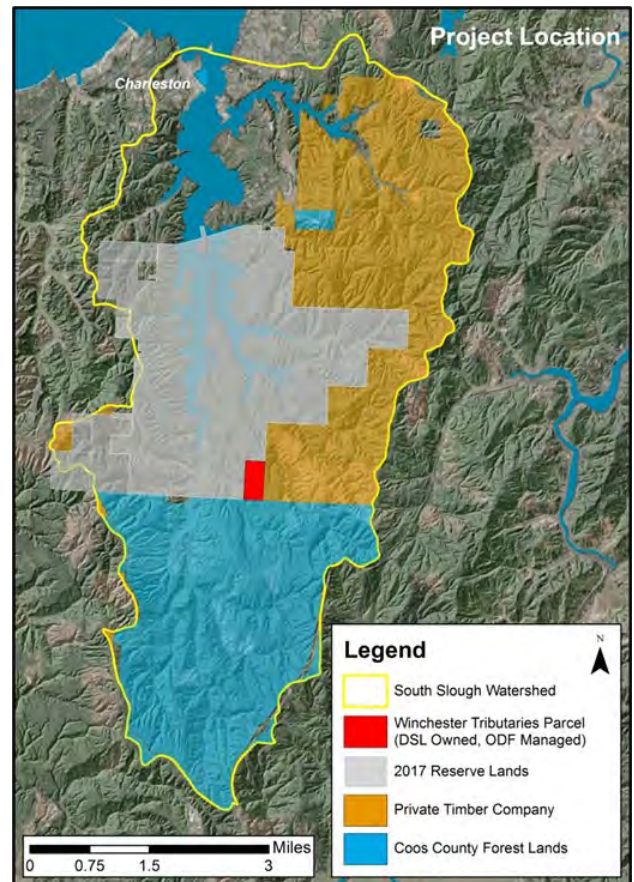
**Estimated length of project:** 2 years

### Recommendation

South Slough Reserve recommends the Commission authorize Reserve staff to submit two proposals to NOAA for its 2022 Infrastructure Investment and Jobs Act grant cycle for implementation of the Wasson Creek Watershed Restoration Project and acquisition of the 80-acre Winchester Uplands and Tributaries Parcel.



**Figure 1.** Location of the Wasson Creek Watershed Restoration Project in the context of the South Slough Reserve and watershed.



**Figure 2.** Location of the Winchester Uplands and Tributaries parcel in the context of the South Slough Reserve and watershed.

## **Administrative/Facilities Report**

**Staff: Bree Yednock, Reserve Manager**  
**Rebecca Muse, Operations Manager**  
**Michael Allman, Facilities Lead**  
**Jonathan Forth, Park Ranger Assistant**  
**Patrick Juarez, Procurement/Contract Assistant**  
**Katherine Andreasen, Administrative Assistant**  
**Ed Oswald, Information Systems Technician**

### COVID-19 Update

The Visitor Center remains closed to the public until May 1. Management and staff are preparing steps to reopen.

### 312 Evaluation

Section 312 of the Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration (NOAA) conduct periodic evaluations of National Estuarine Research Reserves. The last 312 Evaluation of South Slough Reserve was conducted in 2015. An upcoming 312 Evaluation is scheduled for the week of April 11-15, 2022. This evaluation will focus on the Reserve's work related to Climate Resilience from October 2015 to April 2022.

In December 2021, the Reserve provided a comprehensive information submittal to NOAA describing work conducted during the evaluation period. In January 2022, NOAA sent an electronic survey to key partners.

During the evaluation week, NOAA will hear from the reserve staff, partners, and stakeholders through coordinated sessions focusing on collaborative projects and accomplishments over the evaluation period. The evaluation will also provide an opportunity for NOAA and the Reserve to receive input from the community on areas for improvement and future opportunities to focus on.

### Reserve Management Plan Update

Staff have begun the process of updating the Reserve's management plan, which is a requirement for receiving annual operations funding through NOAA. The existing [2017-2022 Management Plan](#) includes three overarching management priorities (Climate Change, Habitat Protection, and Invasive Species), under which integrated, cross-program goals, objectives, and actions outline the work staff have been implementing since 2017. Initial work for the plan's update has included auditing the existing plan by comparing it to NOAA's guidance for management plans; reviewing the priorities, goals, and



objectives and making revisions where needed; drafting a chapter outline; and identifying additional content to include in the new plan (e.g., diversity, equity, and inclusion; restoration plan; wildfire prevention and management). Reserve staff have also met regularly with NOAA to outline key administrative tasks, such as updating required memorandums of understanding and creating a timeline for the process. The current timeline includes providing a draft plan to NOAA by the end of 2022.

### Administrative

Attached are the state budget reports for the 2021-2023 biennium through January 2022.

Winter at the Visitor Center is always quiet but with the facilities still closed to the public it seemed a lot quieter this winter. Planning still comes and goes with hopes that we can open to the public soon. Small projects at the visitor center continue with a new SWMP exhibit being installed in the aquaria room and reorganizing the bookstore area in coordination with FOSS. Facility staff have continued working onsite as normal with extra cleaning and security rounds.

During the reporting period, administrative and facilities staff continued work on three NOAA Procurement, Acquisition, and Construction (PAC) awards, which include a land acquisition and two construction grants. These updates are reported under the facilities section below.

### Facilities

Facilities staff have continued to work onsite during the COVID-19 closure. Since the closure began in March 2020, there have been additional impacts to the trail system with more cleaning requirements than usual. Daily cleanings are still happening to the public restrooms to keep them open to the public. Staff are also working on the trail system doing the routine maintenance as everything starts to grow.

The FY19 NOAA construction PAC award that assisted with expanding the maintenance compound and adding a RV Host site is continuing. With the COVID limitations/cost increases, this grant has received the biggest hit in terms of progress and budget. After multiple attempts to get a contract in place to construct the pole barn that would house our paddle craft, we were unsuccessful due to the rising costs of construction materials and labor. Every time we went out for bid the costs just kept going up even though we were reducing the building size to try and still fit our needs and budget. Our final

plan will be to order a pole barn kit (just the building materials) to be delivered onsite. With this plan, we will still need to come up with a plan and budget to get it built, hopefully no later than September 2022. The RV host site project is also continuing. The septic connections were completed in February 2022 with power and water coming next. Operations Manager Muse has started the planning process with HR to come up with a process/plan for recruiting the host which will include position descriptions, recruiting procedures (similar to the State Parks' program) and workers compensation requirements.

The FY20 NOAA land acquisition PAC award provides \$60,000 in Federal funds towards the purchase of a 1.14-acre property at the entrance to the Visitor Center from Coos County. Reserve Manager Yednock worked closely with DSL Real Property staff to complete the purchase in November. Final reporting to close out the grant will happen in April 2022.

Facility staff are working through the last few tasks of the Trails Grant updates (FY20 NOAA Construction PAC award). We had significant savings on one of the larger tasks of this grant and submitted a reprogram request to NOAA for the grant to get approval to purchase some equipment (recommended in the trails assessment) for long-term maintenance of our trails as well as a request for a no-cost extension through the end of 2022 to finish up all tasks.

NOAA processed and recommended National Environmental Policy Act special award conditions for the FY21 NOAA Procurement, Acquisition, and Construction grant for upgrades to the Visitor Center for the restroom renovation portion. This recommendation was released so we can move forward with this project in November. This grant will fund the renovation of the Visitor Center to ensure ADA accessibility at entrances and public restrooms as well as updates to multiple areas throughout the facility and updates of the exhibits. The total Federal ask was \$500,000. Building plans have been commissioned and signage explaining the project is onsite and ready for installation. Demolition on the restroom building should be starting in March and temporary restrooms will be added while construction is ongoing. The Education staff have created the requirements for the design of the exhibit updates and the design phase is currently out for bidding through OregonBuys.

	Biennium To October	November	December	January	Biennium To Date	Budget	Adjustments	Remaining Balance	% of Budget Remaining
1010	TRANSFER IN FROM OTHER FUNDS	0	100,000	200,000	800,000	0	0	0	NA
<b>Total:</b>	<b>TRANSFER IN</b>	<b>0</b>	<b>100,000</b>	<b>200,000</b>	<b>800,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>
<b>Grand Total:</b>	<b>Transfer In</b>	<b>0</b>	<b>100,000</b>	<b>200,000</b>	<b>800,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>
0355	FEDERAL FUNDS	0	128	7,121	7,249	0	0	0	NA
0410	CHARGES FOR SERVICES	3,500	11,988	0	15,488	0	0	0	NA
0510	RENTS AND ROYALTIES	40	1,256	0	1,296	0	0	0	NA
0905	DONATIONS	0	0	30,000	30,000	0	0	0	NA
0975	OTHER REVENUE	0	482	7,016	7,498	0	0	0	NA
<b>Total:</b>	<b>REVENUES</b>	<b>3,540</b>	<b>13,854</b>	<b>44,137</b>	<b>61,531</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>
<b>Grand Total:</b>	<b>Revenue</b>	<b>3,540</b>	<b>13,854</b>	<b>44,137</b>	<b>61,531</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>

**32007 SSNER O/F**

**Report for January-2022**

**Biennium Remaining: 70.83%**

	Biennium To October	November	December	January	Biennium To Date	Budget	Adjustments	Remaining Balance	% of Budget Remaining
3110	CLASS/UNCLASS SALARY & PER DIE	282,723	64,537	66,266	68,060	1,399,284	0	917,698	65.58%
3160	TEMPORARY APPOINTMENTS	4,218	0	0	0	7,047	0	2,829	40.15%
3180	SHIFT DIFFERENTIAL	54	16	10	15	0	0	-95	NA
3190	ALL OTHER DIFFERENTIAL	11,813	984	1,009	1,009	9,020	0	-5,795	-64.25%
3210	ERB ASSESSMENT	100	22	22	22	531	0	365	68.74%
3220	PUBLIC EMPLOYEES' RETIREMENT S	52,368	11,607	11,916	12,040	241,241	0	153,310	63.55%
3221	PENSION BOND CONTRIBUTION	16,589	3,670	3,768	3,808	79,212	0	51,377	64.86%
3230	SOCIAL SECURITY TAX	22,786	4,982	5,113	5,248	105,183	0	67,054	63.75%
3240	UNEMPLOYMENT ASSESSMENT	0	0	0	0	6,575	0	6,575	100.00%
3250	WORKERS' COMPENSATION ASSES	81	16	16	16	3,512	0	3,383	96.33%
3260	MASS TRANSIT	0	0	0	0	8,250	0	8,250	100.00%
3270	FLEXIBLE BENEFITS	59,053	14,516	15,126	15,126	349,440	0	245,619	70.29%
<b>Total:</b>	<b>PERSONAL SERVICES</b>	<b>449,784</b>	<b>100,350</b>	<b>103,247</b>	<b>105,344</b>	<b>2,209,295</b>	<b>0</b>	<b>1,450,570</b>	<b>65.66%</b>
4100	INSTATE TRAVEL	6,789	1,777	1,663	1,397	17,877	0	6,251	34.97%
4125	OUT-OF-STATE TRAVEL	0	0	0	0	8,318	0	8,318	100.00%
4150	EMPLOYEE TRAINING	100	0	0	2,245	9,768	0	7,423	75.99%
4175	OFFICE EXPENSES	538	0	411	0	25,209	0	24,260	96.24%
4200	TELECOMM/TECH SVC AND SUPPLI	6,282	3,853	0	3,434	17,067	0	3,499	20.50%
4250	DATA PROCESSING	0	0	0	0	608	0	608	100.00%
4275	PUBLICITY & PUBLICATIONS	0	0	0	0	565	0	565	100.00%
4300	PROFESSIONAL SERVICES	0	0	0	0	130,650	0	130,650	100.00%
4325	ATTORNEY GENERAL LEGAL FEES	1,162	920	1,162	218	7,880	0	4,219	54.94%
4375	EMPLOYEE RECRUITMENT AND DE	68	44	0	0	2,816	0	2,704	96.01%
4400	DUES AND SUBSCRIPTIONS	0	40	0	190	13	0	-217	-1669.08%
4425	LEASE PAYMENTS & TAXES	0	0	0	0	53	0	53	100.00%
4450	FUELS AND UTILITIES	582	212	-114	342	8,950	0	7,927	88.57%
4475	FACILITIES MAINTENANCE	3,395	359	151	0	31,166	0	27,261	87.47%
4650	OTHER SERVICES AND SUPPLIES	16,793	14,653	247	-1,074	60,897	0	30,277	49.72%
4700	EXPENDABLE PROPERTY \$250-\$500	0	0	0	0	3,913	0	3,913	100.00%
4715	IT EXPENDABLE PROPERTY	4,942	196	4,404	820	53,508	0	43,146	80.64%
<b>Total:</b>	<b>SERVICES AND SUPPLIES</b>	<b>40,651</b>	<b>22,052</b>	<b>7,925</b>	<b>7,572</b>	<b>379,058</b>	<b>0</b>	<b>300,858</b>	<b>79.37%</b>
5200	TECHNICAL EQUIPMENT	0	0	0	0	44,946	0	44,946	100.00%
5600	DATA PROCESSING HARDWARE	0	0	0	0	18,795	0	18,795	100.00%
5900	OTHER CAPITAL OUTLAY	0	25,000	0	0	0	0	-25,000	NA
<b>Total:</b>	<b>CAPITAL OUTLAY</b>	<b>0</b>	<b>25,000</b>	<b>0</b>	<b>0</b>	<b>63,741</b>	<b>0</b>	<b>38,741</b>	<b>60.78%</b>
<b>Grand Total:</b>	<b>Expense</b>	<b>490,435</b>	<b>147,403</b>	<b>111,172</b>	<b>112,916</b>	<b>2,652,094</b>	<b>0</b>	<b>1,790,169</b>	<b>67.50%</b>

62007 SSNER F/F

Report for January-2022

Biennium Remaining: 70.83%

	Biennium To October	November	December	January	Biennium To Date	Budget	Adjustments	Remaining Balance	% of Budget Remaining
0995 FEDERAL FUNDS REVENUE	156,930	118,945	57,342	66,515	399,732	0	0	NA	NA
<b>Total: REVENUES</b>	<b>156,930</b>	<b>118,945</b>	<b>57,342</b>	<b>66,515</b>	<b>399,732</b>	<b>0</b>	<b>0</b>	<b>NA</b>	<b>NA</b>
<b>Grand Total: Revenue</b>	<b>156,930</b>	<b>118,945</b>	<b>57,342</b>	<b>66,515</b>	<b>399,732</b>	<b>0</b>	<b>0</b>	<b>NA</b>	<b>NA</b>

**62007 SSNER F/F**

**Report for January-2022**

**Biennium Remaining: 70.83%**

	Biennium To October	November	December	January	Biennium To Date	Budget	Adjustments	Remaining Balance	% of Budget Remaining
3110	CLASS/JUNCLASS SALARY & PER DIE	31,864	34,104	35,201	225,595	1,038,324	0	812,729	78.27%
3160	TEMPORARY APPOINTMENTS	106	0	128	575	81,514	0	80,939	99.29%
3170	OVERTIME PAYMENTS	0	0	0	0	3,510	0	3,510	100.00%
3180	SHIFT DIFFERENTIAL	20	4	5	35	8	0	-27	-339.63%
3190	ALL OTHER DIFFERENTIAL	2,410	53	53	2,569	0	0	-2,569	NA
3210	ERB ASSESSMENT	58	14	14	100	455	0	355	77.93%
3220	PUBLIC EMPLOYEES' RETIREMENT S	22,198	5,997	6,140	39,942	178,466	0	138,524	77.62%
3221	PENSION BOND CONTRIBUTION	7,071	1,913	1,959	12,731	60,339	0	47,608	78.90%
3230	SOCIAL SECURITY TAX	9,712	2,592	2,686	17,427	85,935	0	68,508	79.72%
3250	WORKERS' COMPENSATION ASSES	35	9	9	61	361	0	300	83.14%
3270	FLEXIBLE BENEFITS	32,815	8,600	8,600	58,195	300,504	0	242,309	80.63%
<b>Total:</b>	<b>PERSONAL SERVICES</b>	<b>199,085</b>	<b>53,287</b>	<b>54,797</b>	<b>357,230</b>	<b>1,749,416</b>	<b>0</b>	<b>1,392,186</b>	<b>79.58%</b>
4100	INSTATE TRAVEL	1,475	0	0	1,686	16,356	0	14,670	89.69%
4125	OUT-OF-STATE TRAVEL	0	0	0	0	14,656	0	14,656	100.00%
4150	EMPLOYEE TRAINING	90	0	0	90	23,947	0	23,857	99.62%
4175	OFFICE EXPENSES	1,508	370	0	2,031	21,313	0	19,282	90.47%
4200	TELECOMM/TECH SVC AND SUPPLI	50	0	15	89	9,168	0	9,079	99.03%
4250	DATA PROCESSING	0	0	0	0	11,459	0	11,459	100.00%
4275	PUBLICITY & PUBLICATIONS	0	0	0	0	1,675	0	1,675	100.00%
4300	PROFESSIONAL SERVICES	0	0	5,281	5,281	273,285	0	268,004	98.07%
4375	EMPLOYEE RECRUITMENT AND DE	0	0	0	0	6,635	0	6,635	100.00%
4400	DUES AND SUBSCRIPTIONS	25	2,338	5,384	7,747	937	0	-6,810	-726.81%
4450	FUELS AND UTILITIES	564	379	1,002	2,530	28,687	0	26,157	91.18%
4475	FACILITIES MAINTENANCE	-549	1,295	0	745	34,205	0	33,460	97.82%
4575	AGENCY PROGRAM RELATED SVCS	0	0	0	0	6,132	0	6,132	100.00%
4650	OTHER SERVICES AND SUPPLIES	8,673	8,933	4,610	28,992	12,548	0	-16,444	-131.05%
4700	EXPENDABLE PROPERTY \$250-\$500	0	0	0	0	24,126	0	24,126	100.00%
4715	IT EXPENDABLE PROPERTY	1,634	0	0	1,634	1,644	0	10	0.59%
<b>Total:</b>	<b>SERVICES AND SUPPLIES</b>	<b>13,469</b>	<b>13,315</b>	<b>16,292</b>	<b>50,826</b>	<b>486,773</b>	<b>0</b>	<b>435,947</b>	<b>89.56%</b>
5200	TECHNICAL EQUIPMENT	0	0	0	0	10,456	0	10,456	100.00%
5650	LAND IMPROVEMENTS	0	0	9,933	9,933	500,000	0	490,068	98.01%
5900	OTHER CAPITAL OUTLAY	0	0	0	60,000	0	0	-60,000	NA
<b>Total:</b>	<b>CAPITAL OUTLAY</b>	<b>0</b>	<b>0</b>	<b>9,933</b>	<b>69,933</b>	<b>510,456</b>	<b>0</b>	<b>440,524</b>	<b>86.30%</b>
<b>Grand Total: Expense</b>		<b>212,555</b>	<b>66,601</b>	<b>81,021</b>	<b>477,988</b>	<b>2,746,645</b>	<b>0</b>	<b>2,268,657</b>	<b>82.60%</b>

## **SSNERR Education Program Update**

**Staff: Jaime Belanger, Education Coordinator/Lead**

**Eric Dean, Education Specialist**

**Deborah Rudd, Public Involvement Coordinator**

**Vacant, Seasonal Education Specialist**



*November 1, 2021 – February 28, 2022*

The Reserve Visitor Center remained closed to visitors throughout this reporting period due to the COVID-19 pandemic. As with previous reporting periods, the health crisis continued to have an impact on education efforts, but there were some changes. Some local schools began welcoming visitors back into classrooms and other community venues hosted indoor programming in partnership with the Reserve. Interpretive programs continued to be offered, primarily for small groups of people outdoors, but also for larger groups with community partners. Training programs for volunteers and interns were held at the Reserve. Field trips outdoors at the Reserve were available, but attendance is minimal during the winter. Public Involvement efforts increased again this period as some new volunteer and internship opportunities began, and existing volunteers were transitioning to Workday. Education staff continued teleworking regularly and followed COVID-19 safety guidelines when working on site and with public audiences.

### **Staff Training, Innovations, and COVID-19 Work**

Deborah Rudd continues to contribute to the following groups and committees in her role as Public Involvement Coordinator: 2022 South Coast Culture Tour Planning Meetings, Coos Watershed Mayfly Festival Planning Committee, DSL Multicultural Awareness Committee (MAC), Coos Hispanic Alliance, liaison to Friends of South Slough Board (FOSS), Oregon Coast Regional Tourism Network and the South Slough Reserve Diversity, Equity and Inclusion (DEI) Committee. During this period, Deborah received the following training:

- NEEF: Power of Parks for Health, “*Representation of native history and communities in parks and public lands*”: 11/4/2022
- ONREP, “*Growing Up Wild*”: 11/12/2022

- NERRS Annual Meeting: 11/15-11/18/2022
- Sea Grant, Host Mentor Training: 2/10/2022
- Outdoor Learning Series, “*Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship and Sustainability*”: 2/11/2022
- NOAA Digital Coast, “*Seven Best Practices for Risk Communication*”: 2/15/2022

Jaime Belanger is working with Reserve and DSL staff to select a contractor for exhibit design to conduct renovations and updates to the Visitor Center exhibits. She serves as a mentor for the United Communities AmeriCorps member serving at the Reserve. She continues to participate in the NERRS Diversity, Equity, Inclusion and Justice (DEIJ) Strategic Committee, and serve on its Learning Team; she serves as the education sector representative on the NERRA Board, and as a member of the Oregon Coast STEM Hub Leadership Council, as a facilitator for the Oregon Natural Resources Education Program (ONREP) and is a member of the NERRS Estuary Education Resource working group and the Reserve DEI Committee. She attended the following professional meetings and training opportunities:

- NERRS / NERRA annual meeting 11/15-11/19/2021
- AmeriCorps Communication workshop 11/17/2021
- NOAA Education Council Gathering 1/18/2022
- Oregon Volunteers Anti-racism training 2/11, 2/16, 2/25/2022

Eric Dean continued with work on developing the fire ecology curriculum for K-12 schools in southwestern Oregon, a collaborative effort with scientists and educators from Southern Oregon University, the Bureau of Land Management and the U.S. Fish and Wildlife Service. The official release has been delayed again with hopes that it will be rolled out in the second quarter of 2022. In February, he completed his Wilderness First Responder Recertification. This form of wilderness medicine is practiced in the context of delayed access to care, often in challenging environments, with the need to improvise gear with limited communication and independent decision-making care. Eric also serves as the education representative on the Reserve Safety Committee, which is updating the Disaster Plan and Fire Safety/Evacuation Plan.

The Reserve advertised the Seasonal Education Specialist position at the end of December and closed the recruitment mid-January. The hiring committee (Jaime, Eric and Rebecca Muse) is in the process of selecting a candidate.



The Reserve education program was also supported by one college intern who continued work through November 2021, a United Communities AmeriCorps member, and four high school interns.

- Lucas Parvin completed his work on the water quality exhibit project in November, after working closely with education staff to create content for the touch screen. The Reserve was able to pay Lucas a stipend for his additional time working on the project from the exhibit grant budget.
- Sophie Relitz redesigned the structure and schedule of the Estuary Explorers afterschool program. She worked with teachers from Millicoma school to begin the program in February. She recruited four high school interns to assist with the program, provided them with multiple training opportunities and connects with them weekly to plan the lessons for the following week.
- Four high school students from North Bend High School are supporting the Estuary Explorers program on Wednesdays and Thursdays after school. The students have completed the trainings required by DAS for Reserve volunteers, as well as multiple training and planning days with Sophie.

### **Education Program Metrics**

During the winter, the Reserve held 14 education programs for 265 people of different ages from across the state and beyond that resulted in 544 hours of learning. 71 hours were committed to program planning, reflection, and post-program work. The education team designed and delivered safe and engaging programs despite the challenges of COVID-19. Educators worked to meet audience needs and ensure participant, volunteer, intern and staff safety during programs. The numbers above include all education, interpretation, teacher training, outreach and public stewardship provided directly by Reserve staff.

These summary data are also submitted twice a year to NOAA, along with information about the presentations conducted by the science staff, as one of the required performance indicators to the National Estuarine Research Reserve's performance measures database.

### **Visitation and Visitor Services**

The Reserve Visitor Center building remained closed through this reporting period. The Reserve had anticipated reopening on January 1, but this date was postponed due to increased cases of COVID-19 in December 2021. The trails and waterways remained open. The Reserve does not have the capacity to count the number of visitors who walk the trails or paddle in the slough, but staff members working on site are able to note anecdotal information about visitation. Staff have observed continued steady use of the trails, and visitor services continue through communication with the public through the phone at the front desk.

### **Formal Education & Training**

The Reserve categorizes education program areas based on audiences and learning goals, aligning to NOAA education categories. “Formal education” includes programs provided to pre-K-12 students, undergraduates, graduate students, classroom and pre-service teachers. Formal education opportunities for students and teachers, normally one of the largest audiences served, were greatly reduced during the pandemic.

During this reporting period the Reserve provided both field trips and in-school programs for local schools. The winter is typically the slowest season for field trips to the Reserve because of the weather. Schools experienced additional limitations because of the continuing pandemic. Teachers, school staff and bus drivers were often absent due to illness or quarantine, so extra activities like field trips were challenging to carry out. Two classroom visits and one field trip provided 52 students with 74 hours of learning.

Twelve Coos Bay and North Bend teachers participated in a half-day workshop at the Millicoma School and Millicoma Marsh Trail, leading to 36 hours training. This was the second of a three-part series of professional development opportunities funded by the Gray Family Foundation and the Three Rivers Foundation to increase school use of the Millicoma Marsh Trail. The workshop was carried out in partnership with the Coos Bay School District and focused on journaling techniques that support multi-disciplinary learning. Teachers will receive stipends and the opportunity for additional training after they carry out journaling lessons with their students.

Reserve education staff and other partners are supporting the teachers as they bring their students outside for lessons.

*“My student who has Autism really thrived during this lesson. I had reservations taking him due to the change in environment and unpredictability of the day. I was afraid of a serious meltdown. He proved me wrong almost immediately. He was in complete control the whole time and really benefitted from the experience....So did I.”* Millicoma Marsh Teacher Workshop participant

### **Community Education & Interpretive Activities**

Informal education at the Reserve encompasses most of the other learning opportunities outside of a school setting and includes classes and estuary activities about a wide range of local topics, information tables at events, programs presented with partner organizations, activities for children and stewardship activities with a learning component. Community education is offered to all ages in a variety of places around the region. The Reserve was able to continue in-person programs for small groups, stewardship actions and some community events in this period.

Winter interpretive programs are also impacted by the weather. Normally more indoor programming is offered during this time of year, but much of those were not possible because the Visitor Center, the primary program location, remained closed. During the winter, the Reserve provided 10 programs for 201 people, resulting in 434 total hours of public programming. Programs included interpretive activities offered during the week for community members and coastal visitors, afterschool programs for children, a kick-off Second Saturday Stewards event and virtual programming. While program space was limited for some interpretive programs, they were offered at a higher frequency to accommodate interest from the community. Education staff worked with the Coos Bay Library to provide two community action education programs to build bat-boxes; the programs were well-received and attended by 52 people, and created 24 bat boxes, enough to house around 5,000 bats. The Reserve was also able to re-start the Estuary Explorers afterschool program, serving 20 students at Millicoma School and the Second Saturday Stewards program, which will increase community knowledge about stewardship and invasive species.

*“Wait, are we in a club?!!”* – excited student from afterschool program

## **Public Involvement**

### Volunteers/Internships

A total of 27 volunteers/interns put in 871.85 hours valued at \$24,015 from October 31, 2021-January 31, 2022\*. The program category breakdown included 186.75 research, 519.50 education, and 165.50 stewardship hours. \* *February hours were not yet available at the time this report was written.*

A holiday gathering was held for volunteers on December 1, outside of the Visitor Center classroom with food, games, and gifts for volunteers. Thirteen volunteers and five staff participated.

The South Slough Reserve is in process of recruiting seven adult and four youth interns for the 2022 season. Through partnerships with the Friends of South Slough Reserve, inc., National Science Foundation Research Experiences for Undergraduates, NOAA College-Supported Internship program, Oregon Sea Grant Summer Scholar program, Oregon Coast Stem Hub, and Recruit Hippo, the Reserve hopes to provide stipend awards for all the interns this season.

Reserve staff have already recruited four youth interns to assist with delivering the Estuary Explorers afterschool program and two Hollings Scholars who will work with the Reserve Stewardship program.

Housing for the interns could present a challenge again this year. The Reserve Visitor Center (and housing units) are not yet open to the public and OIMB dormitories are full and have a waitlist. Housing and transportation are significant obstacles faced by interns hoping to serve at the Reserve. Reserve staff regularly consider these obstacles and seek solutions.

### Outreach/Marketing

Several social media campaigns were delivered during this period. The Reserve can gauge how audiences are responding to social media and other digital communications by examining analytics provided by the companies. The numbers below summarize social media responses and how well recipients engaged with emails sent by the Reserve. Summary data are shown for the

most recent 28-day period for Facebook, Instagram, and Twitter, which is based on the media sites' available data.

Facebook: Reach: 2,933, Engagement: 746, Total Followers: 3,001.

Instagram: Reach: 535, Engagement: 116, Total Followers: 656.

Twitter: Engagements: 60. Impressions: 931. Total followers: 163.

Google: 2,541 views. 343 interactions.

The data shown for social media are defined as:

- **Facebook/Instagram reach rate**- number of unique users who had any content from the Reserve's Facebook/Instagram Page or about the Reserve's Page enter their screen
- **Twitter engagement rate**- percentage of users who see Reserve posts and engage with them, the impression rate is how many times the hashtag could have been seen by users
- **Google Interactions**-people who call, message, make bookings, ask for directions, and more from the Reserve's business profile on Google
- **Followers** - people who have chosen to like or follow the Reserve social media accounts

A post that is getting a lot of interaction will get more impressions because the algorithms show that people are interested in it. Some of the top performing post themes during this period included the "I 'heart' estuaries campaign", European Green Crabs, Trail Stewards Activities, Martin Luther King Volunteer Event, High School Estuary Explorers Intern Post, New Year's "Go Green" message.

#### **Newsletters/Calendars:**

**12/23/21:** Holiday Greeting Card from the South Slough Reserve, 75 opens (9%), 2 clicks (2%)

**1/28/22:** South Slough Reserve Winter Newsletter, 288 opens, (34%) 17 clicks, (2%)

*(According to [Mailchimp](#), the open rate is a percentage that tells you how many successfully delivered campaigns were opened by subscribers. The click rate is a percentage that reflects the number of distinct recipients that have clicked on any links in the campaign. [Average](#) open rates should be between 12-25%, average click through rate should be between 2-5 %.)*

As part of the effort to share the findings from the [2021 European Green Crab](#) report by Reserve Research Coordinator, Dr. Shon Schooler, a short YouTube [video](#) was made with research intern Sara Stansbury to demonstrate how to trap green crabs.

## Coastal Training Program, December 2021 – February 2022

Sabra Comet, CTP Coordinator

### CTP workshops and trainings

The Coastal Training Program is required by NOAA to complete at least five trainings per annual cycle; no new trainings have been completed since the last update to the Commission. Several trainings are planned to occur before the end of the fiscal year (June 30, 2022) to fulfill NOAA's requirements.

**PMEP (Pacific Marine and Estuarine Fish Habitat Partnership) Data Tools**, April 5-6, 2022. This is a repeat of a workshop by the same title offered in November 2021. The workshop will cover use and utility of the PMEP's online spatial data and web-based mapping tools: Estuary Explorer and Estuary Viewer. PMEP's spatial framework integrates standardized data across the partnership's geographic scope and its four defined ecoregions. Data themes in the framework include current and historical estuary extents, estuarine biotic habitat, presence data for eelgrass and fifteen focal estuarine fish species, and an indirect assessment of tidal wetland losses incorporating restored tidal wetlands data. PMEP's tools allow users to explore and filter data, on a regional scale, for conservation and restoration planning and management, and on a local scale where specific planning site information may be limited. The tools provide easy access to compiled geographic and biophysical information on estuaries and coastal fish habitat of California, Oregon, and Washington. Participants will receive background information on the PMEP's spatial data framework and learn how to navigate and answer conservation planning queries through hands-on exercises, as well as how to download data from the tools and how to upload datasets to the tool for customized mapping needs.

**Juvenile Lamprey Identification Workshop**, last week of May 2022. Field identification techniques for identifying juveniles of several lamprey species in the field. The morning portion of the one-day workshop will be lecture-based and possibly streamed virtually to a larger audience than space allows for in-person participation. The afternoon portion will be identification at stations with lamprey specimens. The cap for in-person participation is 30, and priority (given funding sources and travel scholarships) will be given to biologists from Oregon Tribes.

**Fire and Defensible Space** (virtual component), spring 2022. Focused on "Defensible Space" strategies for reducing risk of wildfire to property and structures. The virtual component will be lecture-based and streamed to reach a wider audience, which will include fire management and response personnel, property owners, and agency personnel with large structures in forested areas. There will be a follow-up in-person component hosted at the SSNERR Visitor Center in late fall/early winter 2022. The window for the in-person workshop is narrow, confined by weather (end of the rain season) and the availability of fire management personnel (usually on call by late May/early June).

### **Technical Assistance**

**SSAM-SAV Needs Assessment survey**, July 2021 – present (ongoing). The CTP coordinator was asked to join the cross-NERR team evaluating how to conduct a national needs assessment which will inform a potential overhaul of the SSAM-SAV (Sentinel Site Application Module – Submerged Aquatic Vegetation) methodology. Recent work has centered around creating a survey that will be answered by each NERR site and will be launched the third week of March 2022. A stakeholder survey will follow soon after.

**NERRS Science Collaboration project**, 2021-March 30, 2022. The project titled “Determining salt marsh restoration success using focus groups of managers and the public, and past data” has finished data collection and is nearing the finalization of the project. The CTP coordinator has been heavily involved in adapting the analysis and end products to fit SSNERR needs. These include “profiles” of different types people and their priorities, as well as detailed matrices that “score” restoration projects (including those on the Reserve) based on both ecological restoration and how they align with stakeholder priorities (i.e. aesthetics, bird watching opportunities, etc.).

**Intergovernmental Policy Council (IPC) presentation**, January 31. The CTP coordinator and the Pacific Islands Region Cultural Resources Coordinator (NOAA Marine Sanctuaries) co-led a presentation to the IPC with four of the Washington Treaty Tribes present. This presentation was a follow-up to a presentation in November 2021, asking for the Tribes’ support and participation in the U.S. - Chile Partner Summit Workshop on Indigenous-Led Conservation of Protected Areas (Indigenous Summit Workshop). The updates were received favorably and have informed further planning for the workshop in September.

**NERR Indigenous Knowledge Working Group**, January – February 2022. The NERR IKWG recently reviewed the NERR Management Plan guidance document and added comments to better incorporate indigenous partner (including Tribes) input, the value of Traditional Ecological Knowledge (TEK), encourage partnerships with Tribes to sites that don’t have a history of such, and some pointers on how to effectively engage with indigenous partners (i.e., timeline and capacity logistics, etc.). The group had previously met with staff that oversee the NERR Science Collaborative grants to talk through how the funding mechanisms can make the program 1) more feasible for Tribal applicants and 2) encourage applicants to partner with Tribes and indigenous communities in future applications.

**SCIENCE and STEWARDSHIP PROGRAM UPDATE**  
**Nov 1, 2021 – Feb 28, 2022**

**Staff:** Shon Schooler, Research Coordinator  
Alice Yeates, Stewardship Coordinator  
Ali Helms, Estuarine Monitoring Coordinator  
Jenni Schmitt, Watershed Monitoring Coordinator  
Adam DeMarzo, Monitoring Technician  
Vacant, GIS Specialist

**MONITORING**

**NERRS System-Wide Monitoring Program (SWMP)**

Ali Helms and Adam DeMarzo continued to operate the water quality, weather, and nutrient components of SWMP.

**SWMP Data:**

Science staff completed monthly field and lab work associated with the water quality, meteorological and nutrient long-term primary monitoring stations. This included monthly and quarterly station maintenance, data uploads, instrument cleanings and calibrations, and data submissions to the NERRS SWMP Centralized Data Management Office (CDMO). Quarterly submissions for water quality and meteorological data were submitted November 2021 and February 2022. SWMP data submissions include data that have undergone several levels of quality assurance and quality control (QA/QC) procedures, metadata development, calibration and field logs, and instrument and sensor inventories. Annual nutrient reviews for 2016-2018 were completed December 2021. After annual data reviews are completed, datasets are authenticated, having undergone tertiary review and are available as final authoritative data. SWMP data for the SSNERR and all other Reserves are accessible online at [nerrsdata.org](http://nerrsdata.org).

The science staff completed monthly weather station maintenance, data downloads, and field logs for November 2021 – February 2022 at Tom's Creek marsh. The SWMP weather station (sostcmet) real-time data are available at [nerrsdata.org/get/realTime.cfm](http://nerrsdata.org/get/realTime.cfm).

After relocating the Charleston Bridge SWMP station to a piling in Spring 2019 due to failing pier infrastructure, the station was relocated a second time in February 2022 due to severe fouling on the instrument causing the sonde to become stuck repeatedly. The sonde deployment tube was installed on the second creosote-free piling with help from John Schaefer (CTCLUSI) in January 2022 and the first deployment at this new location began February 2022. A telemetry package (Storm 3) provided by the CDMO for equipment upgrades is being prepared for installation at this second new piling site.

The science staff completed monthly collection, processing, and analysis for Total Suspended Solids (TSS), a nutrient parameter added to the routine SWMP nutrient



dataset, for a NERRS Science Collaborative Sediment Hydrodynamic Model project. TSS data collection will continue 2021-2025 with funds from the NERRS Science Collaborative project (Sutherland, UO): *Buried or Fried? Understanding sedimentation and temperature effects on native species restoration in the South Slough National Estuarine Research Reserve and the Coos estuary.*

The science staff completed field deployments, retrievals, and calibrations for three Coos estuary SWMP water quality stations located at Isthmus Slough, Catching Slough, and Coos River, and data were uploaded using the non-SWMP tool provided by the CDMO.

Science staff are collaborating on an education project led by Jaime Belanger to develop a SWMP exhibit in the South Slough Reserve Visitor Center entryway. Education and science staff worked with volunteers Anne Farrell-Matthews and Trent Hatfield this Fall to capture field photography and drone imagery of SWMP stations.

**Real-Time SWMP Data:** As a participant in the US Integrated Coastal Ocean Observing System (IOOS)/Northwest Association of Networked Ocean Observing System (NANOOS), we operate telemetry systems at all four of the core SWMP water quality stations and the weather station to provide real-time data available at [nvs.nanoos.org/Explorer](https://nvs.nanoos.org/Explorer).

**CDMO Data Management:**

The Centralized Data Management Office (CDMO) is the technical support team dedicated to data management activities associated with the SWMP data collected at the 30 reserves. Recent activities of the CDMO include supporting data management for Sentinel Site vegetation monitoring datasets, releasing a new telemetry application for internal troubleshooting use, updating SWMP station images, and updating data management processes for older datasets allowing them to be included in annual SWMP status reports. The annual NERRS Technician Training Workshop will be held virtually March 2022 hosted by the CDMO.

**SWMP Status Reports:**

The Reserve system developed tools for creating Annual Status Reports on water quality, nutrient, and weather summaries for each Reserve. The CDMO provides the R software package for download and updates files annually. The Reserve responded to Office for Coastal Management requests for updates for Reserve-specific preferences for the status reporting software (last updated 2016) for running the 2021 reports, including options for parameter units and thresholds, how nutrient parameters are calculated, and station names and labels.

**Bacteria Monitoring:**

Staff continued monthly monitoring of fecal indicator bacteria (total coliforms and *Escherichia coli*) at the four SWMP nutrient monitoring stations. The bacteria data are of interest for the Coos Bay Estuary Data Source, Oregon Department of Environmental Quality for Total Maximum Daily Load standards and to Oregon Department of Agriculture as they conduct commercial and recreational shellfish bacteria assessments.

Volunteers from the Surfrider Foundation resumed use of the lab for their monthly monitoring of fecal indicator bacteria (*Enterococcus sp.*) at four local beach sites (Bastendorff Beach, Lighthouse Beach, and two Sunset Bay locations: Big Creek and Sunset Bay proper). Volunteer Luke Donaldson began assisting with Surfrider bacteria monitoring starting in October 2021.

**Climate Reference Network:**

The NOAA Climate Reference Network station at Frederickson Marsh collects air temperature and precipitation data as part of a US network of over 130 climate monitoring stations. The station is having issues due to water intrusion into one of the sensor enclosures and NOAA technicians plan to resolve the problems by raising the control box housing the wetness sensor Summer 2022. Staff completed maintenance for the station rain gauges and annual winterizing. Data are available for this station (OR Coos Bay 8 SW) at: [ncdc.noaa.gov/crn/current-observations](https://ncdc.noaa.gov/crn/current-observations).

**SeagrassNet Monitoring:**

SSNERR science staff and volunteers completed quarterly eelgrass sampling at Valino Island in January 2022 using the SeagrassNet sampling protocol. SeagrassNet is an international monitoring program established to document the status and health of seagrasses. Eelgrass has been declining at the permanent monitoring plots at Valino Island since 2016 and science staff and collaborators have been working on projects and research proposals to investigate factors that may be contributing to the declines along with habitat suitability and restoration.

**Northwest Association of Networked Ocean Observing Systems (NANOOS):**

SSNERR is a participant in a partnership project that provides real-time water quality data for stakeholders in Oregon, Washington, and Alaska through the NANOOS Visualization System (NVS): [nvs.nanoos.org](https://nvs.nanoos.org).

The NANOOS 5-year award (FY21-25) to sustain the Pacific Northwest component of the US IOOS, including South Slough, OR Estuary Observations was awarded September 2021 and subaward contracts were initiated November 2021. The progress reports for Oregon estuary observations for 6/1/2021-11/31/2021 and the FY20 one year extension were submitted December 2021 and January 2022, respectively.

SSNERR partners with one of the local tribes, Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) to provide telemetry equipment for their North Spit BLM sonde station in lower Coos Bay. The data are available to end-users through the NANOOS Visualization System (<http://nvs.nanoos.org>).

**NERRS Sentinel Sites Monitoring:**

The NERRS Sentinel Sites program pairs the long-term SWMP water quality and water level data with physical and biological data quantifying other factors (e.g., marsh elevation, plant community, vertical accretion, soil salinity, groundwater level) to help

interpret long-term changes in emergent marsh plant communities, eelgrass beds, and a Sitka spruce swamp.

Water level, temperature and salinity loggers were deployed into groundwater wells in January 2021 at the Winchester Sitka spruce swamp Sentinel Site station, set to collect data every 30 minutes. The data loggers were pulled for the year in December 2021. Loggers were deployed into wells at mainland marsh sites (Metcalf Marsh, Valino Marsh, Hidden Creek Marsh, Danger Marsh, Fredrickson South Marsh, and Winchester Marsh) in late December to start a round of annual monitoring of groundwater level, temperature, and salinity (subset).

Staff and volunteers finished build-out of the deep rod surface elevation table (RSET) network at all Sentinel Sites by installing the final five RSETS in January and February. There are now 29 RSETS distributed across nine Sentinel Sites to better understand sediment dynamics in tidal wetlands. Equipment was purchased with funds from the newest hydrodynamic model grant (see Partner Projects below).

SSNERR Sentinel Site data is being used in a National Estuarine Research Reserve System national project called “National Synthesis of Tidal Marsh Response to Sea Level Rise”. Sediment dynamics data are also being used in the newest hydrodynamic modeling project. See partner projects below for more details.

A tide gauge with water level sensor will be deployed in Winchester Creek, near the Hidden Creek marsh sentinel station to collect high-precision (mm) water level data to meet requirements of the South Slough’s Reserve Sentinel Sites project goals. Staff are working with NOAA tide gauge engineers and Yellow Spring Instruments for purchasing the Nile microwave radar sensor. Staff are planning tidal benchmark locations based on requirements for distance between marks.

#### **Wasson Watershed Monitoring:**

Science staff are completing baseline monitoring of the Wasson Creek lowlands, in preparation for anticipated restoration work. Groundwater levels were continuously collected from groundwater wells at both Wasson Creek (19 locations) and Tom’s Creek (4 locations) over the past several years. Data loggers were pulled in December and will be redeployed after restoration occurs.

Staff are now planning for and calculating project budgets for post-restoration monitoring, in order to understand effectiveness of restoration treatments.

#### **Indian Point Monitoring:**

Staff continue to monitor western lily populations annually and will periodically track changes to herbaceous, shrub and tree cover metrics related to restoration work (tree thinning that occurred in early 2018). Staff finished a five-year period of groundwater level data collection in December and are now analyzing the data to assess success of restoration work and to guide future restoration actions.

### **Lamprey Monitoring:**

South Slough watershed hosts at least two native species of lamprey. However, we do not have adequate abundance data over time to evaluate the status of lamprey in the South Slough watershed. Therefore, we are sampling abundance at 3 permanent sites along Winchester Creek. In addition, the Reserve is currently leading a citizen science project (funded from a USDA-USFS grant) that is mapping lamprey species distributions (Western brook and Pacific lampreys) in watersheds of Oregon's south coast using environmental DNA (eDNA) methods. The project collected and analyzed 52 samples in 2021 and reported the information to stakeholders, tribes, and volunteers. We are currently working on the 2022 sample plan. Schooler and Schmitt are part of a statewide Lamprey Technical Workgroup.

## **RESEARCH**

### ***SSNERR Projects***

#### **Invasive European Green Crabs in the Coos Estuary:**

South Slough is leading the monitoring and research on European green crabs in the Coos Estuary, including South Slough. We completed our 2021 annual sampling of 10 sites around South Slough and Coos Bay including monthly sampling of juvenile crabs using crayfish traps from June to September and adult crabs using Fukui traps from June through August. The overall goals of the work are to: 1) compare the relative abundance of green crabs and native crabs in the estuary across years and locations, 2) examine linkages between environmental conditions and green crab abundance, 3) study the potential impacts of green crabs on native species, 4) better understand the life-cycle of green crabs in Oregon estuaries, and 5) generally reduce green crab abundance through consistent and repeated sampling. We are currently collaborating with a Master's student, Elissa Connolly-Randazzo (PSU, advisor Catherine de Rivera). She is using SSNERR green crab data to look at correlations among environmental conditions and green crab abundance in order to predict green crab abundance in habitats throughout Coos Bay. She defended her Master thesis in December 2021 and is currently finishing up her revisions.

#### **DNA Methods to Monitor Invasive Species and Biodiversity in Estuarine Systems:**

The Reserve is collaborating on a research project initially funded through the NERRS Science Collaborative to use eDNA to characterize fish biodiversity in estuaries. The project includes researchers from University of New Hampshire and from the Great Bay (NH), Apalachicola (FL), He'eia (HI), Hudson (NY), Padilla Bay (WA), and Wells (ME) NERRs. In 2021, Oceankind accepted our proposal to continue to investigate the use of eDNA to monitor estuarine fish communities (collaborating with Dr. Alison Watts of the University of New Hampshire). The project will start in March 2022 and will run through June 2024. We are currently planning quarterly sampling for 2022.

#### **Eelgrass Pilot Transplant at Valino Island, South Slough Estuary:**

Science staff began a pilot eelgrass transplant experiment in July 2020 to test eelgrass transplant survival and abundance along an elevation gradient and planting during different seasons to understand the potential to restore eelgrass to South Slough. Staff and

interns harvested eelgrass plants from Clam Island, Coos estuary and transplanted adult vegetative and flowering eelgrass shoots into plots at Valino Island, South Slough estuary. Eelgrass was planted at 3 elevation transects (mid, low, and deep). Additional plants were transplanted in different seasons to test effects of planting season on eelgrass establishment. The plots are monitored quarterly for shoot survival and density.

Preliminary trends from monitoring transplanted plots showed higher average percent cover and density for the lowest elevation transects. The highest elevation plots are decreasing in cover and density.

**Margaret A. Davidson Fellow Research:**

Three data modeling projects, prioritized by the Eelgrass Recovery Advisory Committee (established in 2019 through a NSC Capacity Building project), to understand drivers of the eelgrass declines before implementing larger scale restoration projects, utilized SWMP weather and water quality data to understand what environmental factors may be contributing to the declines. These graduate students were partially supported by funds from the NERRS Margaret A. Davidson graduate research fellowship program and all projects were completed by December 2021.

Maria José Marin Jarrin, a graduate student from University of Oregon (Dave Sutherland's lab) is interested in connectivity between the main Coos estuary and South Slough, and the role of water residence time on abundance of species like native oysters, crabs, and eelgrass. For eelgrass, she explored retention time of anomalously warm air and water temperatures and low river discharge linked to the eelgrass losses. She defended her PhD thesis *Variability of Circulation in the Coos Estuary* on 11/19/21 and is working on a manuscript related to the drivers of eelgrass decline.

Winni Wang, a graduate student from Oregon State University (Ryan Mueller's lab) who defended her PhD in Sept 2020, applied Maxent species distribution modeling to understand environmental drivers of the eelgrass declines. Keary Howley (GIS Specialist) contributed GIS expertise related to the modeling package and other aspects of the project. Winni completed runs of the model at 10-meter resolution, testing before eelgrass declines in 2010 and after eelgrass declines in 2016. She found elevation to be the strongest variable determining eelgrass distribution in the 2010 and 2016 models but due to differences in the spatial datasets available for eelgrass cover (2005 EPA and 2016 PMP), the model was not able to compare before and after declines. She found interesting comparisons of environmental variables from model results in different regions of the estuary, with water temperature and chlorophyll a as parameters contributing to largest observed differences. She submitted a final report for the Maxent modeling project December 2021.

Caitlin Magel, a graduate student from OSU who completed her PhD in Sept 2020 (Sally Hacker/Francis Chan labs) examined environmental "regime" relationships to predict eelgrass vulnerability. She showed summer eelgrass and macroalgae biomass were negatively associated with water and air temperature, water column turbidity, and watershed disturbance, and eelgrass declines were likely caused by thermal stress, light

limitation, and other effects associated with watershed disturbance. Macrophyte biomass was also positively associated with pH and dissolved oxygen (DO), through photosynthesis effects on water quality. She has submitted a manuscript about effects of marine heat waves on eelgrass and macroalgal biomass to *Frontiers in Marine Science*.

Taylor Dodrill (Portland State University) is our 2020-2022 Margaret A. Davidson Graduate Fellow. She is conducting research that will help us predict the occurrence and negative effects of harmful algal blooms in South Slough, Coos estuary, and Tenmile Lakes. She started in September 2020. Staff have assisted with monthly sampling at four sites in South Slough from November 2020 through March 2022. She set up a system (ELISA – Immuno-assay technique) at the Reserve for measuring toxins produced by algae (saxitoxin, domoic acid, microcystin) in water samples. As part of her fellowship, she is also collaborating with CTCLUSI (Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians) natural resource managers to sample sites they are interested in. She is also conducting experiments on what triggers toxins to be expressed in algae at facilities at OIMB (Oregon Institute of Marine Biology). She regularly attends the South Slough Research fortnightly Zoom meetings.

### ***Partner Projects***

#### **Partnership for Coastal Watersheds (PCW):**

The PCW is a local group of civic-minded community members that includes representatives of South Slough Reserve, Coos County Planning Department, Cities of Coos Bay and North Bend (planning and city council), Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, Coquille Indian Tribe, South Coast Development Council, Stuntzner Engineering (planning), Coos Watershed Association, Department of Land Conservation and Development, Southwestern Oregon Community College, Oregon Department of Fish and Wildlife, Oregon State Parks, US Fish and Wildlife Service, International Port of Coos Bay, Oregon Department of Environmental Quality, and citizens at large.

The PCW meets monthly and is currently working towards several goals concurrently:

- The group is steering the development of a coastal hazards vulnerability assessment for the Coos Bay area. Local organizations are seeking to understand their vulnerabilities to a range of local coastal hazards (e.g., sea level rise, ocean acidification, coastal erosion, etc.) and consider adaptation strategies that coordinate local responses to those threats. Work is being completed through funding from FEMA Cooperating Technical Partners and by University of Oregon's Institute for Policy Research and Engagement. Additional funding by the National Fish and Wildlife Foundation was awarded to Department of Land Conservation and Development to augment this coastal hazards work by focusing on adaptation planning. Funding was also secured through a NERRS National Product to focus on climate change vulnerabilities to key estuarine habitats.

Currently the team has conducted listening sessions, surveys and interviews with stakeholders and organizations in the Coos Bay area. They've begun to assess how coastal hazards, in particular sea level rise and flooding, will affect social systems

(at-risk populations, cultural resources, community centers, jobs and economy), built assets (Coos Bay commercial downtown, transportation network, school facilities, communication infrastructure, water and wastewater infrastructure), and natural resources (eelgrass, marsh, shellfish, forests). For each component, the team is characterizing the sensitivity and adaptive capacity.

- Developing and refining a restoration inventory for the Coos estuary. This project is identifying tidal wetlands that could benefit from restoration, as well as historically restored sites and reference wetlands that have remained relatively untouched. The first step of this work is to refine the state's Coastal and Marine Ecological Classification Standard (CMECS) for the Coos estuary. Funding for this project is from The PEW Charitable Trusts to Coos Watershed Association and work is being coordinated by Craig Cornu (Institute for Applied Ecology) with guidance from the Department of Land Conservation and Development.
- Craig Cornu is also leading an Ecological Effects of Sea Level Rise (EESLR) NOAA-funded project that is creating a model to enable our community to understand how much effect tidal wetland restoration might have on reducing storm- and sea level rise-related flooding in the Coos Bay area. They are also using modeling to investigate the potential reduction or diminishment of flooding through restoring tidal wetlands in the system with the idea that water may be dissipated or stored elsewhere in the watershed if some dikes are breached and the wetlands behind them reconnected to the system. This project models how much of a difference restoring those areas will make for high priority areas that are most prone to flooding (e.g., North Bend Airport, parts of Highway 101).
- The PCW continues to be a sounding board for researchers doing work around the Coos estuary. Most recently the group has been engaged by University of Oregon professor Dave Sutherland's modeling work (see "Hydrodynamic Model of Coos Estuary" below).
- For more on the PCW and its current work, visit their website: <https://partnershipforcoastalwatersheds.org>

### **Ocean Acidification (OA):**

The Reserve completed collaboration with Caitlin Magel (University of Washington), Francis Chan, and Burke Hales (Oregon State University) on ocean acidification data collection for Charleston Bridge and Valino Island sites. SAMI CO<sub>2</sub> and SeapHOx sensors were deployed from 2016-2019, collecting 15-min time series data for partial pressure of carbon dioxide and pH, and the Reserve is analyzing time-series and grab data.

The Reserve participates in the Oregon Ocean Monitoring Group led by Charlotte Regula Whitefield (ODFW) and the NERRS Coastal and Ocean Acidification workgroup led by Kari St. Laurent at the Delaware Reserve.

### **Hydrodynamic Model of Coos Estuary:**

A series of projects, led by Dr. David Sutherland (University of Oregon) have resulted in a hydrodynamic model for the Coos estuary to characterize present-day sediment distribution, surface and bottom salinity, sediment flux, and circulation patterns in the estuary. SSNERR is involved in collecting sediment data, providing data from water quality and Sentinel Site stations, selecting sampling sites, and facilitating end-user discussions between the project team, end-users (e.g., Coos County, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Institute of Marine Biology, Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, Coquille Indian Tribe, Department of State Lands), and other stakeholders through the Partnership for Coastal Watersheds.

The team's current project (funded by the NERRS Science Collaborative, NSC) focuses on better understanding sediment and temperature effects on native oysters and eelgrass in the Coos estuary. Reserve staff are included on the project team to help coordinate engagement with end-users and stakeholders, present results to regional and national audiences, provide local technical knowledge, collect monthly grab samples for Total Suspended Sediment (TSS) analysis, assist with data acquisition as needed, and help develop products for educational purposes.

Team member Molly Keogh gave a talk for the Rogue Climate webinar series "Where the Rivers Meet the Sea: Coos Estuary Monthly Webinar Series" in February.

#### **National Synthesis of Tidal Marsh Response to Sea Level Rise:**

This NSC-funded project, nicknamed "NAMASTE" is led by Chris Peter (Great Bay NERR, NH) in collaboration with team members across the Reserve system, including staff at SSNERR. This project is a national scale synthesis of marsh vegetation community data, leveraging our Sentinel Site and SWMP programs. The synthesis will examine shifts in species ranges, patterns of diversity across latitudes and biogeographic regions and quantify climate-induced shifts to marsh systems. SSNERR staff (Schmitt, Yeates, Helms) have been informing technical team meetings, providing SSNERR Sentinel Site data to the project team for analysis, helping develop appropriate analyses, and providing feedback on draft products.

Jenni Schmitt and Ali Helms participated in the Technical Advisory group in November 2021 to review and provide feedback on the marsh data protocols and templates; a December 2021 project meeting led by Liz Gorrill to understand Reserve monitoring sites, protocols, and metadata; and participated in a project overview and data update meeting in January 2022.

#### **Native Olympia Oyster Collaborative (NOOC):**

This collaborative group, formed through a NERRS Science Collaborative catalyst project led by Kerstin Wasson and April Ridlon (Elkhorn Slough NERR), completed a synthesis of success of past Olympia oyster restoration projects to share lessons learned and to identify the practices and environmental conditions that predict the best restoration outcomes. The NOOC published the Olympia oyster restoration synthesis summary and results in *Estuaries and Coasts* in April 2021: *Conservation of Marine Foundation*



*Species: Learning from Native Oyster Restoration from California to British Columbia.* The NOOC in partnership with The Pew Charitable Trusts created maps of current and historical oyster distributions across the range of the Olympia oyster to inform conservation and restoration strategies. The NOOC continues to serve as a useful networking group for Olympia oyster updates, collaborative research opportunities, and conferences. More information can be found at: <https://olympiaoysternet.ucdavis.edu>.

### **Kelp / Eelgrass Framework Development project**

Building on the Planet pilot project led by the Oregon Coastal Management Program at Department of Land Conservation and Development (DLCD) with multiple state agencies, including participation by SSNERR, to determine how useful Planet's daily global satellite data products would be for eelgrass and kelp detection on Oregon's coast, DLCD received funding through the Oregon Geospatial Information Council Framework Development program for the project "CMECS Biotic Component Data Development for Seagrass and Canopy Forming Algal beds", led by Eric Nielsen (GIS Analyst), Institute of Natural Resources, Portland State University and Tayna Haddad, DLCD. SSNERR staff (Jenni Schmitt, Ali Helms, and GIS specialist) are participating as project advisory team members, by providing eelgrass field survey datasets for ground truthing habitat mapping of intertidal eelgrass and providing input on map products. The project team will be meeting monthly with the first meeting held February 2022.

### **Climate Change Vulnerability Assessment Tool for Coastal Habitats (CCVATCH):**

This project is piloting an online app to assess how key estuarine habitats may be affected by climate change, assess sensitivity of those habitats (by assessing how non-climate stressors are impacting function or integrity of the habitats), and begin to develop adaptation actions. This is a National Product project awarded funding in 2021 by the NERRS, led by North Inlet-Winyah Bay NERR and with SSNERR as one of the pilot reserves. Jenni Schmitt has been coordinating SSNERR involvement by assembling teams of experts who can speak to how upland forests, native oyster beds, tidal flats, and tidal fresh wetland are likely to respond to climate change. A series of meetings with these experts was held in January and February. Results will not only provide valuable feedback for the national product, but feed into the Coos estuary coastal hazard vulnerability assessment work being coordinated by University of Oregon and guided by the Partnership for Coastal Watersheds (see above).

### **Social Measures of Estuarine Restoration Success:**

South Slough is assisting researchers on a collaborative 1-year project (2021-2022) funded by the NERR Science Collaborative titled "Developing and Integrating Social Measures of Estuarine Restoration Success". Project collaborators are Paul Engelmeyer (Wetlands Conservancy), Catherine de Rivera and Melissa Haeffner (Portland State University), and Edwin Grosholz and Julie Gonzalez (University of California Davis). Using South Slough NERR and The Wetlands Conservancy restoration projects as case studies, this project includes a three-pronged approach to improve estuarine restoration success. The team will: 1) synthesize long-term NERR monitoring data to derive commonly used ecological metrics and to compare these with manager and public perceptions of restoration success, 2) conduct focus groups to examine how the presence

and outreach activities of South Slough NERR influence public perception of restoration, and 3) conduct interviews with managers involved in restoration to understand the efficacy of the ecological metrics used to determine restoration progress. The project will produce a summary of values and perceptions associated with estuarine restoration, recommendations for including social and ecological metrics in project design and assessment, and an assessment of the social value of a long-term NERR. This project will help to improve coastal restoration project design and should lead to more inclusive and effective communications surrounding estuarine restoration.

### ***Research Support***

SSNERR is a field location for Oregon Department of Fish and Wildlife's adult mosquito abundance trapping program, to be used as a reference for comparison to restored marshes in the Coquille valley. Trapping began in June 2018 and is expected to continue through 2022. ODFW staff have also agreed to sample Wasson Creek for the SSNERR restoration project at SSNERR staff request. This sampling will help us understand the effect of marsh restoration projects on mosquito populations.

SSNERR has several sites that will be used for a collaborative project between OSU, Institute for Applied Ecology, and UO to model the impacts of sea level rise on West Coast tidal wetlands. The work is being funded by NOAA's Ecological Effects of Sea Level Rise (EESLR) program.

In conjunction with the EESLR project listed above, the Reserve is collaborating on a NERR Science Collaborative (2020-2023) project that continues carbon flux research, called Phase 2 Blue Carbon Research. The project is being led by Craig Cornu (Institute of Applied Ecology) with numerous collaborators from Oregon State University, University of Oregon, Western Washington University, Pacific Northwest National Laboratory, and the Padilla Bay NERR. This research is primarily aimed at measuring methane emissions from estuarine wetlands along salinity, temperature, and land-use gradients. The study includes sites in South Slough and Coos Bay.

Anna Liang (former Hollings Scholar) continues to work with SSNERR staff on an undergraduate research project through Virginia State University. Anna is modeling forest development for the Wasson Creek basin, under planned and potential management scenarios, using the U.S. Forest Service's Forest Vegetation Simulator (FVS). Project completion is expected in April 2022.

We are continuing to work with Dr. Carolyn Tepolt of Woods Hole Oceanographic Institute by providing green crabs of selected sizes for an international genetic analysis. The purpose of the project is to identify and track different genetic populations of green crabs along the west coast of North America. In 2018-2020 we collected and posted samples as per sampling protocols. Samples were collected in summer 2021 and sent to her in November 2021. We will collect additional samples in 2022.

SSNERR staff have been working with Molly Keogh (post-doc in Dr. Dave Sutherland's lab) to collect monthly shallow sediment cores at multiple locations in South Slough and Coos Bay for analysis at Dr. Emily Eidam's lab (UNC Chapel Hill). The samples are shipped to Dr. Eidam's lab to undergo isotope analysis for short-term and long-term deposition rates. Results are helping to inform the sediment dynamics portion of the hydrodynamic model project (see Hydrodynamic Model of Coos Estuary under Partner Projects above).

SSNERR staff continue to work with Dr. Sam Chan (OSU) to assist a graduate student, Sarah Marten, on her Professional Masters of Natural Resources project. Sarah is looking at tree and shrub use by beavers in pre-restoration, post-restoration and reference basins in South Slough. This work will provide guidance to the Wasson Creek Restoration planting plan and other similar restoration projects. SSNERR staff and volunteers continue to service six wildlife cameras monitoring beaver activity.

## **STEWARDSHIP**

### **Wasson and Upland Research:**

Staff and collaborators are preparing the Wasson Creek uplands project area for contractors to start restoration thinning. The call for contractor bids has closed, and work is anticipated for the April to May period. The youngest stands are targeted during this first round of restoration thinning (Stands 4-6 in Wasson Uplands Restoration Plan) and work is funded through Friends of South Slough's (FOSS) collaborative agreement grant with the US Fish and Wildlife Service. A public information session is scheduled for 6pm on March 16<sup>th</sup> via Zoom.

Staff are working with the Wasson Creek Technical Advisory Team to revise the lowlands portion of the Wasson Creek Watershed Restoration Plan. We anticipate that this section of the plan will be ready for Commission approval at the July 2022 meeting. The Coos Watershed Association received money from the 2021 Coquille Tribal Community Fund to plant native species, primarily willow, in the upper Wasson valley. This will include a research component examining the effects of planting densities on the effectiveness of managing the invasive plant reed canary grass. Planting is anticipated for the fall of 2022.

The SSNERR intends to submit a funding application to the NERRS Infrastructure Restoration Grant Program to cover the remaining costs of the Wasson Creek restoration project.

### **Invasive Species:**

The SSNERR Second Saturday Stewardship program restarted on February 12<sup>th</sup> and will conduct monthly public stewardship events throughout the year. The February program targeted the removal of, and education around, the invasive plant Bidly-Bidly. The plant was removed from old access roads in the Wasson Creek uplands project area to prevent it from spreading into the forest during management. At the March program, participants will help monitor the area cleared of the invasive plant Pampas-grass in 2021 and remove

small plants where possible. The Reserve continues to develop the Trail Stewards program which, among other things, helps with invasive plant management along Reserve trails.

**Native, Endangered, and Culturally Significant Species:**

The SSNERR Stewardship Coordinator met with members of the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) and the Coquille Indian Tribe (CIT) to discuss interest in reintroducing cultural burning in the Reserve as part of the ongoing management of culturally significant species. Participants of the discussion were interested in working with the Reserve to provide training opportunities to tribal members, along with providing information on cultural resource protection during active fire management. Discussions around using fire as a management tool in the Reserve are preliminary and are in the information gathering stage. Representatives from the Tribes acknowledged the long history of using fire to manage species (e.g., camas, hazel, bear grass) within the Coos Bay area and supported further discussions on this topic. These discussions will be incorporated into the SSNERR Fire Analysis, Management, and Response Plan.

**Trash:**

Staff continue to remove trash from within the Reserve and are supported by the Trail Stewards Team. Temporary signs have been placed at areas commonly used for dumping trash and garden waste.

**Fire Management:**

The SSNERR Fire Analysis, Management, and Response Plan is currently under review by staff, fire and resource management experts, the CTCLUSI and CIT. The plan defines the SSNERR's fire management goals; provides a summary of the historic, current, and predicted climate, fire regime and plant communities within the South Slough Reserve; uses spatial wildland fire analyses to provide information for decision making; provides a summary of how fire is integrated into education, outreach, and coastal training programs; provides forest management recommendations to help achieve the Reserve's fire management goals; provides recommendations for infrastructure improvements; gives clear instructions for responding to active fires, and outlines opportunities and risks following a fire within the Reserve. The new GIS Specialist (position recruitment in process) will review and complete the spatial analysis section prior to finalizing the plan.

**INTERNSHIPS**

*NOAA Ernest F. Hollings Scholars Program:*

The 2022 Hollings Scholar has been selected and has conducted their pre-internship site visit. Marin MacDonald (Colorado State University) will be researching short term effects of variable density thinning on abiotic conditions (e.g., humidity, moisture, temperature) in the Wasson forests.

*NOAA Educational Partnership Program with Minority Serving Institutions (EPP/MSI):*

The 2022 EPP/MSI scholar has been selected and has conducted their pre-internship site visit. Tehani Malterre (University of Hawai'i at Mānoa) will be working with reserve staff along with CTCLUSI members, John Schaefer and Ashley Russell, to determine best planting sites for culturally significant species in the Wasson Creek restoration area.

*Research Experience for Undergraduates (REU) Program through the National Science Foundation, in partnership with Oregon Institute of Marine Biology:*

Reagan Thomas (Portland State University, OR) worked with mentor Ali Helms on understanding sediment dynamics of eelgrass habitats. He compared sediment characteristics, including grain size, bulk density, porosity, organic matter, carbon content, and elevation among sites with abundant eelgrass and sites with historically healthy eelgrass. He presented his poster *Eelgrass Sediment Characteristics in South Slough Estuary, Oregon* for the OIMB REU poster session, at the State of the Coast – Oregon's Coastal Conference in October 2021, and at the American Geophysical Union conference in New Orleans, LA in December 2021.

Reserve staff are reviewing applications for the Summer 2022 REU internships and will make recommendations for top selected interns to OIMB by March 2022.

## **COMMITTEES AND WORKGROUPS**

### **NERRS SWMP Oversight Committee:**

Shon Schooler continues to serve on the SWMP Oversight Committee. This committee provides oversight of SWMP plans and can intervene if SWMP protocols are not being met by individual Reserves.

### **NERRS SWMP Guidance Committee:**

Ali Helms serves on the SWMP Guidance Committee (current members: Dwight Trueblood, Mary Culver, Suzanne Shull, Chris Kinkade, Jennifer Harper, Joan Muller, Matt Ferner, Ali Helms, Robin Weber, and Steve Baird) formed in 2010 to provide strategic planning and oversight of the SWMP program.

### **NERRS Sentinel Site Application Module (SSAM-1) Oversight Committee:**

Jenni Schmitt and Ali Helms are on this NERRS committee, which was formed to develop SSAM-1 outreach strategies, review outreach products from the Marsh Resilience (MARS) report card, integrate remote sensing/habitat mapping into Sentinel Sites, review Sentinel Site plans, develop Centralized Data Management Office (CDMO) data templates for vegetation and sediment data, and manage inventory of SSAM-1 equipment, capacity building and data acquisition. The group has most recently been focused on developing a funding strategy for the Sentinel Site program, including articulating expectations for minimum monitoring protocols to standardize datasets for site, regional and national synthesis, and justifying the need to financially support on-site monitoring, data analysis, and data maintenance and dissemination through the CDMO. A strategic concept related to this was brought in front of NERRS managers at their annual NERRS meeting in November to elicit feedback and again at their winter meeting in February, where the proposal had wide support.

**NERRS Sentinel Site Biomonitoring Workgroup:**

Jenni Schmitt is part of this workgroup, which develops and oversees implementation of national vegetation monitoring protocols and reviews vegetation monitoring datasets submitted to the CDMO.

**NERRS Sentinel Site Submerged Aquatic Vegetation (SAV) Biomonitoring and Mapping Workgroup:**

Ali Helms joined this workgroup in summer 2020 to develop and provide input on protocols for implementing national vegetation, mapping, and mudflat sediment dynamic monitoring in SAV (i.e., eelgrass) habitats. The workgroup is working on advancing SSAM SAV at the system level.

**NERRS Bivalve Working Group:**

Shon Schooler continues to serve on the NERRS Bivalve Working Group with Brandon Puckett, North Carolina NERR; Nikki Dix, Guana Tolomato NERR; Kerstin Wasson, Elkhorn Slough NERR; and Jeff Crooks, Tijuana NERR.

**NERRS Upland Stewardship and Monitoring Working Group:**

Alice Yeates leads the NERRS uplands working group which aims to enhance communication between Reserves and to share information and develop collaborations on upland monitoring, management, research, and outreach.

**NERRS Indigenous Knowledge Working Group:**

Alice Yeates is on the NERRS indigenous engagement working group. The Indigenous Knowledge team addresses social and environmental justice in the NERRS system by centering, engaging, and learning from Indigenous peoples and local communities to facilitate meaningful co-management of coastal lands and waters.

**NERRS Coastal and Ocean Acidification (COA) workgroup:**

Ali Helms participated in the NERRS COA workgroup, formed in December 2019, to share ideas, resources, best practices for monitoring, and partnerships to collaborate on ocean and estuarine acidification monitoring activities across the Reserve system. The workgroup is led by Kari St Laurent at the Delaware NERR and calls were held monthly.

**Pacific and Estuarine Research Society (PERS) Board:**

Jenni Schmitt is the Oregon at-large representative for PERS. PERS is the regional chapter of the Coastal and Estuarine Research Federation (CERF). The committee meets regularly to plan the annual PERS conference, which is next planned for March 17 and 18, 2022.

**Pacific Marine and Estuarine Fish Habitat Partnership (PMEP) Eelgrass Advisory Committee:**

Ali Helms joined this regional workgroup for providing technical input and expertise from an Oregon perspective related to eelgrass habitats. The Committee reviewed drafts and provided input for an Eelgrass Restoration Techniques Synthesis Report published in

May that was funded through The Pew Charitable Trusts and administered by the Friends of South Slough.

[http://honu.psmfc.org/media/PMEP/Eelgrass\\_Restoration\\_Synthesis/Documents/PMEP\\_Beheshti\\_Ward\\_2021\\_EelgrassSynthesisReport.pdf](http://honu.psmfc.org/media/PMEP/Eelgrass_Restoration_Synthesis/Documents/PMEP_Beheshti_Ward_2021_EelgrassSynthesisReport.pdf)

**Oregon Lamprey Technical Workgroup:**

Shon Schooler and Jenni Schmitt sit on this advisory committee of the Conservation Agreement for Pacific lamprey in Oregon. The group meets several times a year to discuss updates on conservation initiatives, subgroup updates (tagging, contaminants, ocean, engineering criteria, genetics/eDNA, BMPs for minimizing impacts during stream disturbing activities, and restoration), standardizing white paper formats, lamprey terminology and larval lamprey survey and salvage protocols.

**South Coast Lamprey Working Group:**

Jenni Schmitt and Shon Schooler are on the steering committee for this workgroup, which works to help identify key information for lamprey management at regional, state, and local scales and identify opportunities for future work.

**Coos Watershed Association Technical Advisory Committee:**

Jenni Schmitt, Alice Yeates, Shon Schooler, and Ali Helms participate on this committee to provide technical feedback on a variety of upcoming or ongoing restoration projects.

**South Slough Safety Committee:**

Alice Yeates is the Science Program representative on the SSNERR Safety Committee. They are updating the Disaster Plan and Fire Safety/Evacuation Plan.

**Coastal Native Seed Partnership Committee:**

Alice Yeates is on the Coastal Native Seed Partnership Science Program steering committee, which is working to increase support for local restoration projects by increasing native seed availability.

**SSNERR Diversity, Equity, Inclusion Committee:**

Alice Yeates is the Science Program representative on the DEI Committee. This committee is assessing and identifying ways to improve diversity, equity and inclusion in all areas of the Reserve. The committee's goals focus on dismantling systemic racism and increasing the inclusion of underrepresented and marginalized communities.

The committee is developing land acknowledgement statements and have consulted with CTCLUSI and CIT and reached out to the Confederated Tribes of the Siletz Indians.

**Wild Rivers Land Trust: Conservation Committee:**

Alice Yeates is on the Wild Rivers Land Trust board of directors and the associated Conservation Committee. The Wild Rivers Land Trust aims to conserve and steward natural spaces from Tenmile Lakes to Brookings, OR.

**Oregon Coast Artisan Trade Education Collective (OCATEC):**

Shon Schooler is on the board of OCATEC. This organization develops training around trade skills, including aquaculture, with a focus on sustainability, community resilience, and circular economic principles.

**Sixes River Strategic Action Plan Technical Advisory Committee:**

Jenni Schmitt provides technical expertise to this group related to developing a comprehensive monitoring plan for the Sixes River estuary, a project being led by the Curry Watersheds Partnership.

**Beaver Hill Restoration Project Technical Advisory Team:**

Jenni Schmitt and Alice Yeates provide technical advice related to wetlands restoration and monitoring for this wetland restoration project, led by the Coquille Watershed Association.

**National Marsh Synthesis Team Technical Working Group:**

Alice Yeates is on the technical working group for the Science Collaborative project Detecting Impacts from Climate Change: A National Synthesis, led by Great Bay NERR.

**PRESENTATIONS AND MEDIA**

Shon Schooler and Sylvia Yamada, “Status of green crabs in Coos Bay.” European Green Crab West Coast Technical Workgroup annual meeting. Dec 16<sup>th</sup>, 2021.

Shon Schooler, Deborah Rudd, Ian Rodger, Becky Flitcroft, and Jenni Schmitt, “Using eDNA and community volunteers to map distributions of lampreys in the Oregon Coast Range.” Lamprey Information Exchange virtual meeting, January 11, 2022.

<https://www.gotostage.com/channel/512344cd391c40d39715e29a5a4e82f6/recording/97b5480fa134403aa56bd49e7b2999e3/watch?source=CHANNEL>

Shon Schooler, Invasive green crabs threatening local species. National Public Radio Weekend Edition, host Scott Simon, Nov 27, 2021

<https://www.npr.org/2021/11/27/1059490262/invasive-green-crabs-are-threatening-local-species-the-solution-eat-them>

Shon Schooler and Sylvia Yamada, Green Crab Invasion of Coos Bay, North Bend Rotary Club monthly meeting, January 19, 2022.

Shon Schooler, Scientists say: eat more green crabs. Oregon Public Broadcasting: Think Out Loud, Nov 23, 2021. <https://www.opb.org/article/2021/11/23/scientists-say-eat-more-green-crabs/>

Shon Schooler, Sara Stansbury, Sylvia Yamada, Green crab invading Oregon estuaries. Jefferson Exchange, Jefferson Public Radio, December 1, 2021.

<https://www.ijpr.org/show/the-jefferson-exchange/2021-11-30/wed-8-am-oregon-implores-you-eat-more-green-crab>



Alice Yeates was filmed and interviewed by Jim Gersbach, Oregon Department of Forestry, for a video on the Port-Orford-cedar root rot resistant program. Date of release TBD.

## Friends of South Slough Reserve, Inc.

P. O. Box 5446, Charleston, Oregon 97420



**Date:** 28 February 2022  
**From:** Board of Directors, Friends of South Slough Reserve Inc. (FOSS)  
**To:** South Slough Management Commission  
**Re:** Activities Report to Commission and Interested Public (March 17 meeting)

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The FOSS board continues to provide support for protection and stewardship of estuaries and enhancement of the work of the South Slough National Estuarine Research Reserve. We highlight a brief summary of activities below.

### Financial Support for Entrance Land Acquisition:

Throughout 2021, we engaged with Reserve leadership to provide financial support for the acquisition of two key properties located at the primary public access from Seven Devils Road. The first was a \$25,000 match for the NOAA funded FY 2020 Procurement Acquisition and Construction opportunity to help acquire 1.14 acres from Coos County. The second acquisition was to provide \$40,000 for DSL to purchase an additional 0.56-acre segment of the entrance parcel. With those agreements finalized, we continue to pursue additional opportunities to support assets of the Reserve.

### Internships, Citizen Science Activities, and Grant Support.

FOSS leaders are working with Reserve leadership to streamline the methods used to provide annual financial support for research, education and outreach. We are working to increase the equity of financial support that we provide for interns that work with Reserve staff. We continue to pursue ways to increase the public awareness and impact of Reserve programs and research findings.

FOSS leaders manage grants that support the work of estuary science and outreach. Two grants are active in 2022. One program funded by the US Fish and Wildlife Service supports collaborative restoration activities in the Wasson Creek Watershed, and a citizen science grant funded by the US Forest Service supports lamprey monitoring.

### Strategic Planning and Advocacy for SSNERR

Our planning team is working to clarify to members and the public the difference between the roles for our all-volunteer, nonprofit corporation and the operations of the Reserve. We plan to have additional meetings this spring to focus on messaging to members and community members.

We plan to provide letters of support for funding opportunities available for the planned NERRS infrastructure proposals. We are also drafting letters of support letters for the House and Senate Appropriations Conference Committee members for the FY 2023 budget.