

COMMITTEE STAFF SUMMARY FOR JULY 20, 2017

6. RED ABALONE

Today's Item	Information <input checked="" type="checkbox"/>	Direction <input type="checkbox"/>
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- | | | |
|-----|--|--|
| (A) | Receive update on red abalone recreational fishery and discuss potential recommendation regarding regulatory options for 2018. | |
| (B) | Receive progress update on red abalone fishery management plan (FMP) development. | |

Summary of Previous/Future Actions

- | | | |
|-----|--|--|
| (A) | <ul style="list-style-type: none"> FGC receives update on 2017 surveys and fishery Today's update on fishery and options for 2018 Notice hearing MRC update on 2017 surveys and options review | Jun 21-22, 2017; Smith River
Jul 20, 2017; MRC, Santa Rosa
Aug 16-17; Sacramento
Nov 9, 2017; MRC, Marina |
| (B) | <ul style="list-style-type: none"> FGC supports red abalone FMP development per MRC recommendation DFW update on FMP process and timeline Update on FMP process and timeline Today's update on FMP process and timeline | Oct 8, 2014; FGC, Mt. Shasta
2015-2016; MRC meetings
Mar 23, 2017; MRC, San Clemente
Jul 20, 2017; MRC, Santa Rosa |

Background

- (A) **Recreational fishery:** Abalone is currently managed under the FGC-adopted Abalone Recovery and Management Plan (ARMP). Since Feb 2016, DFW abalone project staff has kept FGC and MRC updated on impacts to abalone stocks resulting from the unprecedented set of environmental conditions and subsequent biological impacts to abalone, which warranted emergency action by FGC (in Dec 2016). Severely-impacted environmental and red abalone conditions led FGC to take emergency action to change abalone regulations in 2017, by reducing the annual limit from 18 to 12 (except for Sonoma County, which remained at 9) and reducing the months open to fishing from seven to five by closing Apr and Nov. The emergency regulations became effective on Apr 1, 2017 and will expire on Sep 29, 2017; FGC is scheduled to consider extending the emergency regulation through the 2017 season during its Aug 2017 meeting.

In Jun 2017, DFW also notified FGC that regulations to be proposed for the 2018 fishery season may need to be more restrictive than the 2017 emergency regulations (Exhibit A.1). DFW reported that early indications, based on recent DFW creel surveys and in-water reports and observations to date, suggest conditions continue to be very poor and are not likely to quickly improve. Red abalone assessed from nine sites in 2017 shows that 25% of the abalone surveyed (n=3800) are

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shrunk and starving. Kelp food resources continue to be poor and density of purple sea urchin competitors remains high. There is also growing concern amongst DFW staff that this summer's density survey results may hit management triggers specified in the ARMP, resulting in additional restrictions, including possible site or county closures.

At this meeting, DFW intends to present regulatory options to further curtail the fishery for the 2018 season to levels appropriate for the biological needs of red abalone across the fishery. DFW has indicated that surveys need to be conducted into the fall before recommending a specific option within the range of potential actions. Today's MRC discussion is intended to inform FGC consideration of options included in a draft rulemaking package to be presented in Aug.

- (B) **Red abalone FMP:** This is a standing agenda item to receive DFW updates on development of a red abalone FMP, which commenced in fall of 2014. DFW has provided updates at MRC meetings on stakeholder input and next steps in the FMP development process.

Today DFW will provide an update on red abalone FMP progress, as informed by recent conditions in the fishery, and discuss possible role of citizen science within the management framework.

Significant Public Comments

The Nature Conservancy highlighted its collaborative efforts to develop potential new data streams, including citizen science, to inform an adaptive management framework for red abalone (Exhibit B.1). Dr. Jono Wilson, staff senior fisheries scientist, has been approved to provide a presentation on this topic.

Recommendation

Discuss the range of options to include in a draft rulemaking package (to be presented to FGC in Aug) and schedule further discussion of options for the Nov MRC meeting.

Exhibits

- A.1 [DFW presentation from Jun 21-22, 2017 FGC meeting](#)
- B.1 [Letter from Tom Dempsy, The Nature Conservancy, received Jul 7, 2017](#)

Committee Direction/Recommendation

Consider options presented and discussed, and develop a recommendation for any options to add or remove for the draft rulemaking the Commission will consider in August.



Red Abalone Fishery Update



Sonke Mastrup

California Department of Fish and Wildlife

June 2017



Update Overview

- FMP timeline
- Fishery conditions update
 - Preliminary Creel survey information
 - Updated kelp fly-over survey data
- 2017 rulemaking
- Next steps

Abalone FMP Timeline

Note: Bold emphasized Milestones signify public input opportunities

[illegible]



Abalone Creel 2017



Staff Days	Staff Hours	Volunteer Days	Volunteer Hours
17	104	21	123

- 9 sites surveyed over 2 days, 1 to 5 people per site depending on expected level of fishing effort
- 227 total hours to conduct the two day creel survey



Abalone Condition May 2017

25% starvation (N=3870)

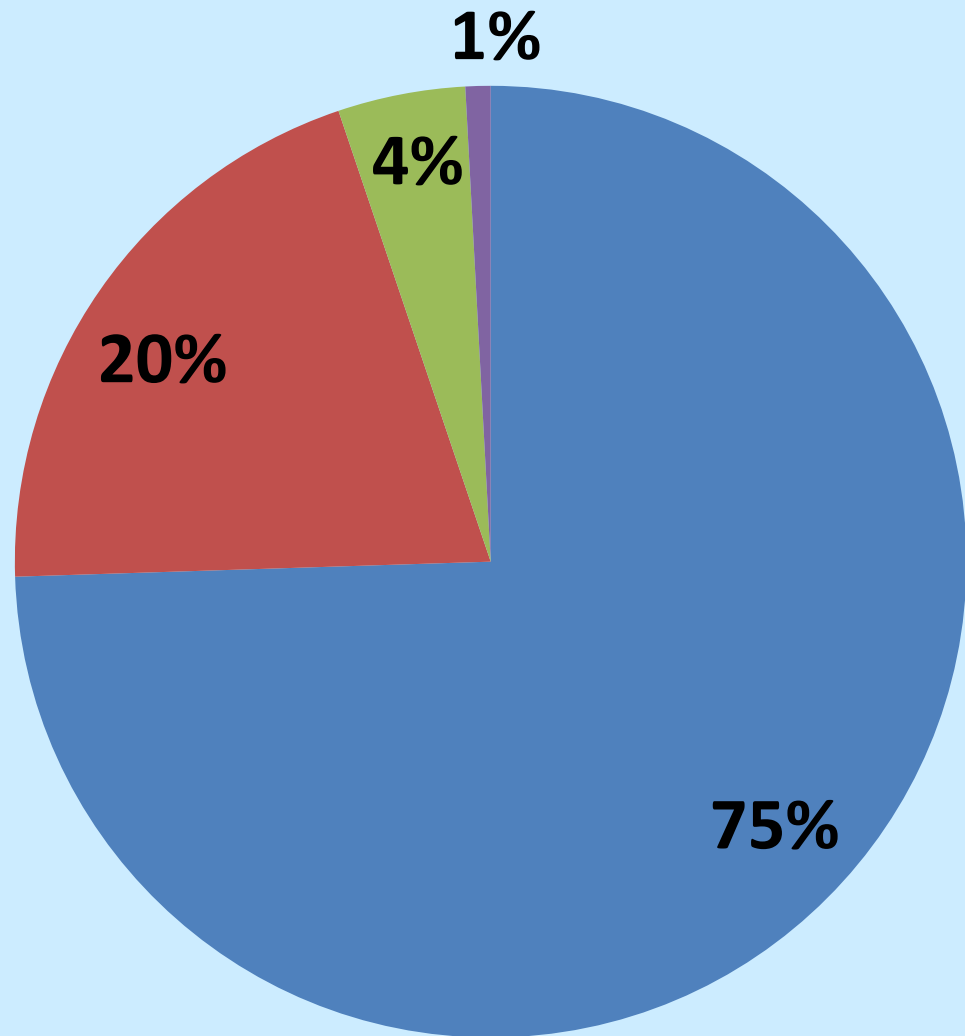


■ Total 0 Scores

■ Total 1 Scores

■ Total 2 Scores

■ Total 3 Scores



2017 Red Abalone Creel Shrinkage Scores by Site

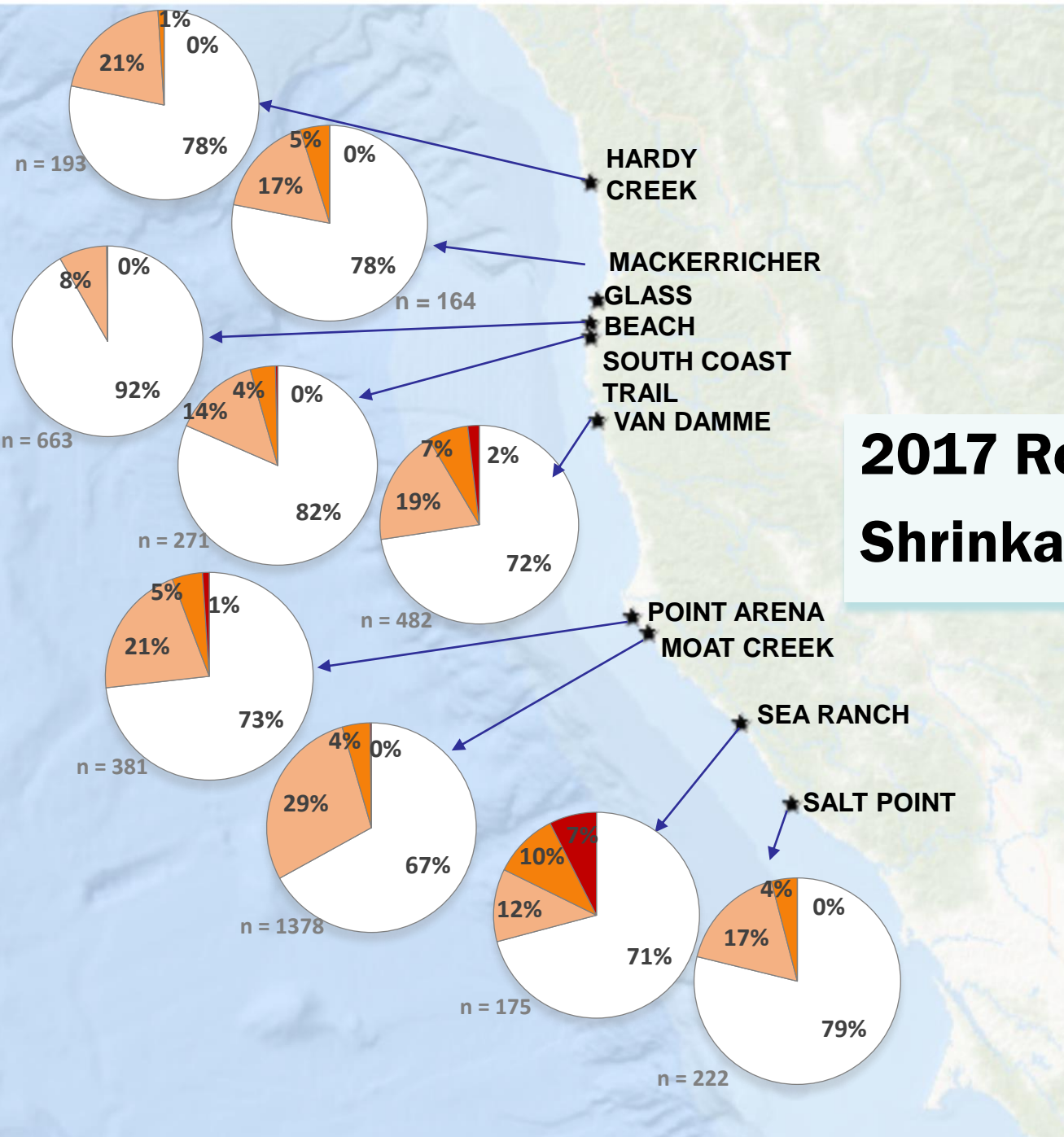
Shrinkage Scores

zero

one

two

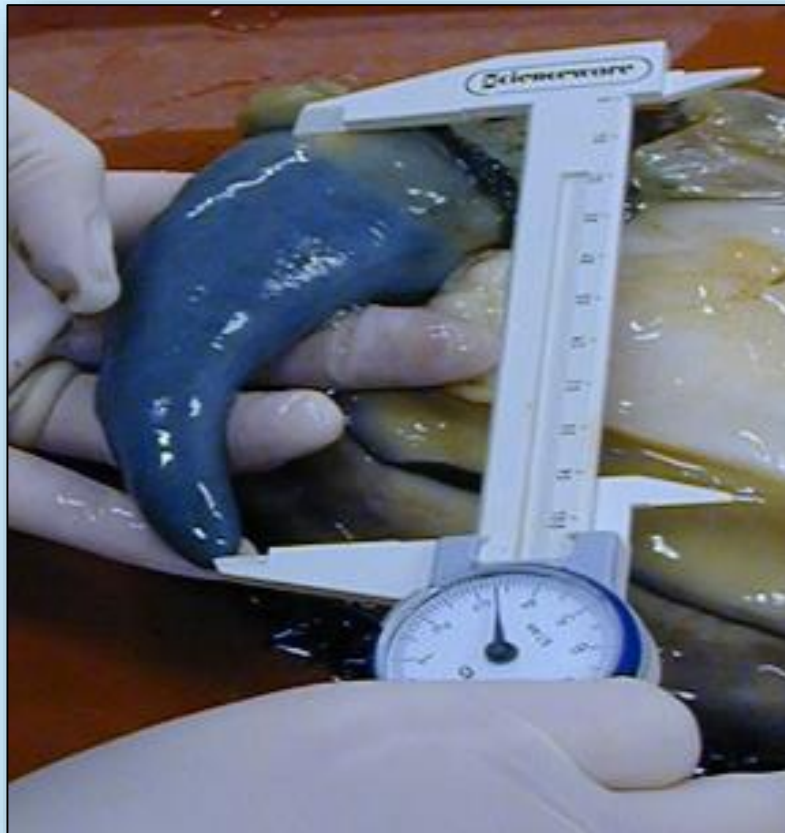
three





2+ years in a row of poor gonad

NORMAL



STARVED





Kelp Fly-Over Surveys Northern California

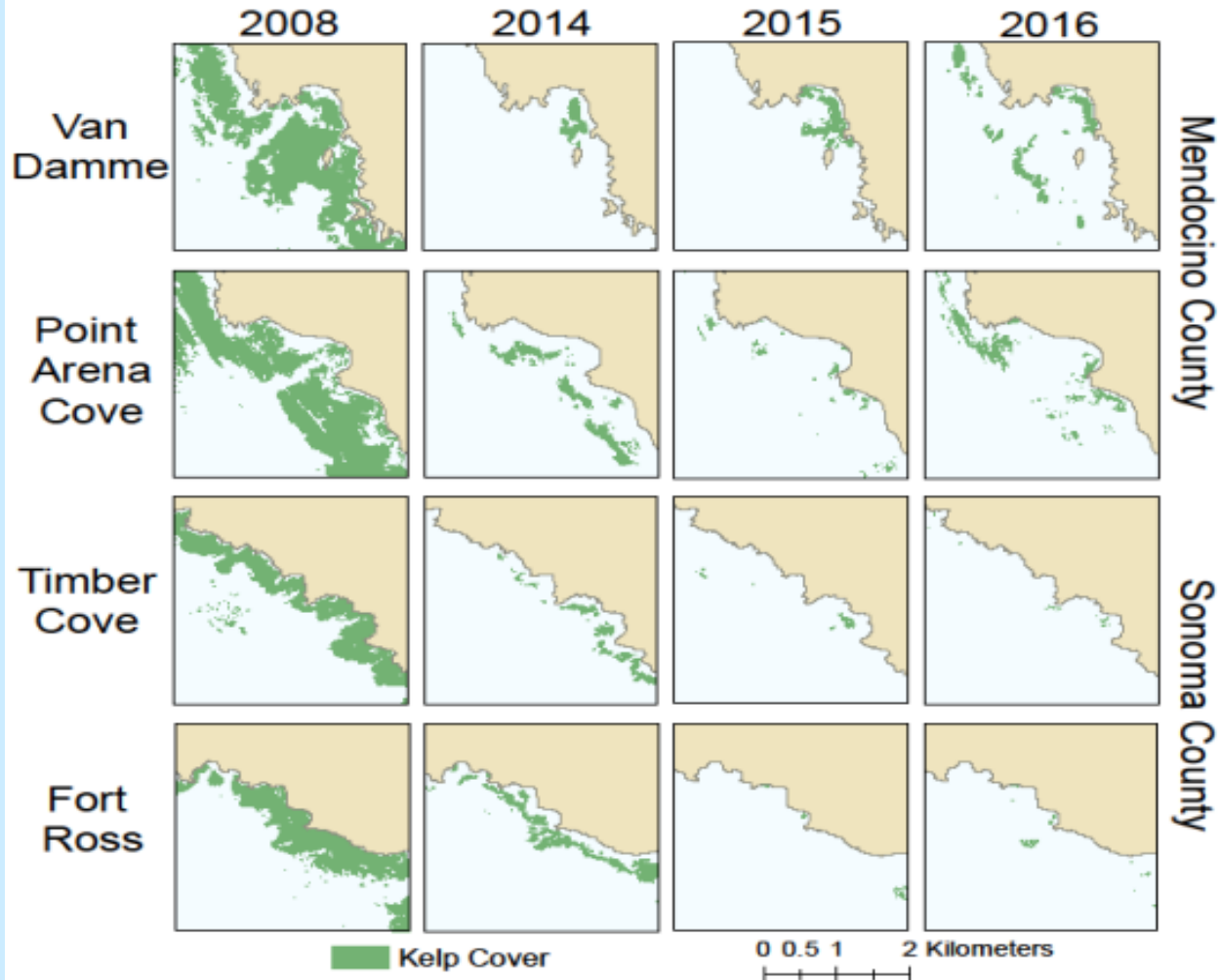


Image: Ben Walker



Subtidal Algal Impacts in 2016



**Bare
Rock**

Urchins are starting to eat through the
Crustose coralline algae



Concerns for Abalone Fishery 2017

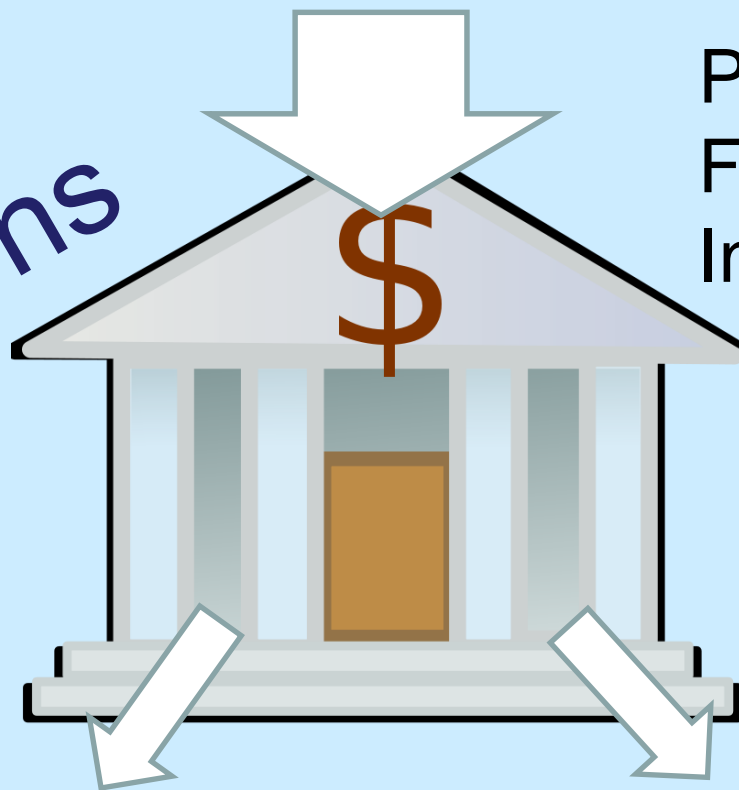
- Continuing starvation conditions
 - Food for abalone scarce
 - High densities of purple sea urchins
 - Reproduction conditions very poor
- Abalone more vulnerable to the fishery
 - Abalone are all in shallow water
 - Fishing has never been better



Sustainable Fishery Bank Account Model

Normal
Conditions

Abalone Production



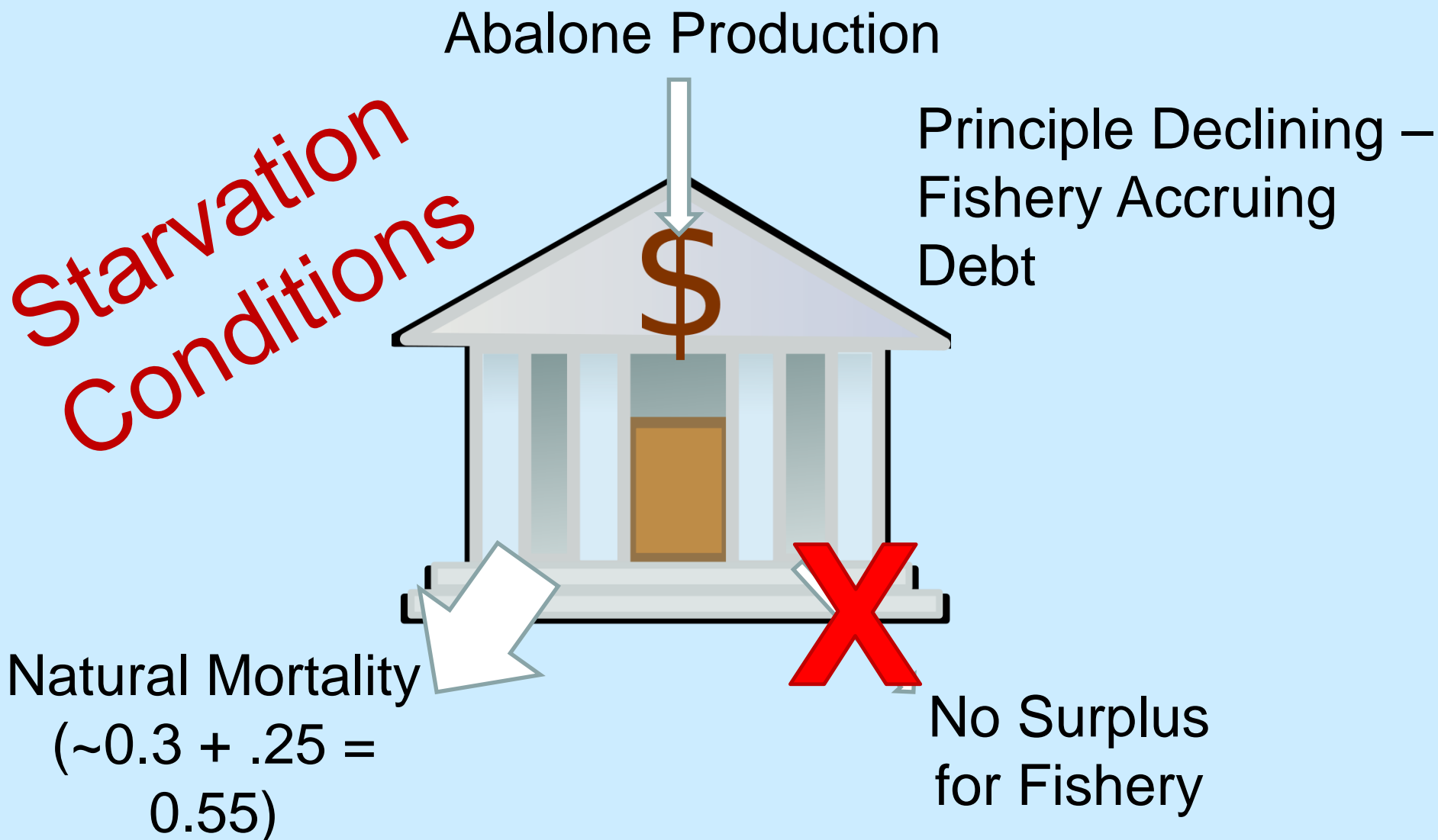
Principle Protected –
Fishery Runs on
Interest

Natural
Mortality (~0.3)

Surplus for
Fishery
(~0.3)



Starvation Conditions Change the Fishery Productivity Equation





2017 Rulemakings

- Re-up emergency rules - August
- Notice rulemaking for 2018 - August
- Discuss October, Adopt December
- Consider more restrictive options:
 - Annual limit of 9
 - Closure(s)

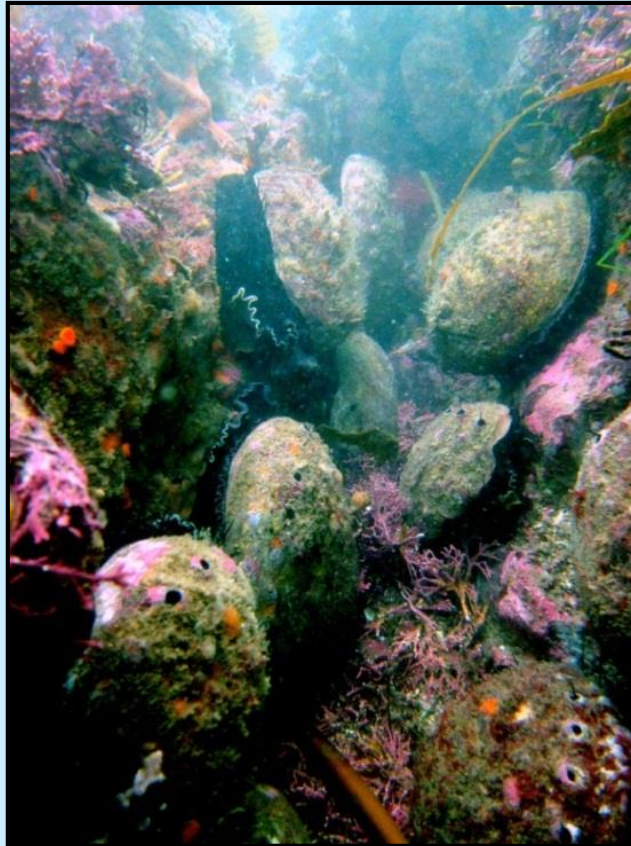


Next Steps

- Red Abalone FMP
 - Public discussions of draft FMP
 - Peer review
 - Begin CEQA
- Continued Fishery Monitoring
 - Creel Survey end of June
 - Dive Surveys August/September
 - Updates at August and October meetings
- Rulemaking notice August



Thank You



Sonke Mastrup

<https://wildlife.ca.gov/Conservation/Marine/Invertebrates/Abalone>

July 7, 2017

Mr. Eric Sklar, President
California Fish and Game Commission
1416 Ninth Street, Room 1320
Sacramento, CA 95814

RE: Agenda Item 6B, Red abalone – Update on fishery management plan development

Dear President Eric Sklar and MRC Members,

The Nature Conservancy is working to build innovative, collaborative solutions to promote healthy ocean ecosystems and thriving marine fisheries in California. Given the inherent value of the red abalone recreational fishery, and the vulnerability of the species and coastal ecosystems to changing ocean conditions, it is critical that we manage this resource more effectively. Yet, the current management framework is largely seen as inflexible, relies exclusively on limited data generated from state-led density and recruitment surveys.

Since the California Department of Fish and Wildlife (CDFW) initiated the development of a fishery management plan for the recreational red abalone fishery in late 2014, the Conservancy's team has worked closely with fishery stakeholders and with world-class fishery scientists. **These collaborations have yielded promising new data streams and data collection tools, as well as a harvest control rule, that can be incorporated into the red abalone fishery management plan currently in development.** We believe that these new management tools and approaches will facilitate more nimble management and long-term conservation of red abalone in the future.

Generating New Data Streams to Inform Management

The Nature Conservancy is developing new, cost-effective harvester and 3rd party generated data streams capable of capturing high-quality data on abalone length. As proven in extensive peer-reviewed science and demonstrated in invertebrate fisheries around the world, robust information on length can be invaluable for management. It can inform estimates of spawning potential ratio (SPR), which can be used to inform assessments and management decisions for data-poor resources like red abalone.

In working to generate a length database for red abalone, we first partnered with Reef Check, CA and its volunteer citizen scientists. In consultation with CDFW, we have also co-developed an abalone specific protocol and facilitated the uptake of this strategy by hosting diver trainings and public forums. Citizen science data collection shows great promise in creating a management-ready dataset for red abalone, particularly given Reef Check divers can collect abalone length

measurements at more than five times the rate of the state. **In the span of just over a year, we have generated an unprecedented length database for this resource (approximately 7,000 individual measurements), improved spatial representation of the current sampling scheme (sampling across 17 sites), and there is increased interest in participation by Reef Check divers for this season.**

Additionally, the Conservancy and partners are piloting a mobile application that will allow the approximately 25,000 recreational abalone divers in California to easily collect high-quality length information on abalone at the point of capture. This mobile app has the potential to both modernize the report card process for collecting abalone data and inform near real-time stock status models. **In-depth feedback received thus far from recreational divers has been positive and constructive criticism received has resulted in some key revisions to the mobile app, which is anticipated to be ready for use by late summer 2017.**

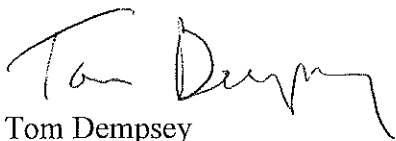
New Frameworks for Transparent Decision-Making

The Conservancy has worked with scientists and our partners to develop a new climate-ready, adaptive framework for red abalone. Building off the concept described by Dr. Natalie Dowling, a renowned expert in data-limited harvest strategies, during a 2016 public workshop co-hosted with CDFW, the Conservancy has finalized a harvest control rule that uses a two-tier decision tree to integrate multiple streams of information (including density surveys, individual length, report card landings, and an El Niño environmental indicator) to assess stock status and generate catch limits to manage at the preferred spatial scale deemed suitable for management by CDFW.

To evaluate the effectiveness of our proposed red abalone harvest control rule against status quo management approaches, fisheries modeling expert Dr. Bill Harford completed a comprehensive Management Strategy Evaluation (MSE). **Results from the MSE indicate that the proposed harvest control rule performs best over long and short time periods when both landings and length data are included and density data is excluded. The harvest control rule is also robust under perfect storm conditions (i.e., harmful algal blooms, El Niño, kelp die-off, poaching, fishing pressure). Use of multiple streams of data in the proposed harvest control rule help to reduce the risk of stock collapse while maximizing yields and maintaining stability under a range of normal and extreme environmental conditions.**

The Conservancy appreciates the Commission's leadership on this important issue. We look forward to continuing to work collaboratively with CDFW, harvesters, and scientists to improve management of data-poor fisheries like red abalone and to develop a fishery management plan that enhances climate-readiness in this fishery.

Sincerely,



Tom Dempsey
Senior Fisheries Project Director
The Nature Conservancy
California Oceans Program