

CALIFORNIA FISH AND GAME COMMISSION
STATEMENT OF PROPOSED EMERGENCY REGULATORY ACTION FOR
RE-ADOPTION OF EMERGENCY REGULATIONS

Emergency Action to
Re-adopt Amendments to subsections (b) and (c) of Section 29.15,
Title 14, California Code of Regulations
Re: Re-adoption of Emergency Abalone Take Reduction Due to Harmful Environmental
Conditions

Date of Statement: July 24, 2017

I. Emergency Regulation in Effect to Date

The California Fish and Game Commission (Commission) submitted an emergency rulemaking that became effective April 1, 2017, to address concerns with the red abalone resource due to a combination of unprecedented environmental and biological stressors. The emergency rulemaking reduced the open season length by two months by closing April and November and reduced the annual limit from 18 to 12 (except for Sonoma County, which remained at 9).

II. Request for Approval of Re-adoption of Emergency Regulations

Based on California Department of Wildlife (Department) creel surveys and in-water reports and observations in 2017, early indications suggest conditions continue to be very poor and are not likely to quickly improve. Body shrinkage scores for red abalone (over 3,800 samples) assessed from nine sites throughout the fishery in May and June 2017 show 25 percent of the abalone are shrunken and starving. Gonad condition data also indicates no reproduction will occur this year, adding to the two previous years with similar conditions. Kelp resources continue to be poor and the density of purple sea urchin competitors remains high. The Department is requesting that the Commission re-adopt the emergency regulations that are set to expire on September 29, 2017 to continue the emergency regulations through the end of the 2017 season. The Department is preparing a standard rulemaking for the Commission's consideration to make the 2017 emergency regulations, or more restrictive regulations, effective for the 2018 season.

III. Statement of Facts Constituting the Need for Emergency Regulatory Action

The recreational red abalone (*Haliotis rufescens*) fishery is one of California's most successful and popular fisheries, and is economically important, particularly to Sonoma and Mendocino counties where approximately 95 percent of the multi-million dollar fishery takes place. Over 25,000 fishermen participate in the fishery each year. Red abalone may be taken with a sport fishing license subject to regulations prescribed by the Commission.

Under existing statute (Fish and Game Code Section 5521) and regulation (Section 29.15, Title 14, CCR), abalone may only be taken for recreational purposes north of a line drawn due west magnetic from the center of the mouth of San Francisco Bay, except in the closed Fort Ross area. The current regulation also specifies the season, hours, daily and annual limits, special gear provisions, measuring devices, abalone report card requirements, and minimum size. Red abalone may only be collected by skin diving (without SCUBA) or rock picking during low tides, so that a deep-water refuge population is maintained to enhance productivity of the fishery.

In 2005, the Commission adopted the Abalone Recovery and Management Plan (ARMP) pursuant to requirements in statute (Fish and Game Code Section 5522), to provide a cohesive framework for recovering depleted abalone populations in southern California, and for managing the northern California fishery and future fisheries, including red abalone. The ARMP articulates a framework for sustaining abalone populations based largely on densities, catch, size, and reproductive success as triggers for adjusting total allowable catch (TAC) and engaging other management measures. Using criteria described in the ARMP, the TAC is adjusted when specific triggers are met, through various management actions such as changes to daily bag limits, seasonal limits, and season length.

In 2015, a combination of unprecedented environmental and biological stressors began to take their toll on abalone populations, including warmer-than-normal waters and decreasing food resources, leading to starvation conditions. Throughout 2016 and spring of 2017, the Department conducted surveys, visual assessments, and histological sampling of north coast abalone, and documented citizen reports of unhealthy or moribund abalone within the fishery. The Department has identified wide-sweeping changes in the density, occurrence, size and health of red abalone and the kelp upon which it depends for food. Specifically, the Department has found:

- **Warm Water Conditions and Kelp and Algae Declines.** Red abalone are herbivores that live on rocky reefs in kelp forests, eating red and brown algae. In 2014, the kelp forests in the abalone fishery region declined by 93 percent due to extreme warm water conditions and an unprecedented increase in herbivorous red and purple sea urchin populations. Unlike abalone, sea urchin populations are generally resilient to food shortages and can survive longer, such that even if water conditions cool, grazing pressure from surviving sea urchins may still keep kelp from wide-spread recovery. Warm water conditions persisted through 2015, impacting kelp recovery and abalone health. Recently there has been some improvement in kelp growth, but current kelp canopies are still very sparse compared to normal years.

- **Starvation Conditions.** Red abalone are susceptible to starvation when kelp and algal abundances decline. Kelp and other algal species are being actively cleared from rocky bottom habitat that is dominated by purple sea urchin, which is greater than sixty times more abundant now than prior to 2013. Urchin populations increased, in part, due to large-scale loss of predatory sea star species in 2013 due to sea star wasting disease. Bull kelp and other algal food sources for abalone have remained at extremely low levels since 2014; the large number of purple urchins is likely keeping kelp recovery confined to very limited areas.

Abalone have been observed stacked on top of each other in shallow water, which could be attributed to either abalone moving from deeper water to shallower water where algae is slightly more abundant, or abalone trying to graze whatever algae is growing on the shells of other abalone; shells were observed to be unusually clean of algal growth. Recent evidence indicates the starvation conditions have not yet abated; additional impacts have been observed in 2017 and are expected to continue through the 2018 season.

- **Density Declines.** In spite of the Commission's 2013 actions to reduce take and recover densities, the actions were ineffective in preventing densities from continuing to decline, from an average of 0.47 per square meter (m²) in 2013 to 0.44 per m² in 2016. The Department believes the density decline is largely due to the environmental conditions described herein.
- **Deep-Water Refuge.** Deep-water refuge is believed to be a critical component in maintaining a highly productive recreational fishery. Deep-water abalone are generally safe from take and can be a source of both adults to replace abalone removed from shallower waters and larvae to enhance abalone reproduction rates. Surveys in the summer of 2016 showed dramatic reductions in abalone densities in deep water refuges (greater than 28 foot depths). The average density of deep-water red abalone populations over the past four years has declined, increasing the risk that the fishery is not sustainable. It should be noted that abalone movement from deep water into shallow water or from cryptic locations to exposed shallow areas can give the impression that abalone populations are stable or have increased if the absence of abalone in deeper waters is not considered.
- **Abalone Health, Reproduction, and Mortality.** The abundance of warm water, coupled with a lack of algae, has severely impacted the health and reproductive development of abalone. Fishermen and the public have reported weak, shrunken, and dying abalone, as well as unusually high numbers of empty shells of all size classes throughout the 2016 season, which has continued into the 2017 season. Department surveys revealed

more than 25 percent of catch at nine survey sites had body mass that was shrunken (meat smaller than the shell). Reductions in body mass lead to reduced reproductive fitness; just a 20% reduction in body mass can reduce reproduction by 60-90 percent. Red abalone require approximately 12 years to grow to minimum legal size, so that multi-year gaps in reproduction will be observed in the fishery for years to come. Furthermore, recent laboratory feeding studies of starved wild red abalone indicate that reproductive capability may take more than one year to recover to normal levels after algal conditions improve.

The weakened condition of abalone may also reduce their ability to withstand normal storm waves during the winter, increasing mortality. This fishery has suffered two years of poor reproduction (2015 and 2016) with all indications that 2017 will add a third year. This situation is likely to put future sustainability of the fishery at risk. Lack of kelp and other algae greatly reduces cover for red abalone, making them easier to locate by fishermen.

Studies, Reports, or Documents Supporting Factual Emergency

The Department relied on the following document in proposing this emergency rulemaking action:

- (1) The Abalone Recovery and Management Plan
<https://www.wildlife.ca.gov/Conservation/Marine/ARMP>

Department staff has documented critical negative impacts to red abalone fishing grounds:

- (1) A dramatic decline in sea stars, important sea urchin predators, due to sea star disease.
- (2) A dramatic decline (93 percent) of the kelp canopy in Sonoma and Mendocino counties in 2014.
- (3) A dramatic increase (60 times) in the density of purple sea urchins in 2015, increasing competition with abalone for food.
- (4) Warm seawater conditions in Sonoma and Mendocino counties in 2014 and 2015.
- (5) A lack of kelp, which increases the efficiency of fishing efforts in shallow habitats.
- (6) A decline in deep-water abalone densities.
- (7) Continued decline in overall average abalone densities in spite of significant take reductions implemented in 2014.

Department staff has documented critical negative impacts to red abalone health:

- (1) Visual abalone body health scores for abalone taken in the fishery during the spring of 2016 and 2017 show that more than 25 percent of abalone were shrunken in body mass at sites in northern California.
- (2) Body condition index declined at Van Damme State Park by 20 percent, but no significant difference was observed at Fort Ross in summer of 2016 (60 abalone per site).
- (3) Department staff and abalone fishermen have observed weak abalone washed up on shore and easy to remove from the rocks as well as many new shells of all size classes, indicating increased natural mortality.

Department staff has documented critical negative impacts to red abalone reproduction:

- (1) Gonad index declined significantly at Van Damme State Park and at Fort Ross in the summer of 2016 and 2017 (60 abalone per site).
- (2) Small numbers of larval abalone observed in plankton surveys in Sonoma and Mendocino counties in 2015.
- (3) Small numbers of newly settled abalone observed in coralline-covered rock samples from Sonoma and Mendocino counties in 2015.
- (4) Few juvenile (< 21 millimeter) red abalone were observed in artificial reefs in Van Damme State Park in 2015.

IV. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following determinations relative to the required statutory categories have been made:

- (a) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None.

- (b) Nondiscretionary Costs/Savings to Local Agencies:

None.

- (c) Programs Mandated on Local Agencies or School Districts:

None.

- (d) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code:

None.

- (e) Effect on Housing Costs:

None.

V. Re-adoption Criteria

1) Same or Substantially Equivalent

Pursuant to Government Code Section 11346.1(h), the text of a re-adopted regulation must be the “same or substantially equivalent” to the text of the original emergency regulation. The language for the re-adopted regulatory amendment is the same as the language of the original emergency regulation.

2) Substantial Progress

Government Code Section 11346.1(h) specifies that the emergency rulemaking agency must demonstrate that it is making “substantial progress and has proceeded with due diligence” to comply with standard rulemaking provisions. At its June 22, 2017 meeting, the Commission received an update on the status of the red abalone resource and directed the Department to develop a standard rulemaking for Commission consideration to make the 2017 emergency regulations, or more restrictive regulations, effective for the 2018 season. The standard rulemaking effort is scheduled for notice at the Commission’s August meeting, with discussion and adoption hearings scheduled for October and December. The re-adoption of the emergency regulations is needed to allow the Commission time to comply with Administrative Procedure Act provisions.

VI. Authority and Reference

The Commission proposes this emergency action pursuant to the authority vested by sections 200, ~~202~~, 205, ~~210~~, ~~220~~, ~~240~~, 255, 260, 265, 275, 399, 5520, 5521 and 7149.8 of the Fish and Game Code and to implement, interpret, or make more specific sections 200, ~~202~~, 205, ~~220~~, 275, 5520, 5521, 7145, and 7149.8 of said code.

IV. Section 399 Finding

Pursuant to Section 399 of the Fish and Game Code, the Commission finds that the adoption of this regulation is necessary for the immediate conservation, preservation, or protection of birds, mammals, reptiles, or fish (abalone).

Informative Digest (Plain English Overview)

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Proposed Regulatory Action:

The proposed emergency regulation will reduce the take of abalone within the entire fishery to levels anticipated to be sustainable under current environmental conditions. Acting under the guidance contained in the ARMP, the Department requests the Commission take emergency action to reduce allowable take by amending abalone subsections (b) and (c) of Section 29.15, Title 14, CCR, to reduce the red abalone allowable annual take from 18 to 12 abalone, with the exception that the lower limit of "not more than 9 abalone of the yearly trip limit may be taken south of the boundary between Sonoma and Mendocino Counties" found in subsection 29.15(c) will continue to apply, and to close April and November to fishing.

Benefits: The proposed emergency reduction within the abalone fishery will benefit the environment by protecting the valuable abalone resource from excessive fishing mortality, which will allow the resource the opportunity to rebuild and be sustainable for the future.

Consistency and Compatibility with Existing State Regulations: The Legislature has delegated authority to the Commission to promulgate sport fishing regulations (Fish and Game Code, sections 200, 205, 265, 275 and 399). No other state agency has the authority to promulgate such regulations. The Commission has conducted a search of Title 14, CCR and determined that the proposed regulation is neither inconsistent nor incompatible with existing State regulations, and that the proposed regulation is consistent with other sport fishing regulations and marine protected area regulations in Title 14, CCR