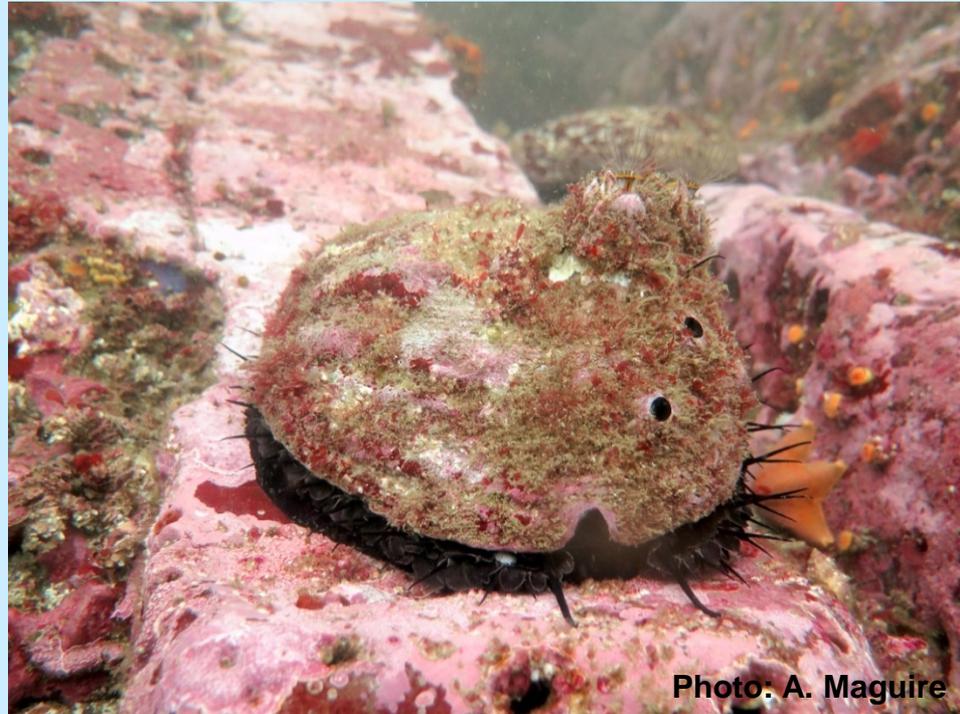




Red Abalone Fishery Management Plan Update



Alisan Amrhein & Ian Taniguchi
California Department of Fish and Wildlife
November 4, 2015

www.wildlife.ca.gov/Conservation/Marine/Red-Abalone-FMP

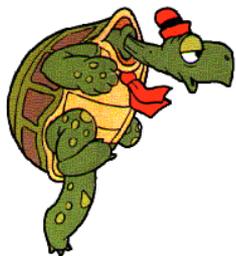


FMP Update Overview

- Context for Abalone Fishery Management
- Abalone Recovery and Management Plan (ARMP)
- Regulation changes & ARMP transition
- Fishery Management Plan (FMP) Development
- Management Principles and Goals
- FMP Management Framework
- FMP timeline and next steps



Fishery Time Frames



Slow Recovery



Fast Recovery

Abalone >12 yrs

Urchins > 7 yrs



Rockfish > 10 yrs



Squid 9mo – 1yr



Herring ~3 yrs



Crab ~3 yrs





Abalone Recovery and Management Plan (ARMP)

- Adopted in 2005
- Recovery portion: addresses all abalone species subject to 1997 fishing moratorium
- Management portion: applies to populations considered sustainable & fishable (northern CA red abalone fishery)
- Includes interim and long-term plan for northern California



Fishery Monitoring

- Abalone densities at fished indicator sites are sensitive to fishing pressures (precautionary approach)
- Selected high and medium use sites in the fishery
- 4 sites per County
- 49% of catch historically taken from these sites

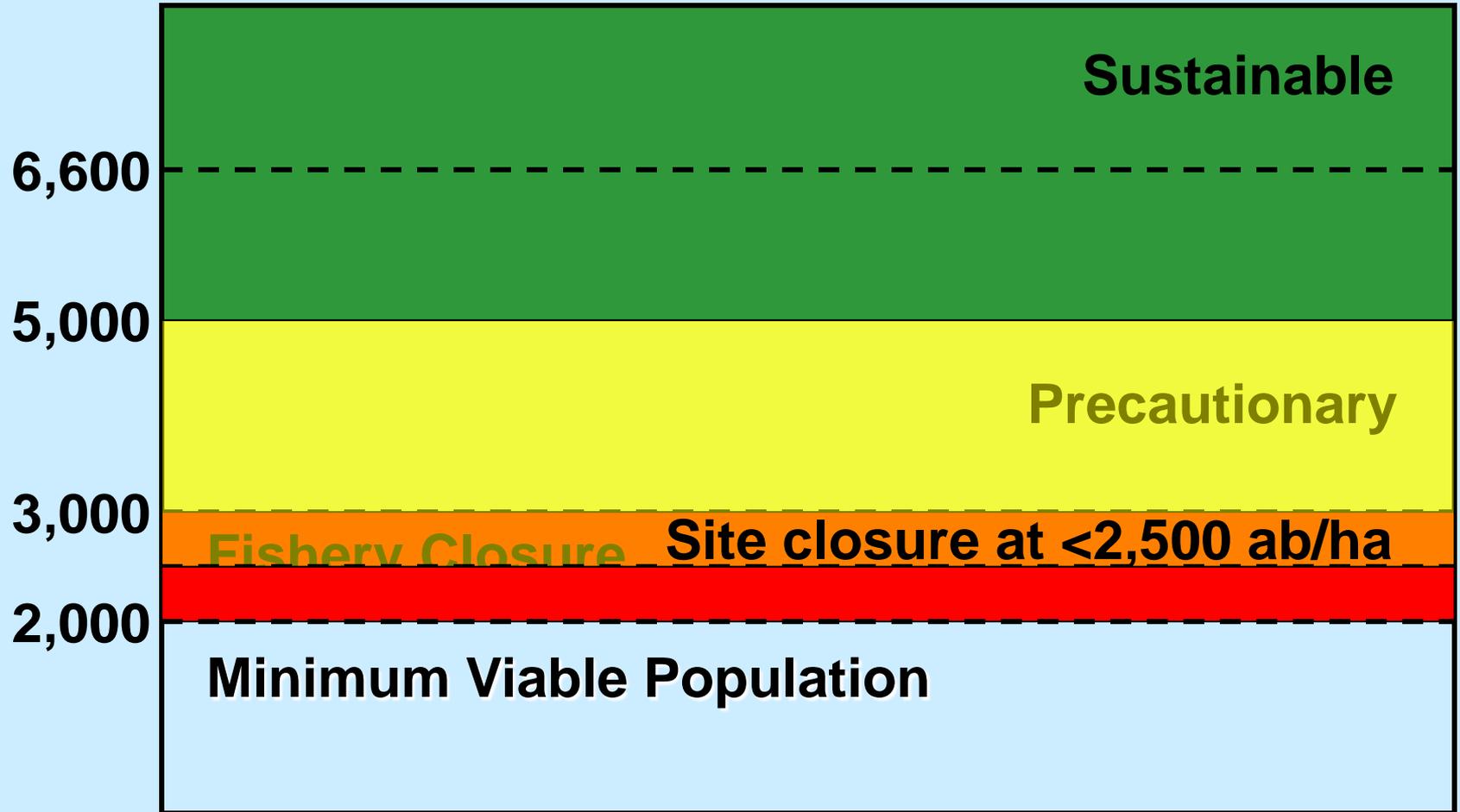




ARMP

Interim Management Strategy

Density (Abalone/ha)





Fishery Changes

Harmful Algal Bloom (HAB)

- Sonoma County August 2011
- Large numbers of dead/dying abalone

ARMP ma

- Overall fish density <5
- Fort Ross <2,500 ab

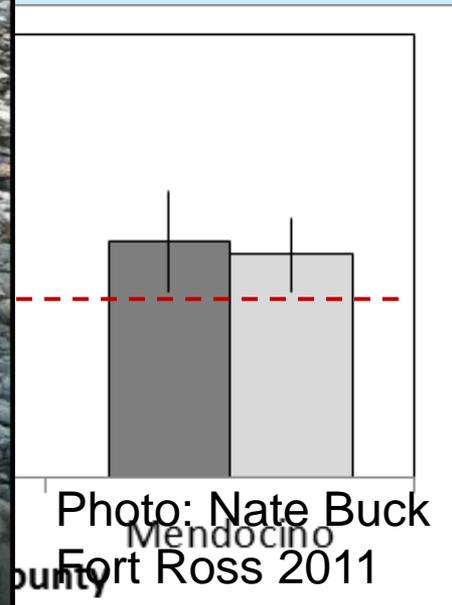
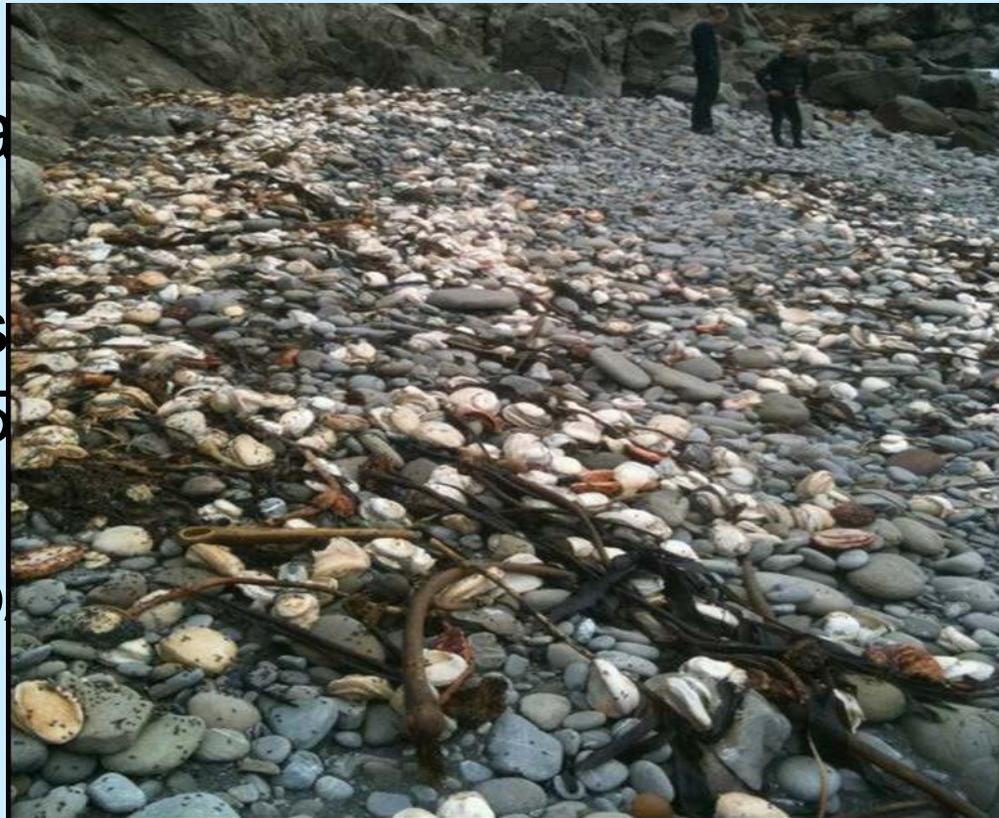


Photo: Nate Buck
Mendocino
Fort Ross 2011



2014 FGC regulation changes

Reduce catch by $\geq 25\%$ according to ARMP:

- Annual limit lowered to 18
- Limit of 9 abalone from Sonoma and Marin counties combined (Fishery now has two areas, North and South)

Fort Ross site closure

- Reduce by amount of catch at Fort Ross to address effort shift concerns



2014 regulation changes

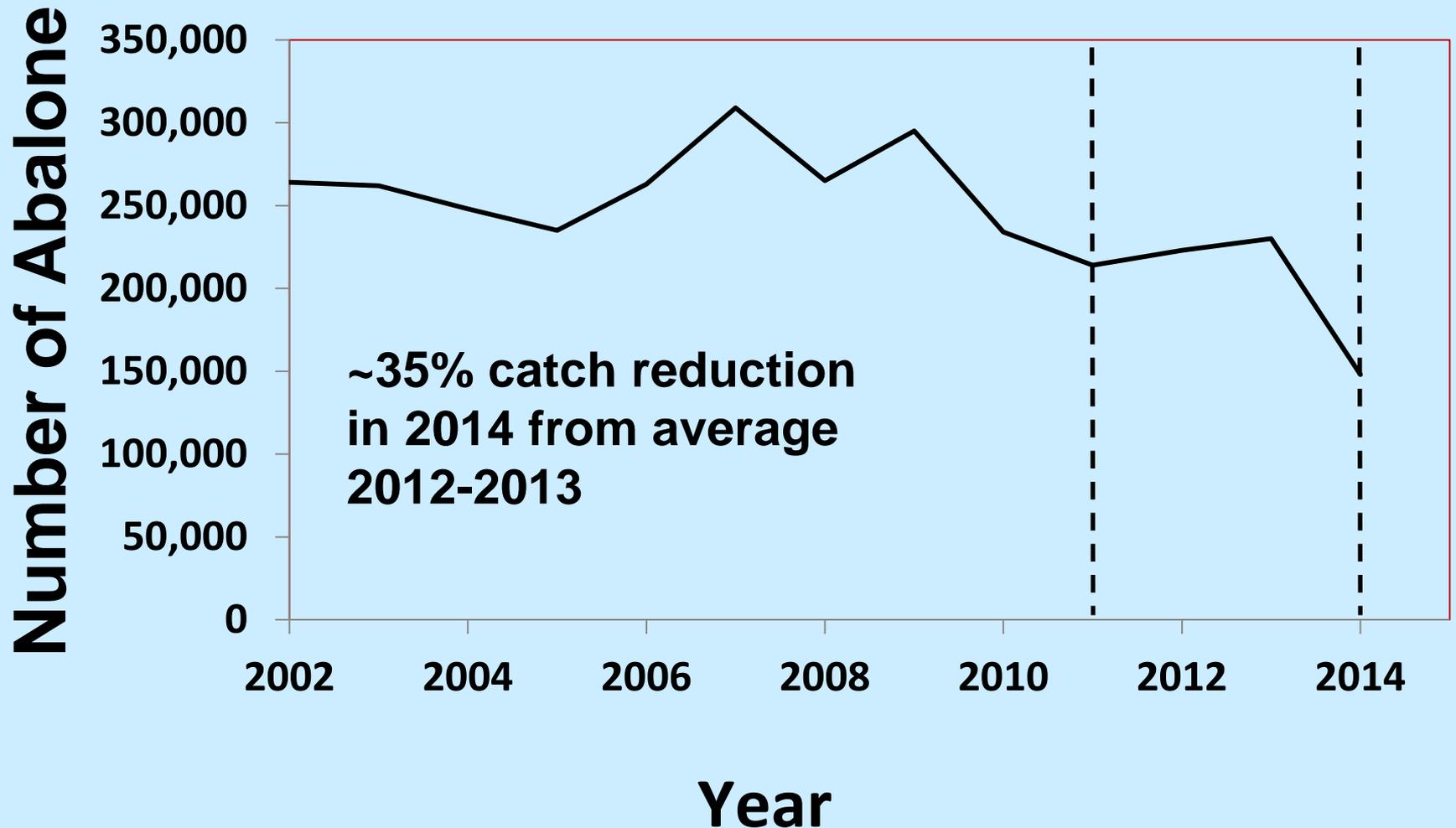
Regulation change to further reduce catch and improve enforcement:

- Defined start time at 8 am
- Anticipated impacts to rockpicking effort
- More limited access during extreme low tide events



Impact of 2014 Regulations

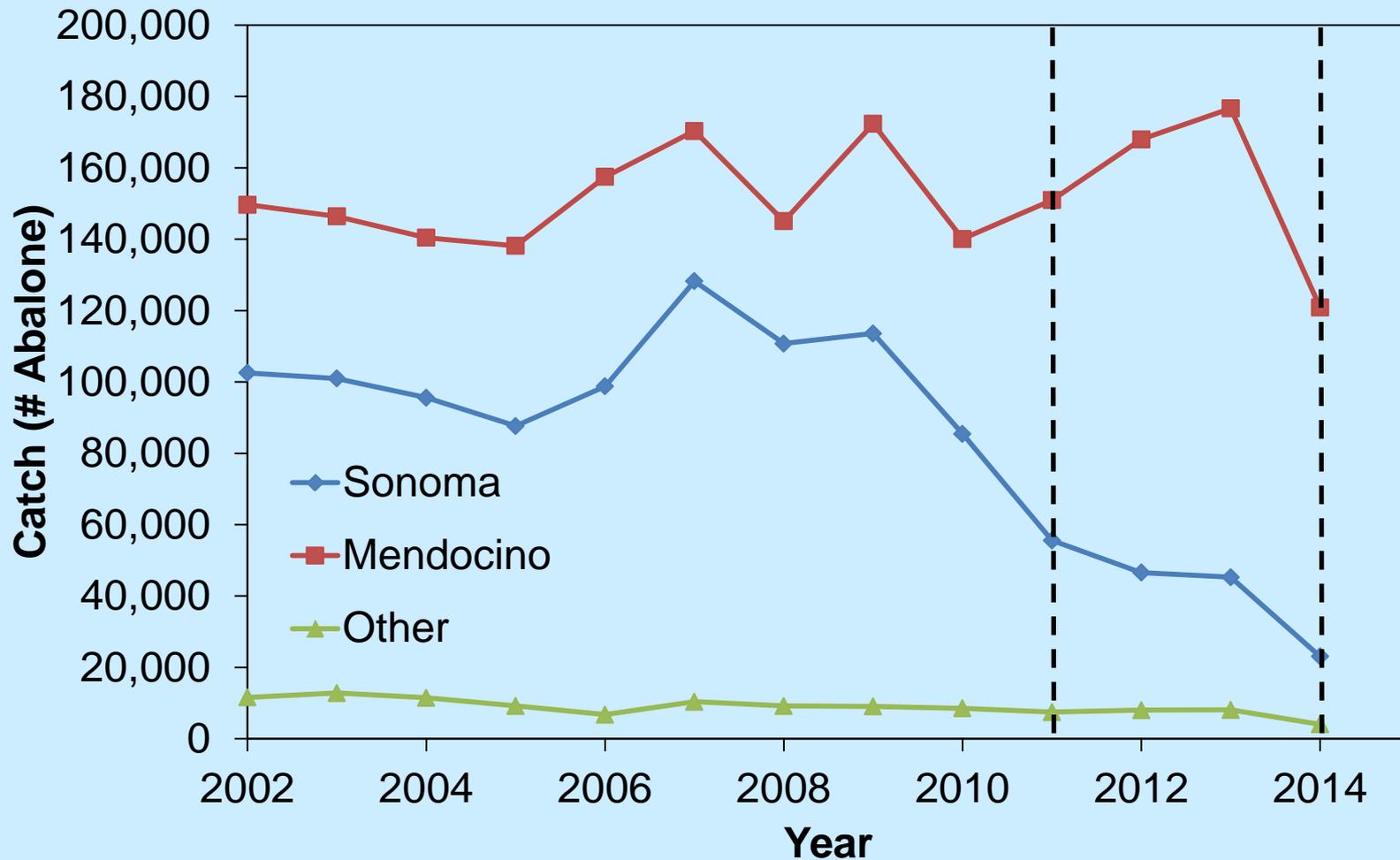
Red Abalone Catch 2002 - 2014





Red Abalone Catch by County 2002 - 2014

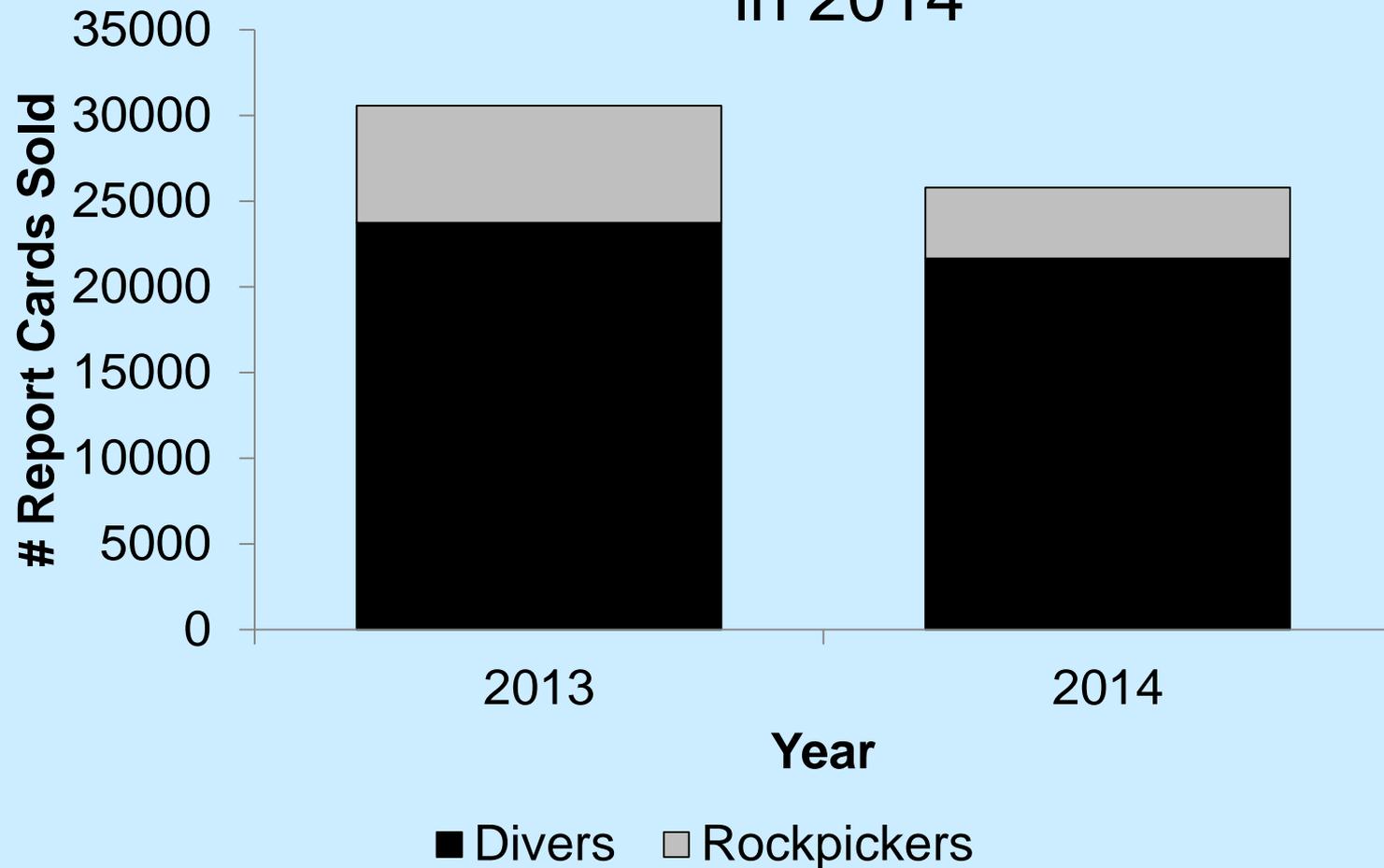
Greater % reduction in Sonoma County





Red Abalone Report Cards Sold

39% fewer rockpickers bought report cards
in 2014





ARMP Long-term Plan

- Area-based management
- Utilize more scientific data
 - Fishery-dependent data (i.e. catch)
 - Fishery-independent data (i.e. population density)
- Move toward a Total Allowable Catch (TAC) management system
- Continue to improve adaptive / responsive management



Motivation for FMP development

- Marine Life Management Act (MLMA) principles
- Move to ARMP long-term management
 - 10+ years of data on catch and density
 - More research on fishery modeling & abalone biology
 - Area-based differences in the fishing grounds
- Technical review of density methodology
- FMP focus on red abalone fishery, existing and future



FMP Development

- Technical review (Winter 2013 – Spring 2014)
- Public workshops & tribal consultation (Sept – Oct 2014)
- Public input and comments (ongoing)
www.wildlife.ca.gov/Conservation/Marine/Red-Abalone-FMP/Involved
- Angler survey (Feb 2015)
- Essential Fisheries Information (EFI) input (July 2015)
- Economic Analysis (current)



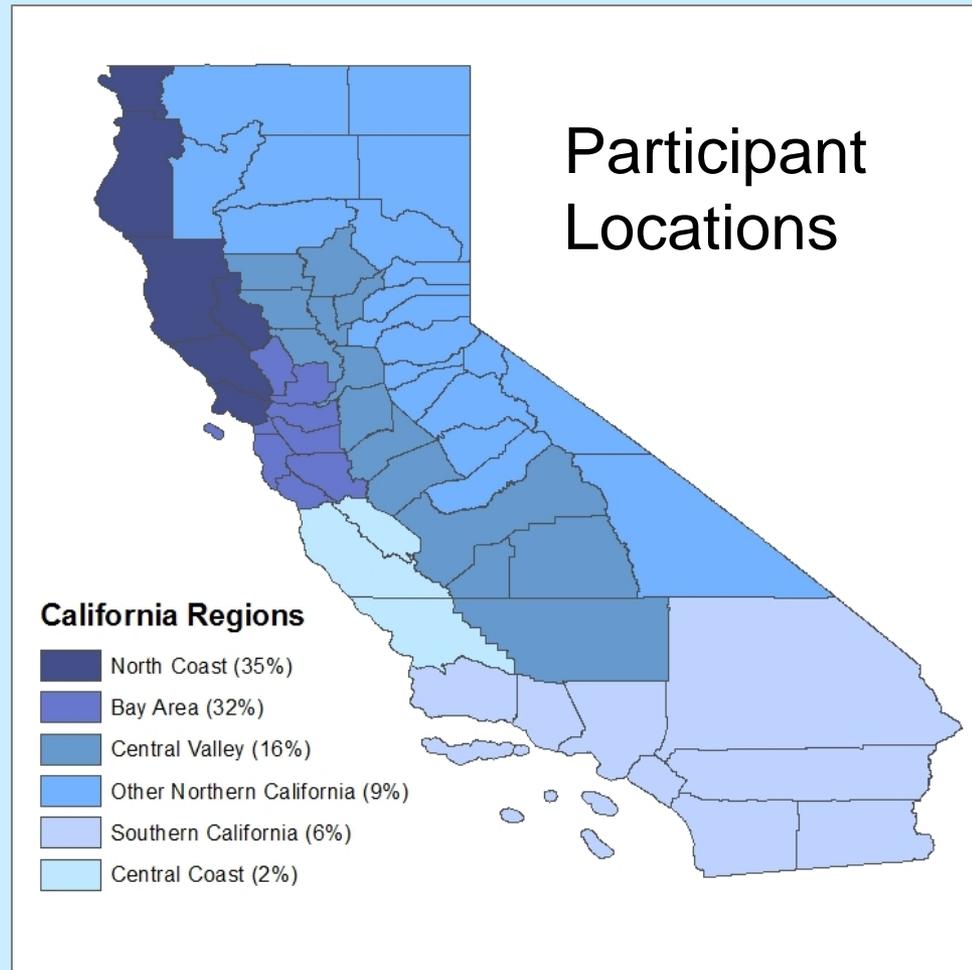
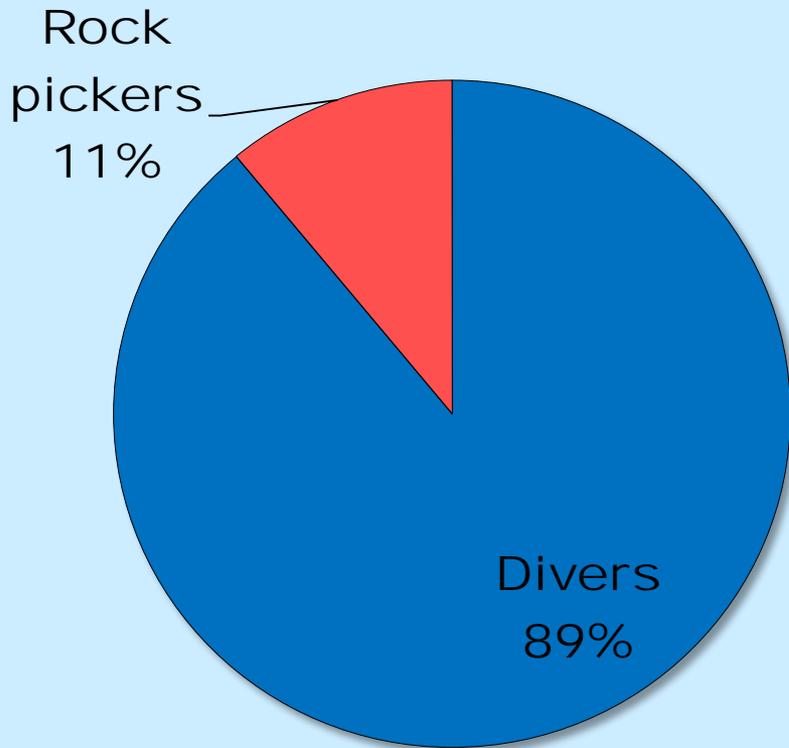
Angler Survey Purpose

- Characterize survey participants
- Identify priority fishery experience characteristics
- Assess fishers' priorities regarding management trade-offs
- Get feedback on report card fee structures
- Incorporate results into management goals for the Red Abalone FMP.



Angler Survey Participant Demographics

- Over 1,600 online respondents





Angler Survey Results Summary

Support:

- Maintain public access to fishing spots
- Adaptive management of the fishery
- Increase report card fee for sustainable adaptive management and better enforcement

No / Neutral support:

- Early re-opening of closed fishing spots
- Implementation of a lottery system for cards
- Progressive fee options



EFI Science Input Purpose

- Identify Essential Fisheries Information (EFI) for red abalone fisheries;
- Develop EFI table to:
 - Identify data availability and knowledge gaps
 - Prioritize EFI research topics.



EFI Science Input

Example topics from EFI table:

Better understanding

- Age & growth
- Reproduction
- Stock distribution & composition
- Abundance indices

Poor understanding

- Total mortality
- Climate change
- Oceanography



Economic Analysis

- Determine:
 - Economic worth of fishery to fishermen
 - Average \$ spent per year per fishermen
 - Economic value of fishery to Sonoma & Mendocino counties
- Track economic health of fishery over time
- Collaborative project with DFW and Resources Legacy Fund
- Completed by Conservation Strategy Fund, John Reid



FMP Principles

- Based on MLMA
 - Fishery sustainability
 - Adaptive management
 - Ecosystem health
 - Cultural and tribal importance
 - Socioeconomic importance





FMP Framework

- Area-Based Management
- More adaptive
 - Implementing smaller adjustments to the fishery on shorter timescales
 - Manage the fishery by true TAC
- Includes additional data streams
 - Builds on the success of density-based management
 - Fishery catch, fishery modeling, economic importance, and other EFI



FMP Next Steps

- Recreational Abalone Advisory Committee (RAAC) update (Nov. 2015)
- Complete draft document by 1st quarter 2016
- Draft FMP input and review
 - Peer review
 - 2nd round public input workshops
 - Tribal consultation
- California Environmental Quality Act (CEQA) analysis





Note: The following slides are for use during the questions and answers session.



EFI Science Input

Topics:

- Genetics, Dr. Ron Burton, Scripps
- Kelp distribution and abundance, Dr. Michael Graham
- Oceanography, Dr. John Largier, UC Davis
- Socioeconomics, Dr. Robert Eyler, Sonoma State
- Stock assessment, Dr. Jono Wilson, TNC
- Illegal take, Special Agent Michelle Zetwo, NOAA
- Disease, Dr. James Moore, CDFW
- Climate change, Dr. Brian Helmuth, Northeastern Univ.
- Ecological interactions, Dr. Jay Stachowicz, UC Davis
- Ecosystem Management, Dr. Eric Bjorkstedt, SWFSC



FMP Management Framework

