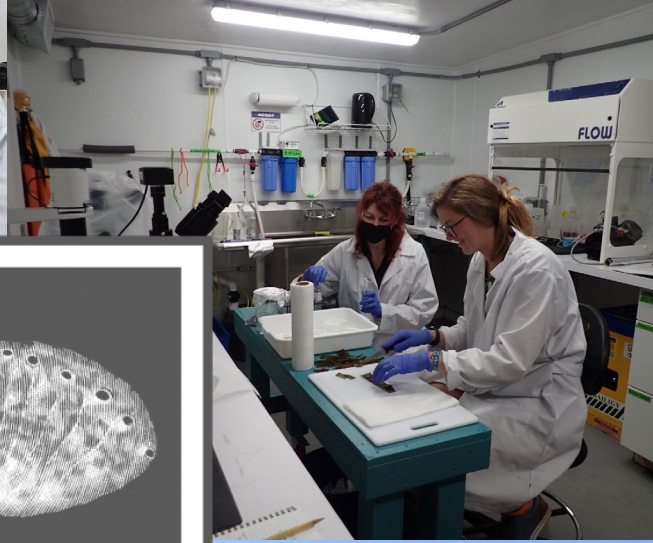
Bull Kelp Restoration in South Puget Sound

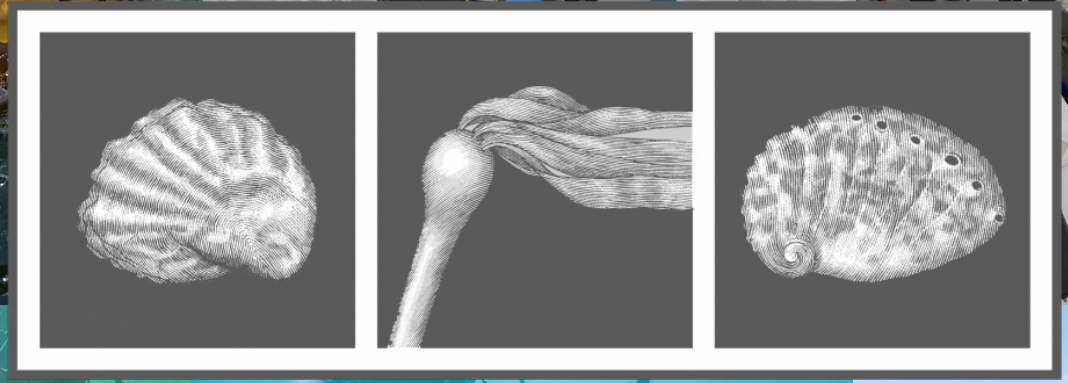
Jessi Florendo & Marina Kochuten

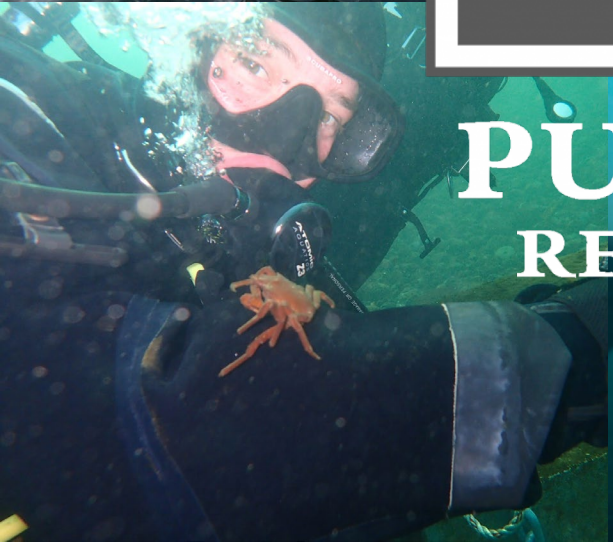
PUGET SOUND
RESTORATION FUND











PUGET SOUND
RESTORATION FUND





Coastal protection



Nutrient cycling & carbon storage



Recreation & tourism



Cultural value

Icons: Contributors at The Noun Project



Possible stressors:

Physical

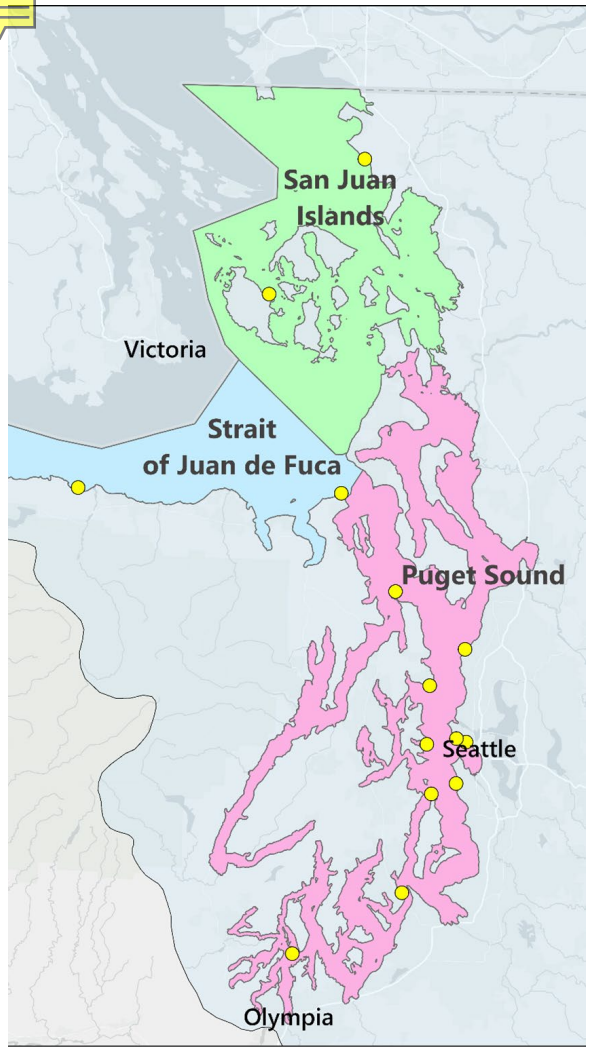
Temperature, nutrients, sediment

Biological

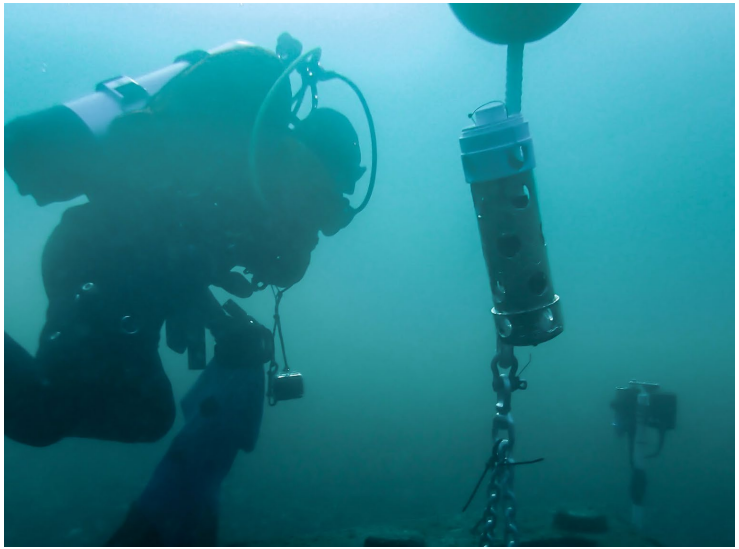
Grazing, competition

& synergistic interactions

Environmental monitoring



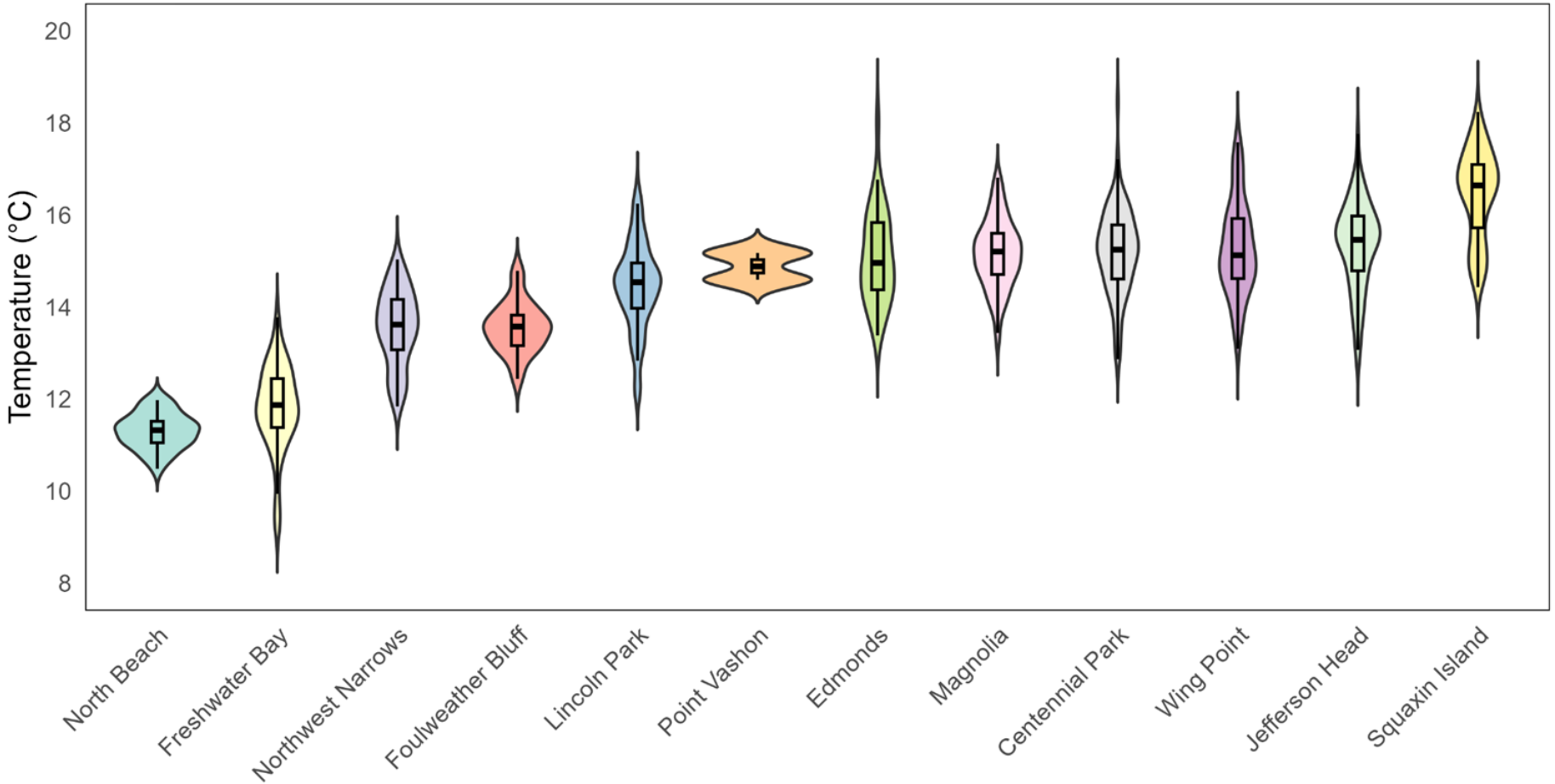


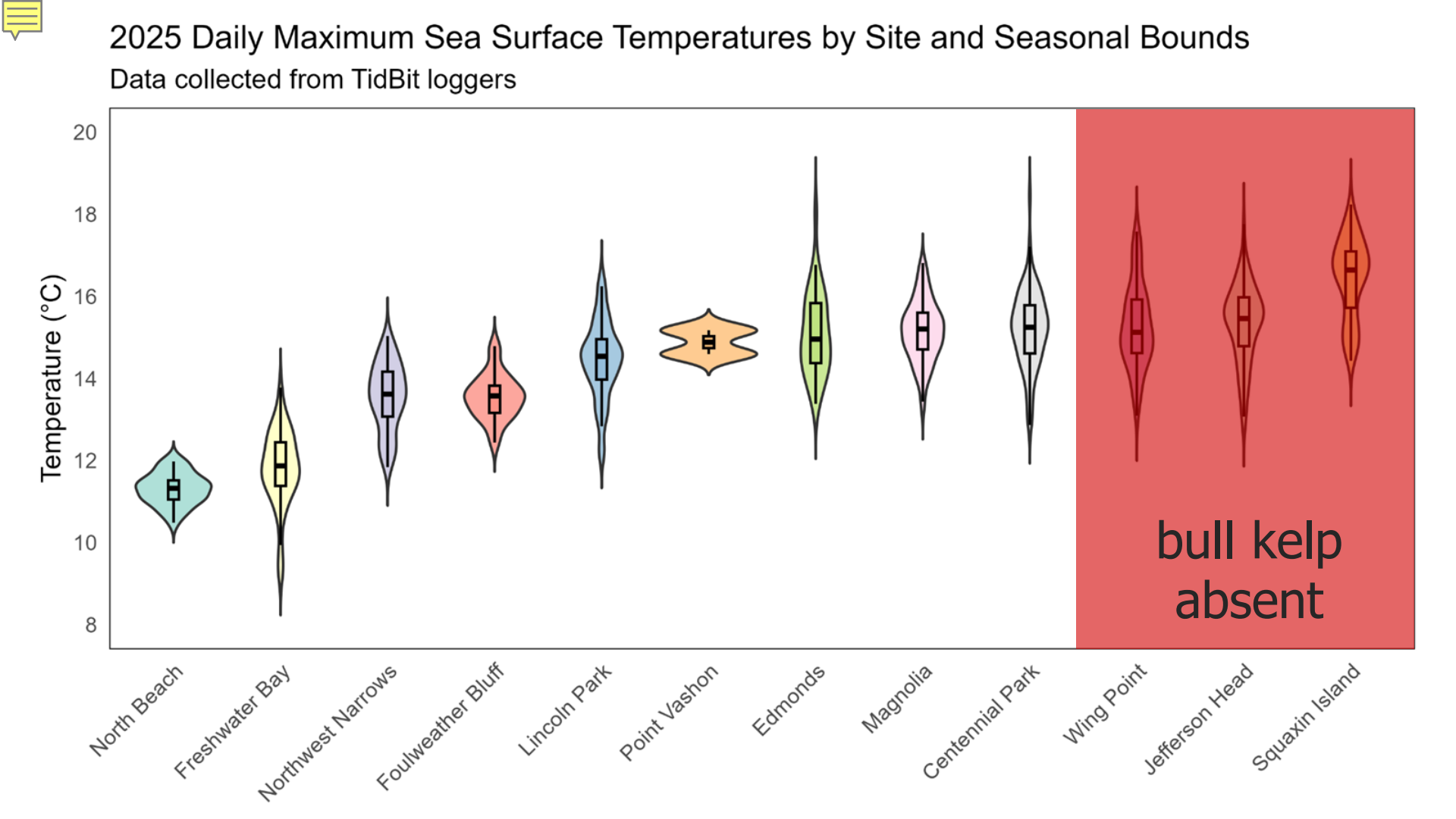




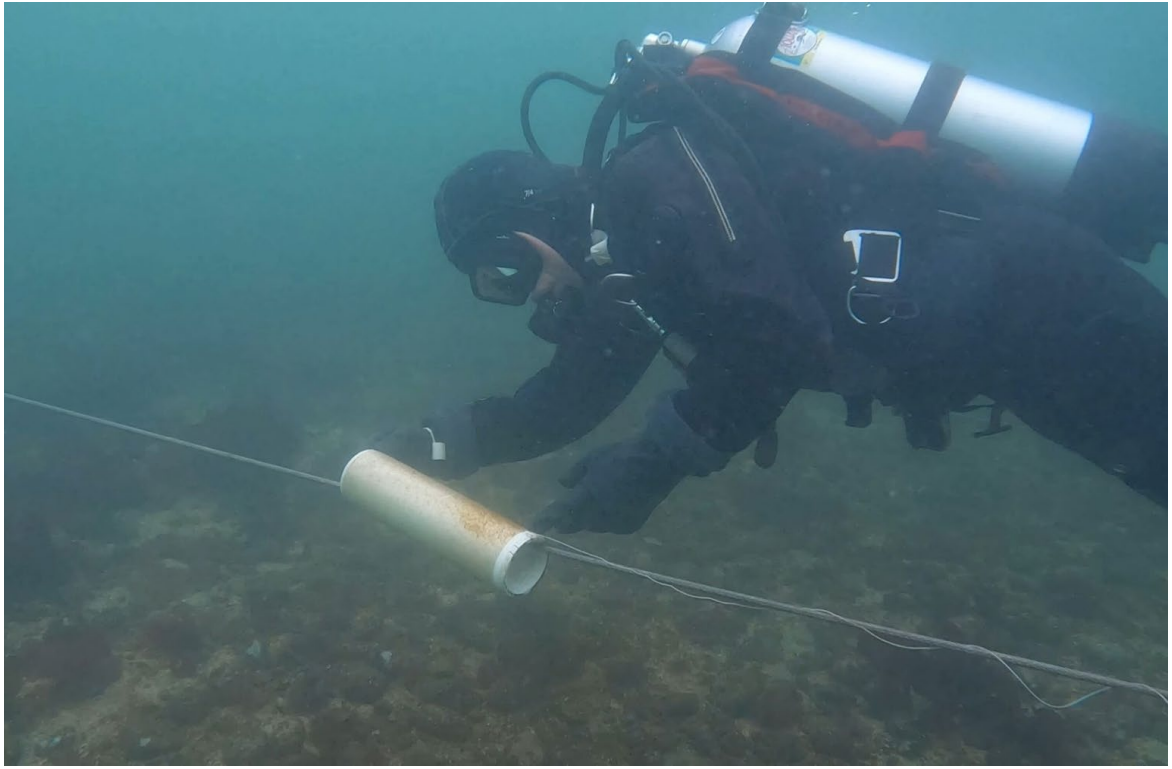
2025 Daily Maximum Sea Surface Temperatures by Site and Seasonal Bounds

Data collected from TidBit loggers




2025 Daily Maximum Sea Surface Temperatures by Site and Seasonal Bounds
Data collected from TidBit loggers
Temperature (°C)
20
18
16
14
12
10
8
bull kelp absent
North Beach
Freshwater Bay
Northwest Narrows
Foulweather Bluff
Lincoln Park
Point Vashon
Edmonds
Magnolia
Centennial Park
Wing Point
Jefferson Head
Squaxin Island

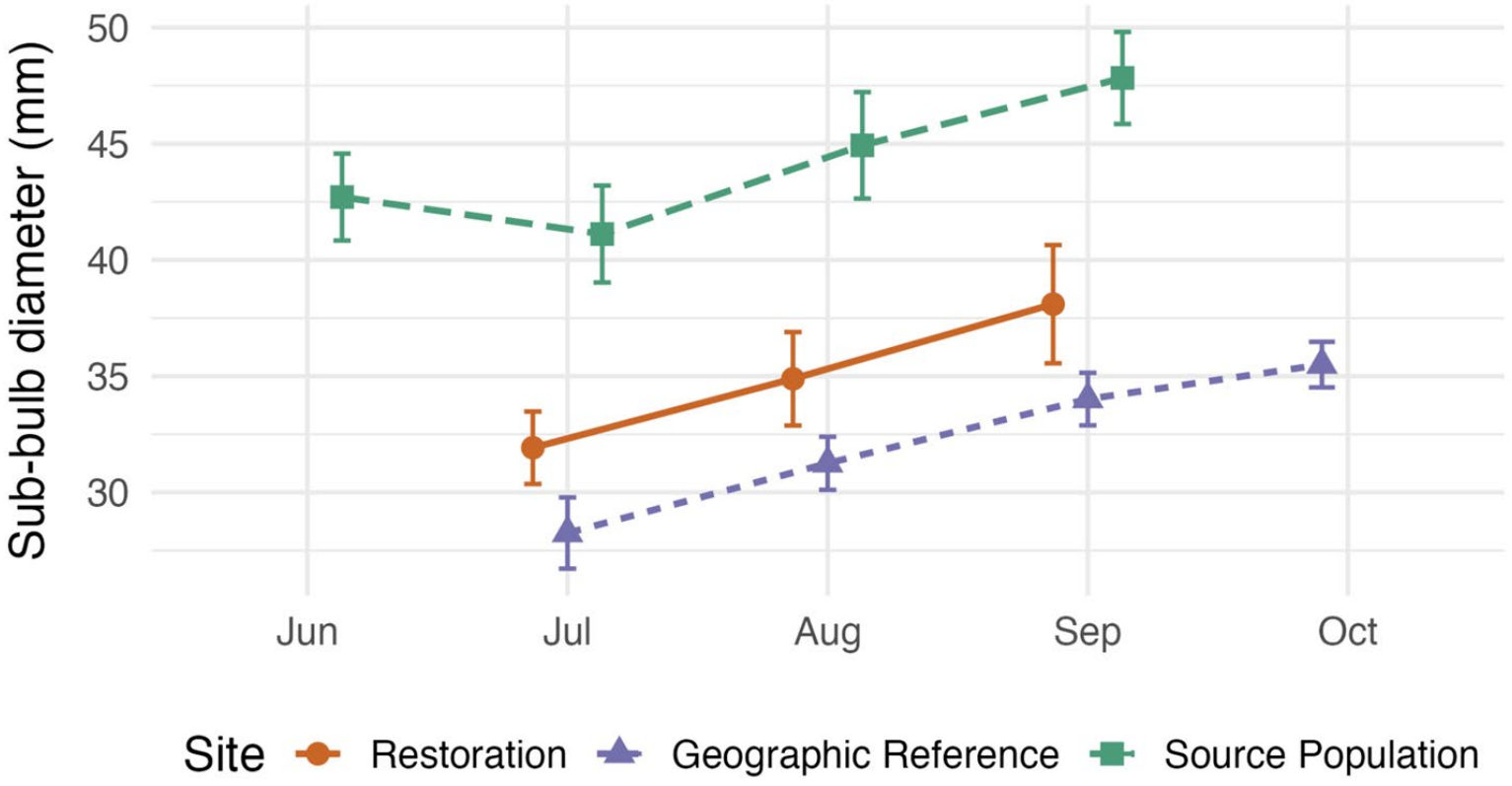
Restoration through cultivation






2020
2021
2022
2023
2024
2025

Cultivated kelp resembles wild populations





Cultivated kelp reaches reproductive maturity each year

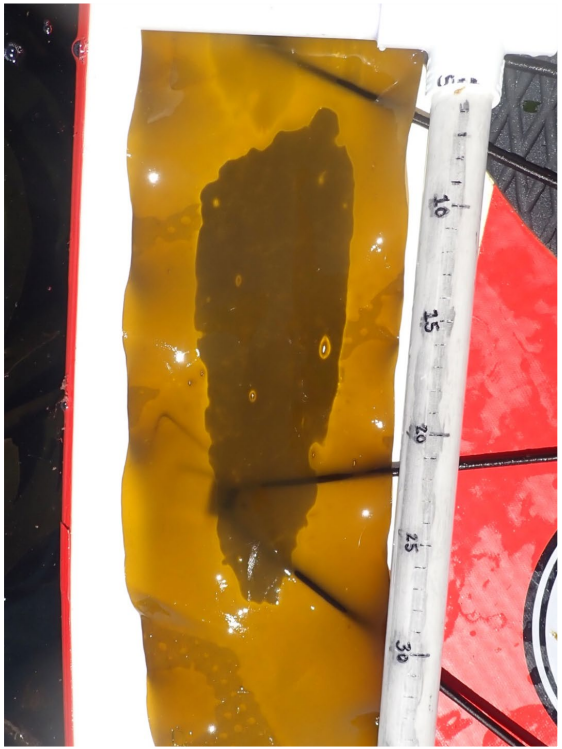
Restoration



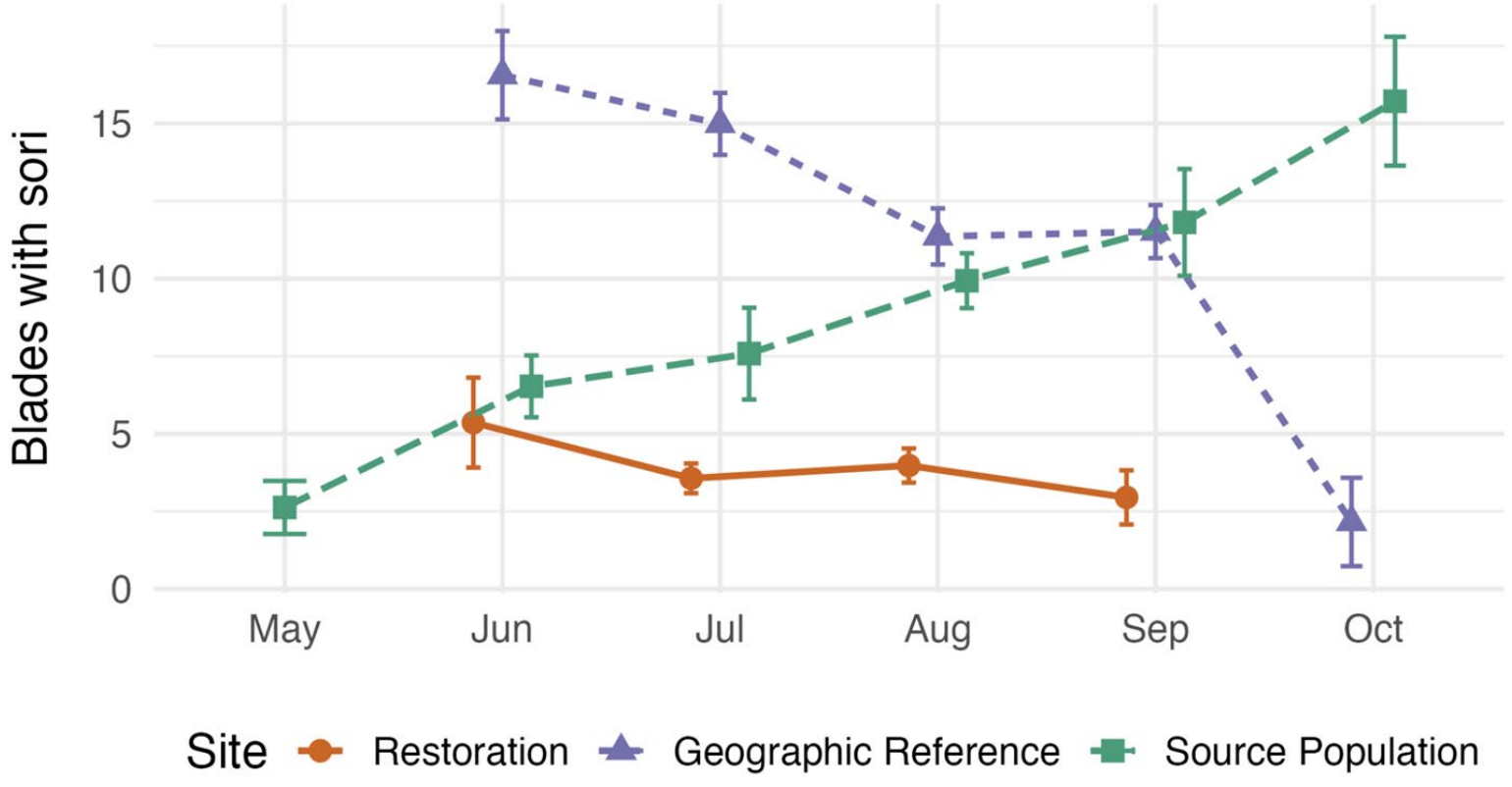
Geographic Reference

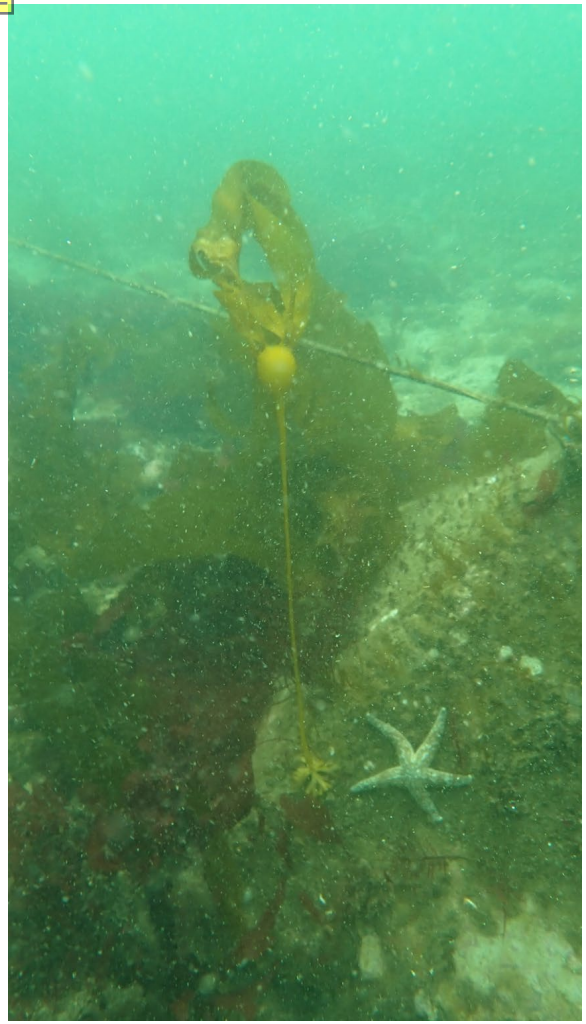


Source Population



Observed reproduction is limited







Recruits!

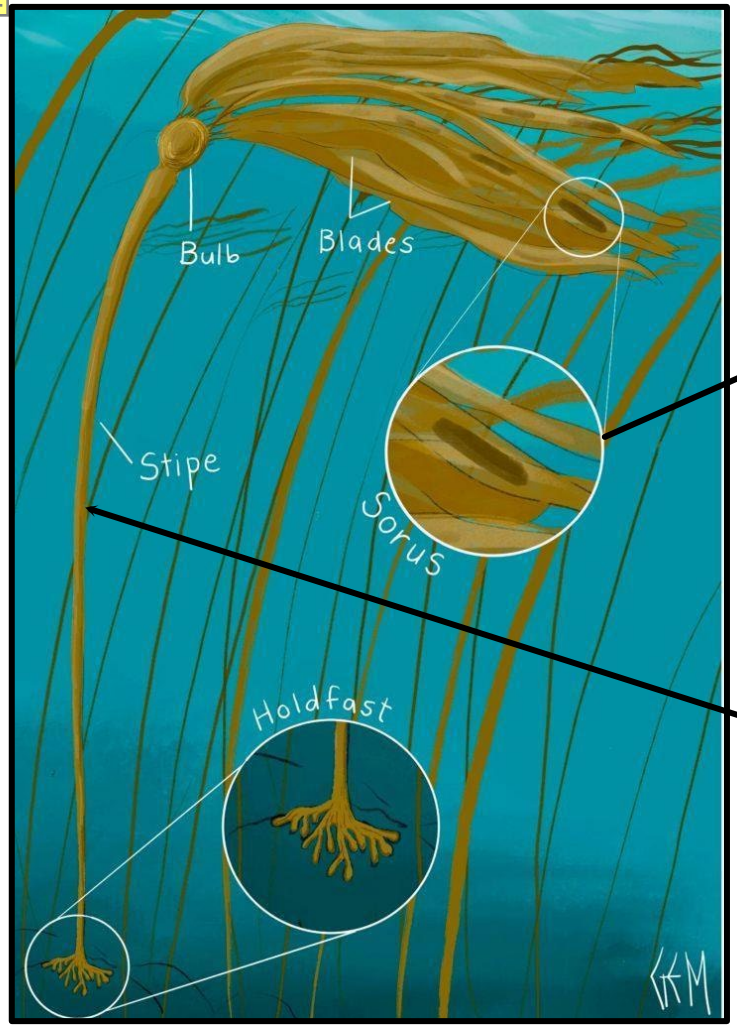
- 33 in 2024
- 30 in 2025
- 53 in 2026

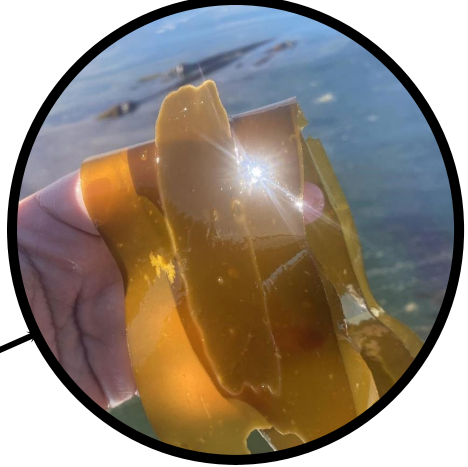


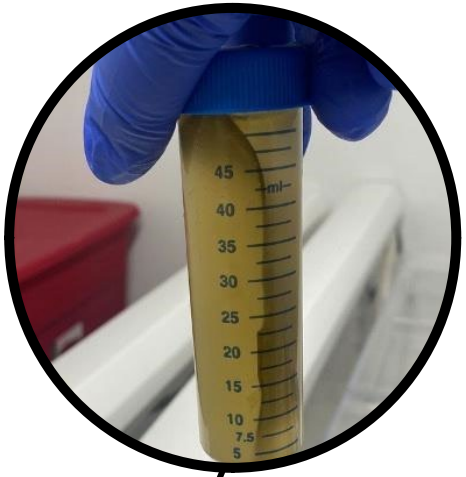


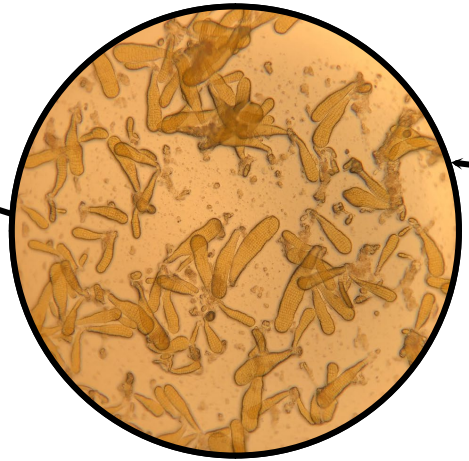

Expanding restoration efforts

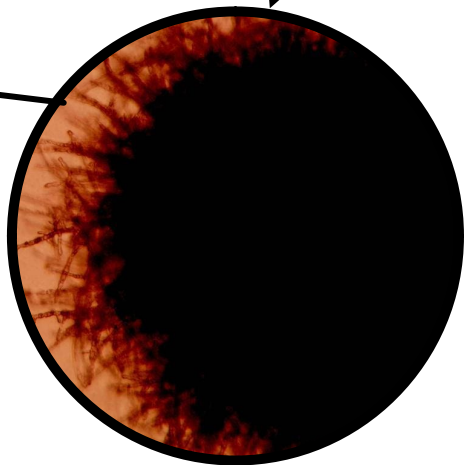
Slide: Aurora Oceguera











Kelp seed bank: **Germplasm Bank**

- **25 Populations** across Washington
- 2 Populations from **South Sound**
- Goal: preservation



Squaxin Island kelp bed

- Culturally important kelp bed
- Significant decline observed 2022
- Squaxin Island Tribe, DNR, + PSRF

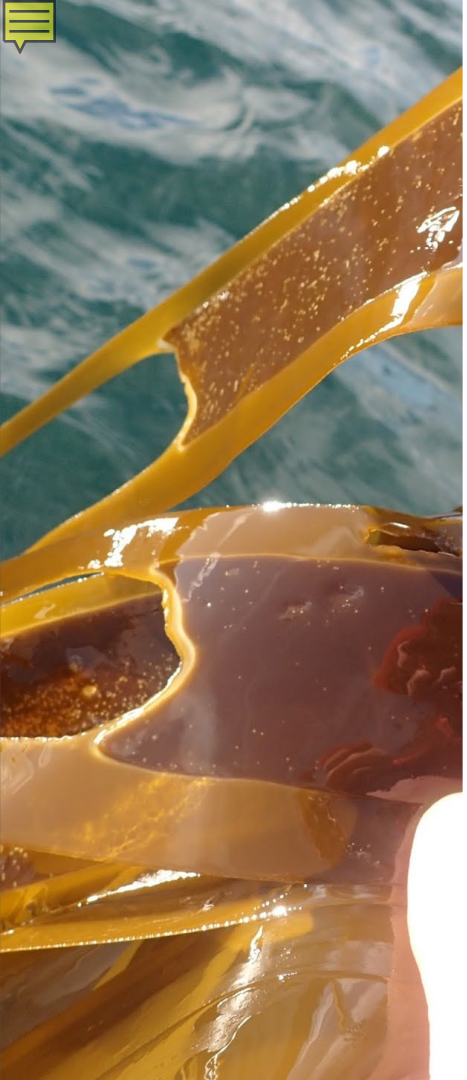
Photos: Sophie Schwager (PSRF)







2023-2025: Germplasm Seed






2025 + 2026:
FED 11/14
Wild
Sporulation

2026 and beyond

- **New methods**: pooled biomass
- Grow newly collected kelp



Photos: Sophie Schwager (PSRF)



Thank you!







