

State of California  
Fish and Game Commission  
Initial Statement of Reasons for Regulatory Action  
(Certificate of Compliance)

Amend Section 29.06  
Title 14, California Code of Regulations  
Re: Recreational Sea Urchin Bag Limit Exemption

I. Date of Initial Statement of Reasons: September 24, 2020

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing

Date: August 19, 2020

Location: Teleconference

(b) Discussion Hearing

Date: October 14, 2020

Location: Teleconference

(c) Adoption Hearing

Date: December 9, 2020

Location: Teleconference

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The kelp assemblage along the Northern and Central California Coast has seen a sharp decline in recent years. Bull kelp (*Nereocystis luetkeana*) in Northern California has declined by more than 90% of its historical level since 2014 (Rogers-Bennett and Catton 2019). This decline has been linked to a combination of severe warm water events and an explosive increase of herbivorous sea urchins, particularly purple sea urchins (*Strongylocentrotus purpuratus*). Purple sea urchins are a native species in California; however, the species' abundance is 60 times higher than historic levels, in part due to the loss of predatory sunflower sea star (*Pycnopodia helianthoides*) from wasting disease (Harvell et al. 2019) and a large purple sea urchin recruitment event. This has led to the overgrazing and suppression of bull kelp forests on the North Coast, and a regime shift from kelp forests to urchin barrens across most of the region (Rogers-Bennett and Catton 2019).

The collapse of the kelp forests has had catastrophic cascading effects on industries that rely on the kelp forest ecosystem, such as the commercial urchin roe fishery (i.e., marketable for culinary consumption of both the male and female gonads). The physiology of sea urchins makes them extremely resilient to death by starvation. At the same time, the lack of food

places all sea urchins, including red sea urchins (*Strongylocentrotus franciscanus*) perpetually in a starved state in which they do not develop healthy gonads (Claisse et al. 2013). The lack of quality/healthy gonads makes most of the RSUs found on the North Coast unmarketable. Despite being a historically important and lucrative fishery, the RSU fishery in Northern California collapsed in 2015 prompting a federal disaster declaration (Newsom G. 2019). In addition, abundance of other grazers and predators relying on kelp for food have decreased rapidly. As a result, the recreational red abalone fishery, one of the most iconic fisheries in California, was forced to close in 2018 (Commission 2018a).

The severe kelp decline is further compounded by the annual life cycle of bull kelp, the dominant canopy species in Northern California (Springer et al. 2010). Since plants die off each year, its abundance in any given year depends heavily on the abundance of the previous year. The severely diminished spore bank thus significantly limits the capacity for broadscale recovery of the species.

In response to the declining health of the kelp forests, the Fish and Game Commission (Commission) and the Department began to consider leveraging recreational divers to help control sea urchin populations. Based on strong public support, the Commission adopted an emergency regulation in April 2018 that temporarily increased the recreational take limit of purple sea urchins in Mendocino and Sonoma County. Due to concerns over accidentally triggering spawning events and potential habitat degradations, divers were required to bring urchins back to shore. In February 2019, the Commission increased the recreational urchin limit through a standard rulemaking and expanded the higher limit to Humboldt county as well (Commission 2018b). The expected recreational effort, however, did not materialize. Following several high-profile restoration events, dive effort tapered off due to the logistical constraints of bringing large quantities of purple sea urchins back to shore.

Since the adoption of the higher purple sea urchins bag limit in the North Coast, the environmental conditions in Northern California continue to deteriorate. Recent satellite data show that the decline of kelp canopy coverage has continued well into 2019 (Figure 1). Aerial drone surveys conducted by the Nature Conservancy across 25 representative sites in Mendocino and Sonoma Counties also show a continued decline of kelp in the region (Figure 2).

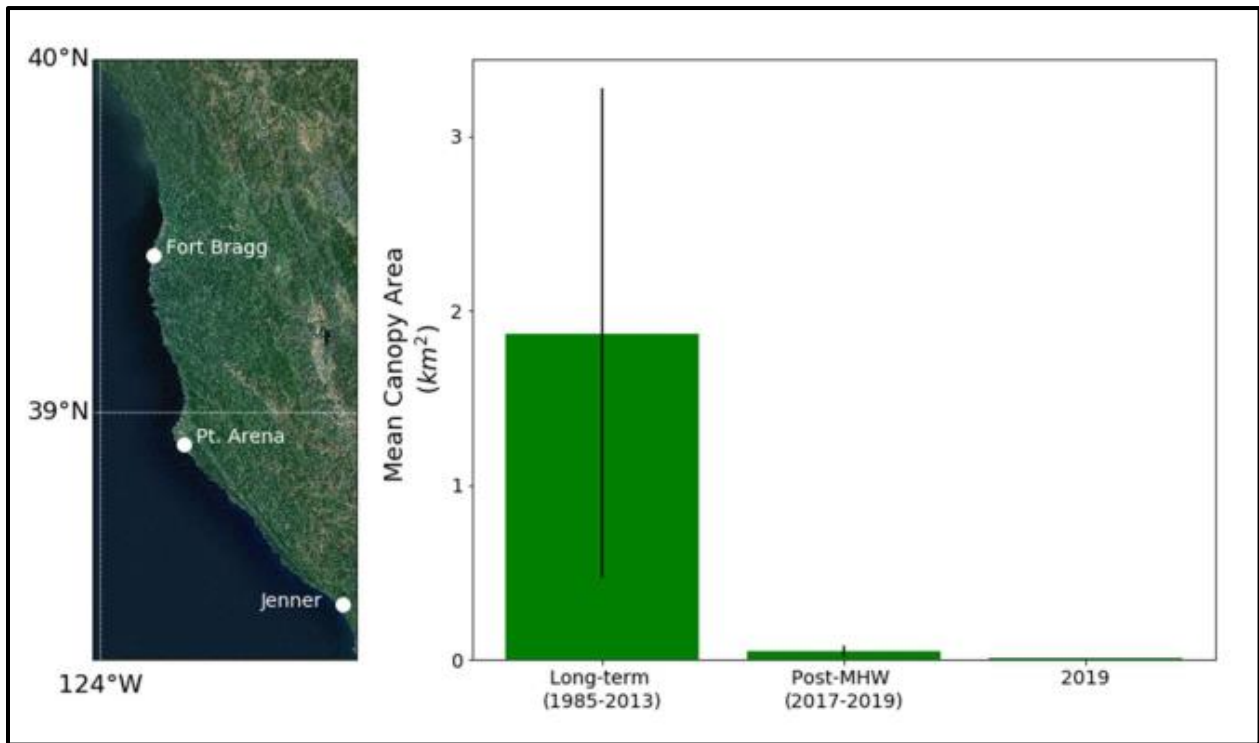


Figure 1. Mean Bull Kelp Coverage in Northern California in km<sup>2</sup> before Marine Heat Wave (MHW), after MHW, and in 2019 (Source: McPherson et al., 2020).

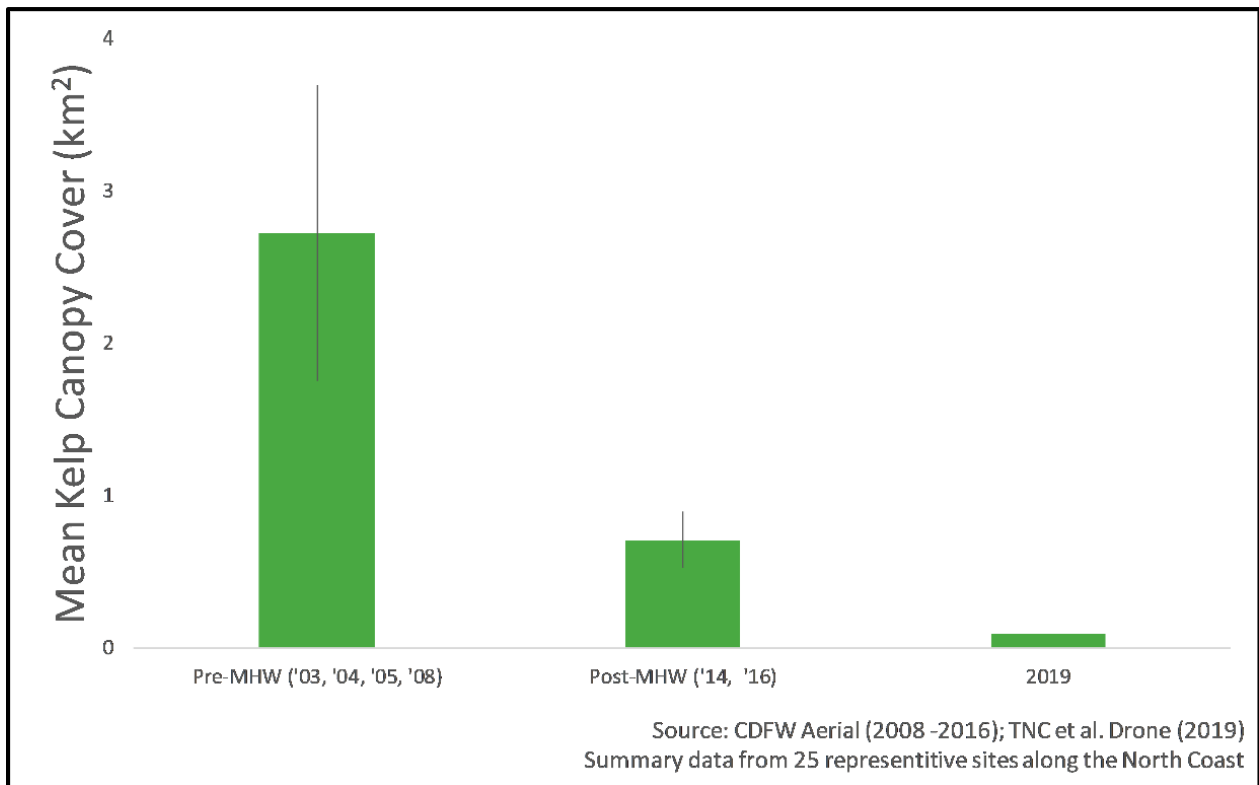


Figure 2. Bull Kelp Canopy Coverage developed from representative sites centered around Sonoma County coastline using aerial drones (Source: TNC 2019)

Towards the end of 2019, in response to further stakeholder input and worsening environmental conditions, the Department began to explore the feasibility of *in situ* take of sea urchins targeting a localized area. That strategy has shown limited potential elsewhere when removal is performed intensively, allowing for localized regeneration of kelp (Sanderson et al 2016). The density of sea urchins in a healthy kelp forest in Northern California is generally less than 2 individuals per m<sup>2</sup> (Rogers-Bennett and Catton 2019). Recently published research papers suggest that such density level is primarily kept in check by sustained and intense top-down predation pressure (Ling et al. 2019; Eisaguirre et al. 2020). If a high level of mortality can be applied to sea urchins in a small, semi-enclosed area, enough kelp stands may develop to reseed the surrounding area to facilitate the return of natural predators when ocean conditions are again favorable to kelp growth.

The Commission and Department selected Caspar Cove, Mendocino as the first test site at the end of 2019. The site is a semi-enclosed cove that delineates a naturally distinct geographical area. The areas outside the cove contained isolated stands of bull kelp occupying frequently disturbed formations that are difficult for sea urchins to access or recruit to. The area is located in the center of the urchin barren outbreak, small enough to attain an effective level of culling, and can be safely accessed by recreational divers through Caspar State Beach.

The Commission adopted an emergency regulation allowing unlimited purple sea urchin take inside Caspar Cove by recreational divers on February 21, 2020 due to concerns over the loss of the remaining kelp stands. The Department, Reef Check California, and volunteer divers were prepared to begin data collection on the planned urchin removal, and a dedicated online tool was developed to allow divers to enter the results of their dives and for Department staff to access data for analysis. However, the advent of COVID-19 pandemic significantly constrained the recreational diver community's participation in the Caspar Cove urchin control experiment, and work to date has been inadequate to assess the effectiveness of this method to help protect and restore kelp. As of August 12, 2020, only 19 dives have been conducted, with an estimated removal of 14,417 urchins. This lower than anticipated level of effort on a continuing basis is unlikely to result in meaningful kelp recovery in Caspar Cove.

In April 2020, the Commission received a request to implement a similar project at Tanker Reef in Monterey County (Commission Petition 2020-001). The Department originally intended to evaluate the efficacy of *in situ* urchin control only at Caspar Cove before potential broader application of the method. However, working with its partners at the Ocean Protection Council (OPC) and the Monterey Bay National Marine Sanctuary (MBNMS), the Department determined there was merit in also evaluating the efficacy of community-led *in situ* urchin control methods at Tanker Reef on the Central Coast. In collaboration with OPC, MBNMS, and the petitioner, a framework was developed whereby the petitioner will handle the bulk of experimental design, execution, and monitoring (Gold et al. 2020). Other partners, including the Department would provide the necessary support. This site represents a different biogeographic region dominated by Giant Kelp (*Macrocystis pyrifera*) rather than Bull Kelp, and has a higher degree of recreational diver accessibility than Caspar Cove, thereby enabling a more comprehensive evaluation of *in situ* urchin control under a broader suite of conditions.

## **Current Standard Regulations and Development of Emergency Regulations**

Currently, under Section 29.06, recreational red sea urchins and purple sea urchins are subject to a daily bag limit of 35 animals per individual per day (subsection (a)). Under subsection (b), an individual can take up to 40 gallons of purple sea urchins when diving off the coast of Humboldt, Mendocino, and Sonoma Counties. Under subsection (c), retention of purple sea urchin, is not subject to any possession limit to ensure that individuals can collect and utilize large number of purple sea urchins taken under the higher daily bag limit in those three counties.

On March 9, 2020, the Commission filed an emergency rule adding subsection (d) to allow unlimited recreational take of purple sea urchin by hand or hand-held tools specifically inside Caspar Cove, Mendocino County with the Office of Administrative Law (OAL File 2020-0309-02E). The rule came into effect on March 17, 2020. Through Executive Orders N040-20 and N66-20, this action is extended through January 9, 2021. An additional extension is planned. On August 19, 2020, the Commission approved to go to Notice this ISOR initiating a certificate of compliance rulemaking to make standard the March 2020 emergency regulation, with some adjustments, as discussed below.

### **Proposed Amendment**

This regulatory proposal would amend Section 29.06 to adopt the current emergency rule for Caspar Cove under subsection (d) as a standard rule. The proposal would also similarly create an exemption on recreational bag limit for sea urchin at Tanker Reef, Monterey.

The main goal of this proposal is to gather data and help inform whether recreational diver community-led *in situ* urchin control can support kelp restoration at key locations through promoting natural recovery. The Department also hopes that a successful restoration effort may directly confer ecological benefits to both Caspar Cove and Tanker Reef, such as allowing abalone to re-colonize areas previously impacted by urchin barrens.

### **Amend Subsections 29.06 (a): Default Daily Sea Urchin Bag Limit**

The regulation will add a clarification to subsection (a) stating that the default daily bag limit of any sea urchin species is 35 individuals, consistent with the default bag limit for many marine invertebrates stated in subsection 29.05(a). Similarly, the name of Section 29.06 is also proposed for revision to remove the word “purple” to allow the section to apply to purple sea urchin, red sea urchin, or any other urchin species with respect to the 35 individual bag limit per species. This amendment is necessary for clarity purposes. In removing the specificity of “purple” to just “sea urchin,” the revision to subsection 29.06(a) removes the recreational bag limit for red sea urchin to accommodate the exemption from a take limit for red sea urchin for Tanker Reef, Monterey under subsection 29.06(d)(2). This change also clarifies that the bag limit for the purple sea urchin elsewhere in the state, and sea urchins generally, is still the default invertebrate daily bag limit of 35 individuals, except as provided in Section 29.06. While this subsection does not change the legal effect of subsection 29.05 (a), which already states

that the default recreational bag limit for marine invertebrates is 35 individuals per day, the statement clarifies it in light of the changes to that bag limit in Section 29.06.

#### **Add Subsection 20.06 (d): Sea Urchin Bag Limit Exemption**

The addition of subsection (d) adds the bag limit exemption for sea urchins in two specific locations. Subsection (d)(1) will maintain the existing exemption on take granted by emergency action under 2020-0309-02E for Caspar Cove. Proposed subsection (d)(2) will provide the exemption for Tanker Reef. Subsection (d) will start with the statement “[n]otwithstanding other parts of this Section.” This is necessary to clarify that the exemptions only apply to the two areas and only under the specific terms of the subsections.

Subsection (d) also provides for a sunset date of April 1, 2024 for both location exemptions. The sunset date is necessary to demonstrate that the removal efforts represent an experimental study, and for accountability and the integrity of the state’s management. On April 1, 2024, the proposed rule would have been in effect for 3 years. Because a Commission rulemaking process concerning recreational fishing can take up to almost an entire year, the proposed time period would give the state at least two years of data before a new round of rulemaking is considered. This is the minimum amount of time needed to observe a potential trend in environmental conditions. The experimental nature of this proposal necessitates the shortest period necessary, and a longer timeframe is thus not proposed.

#### **Add Subsection 20.06 (d)(1): Purple Sea Urchin Bag Limit Exemption in Caspar Cove**

This proposal would adopt the current emergency rule, subsection (d), as a standard rule as subsection (d)(1). The location of Caspar Cove was originally chosen for experimental urchin removal efforts due to its density of purple sea urchins, size, and ease of access for divers. The advent of the COVID-19 pandemic has greatly diminished the short-term prospect of restoring kelp in the cove. Nonetheless, the Department supports the continuation of removals at this location. The Department hopes that dive effort will return, and enough bull kelp stands will persist in the surrounding area to help reseed the cove to inform future management in other areas of the North Coast.

As is with the current emergency rule, only purple sea urchins may be taken in unlimited number. The area is an established fishing ground for the commercial red sea urchin (Figure 3). The Department determined that allowing taking of red sea urchin in Caspar Cove would be inequitable at this time given the recent fishery collapse and federal disaster declaration. This is necessary to preserve the trust and equitable treatment of the commercial red sea urchin fishery.

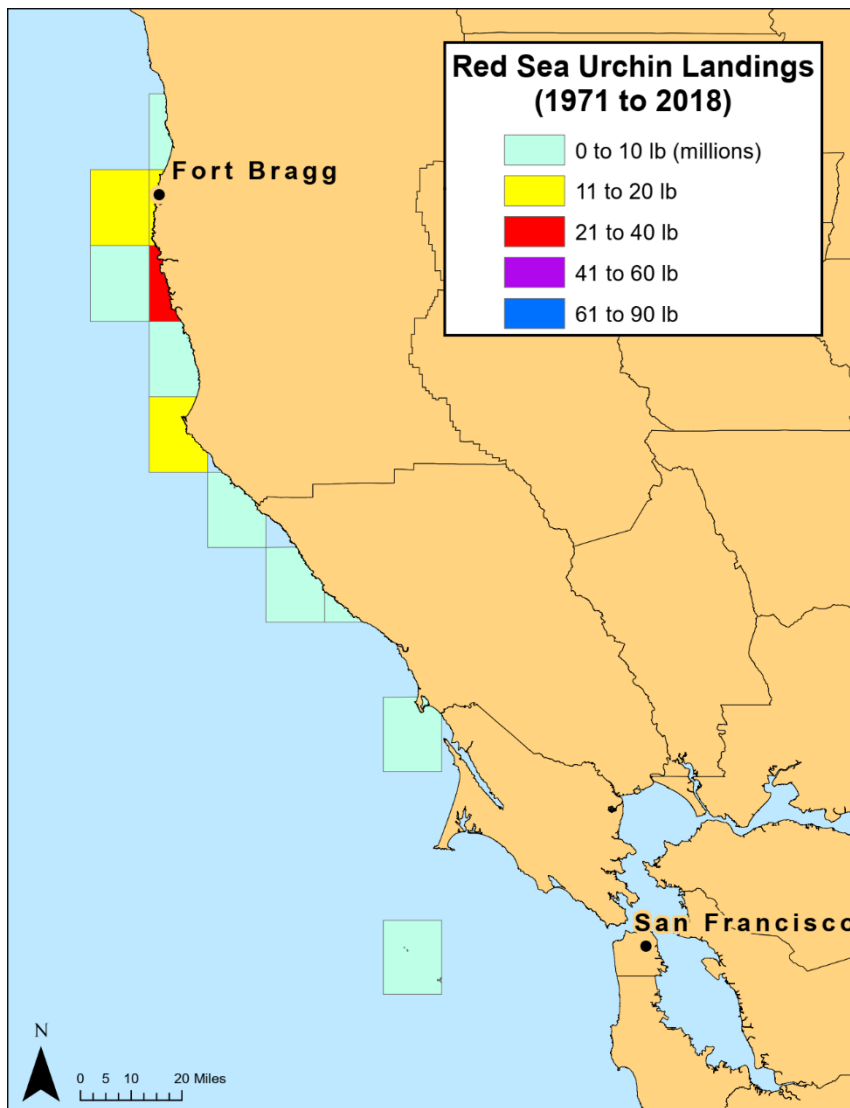


Figure 3. Locations and historical red sea urchin landings in Northern California from 1971 to 2018 (Source: CDFW MLDS 2019).

The proposed regulations would also restrict the daily bag limit exemption to only recreational take by hand or hand-held tools. This is necessary to restrict disturbance to the underlying reef structure. As noted in previous rulemaking packages, the Commission and Department believe that restoration efforts must minimize environmental impact. By restricting take to only hand and hand-held tools, risk of significant environmental impact can be avoided.

**Add Subsection 20.06 (d)(2): Sea Urchin Bag Limit Exemption at Tanker Reef.**

This proposal would add an additional experimental site at Tanker Reef, Monterey and allow daily bag limit exemption of both red sea urchin and purple sea urchin. In addition to its proximity to a large diver population, the Tanker Reef location offers an opportunity for the Department to examine how sea urchin populations can be controlled in a very different setting compared to Caspar Cove. Unlike the North Coast, kelp abundance is diminished in the Monterey area, but the area is not saturated with urchin barrens. The type of kelp that forms

the canopy in this region, giant kelp, are perennial and could potentially respond very differently to urchin removal.

In addition, the Tanker Reef location also allows the Department to examine the effect of culling both red sea urchin and purple sea urchin in an area without commercial activities. Between 2000 and 2020, approximately 6,500 lbs of red sea urchin were taken commercially in the Central Coast area, all of which were landed in Santa Cruz or further north.

The proposed boundary for the Tanker Reef urchin removal site is described below in Figure 4. The western boundary has been angled eastward from that proposed by the petitioner in Petition 2020-001. This is necessary to avoid an established private anchorage (Figure 5). The eastern boundary of the proposed area has been extended further eastward in order to cover the entire reef. This is necessary to ensure that the result of the experiment is not affected by the confounding effect of sea urchins migrating in from any part of the reef not covered by the bag limit exemption. This change also alleviates the need for enforcement officers to determine whether divers at Tanker Reef are inside or outside the delineated boundary. The specific starting points for the eastern and western boundaries are selected because of their clear delineation by the Monterey Tides resort and the parking lot at the end of Camino El Estero, respectively. Lastly, the seaward boundary is extended to 20m to ensure that the exemption will cover the depth range of kelp and all dive activities.

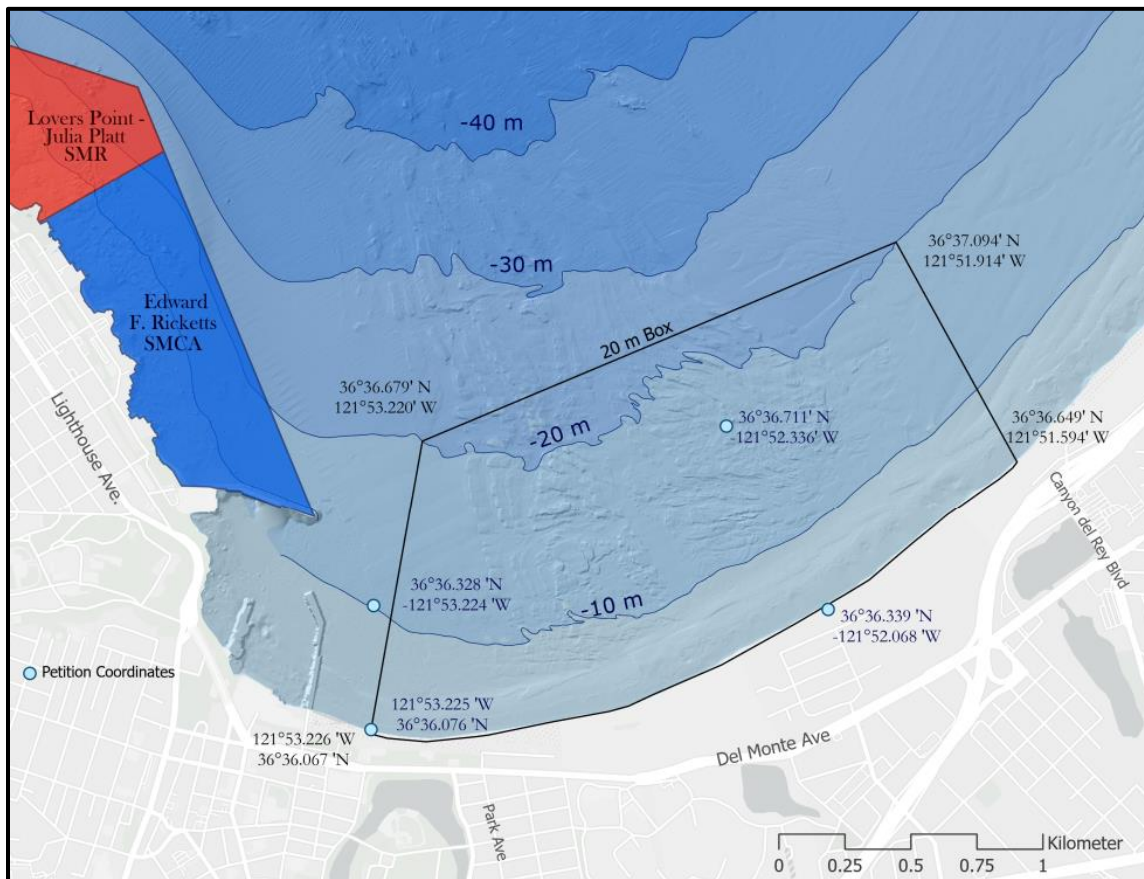


Figure 4. Proposed boundary for Tanker Reef urchin removal site, including proposed boundary in Commission Petition 2020-001.



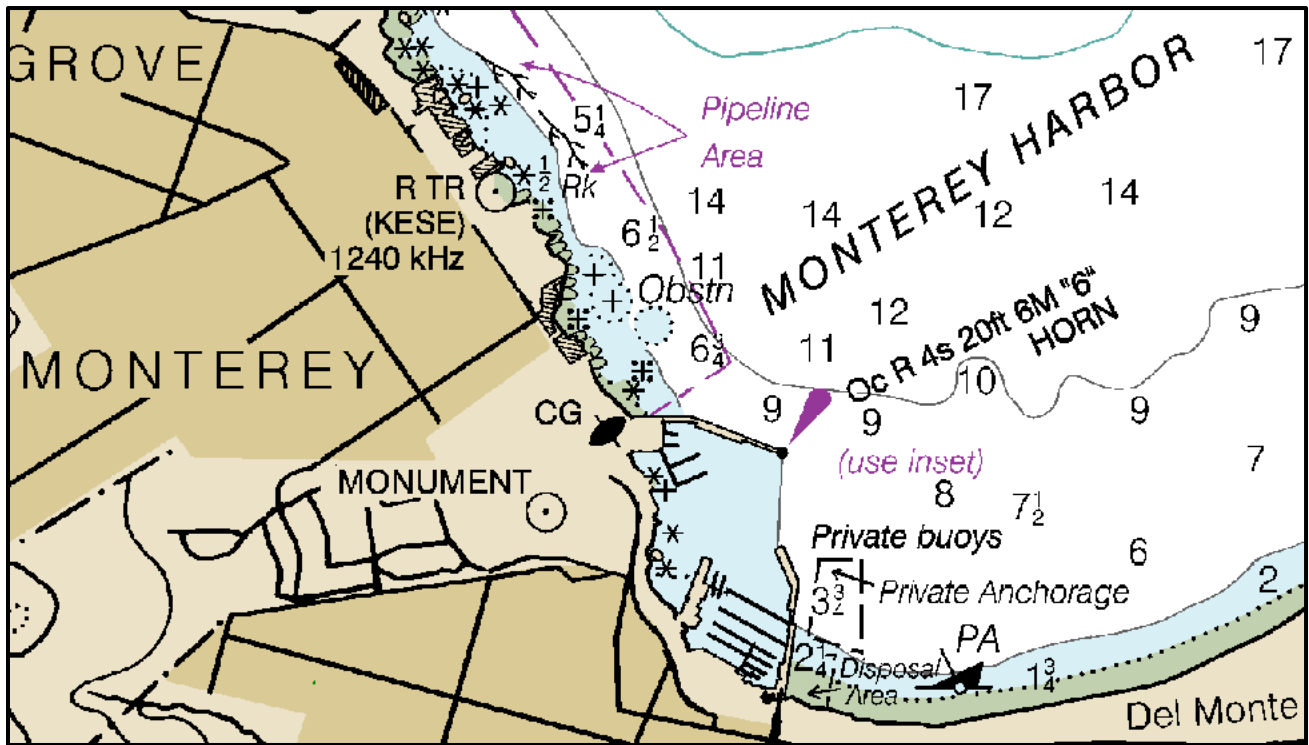


Figure 5. Close-up snapshot of eastern Monterey of NOAA navigational chart 18685 showing existing private anchorage in front of the Monterey Municipal Beach.

Consistent with the emergency rule for Caspar Cove, harvest of recreational sea urchin at Tanker Reef will be limited to take by hand or hand-held tools. This is borne out of the necessity of protecting the physical environment for the same reason as those described above for Caspar Cove.

(b) Goals and Benefits of the Regulation

The policy of this state is “to ensure the conservation, sustainable use, and, where feasible, restoration of California’s marine living resources for the benefit of all the citizens of the State” (Fish and Game Code section 7050(b)). The primary goal of this proposal is to make permanent an existing exemption on sea urchin take limits in Caspar Cove, Mendocino, and add a second test site at Tanker Reef in Monterey to test the effectiveness of kelp restoration through sea urchin removal by recreational divers. The result from the test sites will help inform future kelp restoration projects. The proposal can also potentially create kelp refuges that can directly contribute to the overall statewide kelp restoration effort.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Authority: Sections 200 and 205 Fish and Game Code

Reference: Sections 200 and 205 Fish and Game Code

(d) Specific Technology or Equipment Required by Regulatory Change

None

(e) Identification of Reports or Documents Supporting Regulation Change

Eisaguirre, J. H., Eisaguirre, J. M., Davis, K., Carlson, P. M., Gaines, S. D., & Caselle, J. E. (2020). Trophic redundancy and predator size class structure drive differences in kelp forest ecosystem dynamics. *Ecology*, 101(5), e02993. Available from: <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecy.2993>.

Fish and Game Commission. (2018b). Initial Statement of Reasons for Regulatory Action to Add Section 29.06, Title 14, California Code of Regulations, Re: Purple Sea Urchin. Available from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=162241&inline>.

Ling, S. D., Scheibling, R. E., Rassweiler, A., Johnson, C. R., Shears, N., Connell, S. D., ... & Clemente, S. (2015). Global regime shift dynamics of catastrophic sea urchin overgrazing. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 370(1659), 20130269. Available from: <https://royalsocietypublishing.org/doi/pdf/10.1098/rstb.2013.0269>.

Ling, S. D., Kriegisch, N., Woolley, B., & Reeves, S. E. (2019). Density-dependent feedbacks, hysteresis, and demography of overgrazing sea urchins. *Ecology*, 100(2), e02577. Available from: [https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecy.2577?casa\\_token=OEdAsbKEzLsAAAAA:8sbcEnHlf7UpgKsQng8SEMZIRwDFQ0sNEqQTU\\_A-QY1txHfFuwxOzKw6xb\\_gxK9j8sOr1bOr5cnpchNr](https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/ecy.2577?casa_token=OEdAsbKEzLsAAAAA:8sbcEnHlf7UpgKsQng8SEMZIRwDFQ0sNEqQTU_A-QY1txHfFuwxOzKw6xb_gxK9j8sOr1bOr5cnpchNr)

Rootsaert, Keith (2020). Petition to the California Fish and Game Commission for Regulation Change in re Central Coast Urchin Petition. Available from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178429&inline>.

Sanderson, J. C., Ling, S. D., Dominguez, J. G., & Johnson, C. R. (2016). Limited effectiveness of divers to mitigate 'barrens' formation by culling sea urchins while fishing for abalone. *Marine and Freshwater Research*, 67(1), 84-95. <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.940.4906&rank=1>.

(f) Identification of Reports or Documents Providing Background Information

Claisse, J. T., Williams, J. P., Ford, T., Pondella, D. J., Meux, B., & Protopapadakis, L. (2013). Kelp forest habitat restoration has the potential to increase sea urchin gonad biomass. *Ecosphere*, 4(3), 1-19. <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1890/ES12-00408.1>.

Fish and Game Commission. (2018a). Initial Statement of Reasons for Regulatory Action to Amend Section 29.15, Title 14, California Code of Regulations, Re: Abalone Regulations. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=160847&inline>.

Gold, M., Shuman, C., Michel, P., Joint Agency Comments Re: Proposed Amendments to Recreational Sea Urchin Regulations at Tanker Reef, Monterey County. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=182105&inline>.

Harvell, C. D., Montecino-Latorre, D., Caldwell, J. M., Burt, J. M., Bosley, K., Keller, A., ... & Pattengill-Semmens, C. (2019). Disease epidemic and a marine heat wave are associated with the continental-scale collapse of a pivotal predator (*Pycnopodia helianthoides*). *Science advances*, 5(1), eaau7042.

<https://advances.sciencemag.org/content/advances/5/1/eaau7042.full.pdf>.

McPherson, Finger, Housekeeper, Bell, Carr, Rogers-Bennett, & Kudela. (2020). Paper Under Review (Analyzes kelp coverage data gathered from Northern California from 1985-2019).

The Nature Conservancy. (2019) Summary Data from 25 Representative Sites along the North Coast.

Gavin Newsom, Governor of California, Letter from, to Wilbur Ross, United States Secretary of Commerce (2019). California Red Sea Urchin Disaster Request.

<https://www.fisheries.noaa.gov/webdam/download/88698465>.

Rogers-Bennett, L., & Catton, C. A. (2019). Marine heat wave and multiple stressors tip bull kelp forest to sea urchin barrens. *Scientific reports*, 9(1), 1-9.

<https://www.nature.com/articles/s41598-019-51114-y?sf222971155=1>.

Springer, Y. P., Hays, C. G., Carr, M. H., & Mackey, M. R. (2010). Toward ecosystem-based management of marine macroalgae—The bull kelp, *Nereocystis luetkeana*. *Oceanography and marine biology*, 48, 1. <https://farallones.org/wp-content/uploads/2018/09/Ecosystem-Based-Management-of-Bull-Kelp.pdf>.

#### (g) Public Discussions of Proposed Regulations Prior to Notice Publication

The poor conditions of the Northern and Central California kelp forests are well-known, and have been discussed extensively in previous rulemakings. The subject has been discussed frequently since 2015 at various Commission meetings, primarily in meetings where the subjects of sea urchin fishing and abalone fishing were on the agenda or otherwise mentioned.

Portion of this rulemaking was developed directly in response to Commission public petition 2020-001 as submitted during the January 2020 Commission meeting and discussed at the June 2020 and August 2020 Commission meetings. As described in Gold et al. 2020, this proposal is the result of months of discussion between the state, the petitioner, and various partner organizations.

#### IV. Description of Reasonable Alternatives to Regulatory Action

##### (a) Alternatives to Regulation Change

- Tanker Reef – Do not include red sea urchin in proposed subsection 29.06(d)(2) regarding unlimited take at Tanker Reef.

The Department considered only authorizing purple sea urchin take at Tanker Reef, consistent with the provisions for Caspar Cove in subsection 29.06 (d)(1), as purple sea urchin is the species causing excessive overgrazing, and California has an active commercial red sea urchin fishery. However, recent studies suggest that even if all

purple sea urchin are removed, that red sea urchin alone still would have the potential to overgrazing a reef, which could undermine the restoration effort as intended. As the Department has determined that there is no commercial red sea urchin in the area and thus would be low risk of impact to the commercial fishery; and due to the temporary nature of the proposal established through inclusion of the sunset date, this proposal was rejected in the interest of effectively testing urchin removals for kelp recovery at Tanker Reef.

- Add a third geographic location to subsection 29.06(d) in Monterey County within a marine protected area (MPA)

The state also considered allowing recreational culling inside MPAs as a result of queries and comments made public meetings, but ultimately declined to do so in the immediate future. The state has serious concerns over the impact that large-scale culling by recreational divers may have on other living resources inside MPAs, which are protected by separate regulations in Section 632. This would require amending regulations in Section 632, would result in increased enforcement burdens, and would be inconsistent with state policy regarding take in MPAs to date. Information gathering inside nearby MPAs will be accomplished through small-scale research activities conducted by California Reef Check under the tighter control and oversight of a scientific collecting permit issued by the Department rather than unlimited recreational take without the same controls.

#### (b) No Change Alternative

Without the proposed regulatory change, the state will not be able to test the prospect of restoring kelp forests through recreational dive effort.

#### V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures needed.

#### VI. 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 initial determinations relative to the required statutory categories have been made:

##### (a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states because the proposed regulatory action will extend and expand an existing kelp habitat restoration effort that will help to support and a variety of recreational sportfishing opportunities. The restoration of kelp forests is vital to the revitalization of the declining abalone sport fishery and to an array of species that benefit from the kelp forest ecosystem.

The proposed action will have no adverse impact to recreational opportunities or to species of value for commercial fisheries.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The Commission anticipates no impacts on the creation or elimination of jobs within the state; no impact on the creation of new businesses or the elimination of existing businesses; generalized benefits to the health and welfare of California residents; no effects on worker safety; and benefits to the state's environment. The proposed action is designed to ensure the long-term sustainability and quality of the kelp forest ecosystem in Central and Northern California, as well as the coastal economy that relies on it. Small increases in recreational urchin diving opportunities may result in an increase in visits to the affected areas that will bring some additional local expenditures to businesses that support ocean diving activities. However, the increase in visits are not likely to be substantial enough to spur the creation of new jobs, new businesses, or the expansion of businesses.

(c) Cost Impacts on a Representative Private Person or Business

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State

No change in administration or enforcement costs are anticipated by CDFW or other State agencies. Consideration was given to keep administrative and enforcement costs within existing budgets. No impact in federal funding to the State is anticipated.

(e) Nondiscretionary Costs/Savings to Local Agencies

None. The proposed action has been designed to ensure that there are no nondiscretionary cost impacts to local law enforcement or emergency response services.

(f) Programs Mandated on Local Agencies or School Districts

None.

(g) 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.

(h) Effect on Housing Costs

None.

## VII. Economic Impact Assessment

The primary aim of the proposed action is to make permanent an existing exemption on sea urchin recreational take limits in Caspar Cove, Mendocino, and to add a second experimental test site at Tanker Reef in Monterey to test the effectiveness of kelp restoration through sea urchin removal by recreational divers. The result from the test sites will help inform future kelp restoration projects. The proposal is also intended to help to ensure the long-term sustainability and quality of the kelp forest ecosystem in Central and Northern California, as well as the coastal economies that rely on productive kelp forest ecosystems.

The Commission anticipates no impacts on the creation of jobs, businesses or the elimination of existing businesses within the state because the proposed action is for increased recreational sea urchin take that is not likely to involve a substantial consistent increase in diver numbers or spending. Some urchin removal events have been organized in Northern California and may continue to occur, however the continuation of organized dive events and turnout numbers are not entirely predictable, given current COVID-19 closures in some areas as well as a multitude of other unknown intervening factors that could affect turnout.

Some small positive economic impacts to businesses that serve ocean divers and other visitors drawn to the vicinity to provide shore support are anticipated. Based on the purple sea urchins removal events in Northern California in 2019 and early 2020, between 30 to 100 people may participate in each organized urchin removal event, as well as and smaller group trips, in the Northern California location and at the new Tanker Reef location in Monterey County.

Expenditures on purchases or rentals of wetsuits, SCUBA tanks and oxygen refills, fuel, food, and accommodations are the some of the types of spending that may be increased due to this regulation change. The most common recreational methods used to take sea urchins are SCUBA and free-diving that may spur a small increase in local spending on diving equipment rentals and/or purchases. Additionally, these recreational urchin divers are often accompanied by shore support and other friends and family, who are also likely to spend locally on fuel, food, and for those who travel larger distances, also accommodations.

The proposed action also increases the recreational take of red sea urchins in Monterey County (Tanker Reef). Red sea urchins are a commercial target species, but historically red sea urchins have not been commercially landed in Monterey Area ports since a small landing in 2015 as shown in Table 1. Additionally, stressed RSU have reduced commercial value due to tissue deterioration. These two factors support the expectation of no adverse impact to commercial red sea urchin diving businesses.

Table 1. California Red Sea Urchin Pounds Landed by Port Area: 2014-2020

PORT AREA	2014	2015	2016	2017	2018	2019	2020 Jan- July	Area Total
<b>Fort Bragg Area</b>	3,598,497	1,272,085	546,495	461,011	215,114	49,248	75,449	6,217,899
<b>Bodega Bay Area</b>	92,237	111,570	583	1,570	8,136	1,040	1,099	216,235
<b>San Francisco Area</b>	13,068	10,739	14,835	23,542	11,704	6,506	6,738	87,132
<b>Monterey Area</b>	0	176	0	0	0	0	0	176
<b>Eureka Area</b>	186	3,737	0	0	0	0	0	3,923
<b>NORTH TOTAL</b>	<b>3,703,988</b>	<b>1,398,308</b>	<b>561,914</b>	<b>486,123</b>	<b>234,954</b>	<b>56,794</b>	<b>83,286</b>	<b>6,525,365</b>
<b>Los Angeles Area</b>	1,355,543	1,106,258	644,046	839,811	905,226	947,855	238,244	6,036,983
<b>Morro Bay Area</b>	1,481	1,919	0	359	658	0	0	4,417
<b>Santa Barbara Area</b>	6,932,102	5,517,715	4,473,453	2,782,120	1,981,761	1,027,377	518,939	23,233,466
<b>San Diego Area</b>	516,727	457,751	204,671	87,549	107,005	344,822	152,964	1,871,489
<b>SOUTH TOTAL</b>	<b>8,805,853</b>	<b>7,083,642</b>	<b>5,322,170</b>	<b>3,709,839</b>	<b>2,994,649</b>	<b>2,320,054</b>	<b>910,147</b>	<b>31,146,355</b>

Source: CDFW Marine Landings Database

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The Commission anticipates no impacts on the creation or elimination of jobs within the state because the proposed action is for increased recreational purple sea urchin take that is not likely to involve a substantial increase in diver visits or area expenditures. At recent Northern California removal events the most common dive methods used were SCUBA and free-diving that may spur a small increase in local spending on diving equipment rentals and/or purchases. The proposed action also increases the recreational possession of red sea urchins (in Tanker Reef). Red sea urchins are a commercially targeted species, but historically red sea urchins have not been regularly commercially landed in Monterey County, as shown in Table 1. Additionally, stressed red sea urchins, as occur in the urchin barrens, have reduced commercial value due to gonad tissue deterioration. These two factors support the expectation of no job impacts to the commercial red sea urchin fishery.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The Commission anticipates no impacts on the creation new businesses or the elimination of existing businesses within the state because the proposed action is for increased recreational sea urchin take that is not likely to involve a substantial increase in the number of diver visits or area expenditures. The most common methods used are SCUBA diving and free-diving that may spur a small increase in local spending on diving equipment rentals and/or purchases. The proposed action increases the recreational take of red sea urchins (in Tanker Reef). Red sea urchins are a commercial target species, but historically red sea urchins have not been commercially landed in Monterey County, since a small quantity in 2015 (see Table 1.). Additionally, stressed red sea urchins reduces the commercial value of the harvest due to tissue deterioration. These two factors support the

expectation of no impact to the commercial red sea urchin fishery and/or associated businesses.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The Commission anticipates no impacts on the expansion of businesses currently doing business within the state because the proposed action is for increased recreational purple sea urchins take that is not likely to involve a substantial increase in diver numbers or spending. The most common methods used are SCUBA diving and free-diving that may spur a small increase in local spending on diving equipment rentals and/or purchases. The proposed action also increases the recreational take of red sea urchins (in Tanker Reef). Red sea urchin are a commercial target species, but historically red sea urchins have not been commercially landed in Monterey County. Additionally, stressed red sea urchins reduces the commercial value of the harvest due to tissue deterioration. These two factors support the expectation of no impact to the commercial red sea urchin fishery and/or associated businesses.

(d) Benefits of the Regulation to the Health and Welfare of California Residents

The Commission anticipates generalized benefits to the health and welfare of California residents with increased recreational sea urchin take and because the program is an effort to restore vital kelp forests that support diverse species and healthier marine ecosystems which many residents value and that may also benefit coastal economies.

(e) Benefits of the Regulation to Worker Safety

The Commission anticipates no impacts on the worker safety because the proposed action does not have any bearing on to working conditions.

(f) Benefits of the Regulation to the State's Environment

The Commission anticipates benefits to the State's environment by contributing to the restoration of vital kelp forest ecosystems.



## Informative Digest/Policy Statement Overview

The Fish and Game Commission (Commission) and the Department of Fish and Wildlife (Department) are proposing to amend Section 29.06 of Title 14, California Code of Regulations (CCR). The proposed regulations would establish two areas for kelp restoration and information collection efforts aided by recreational divers. The proposal is the state's most recent attempt to help restore depleted and diminishing kelp forests in Central and Northern California following warmer than normal ocean conditions and the loss of predatory sea stars to wasting disease. Many former kelp forests are now urchin barrens, and new kelp stands cannot be reestablished due to overgrazing by sea urchins.

Best available studies suggest that sea urchin density can be controlled only if sufficient mortality can be incurred. This proposal puts forth Caspar Cove in Mendocino County and Tanker Reef in Monterey County as two sites where recreational divers will be able to test the feasibility of controlling sea urchin populations through recreational diving efforts. It is hoped that kelp refuges can be created at these sites and when ocean conditions are again favorable for kelp growth and return of natural predators, these areas can provide the necessary spore banks to reseed the coast.

Under the proposed regulations, recreational divers are allowed to take unlimited purple sea urchins in Caspar Cove and unlimited purple sea urchins and red sea urchins at Tanker Reef. Take of red sea urchin will not be allowed in Caspar Cove because of an active commercial red sea urchin fishery in the area. Take must be conducted by hand or with hand-held tools due to the risks that automated or pressurized machines pose to the hard substrate of the reefs. The primary purpose of the proposed regulations is to collect data and gather information; the regulations will sunset on April 1, 2024. Upon the expiration of the proposed regulations, the Commission and the Department will work to implement the next step of its adaptive management based on information gathered.

### **Benefits of the Regulations**

The primary goal of this proposal is to test the effectiveness of kelp restoration through sea urchin control by recreational divers at two test sites. The results from the test sites will help inform future kelp restoration projects. The proposal can also potentially contribute to the overall statewide kelp restoration effort.

### **Consistency and Compatibility with Existing Regulations**

The Legislature has delegated authority to the Commission to promulgate recreational fishing regulations (Fish and Game Code, sections 200 and 205); 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 regulations are consistent with other recreational fishing regulations and marine protected area regulations in Title 14, CCR.