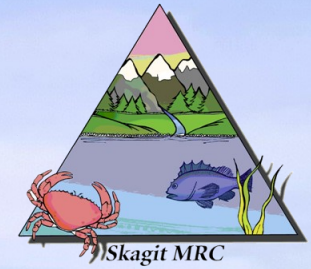
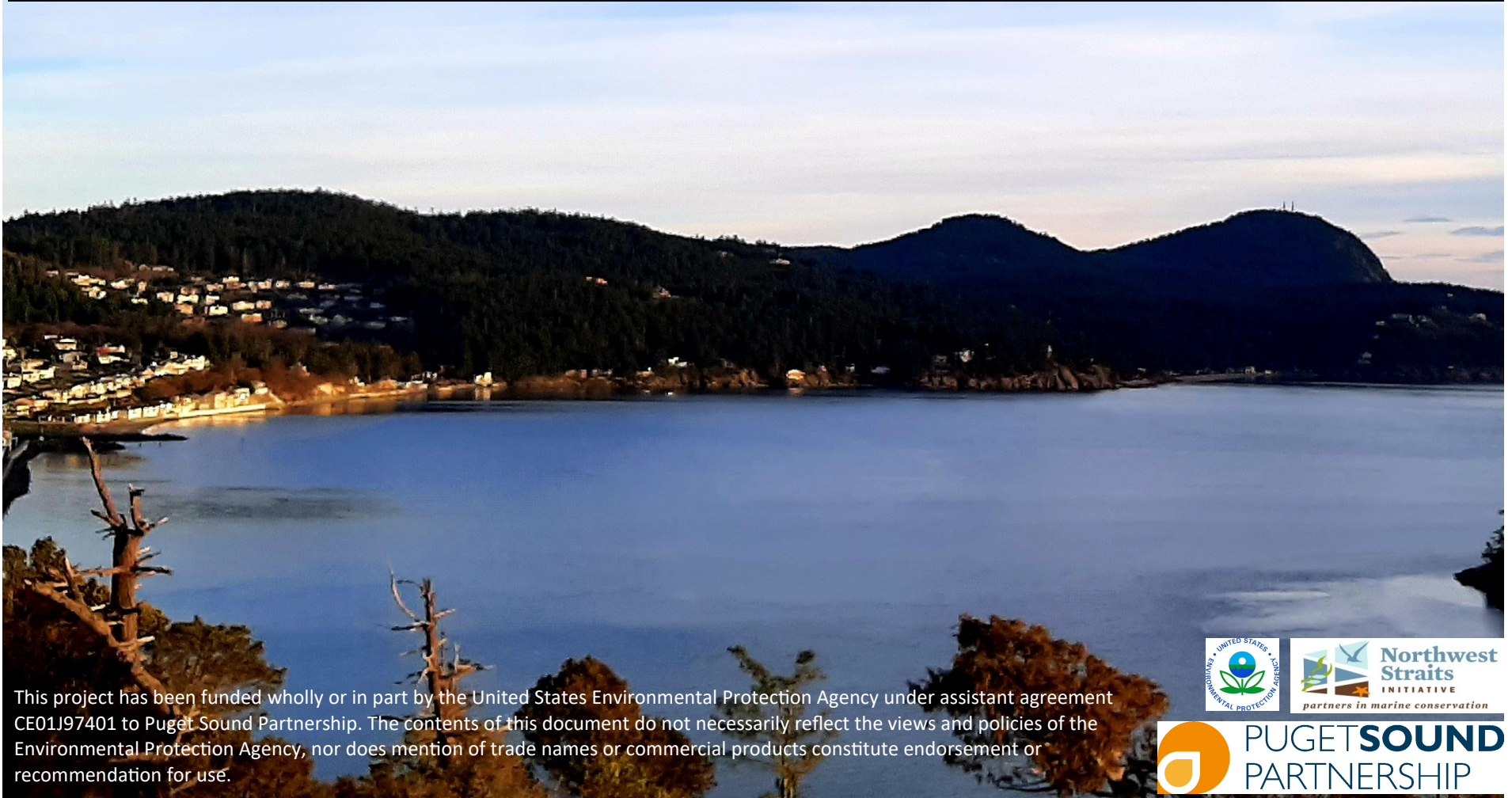


# *Skagit County* **MARINE RESOURCES COMMITTEE**



## **2022 Annual Report**



This project has been funded wholly or in part by the United States Environmental Protection Agency under assistant agreement CE01J97401 to Puget Sound Partnership. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.







*“Skagit Marine Resources Committee acts as a catalyst for the protection and restoration of the marine waters, habitats and species of Skagit County to achieve ecosystem health and sustainable resource use”*

Inside This Report

**2022 Financial Summary**.....3

**About**

Northwest Straits Marine Conservation Initiative.....4

Skagit County Marine Resources Committee Members.....4

**Education and Outreach**

Fidalgo Bay Day.....5

Salish Sea Stewards.....6

Kids on the Beach .....7

MRC– Salish Sea School Intern .....8

**Conservation and Restoration**

Pinto Abalone Recovery .....9

Bowman Bay Shoreline Plant Maintenance.....10

Native Oyster Monitoring .....11

Forage Fish Surveys .....12

Kayak-based Bull Kelp Surveys.....13

**Acknowledgements**.....14

# YEAR IN REVIEW: 2022

In 2022, we were thrilled to get back to hosting in-person education and outreach events and activities again, like Kids on the Beach, Salish Sea Stewards Training, and Fidalgo Bay Day! New in 2022, we implemented the MRC's Salish Sea School Intern pilot project. Our important conservation and restoration work continued with several ongoing projects including: Pinto Abalone Recovery, Bowman Bay Shoreline Restoration Plant Maintenance, Native Oyster Monitoring in Fidalgo Bay, Forage Fish Surveys, and Kayak-based Bull Kelp Surveys. Three of our projects are 100% volunteer driven because they are not funded and wouldn't happen without them including: Native Oyster Monitoring, Forage Fish Surveys, and Kelp Surveys. Our volunteers are AMAZING!

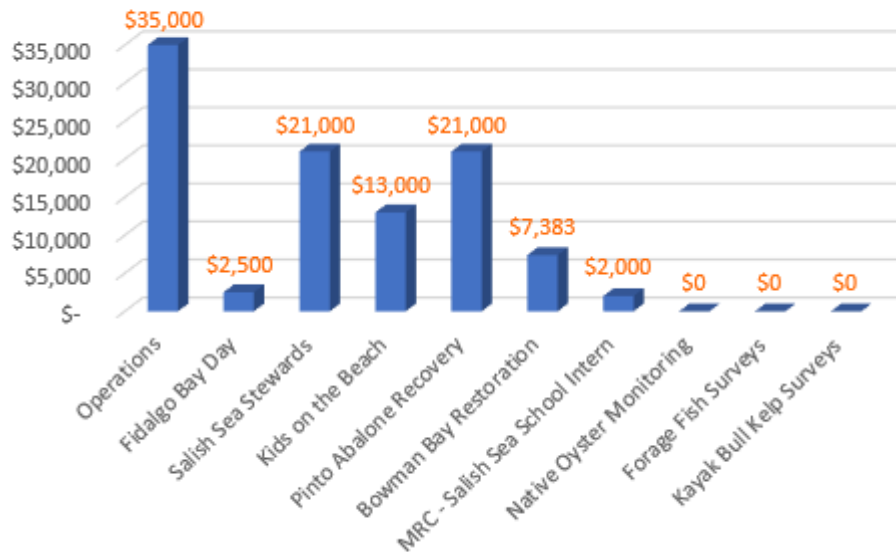
**53** Volunteers  
contributed over  
**2,362**  
Volunteer Hours  
in support of MRC  
projects. A value of  
over **\$79,718!**



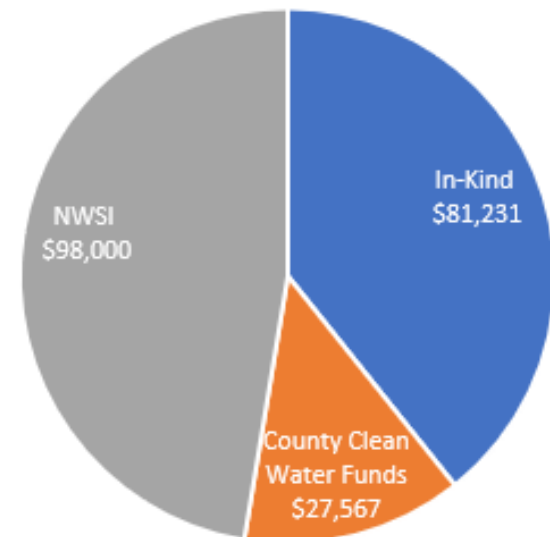
## FINANCIAL SUMMARY

- MRC base funding is provided by the Northwest Straits Initiative (NWSI) through state and federal funding sources: National Estuary Program, Environmental Protection Agency, Puget Sound Partnership, and Washington State funds.
- NWSI funding is leveraged through county staff support, volunteer hours, in-kind contributions, and the Northwest Straits Foundation.
- MRC Staff support is partly funded by County Clean Water funds administered under the Skagit County Public Works Natural Resources Division.

2022 Skagit MRC Project Funding



2022 Skagit MRC Funding Sources







# NORTHWEST STRAITS INITIATIVE

- Congressionally authorized since 1998, as part of a collaborative grassroots effort to protect and restore the marine environment in the northwest straits region of our state.
- Three main entities established under the Initiative are partners in marine conservation: Northwest Straits Commission, 7 county-based MRCs, and the Northwest Straits Foundation.



- Provides MRCs with base-funding, training and technical support.
- Facilitates regional projects and collaboration.



## Skagit County Marine Resources Committee

- A grassroots collaboration representing diverse interest groups that serve as advisors to local government.
- Identify and carry out local priority projects that protect and restore marine resources based on sound science and guided by the NWSI Strategic Plan.
- Administered under the Natural Resources Division of Skagit County Public Works.



- Nonprofit arm to leverage additional financial resources to support the work of the initiative.
- Manages large regional projects like derelict fishing gear removal and nearshore restoration.

## MRC Membership

MRC members are volunteers appointed by the Board of Skagit County Commissioners as stakeholders of the marine environment that represent a broad spectrum of community interests including tribal, government, economic, recreational, conservation, and scientific.



Pete Haase  
Citizen-at-Large



Darla Gay Smith  
Recreational Fishing



Jude Apple  
Padilla Bay NERR



Jay Lind  
Commercial Fishing



Catey Ritchie  
Swinomish Tribal  
Community



Matt Castle  
Samish Indian  
Nation, DNR



Kevin Anderson  
Port of Anacortes



Paul Dinnel  
Marine Scientist  
(Retired)



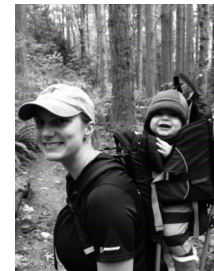
Lynne Wenberg-  
Davidson  
Recreational Boating



Betsy Stevenson  
MRC Chair  
Skagit County  
Planning Dept.



Kari Odden  
Skagit Land Trust



Diane Hennebert  
City of Anacortes  
Stormwater



Tracy Alker  
Skagit MRC Staff  
Skagit County  
Public Works



MRC members contributed  
over **766** Volunteer Hours  
in 2022!



# FIDALGO BAY DAY



A FREE community event since 2004, Skagit MRC's Fidalgo Bay Day is filled with fun interactive educational activities focusing on the marine environment that people of all ages can enjoy. Some of the activities include: beach seining demonstration, a touch tank with living marine creatures, educational booths, kid friendly craft tables, and samples of fresh local seafood.



This annual event is planned, coordinated and carried out by a team of amazing volunteers on a very small budget!

## 2022 HIGHLIGHTS

More than

**300** attendees

**100** volunteers

**600** volunteer hours!

**40** participating organizations

**20** educational booths

**0** waste!





# SALISH SEA STEWARDS



*Salish Sea Stewards class of 2022 exploring the Padilla Bay mudflat*

Skagit MRC's Salish Sea Stewards (SSS) volunteer training program offers FREE classes on a variety of topics taught by local experts about the marine environment. Volunteers commit to at least 40 hours of volunteer service to support projects that help restore and protect the marine environment.



The Salish Sea Stewards program is a collaboration of the Skagit MRC & Padilla Bay National Estuarine Research Reserve.



The Salish Sea Stewards Advisory Committee comprised of Salish Sea Steward volunteers, Padilla Bay staff, and MRC staff help guide and support the program.

## 2022 HIGHLIGHTS

**25** graduates got **48** hours of FREE training about the marine environment from **39** local experts. New graduates completed **510** volunteer hours in 2022! Over **300** volunteers completed the program since 2014 & contributed over **40,000** volunteer hours!





# KIDS ON THE BEACH



*Conway 8th grade students at Fidalgo Bay*

The Kids on the Beach (KOTB) program is designed to engage middle-school kids in a variety of hands-on authentic marine science research that generates useful scientific data in the classroom and on the beach



The KOTB program is a collaboration of the Skagit MRC & Padilla Bay National Estuarine Research Reserve

## 2022 HIGHLIGHTS

**175** students from

**3** middle schools

- Concrete– 8th grade
- Sedro Wooley– 6th grade
- Conway– 8th grade

### Collected & Analyzed Data:

- Forage fish eggs
- Nearshore fish
- Beach & mudflat habitats
- Invasive mud snails





# MRC SALISH SEA SCHOOL INTERN



The MRC's Salish Sea School Intern project is one of several intern projects in a year-long collaborative pilot program that provides middle and high school students the opportunity to learn how to conduct scientific research projects.

The young students are mentored by active research scientists working as interns to hone their skills in scientific exploration and communication.

The focus of Skagit MRC's Intern program is to get students involved in forage fish field research. MRC member Pete Haase taught the research scientist intern, Trevor Derie, the forage fish survey protocols. Trevor mentored 7th grade student Julia Schielke in conducting the forage fish research project.

## 2022 HIGHLIGHTS

**Research Project:** Spawning trends of surf smelt at March's Point, Anacortes

**Research Question:** Do surf smelt prefer overhead shaded beach or non-shaded beach areas to spawn?

## Monthly Field Sampling & Microscopy

**Conclusion:** Egg presence higher in shaded versus no shade beach habitat. Very few fish fry observed.

**STaRS Symposium Presentations:** <https://www.youtube.com/watch?v=qhppJ8nHiKQ>



# PINTO ABALONE RECOVERY

➤ Pinto abalone (*Haliotis kamtschatkana*) is the only known species of abalone indigenous to the Salish Sea and is an important part of a healthy diverse marine ecosystem and a highly valued resource.

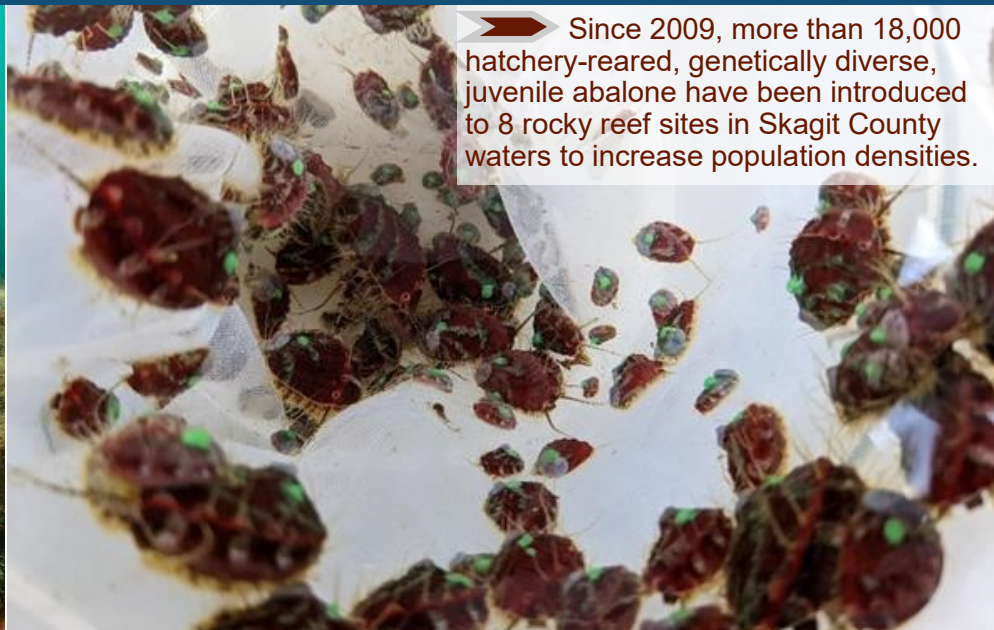
➤ Pinto abalone are currently listed as Endangered in Washington State waters and cannot recover without our help!



➤ **Pinto Abalone Recovery is an ongoing Collaborative Effort Between Multiple Partners**

Since 2014, Skagit MRC has been involved in the pinto abalone recovery effort in partnership with Puget Sound Restoration Fund to help rebuild a sustainable spawning population in Skagit County waters.

Surveys are conducted each year to monitor growth, survivorship and movement of the pinto abalone released into the wild.



➤ Since 2009, more than 18,000 hatchery-reared, genetically diverse, juvenile abalone have been introduced to 8 rocky reef sites in Skagit County waters to increase population densities.

## 2022 HIGHLIGHTS

**1.27** million abalone cultured in hatchery for future outplants

Diver surveys at **4** abalone restoration sites

Identified several **Future Outplant Sites**

**275** abalone observed

Tested **2** age cohorts for survival rates

**Time Lapse Cameras** installed to study abalone movement & predation

Abalone increased in **Size**, Population **Density**, and **Distribution**  
**20%** migrated outside plot boundaries



# BOWMAN BAY RESTORATION



Skagit MRC partnered with the Skagit Fisheries Enhancement Group (SFEG) to enhance and maintain the shoreline vegetation at the Bowman Bay restoration site with the help of volunteers. Additional planting and plant maintenance will continue each year until it becomes well established and self sustaining.

Shoreline plant maintenance at Bowman Bay is part of a larger collaborative restoration project of the Skagit MRC, Northwest Straits Foundation, Deception Pass State Park, and SFEG. Construction was completed in 2015.

- Approximately 540 ft of rock riprap was removed to restore natural sediment processes.
- Added 1,080 tons of beach nourishment material, regraded the beach to match the natural contour, and planted shoreline vegetation to improve approximately 0.6 acres of nearshore habitat for forage fish, juvenile salmon and bull trout.
- Improved public access and installed interpretive signage, providing opportunities for education and outreach.

## 2022 HIGHLIGHTS

**6** Work Parties

**51** Volunteers

Over **146** Volunteer Hours

**175** Native Plants Planted

**Weeding** and **Watering** to increase survivability of newly planted vegetation

**Mulch Compost** to provide nutrients to planted vegetation

Shoreline vegetation provides good habitat for insects, which are important prey for juvenile salmon, and protects the beach from erosion.





# NATIVE OYSTER MONITORING



➔ The Olympia oyster, *Ostrea lurida*, is the only oyster native to the Pacific Coast of North America. Olympia oysters were driven to near extinction in Puget Sound in the late 1800s from over harvesting and severe water pollution.

➔ **Fun Fact:** Just one Olympia oyster can filter up to 12 gallons of water a day! 3 million oysters can filter **36 million gallons** a day!!



Since 2002, Skagit MRC has been working collaboratively with many partners and trained community scientists to establish a sustainable Olympia oyster population in Fidalgo Bay through the distribution of Pacific oyster shell and plantings of native oyster seed.

There are now an estimated **3 million Olympia oysters** in Fidalgo Bay. Oysters continue to settle heavily in 6 constructed Pacific oyster shell beds (4.5 acres).

The native oyster population appears to be self sustaining and spreading to other areas of Fidalgo Bay beyond the restoration site.

Some of the oyster seed produced naturally in Fidalgo Bay is now being used to help establish oysters in other areas where they were once historically located including Padilla Bay, Skagit Bay, Kukatali, and Chuckanut Bay.

MRC volunteers continue to monitor the oyster population in Fidalgo Bay each year.

## 2022 HIGHLIGHTS

### 6 Annual Recruitment Bags

monitored for 2021 oyster settlement. It was the **2nd highest oyster settlement** ever recorded in Fidalgo Bay!

### 6 new Annual Recruitment Bags

deployed to monitor oyster settlement in 2023.

**Ceramic Tile Stacks** monitored for post larval recruitment at two week intervals throughout the summer.

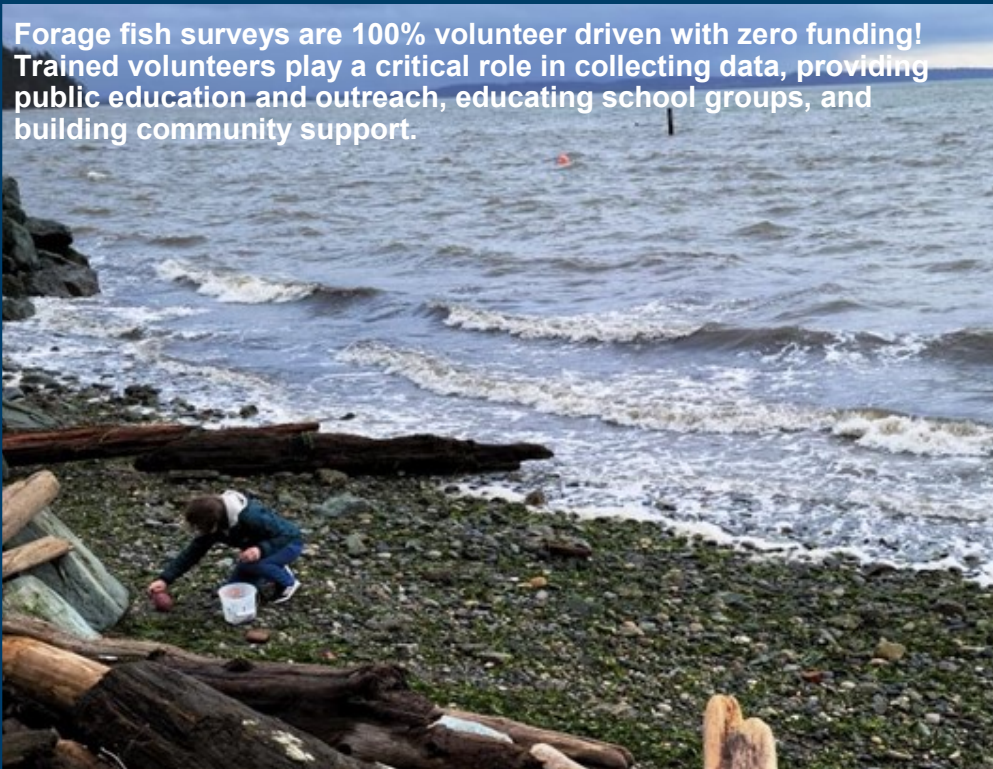
**Shell Strings** monitored for post larval recruitment at the Fidalgo Bay Trestle and Weaverling Spit.

**50 bags of oyster seed** were collected from Fidalgo Bay and **relocated** to south **Padilla Bay**. Deployed new cultch bags in Fidalgo Bay to collect more oyster seed for Padilla Bay next year.

**2 volunteers** contributed **over 20 Volunteer Hours!**

# FORAGE FISH SURVEYS

Forage fish surveys are 100% volunteer driven with zero funding! Trained volunteers play a critical role in collecting data, providing public education and outreach, educating school groups, and building community support.



➤ Forage fish are an important food source for marine birds, salmon, mammals, and people.

➤ Surf Smelt and Sand Lance beach spawning habitats are impacted by hard shore armoring and lack of shade.

➤ Surf smelt eggs are less viable during the hot summer months in areas without shade.

**WDFW Index Site Surveys:** Data collected monthly to look at annual variations in the forage fish spawning population and to identify potential trends.

**Shoreline Restoration Site Surveys:** Data collected monthly for at least 5 years to analyze effectiveness of shoreline restoration projects on the forage fish spawning population

## 2022 HIGHLIGHTS

**Surf Smelt Eggs** found at all of our sampling sites!

**Sand Lance Eggs** detected for the first time in 2022 at Ship Harbor/Guemes Channel

**200** Forage Fish samples collected

**6,250** eggs processed, **500** viable

Hosted **3** different school groups for forage fish surveys

**10** Volunteers contributed **344** Volunteer Hours!

## 2022 FORAGE FISH SURVEY SITES

### 3 WDFW Index Survey Sites

- Ship Harbor/Guemes Channel
- NE Similk Bay
- SW Samish Island

### 3 Shoreline Restoration Survey Sites

- Bowman Bay
- March's Point
- Kukutali Preserve

### 2 Special Study Survey Sites

- March's Point (MRC/Salish Sea School Intern Project)
- Guemes Channel Trail

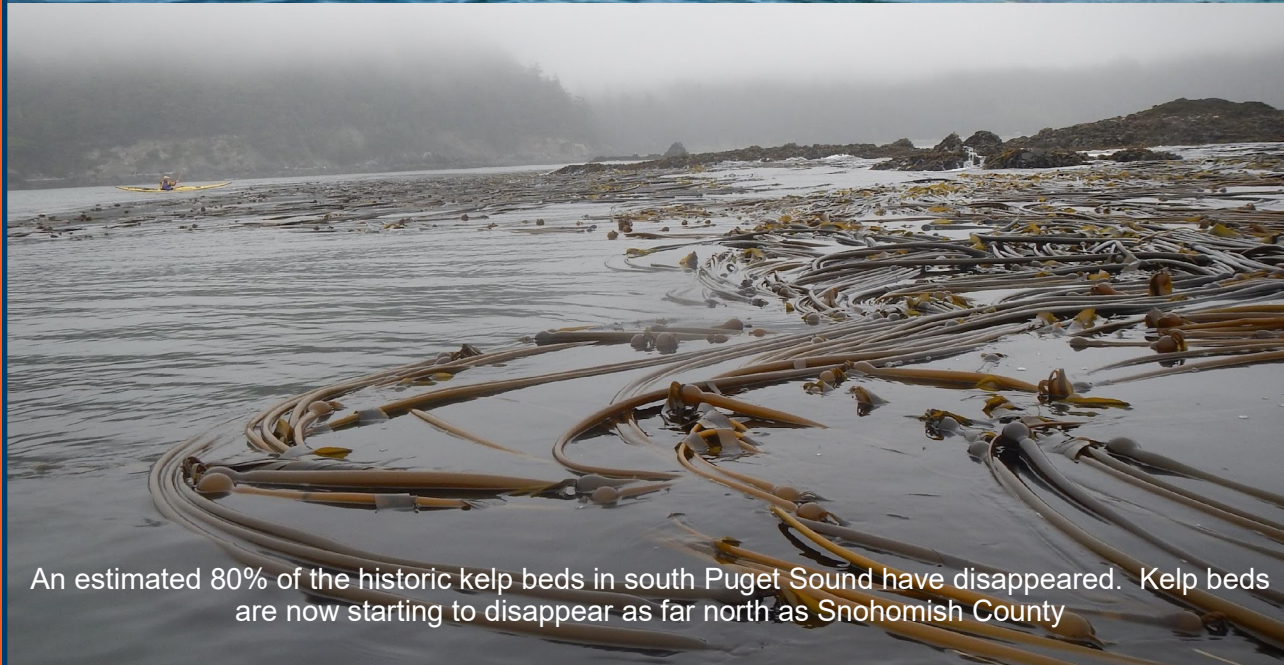
**3 Fidalgo Bay Aquatic Reserve Survey Sites** (Non-MRC Project, but these surveys are supported and led by trained MRC volunteers)



# KAYAK BULL KELP SURVEYS



Our kelp surveys are 100% volunteer driven with 3 teams of experienced kayak volunteers and zero funding



An estimated 80% of the historic kelp beds in south Puget Sound have disappeared. Kelp beds are now starting to disappear as far north as Snohomish County

## 2022 HIGHLIGHTS

### 4 kelp beds surveyed

once a month since 2017 during the peak growing season (June—Sept). Need to continue collecting more data to establish trends.

- Coffin Rocks
- Shannon Point (2 kelp beds)
- Biz Point

14 volunteers contributed over **55 Volunteer Hours!!**

### Kelp Forest Benefits

- Productive ecosystems
- Provide critical habitat
- A source of nutrients
- Controls ocean temperature
- Reduces wave action
- Protects shorelines
- Produces lots of oxygen
- Sequesters carbon dioxide
- Reduces ocean acidification
- Absorbs nutrients
- Culturally significant

### What Impacts Kelp Forests?

- Water pollution
- Shoreline development
- Climate change
- Over-grazing
- Invasive seaweeds

In 2014, the NWSC established the **Salish Sea International Kelp Alliance** and launched a regional kayak-based bull kelp survey program for the MRCs. The data is compiled into a kelp database that is shared with local and regional planners and researchers. The NWSC and MRCs along with multiple partners are involved in the development of the Kelp Recovery Plan. To learn more: [www.nwstraits.org/our-work/kelp-recovery](http://www.nwstraits.org/our-work/kelp-recovery).





# THANK YOU!

The Skagit MRC relies heavily on the technical, financial, and administrative support of the Northwest Straits Commission, Northwest Straits Foundation, Puget Sound Partnership, U.S. Environmental Protection Agency, Skagit County Public Works Clean Water program and the Skagit County Board of Commissioners. The Skagit MRC's work is driven by our dedicated MRC members, the collaboration and shared resources of many partner organizations, and the hard work of our amazing volunteers. The MRC acknowledges that the land and waters where our work resides are the ancestral homelands of the Coast Salish people and have been since time immemorial. We would like to express our deepest gratitude to the Samish Indian Nation and the Swinomish Indian Tribal Community for their partnership and in-kind staff support for our MRC projects. Thanks to all of you for making a difference!!

## Acknowledgments

