

# CLALLAM COUNTY



## MARINE RESOURCES COMMITTEE



<http://www.clallamcountymrc.org/>



# Education & Outreach





# *Why we do it*





# *Summer Intern Program, since 2010*





# 2018 Students





# Mentors



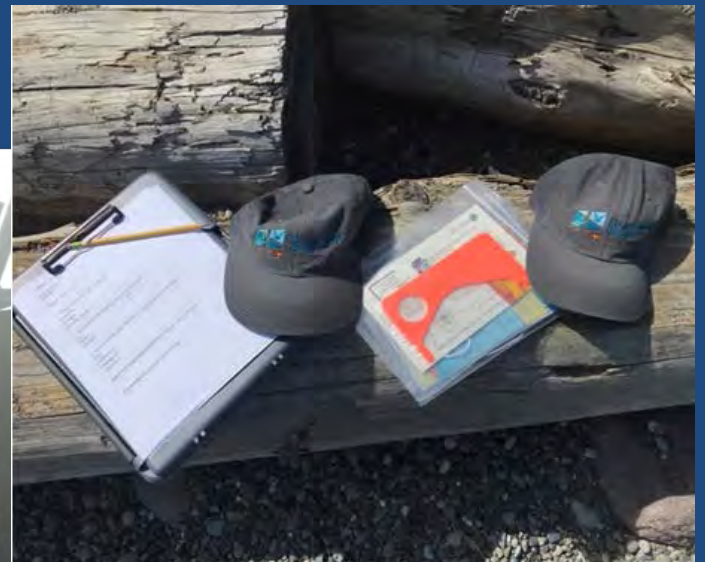


# Projects



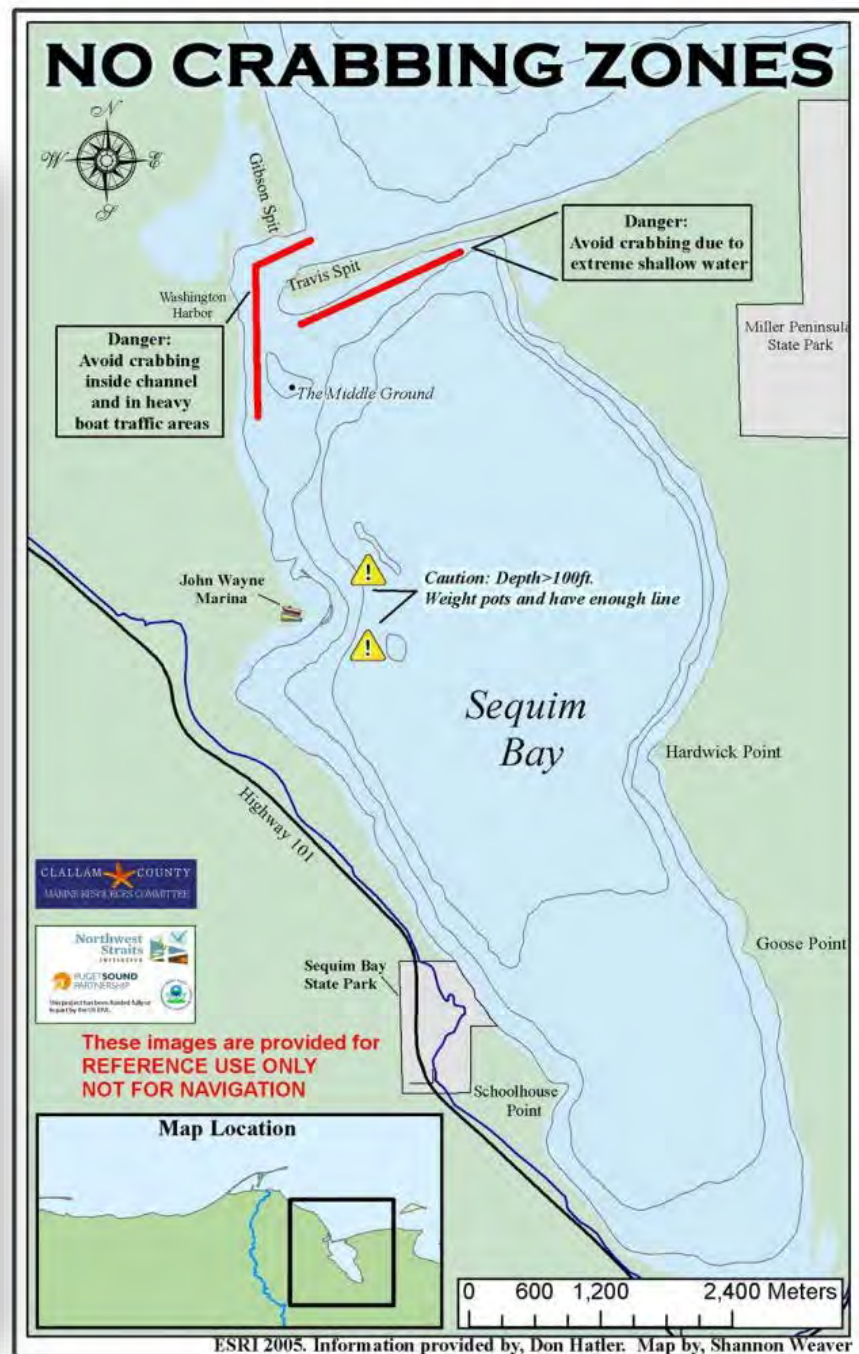


# 1. Crabber Outreach



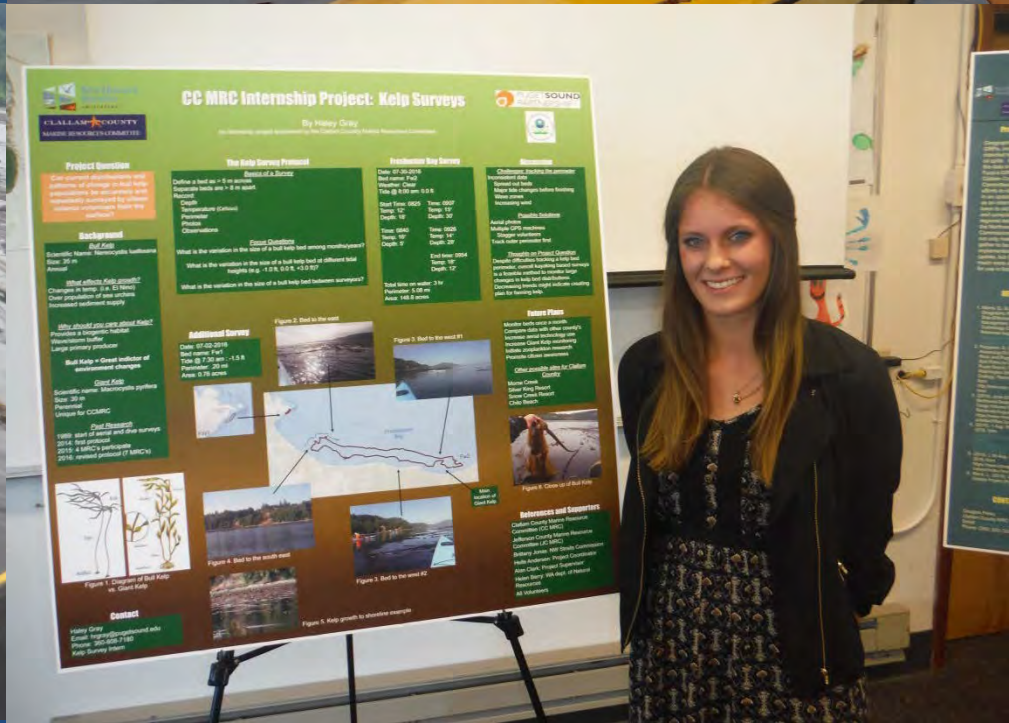


# Products





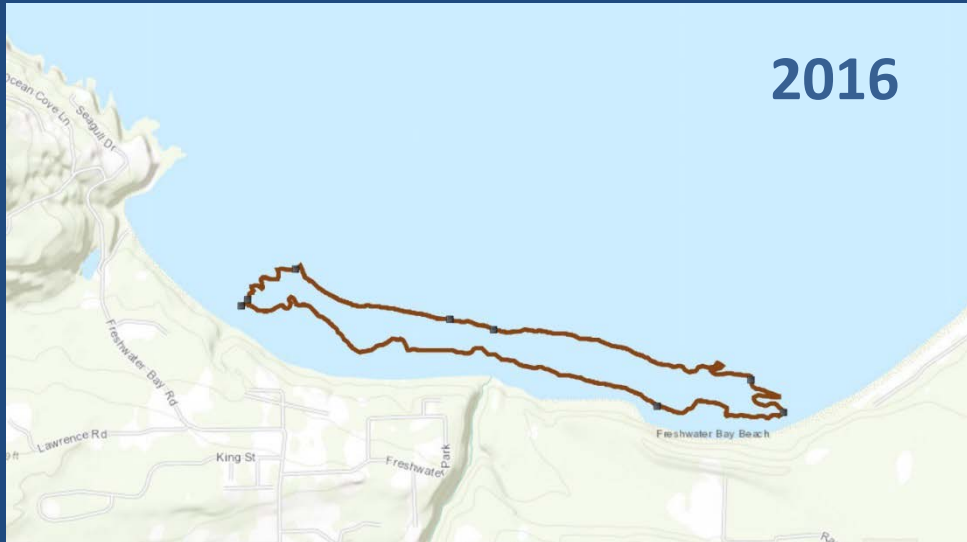
## 2. Kelp Monitoring



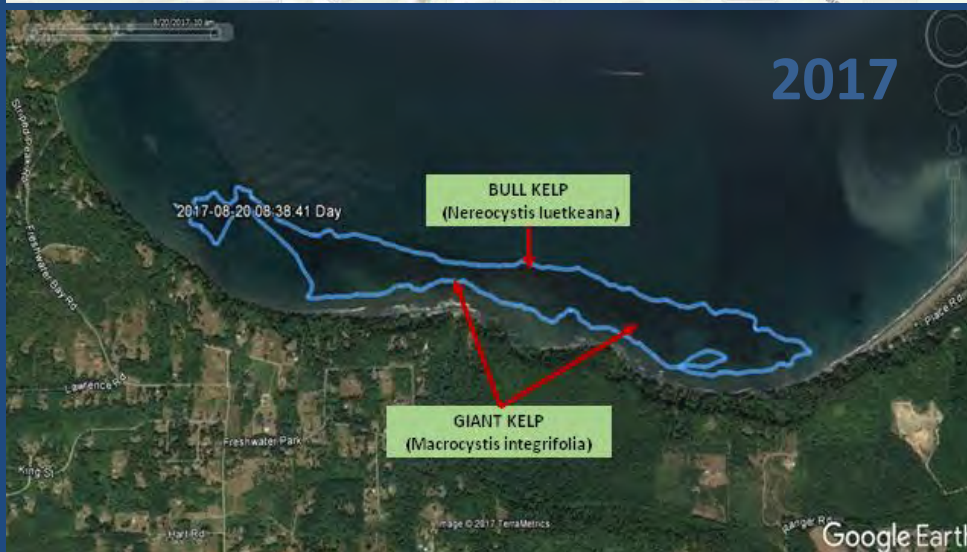


# Products

2016



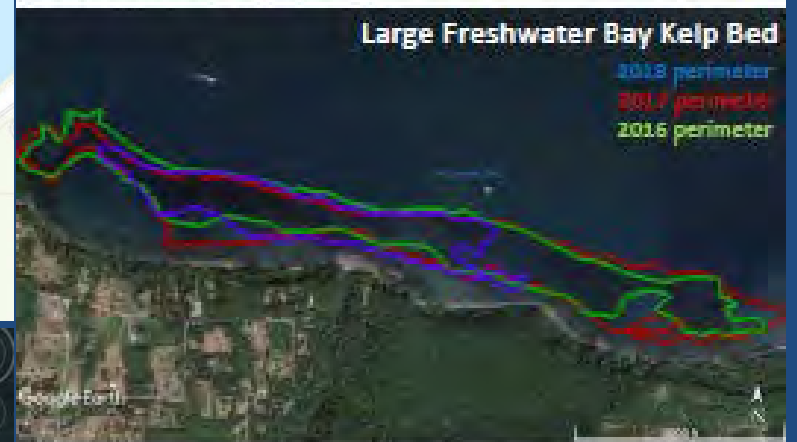
2017



Clallam Bay Kelp Bed



Large Freshwater Bay Kelp Bed

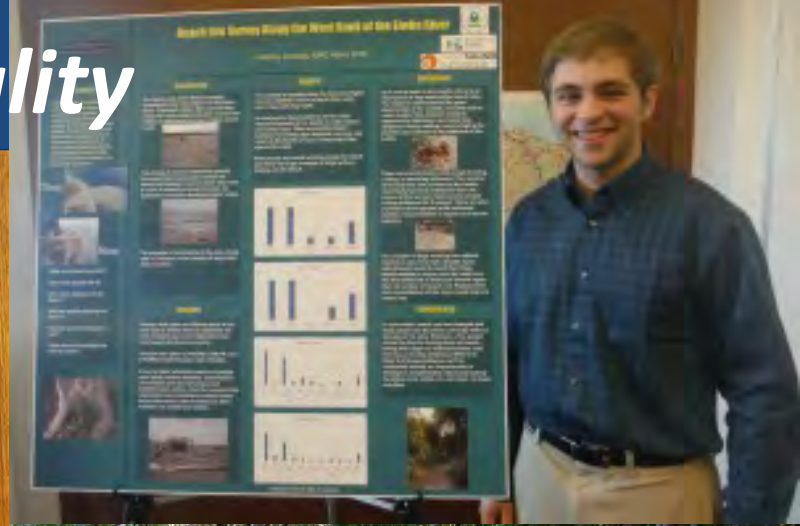


Small Freshwater Bay Kelp Bed





# 3. Elwha Beach Water Quality





## 4. Pigeon Guillemot Surveys





# Products

## CLALLAM COUNTY MARINE RESOURCES COMMITTEE

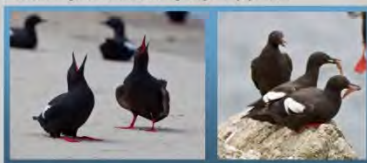
## SURVEYS OF PIGEON GUILLEMOT BREEDING COLONIES IN CLALLAM COUNTY

Christopher Reis, Ed Bowlby, Jeff Ward



### BACKGROUND

- Pigeon Guillemots, scientifically known as *C. Columba*, are members of the Auk family of birds.
- With a range extending down the Pacific Coast, these benthic divers establish breeding colonies on the Alaskan coast and in the Pacific Northwest.
- These birds serve as important indicators of ecosystem health; colony success hinges on benthic-dwelling forage fish population.



- 15 different sites across the Northern coast:
  - Bachelor Rock
  - Port Angeles
  - Dungeness Spit Wildlife Refuge
  - Port Williams County Park
  - John Wayne Marina
  - Panorama Vista
  - Mussel Beach
- Port Williams consists of eight different sites.
- All are located along the coast.

### COLONY MAP



### SURVEYS

- Surveys of breeding colonies were performed by citizen-scientists from the local area in fifteen locations.
- Many volunteers came from the experienced bird watchers of the Olympic Peninsula Audubon Society (OPAS).
- Over the course of the hour, volunteers are to record three population counts as well as a highest count.
- Volunteers document burrow locations along the cliffside and when each burrow is visited by a bird.
- Participants also record any disturbances. These include beach walkers and eagle flyovers.
- Many volunteers include additional notes about bird behavior and pictures of burrow locations.

### WHIDBEY ISLAND

- The project was initiated on Whidbey Island in 2008.
- Surveys started within the Clallam county in 2015.
- On Whidbey Island, from 2008 to 2016, volunteers recorded an average abundance of 991 birds per year with an average of 41 birds per colony.
- Over 6 breeding seasons, they noted 3,872 prey deliveries.
- Using this data, and additional information from other research, they were able to calculate prey delivery percentages, the number of occupied burrows and those with chicks.
- Prey deliveries begin during the middle of July and lasted approximately a month.
- Prey items consisted widely of gunnels/pricklebacks (57%) and sculpins (26%). Other prey, like sand lances or perch filled out the last 17%.



### OBJECTIVES

- Attend surveys from start to end of the breeding season.
- Enter past and present data into the online database.
- Create a map showing survey locations.
- Meet with University Researchers to discuss data analysis methods.

### MORE INFO

- Data Repository - [pigeonguillemotdata.org](http://pigeonguillemotdata.org)
- More Information on Pigeon Guillemots - [pigeonguillemot.org](http://pigeonguillemot.org)
- Audubon Society page on Pigeon Guillemots - [audubon.org/field-guide/bird/pigeon-guillemot](http://audubon.org/field-guide/bird/pigeon-guillemot)

### ACKNOWLEDGEMENTS

- Photo Credit: NOAA, U.S. Fish and Wildlife Service, Whidbey Audubon Society
- Thanks you to the Audubon Society of Whidbey Island and the Olympic Peninsula, the many volunteers, and the Clallam County MRC
- Additional thanks to the Northwest Straits Commission.

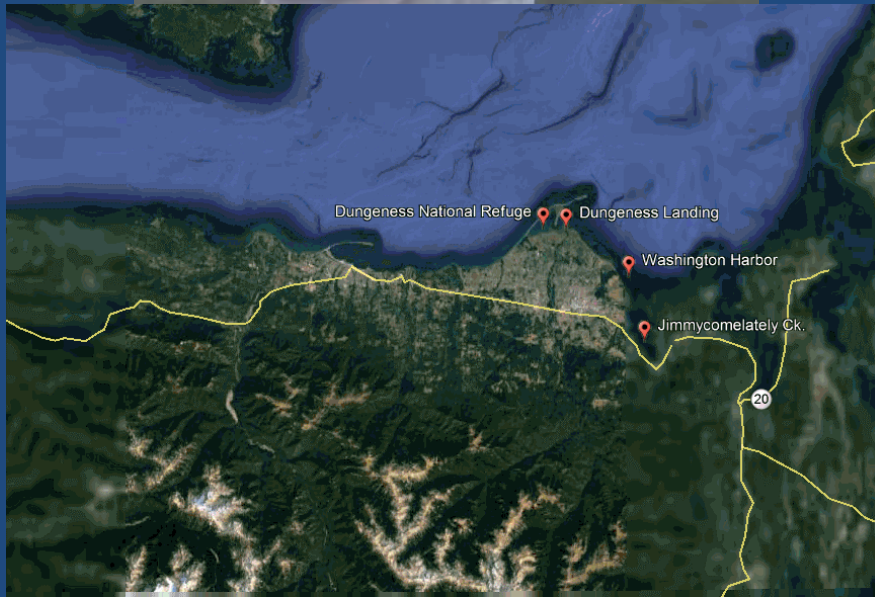
### LESSONS LEARNED

- Birds nesting in high-traffic areas, such as John Wayne Marine, ignore motorboats and other traffic.
- Investigating breeding colonies and conducting bird counts can serve as an indicator for ecosystem health.
- Volunteer-conducted science and citizen-scientists allows for continuous monitoring of local ecosystems.

This project has been funded wholly in part by the United States Environmental Protection Agency under assistance agreement CE-0111941 to the Puget Sound Partnership. The contents of this poster 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.



# 5. Green Crab Removal



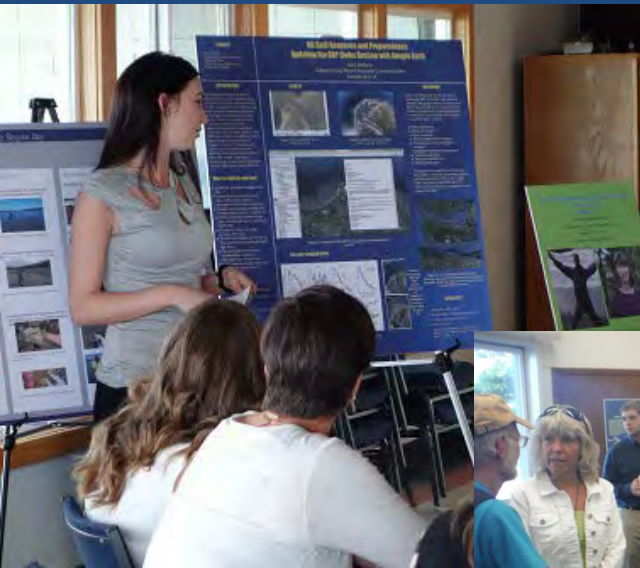


## 6. Olympia Oyster Restoration



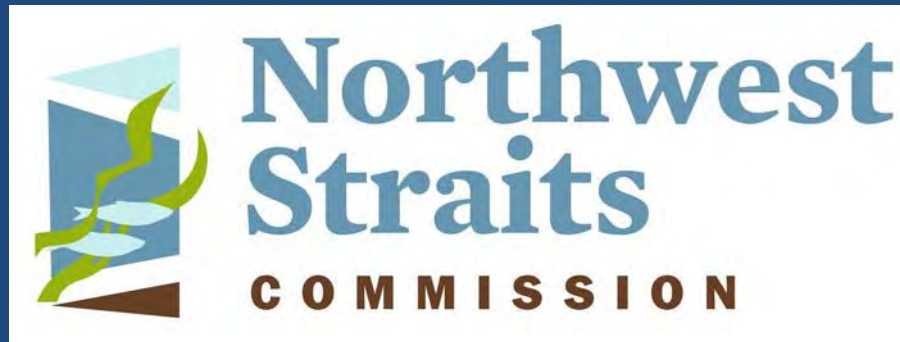


# Celebration & Presentations





# *Funding*





# Partners





# *Past Interns: Off doing great things!*

