



# Status of Abalone: Update on Suspension of the Recreational Abalone Fishery

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# Why we're here

- Recreational abalone fishery suspended (March 2018 to March 2021)
- OFW Commissioners asked for a ~1 year update

- Recap
- Progress
- Update



Red abalone amongst red sea urchins



# 2018 Commission Recap

- Biology and ecology
- Fishery problems
  - Low densities of abalone
  - Poor environmental conditions
  - Increased recreational harvest pressure
- Permit holder questionnaire
- Management options

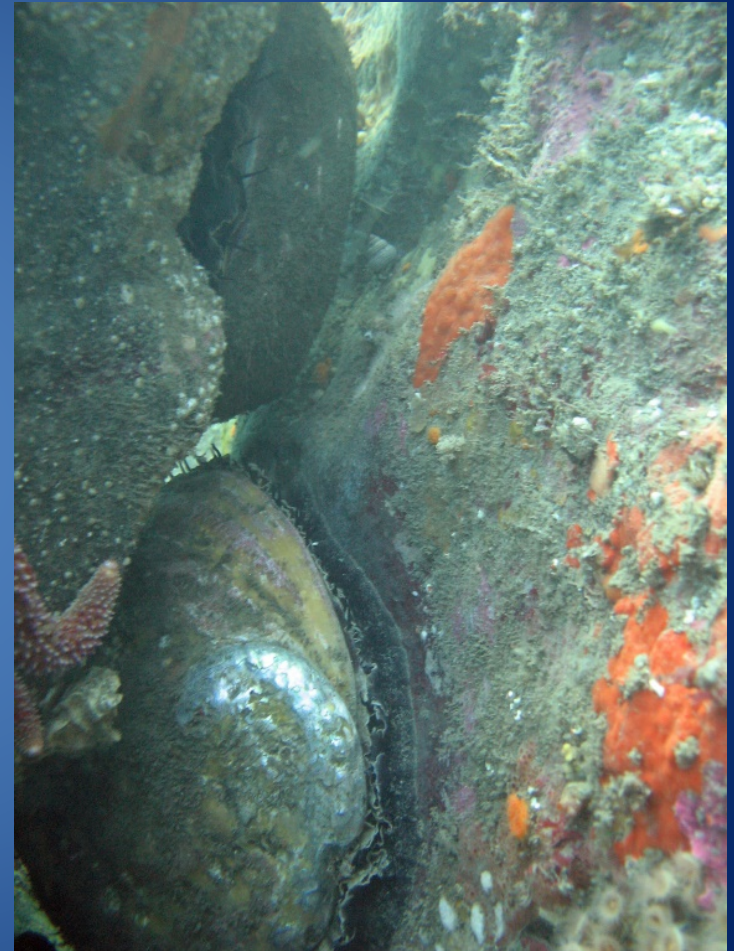






# Abalone biology & ecology

- Marine snails
- Live on rocky reefs
  - Sedentary
- Eat drift kelp
  - Only live in shallow kelp beds
- Broadcast spawners
  - Tight aggregations critical to fertilization success
  - Short larval period (local)
- Long life span
  - ~15 years to minimum size
  - Maximum age 35-54 years



Red abalone frequently inhabit crevices



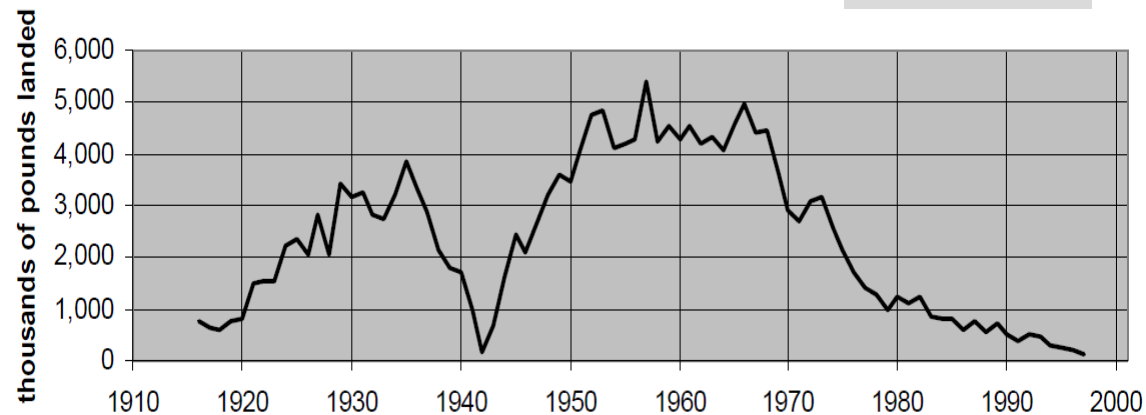
# Abalone fisheries

- Principally occur in areas with cold water and rocky reefs (Australia, New Zealand, South Africa, Japan, West Coast US)
- US West Coast has previously allowed many abalone fisheries, all now closed due to population concerns (5 of 7 species with ESA status)
- California had most robust abalone fisheries and strongest effects



Commercial Landings of Red, Pink, Green, White, Black, and Unspecified Abalone, 1916-2001

Source: CDFG, 2003







# Oregon abalone fisheries

## Two species

- Flat abalone: Commercial fishery (2001-2008)
- Red abalone: Commercial fishery (1960-1962)  
Recreational fishery (1953-2017)



Commercially caught flat abalone 2001-2008

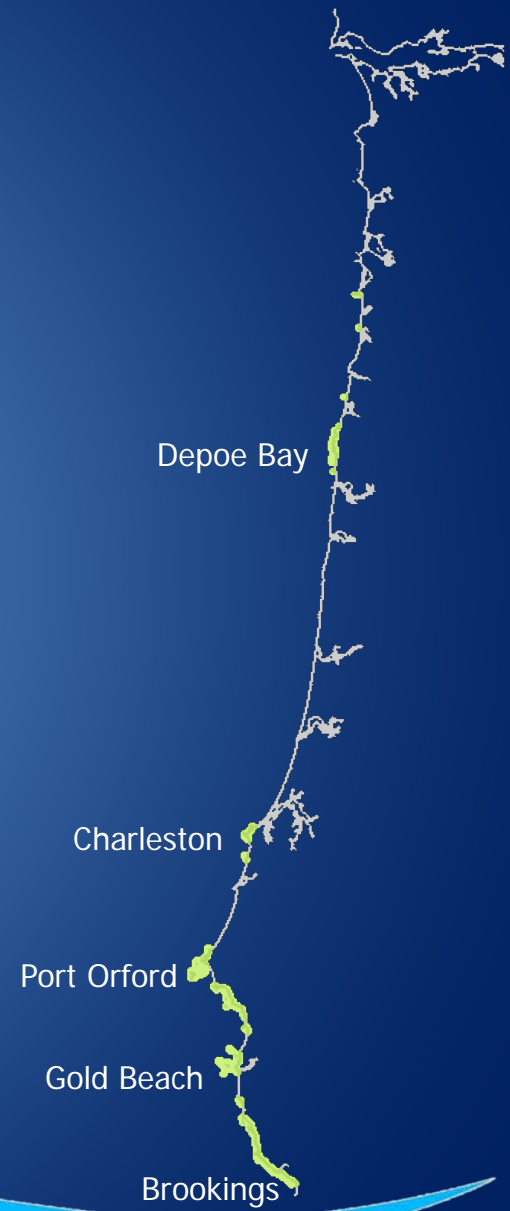


Recreational red abalone harvest- 1960's  
Photo: Eugene Heflin



# Oregon's red abalone

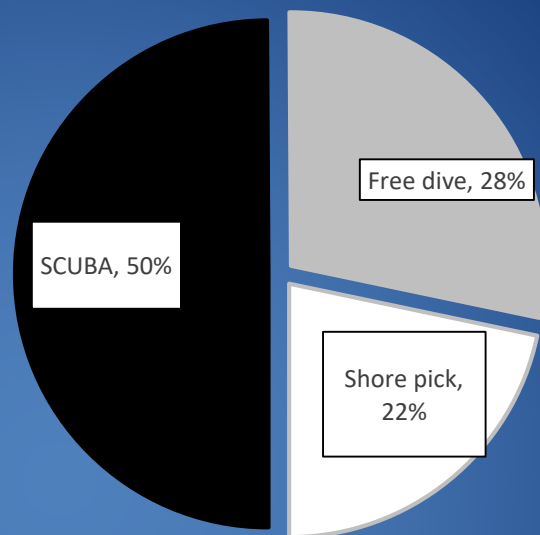
- 1953 - red abalone "discovered"
- 1959 - rules established for recreational fishery (3 abalone / week)
- 1960-1962 - commercial fishery
- 1965-1975, 1994-2002 - spawning programs designed to bolster fishery
- 1996 – revision of recreational rules
  - 1/day, 5/year, added free harvest permit



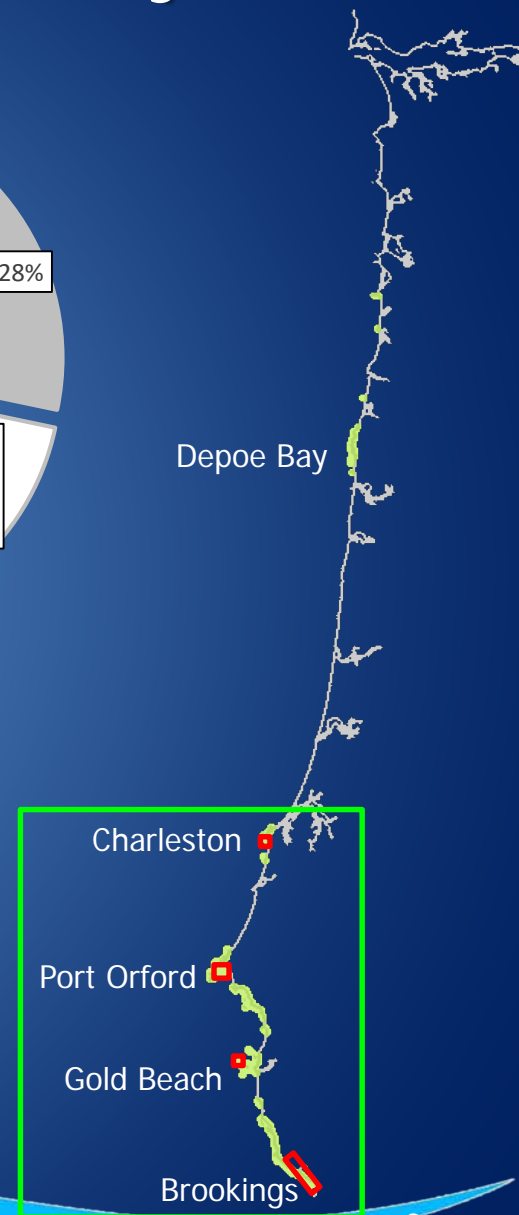


# Oregon's abalone fishery

- Location
  - South Coast
  - Shallow kelp beds
- Methods
  - 50% SCUBA
  - 28% Free dive
  - 22% Shore pick
- Permits
  - ~ 300/year
- Harvest
  - ~ 189/year
  - (2007-2016)



**California:**  
~25,000/year  
~239,000/year  
(2002-2015)  
No SCUBA allowed





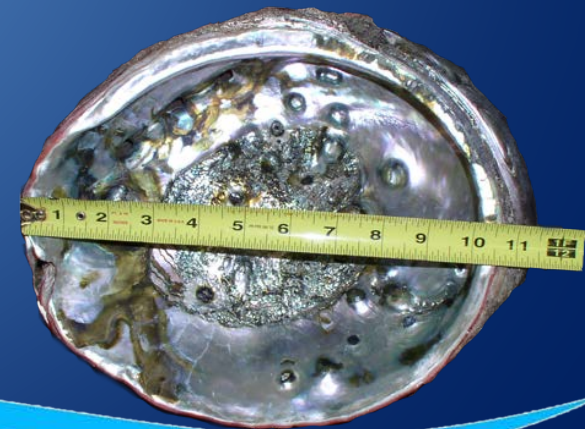


# So what's the allure?

- Trophy shells!
- Red abalone are the world's largest species of abalone
- Like many animals, red abalone grow to their largest sizes at polar range extents
- Oregon red abalone are the largest in the world!
- Trophy hunting for abalone is exciting and competitive



Record-holder John Pepper w/ the shell of his world-record 12 5/16" abalone. A legal-sized 7" ab is shown below for comparison.





# Underpinning problems for abalone fisheries

## 1. Density-dependent spawning success

- Issue: Abalones only spawn when aggregated
- Effect: Fishing targets aggregations

## 2. Fishery data is misleading

- Issue: Reduced abalone abundance may not affect fishing success
- Effect: Population crashes due to fishery managers not detecting changes using fishery data

## 3. Enforcement

- Issue: Easy to illegally harvest and valuable
- Effect: Difficult to monitor



# Current problems for Oregon

1. Low densities
  2. Poor environmental conditions
  3. Increasing pressure / harvest
- No regional FMP or comprehensive conservation framework in place

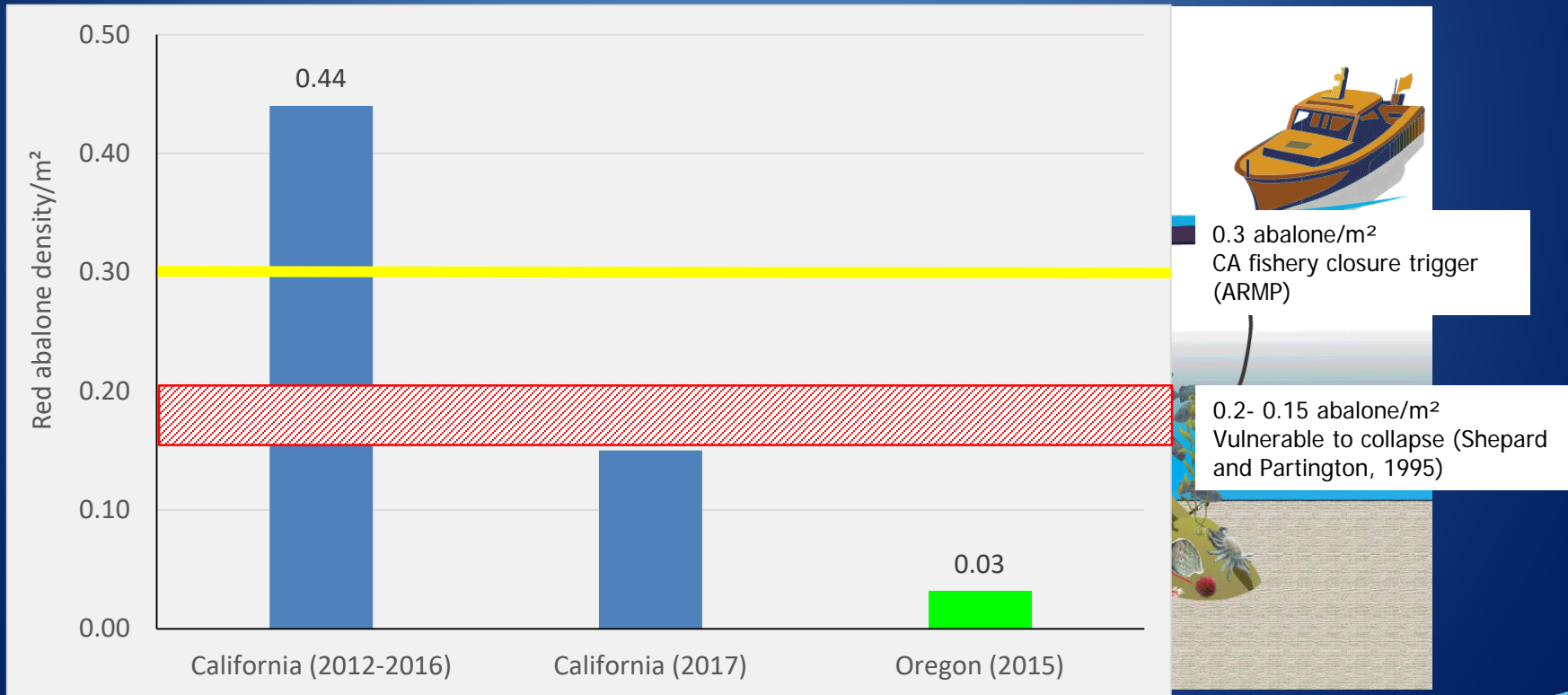






# 1) Low density of red abalone

- Prior to 2015, no quantitative surveys attempted
- 2015 - Belt transect surveys (CA methods)





## 2) Poor environmental conditions

- Kelp beds vastly reduced after El Niño
- Other factors:
  - purple sea urchins
  - sea star wasting syndrome



Healthy

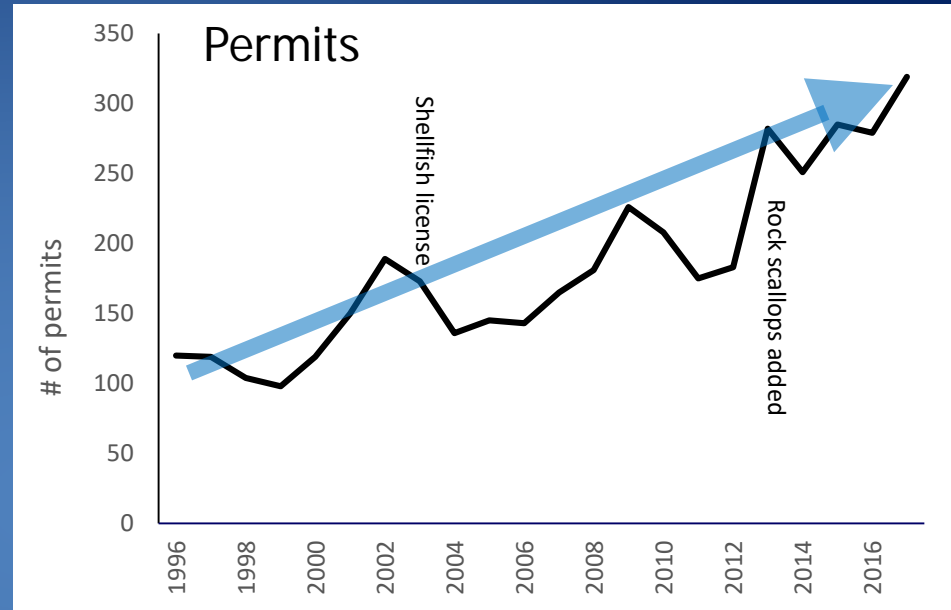
Starved





# 3) Increasing fishery pressure / harvest

- Permits increasing

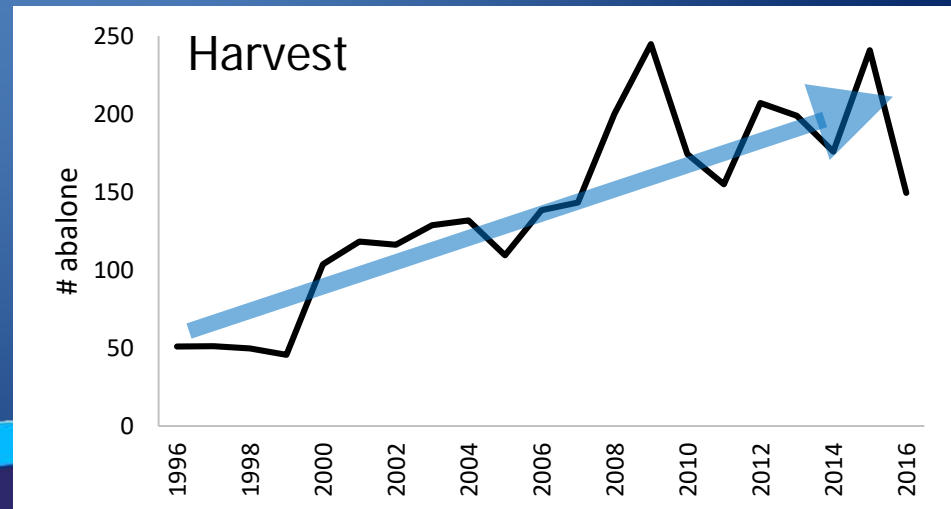


- Harvest increasing



Recent

HUGE spike in interest

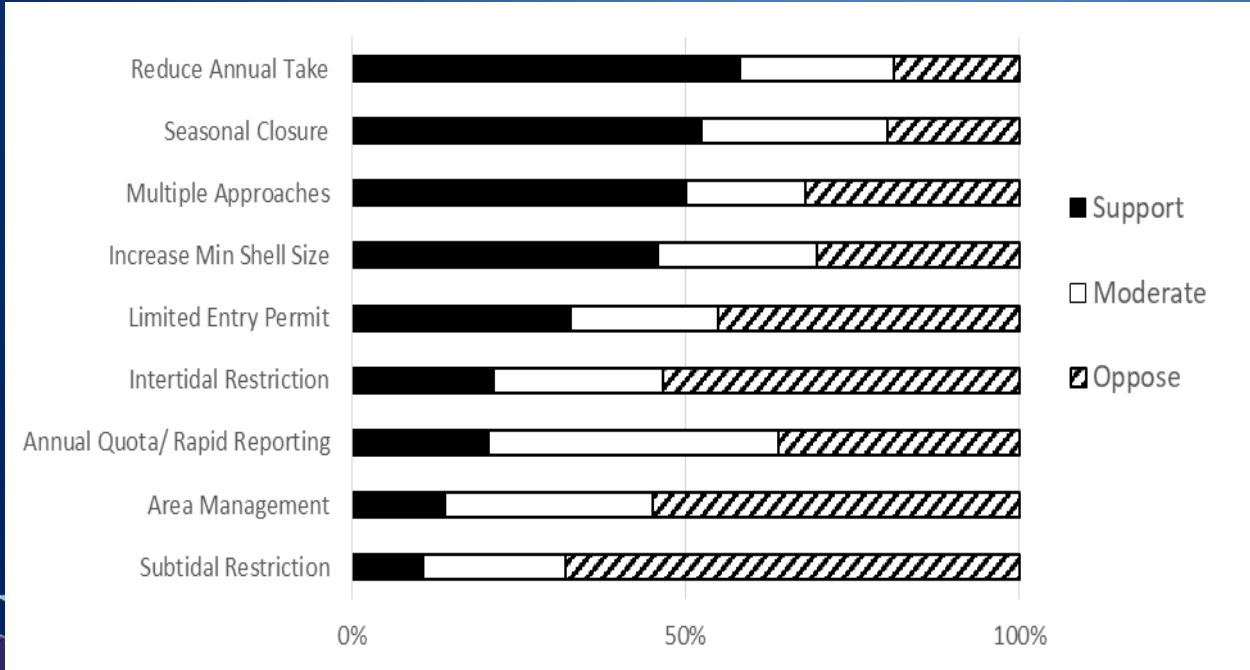
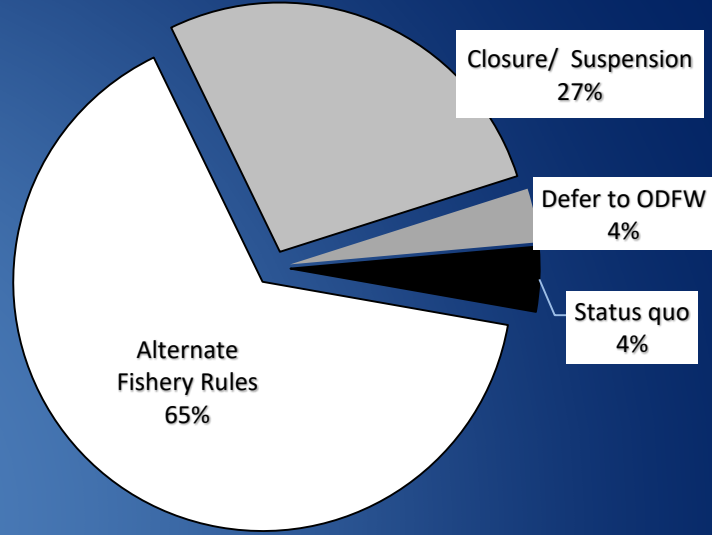






# Stakeholder Questionnaire

- Overall preference
  - Most prefer to continue fishery with alternate rules
- Alternate fishery rule preference
  - Most prefer to reduce annual take





# Summary

- Abalone biology makes them sensitive to fishing pressure
- Abalone fisheries have been unsuccessful
- Low densities in 2015 surveys
- Poor environmental conditions
- Increase in fishery / harvest pressure



# OFWC Decision / Mar 2018

## Option 2: Temporary fishery closure

Allows 3 years to consider stock/fishery

- Workshop on northern stock with California
- Track California monitoring surveys
- Revisit Oregon surveys (if budget allows)
- Develop an abalone conservation plan
- This option is most aligned with imperiled status of red abalone, while allowing a near term- "check in" with Commission





# Progress since 2018 OFWC Decision



# What has California done?

- Extended their one-year closure two more years (February 2021)
- Continued surveys
  - No recovery observed
- Developed a stakeholders group to evaluate fishery options
  - Breeding and outplanting juvenile abalone
  - Reduction (smashing) of purple sea urchins
  - Developing a '*de minimus*' recreational fishery



# What has ODFW done?

- Track California's progress
  - Listening in on their process
  - Communicated with CDFW staff on results of their surveys
- Submitted a grant package with OSU staff
  - Revisit south coast abalone surveys
  - Genetic approach to identify effective population size
- Develop a summary manuscript "*Abalone in Oregon*"
  - Precursor to a conservation plan
- Performed sea urchin surveys
- Developing grants to further understand sea urchin, abalone and kelp





# Updates



# Current status

- Low densities
  - Few formal surveys, no substantial increases
  - Anecdotal reports have not been good
- Environmental conditions
  - Worsened
  - Warm water conditions have not improved substantially
  - Kelp further reduced
  - Purple sea urchin populations increased
- Fishery pressure
  - Suspension addressed





# Humbug Mountain Kelp Beds



Humbug Mountain Kelp Bed, 2016



Humbug Mountain Kelp Bed, 2019





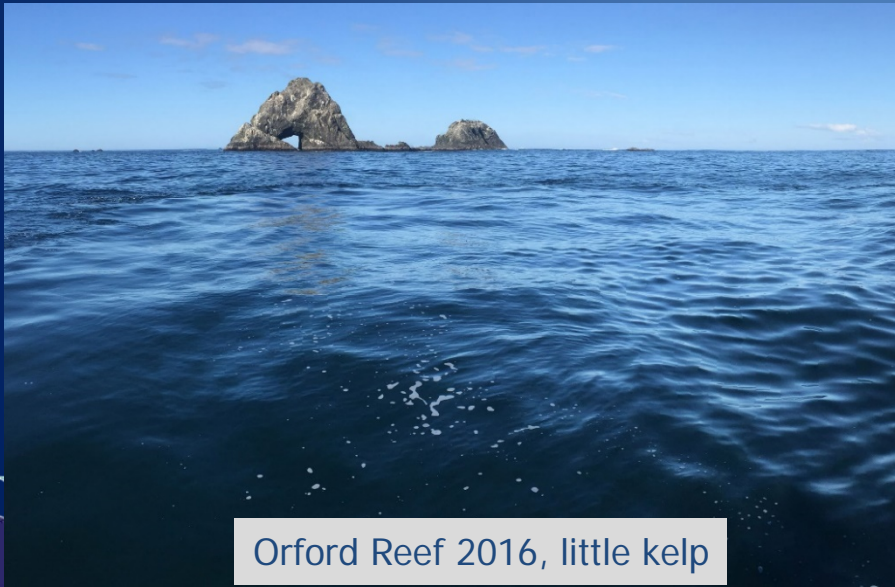
# Orford Reef Kelp Beds



Orford Reef 2014, lots of kelp



Orford Reef 2019, almost no kelp



Orford Reef 2016, little kelp



# What's next?

- Surveys of abalone populations
  - Hopefully next year
- Continued information gathering and publication
- Continued investigation of a limited "big game" fishery
  - Implementation in coordination with CA?
- 2021 OFWC exhibit to decide near-term future of recreational abalone fishery
- End goal is to retain a sustainable recreational abalone fishery in the future