

Agenda Item Summary

BACKGROUND

Oregon's commercial red sea urchin fishery began in 1986, during the period when the fishery rapidly accelerated all along the West Coast. Demand for sea urchin roe was high and the stocks were virtually untouched, allowing for a very profitable fishery for a large group of harvesters. The commercial sea urchin fishery peaked quickly in 1990 when 9.2 million pounds were landed by 60 permitted divers. By 1998, red sea urchin stocks had diminished, the markets were reduced, and the number of active harvesters dropped to 15 permitted divers. Since then, participation in Oregon's commercial sea urchin fishery has stabilized. The recent fishery is characterized by 4-6 full time divers who collectively harvest about 500,000 pounds of red sea urchins per year.

ODFW resource managers and commercial harvesters both agree that the current level of harvest activity appears to be sustainable, but they are concerned that future increases in fishing pressure may affect stability of Oregon's commercial sea urchin fishery.

In response to an initial analysis of the current status of the commercial sea urchin fishery and assessment of poor recruitment, the OFWC acted on March 7, 2014, to temporarily suspend the lottery for limited entry sea urchin permits for a period of two years (per OAR 635-005-0825 (10)). ODFW resource managers were directed to conduct additional stock assessment work, and to bring the issue back to the OFWC after a period of two years (2014-2016).

PUBLIC INVOLVEMENT

On December 3, 2015, ODFW held a meeting with the commercial sea urchin industry (Port Orford, OR). The meeting was attended by six active permitted harvesters. Staff members from ODFW presented results from recent stock assessment surveys and an analysis of stock trends. The group discussed current stock conditions and potential management measures to better assure sustainability of the sea urchin fishery.

ISSUE 1

REDUCE THE NUMBER OF PERMITS REQUIRED TO ACTIVATE THE LOTTERY (FROM 30 TO 12 PERMITS)

ANALYSIS

The commercial sea urchin fishery in Oregon is currently capped by a maximum number of 30 individual limited entry permits, and the lottery is activated when the number of issued permits falls below 30. However, recent stock assessment surveys and analysis of the current status of the commercial sea urchin fishery indicate that the fishery is stable and sustainable at a lower level of participation. ODFW resource managers and the commercial industry agree that the total number of permits available should be reduced from 30 to 12. Reduction in the overall number of permitted sea urchin harvesters will effectively reduce the total harvest potential of the combined fleet, and provide a better match with current practices which have been sustainable since 2003.

Stock Conditions: Orford Reef is a complex and rugged group of offshore

islands and sub-tidal reefs located about five miles north-west from Port Orford. This reef is the most important area for the commercial sea urchin fishery, and the area provides for about 50% of the landings each year. The most robust and consistent series of fishery independent red sea urchin stock assessment surveys have been conducted within Orford Reef. Analysis of these data indicates that: (1) densities of red sea urchins have continuously declined over the period from 1984 to 2014 (Fig. 1); (2) sea urchin populations currently occur at a low density of about one red sea urchin per 2 square meters; and (3) recruitment of new sea urchins has been low (10-30% of the population) in recent years.

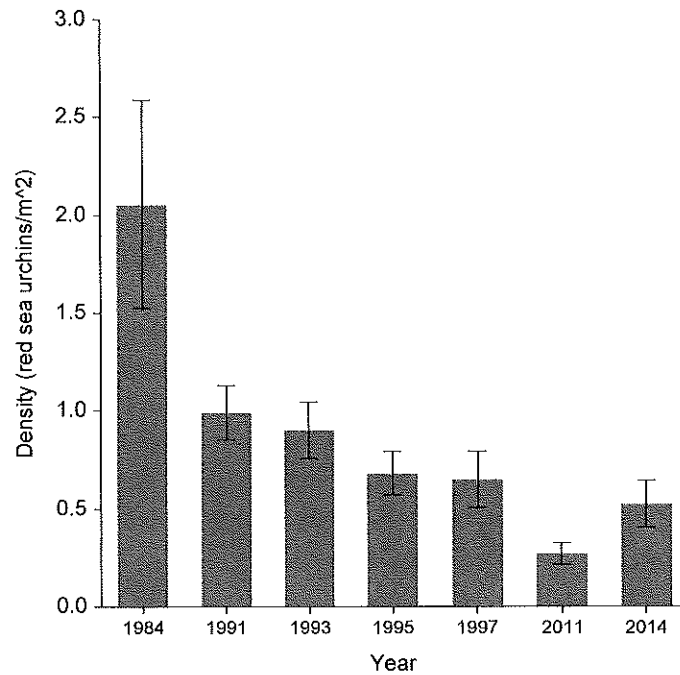


Figure 1. Time series records of declining densities of red sea urchins (# urchins per m²) derived from periodic fishery independent surveys conducted at Orford Reef, OR. Error bars indicate \pm standard error around the mean.

Fishery Effort: The number of active harvest permits and total landings of red sea urchins have both decreased substantially since the early years of the fishery (Fig. 2). From 2003-2015 the commercial sea urchin industry operated with about 6-12 active permits and total annual landings of about 500,000 lbs per year. As the number of permits is currently 30, most sea urchin permits are inactive during each year. Consequently, lotteries for new permits have occurred in most years since 2003 and the number of renewals has decreased each year. The current lottery system is inefficient, offers the potential for an unsustainably high level of harvest, and results in efforts that do not contribute to a sustainable sea urchin fishery.

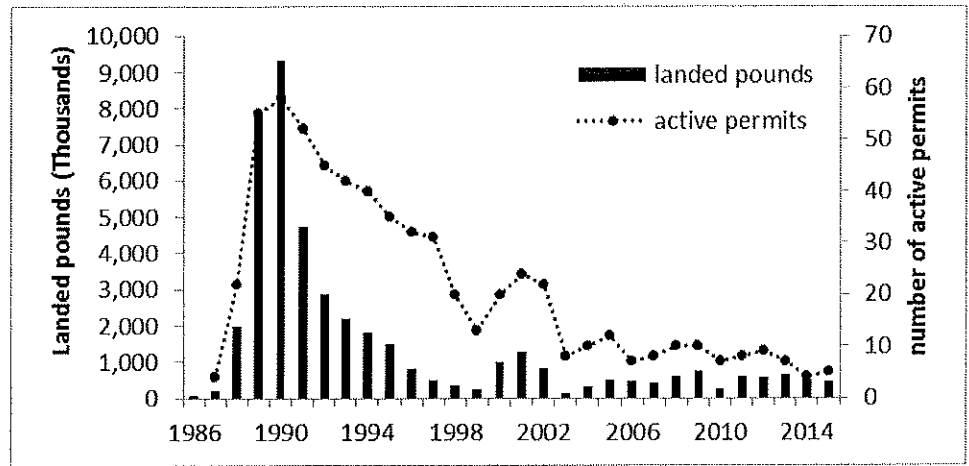


Figure 2. Time series of commercial landings of red sea urchins in Oregon and the number of active permits over the period from 1986 to 2015. The number of active sea urchin permits (*i.e.*, harvester made minimum landings of 5,000 lbs per year) has been fairly stable since 2003.

Given the observed decline in red sea urchin density, low recruitment, and stability of the commercial sea urchin industry at its current low level of participation, it makes good sense to also reduce the overall potential harvest by bringing the permit lottery system into better alignment with the current level of fishery activity. Industry members and ODFW biologists feel the proposed permit reduction will serve to further assure fishery sustainability while not affecting current fishery practices.

OPTIONS

1. Amend 635-005-0825 (1) as proposed by staff.
2. No action (status quo).

**STAFF
RECOMMENDATION**

1. Adopt option 1

DRAFT MOTION	I move to adopt the staff recommendation to amend OAR 635-005-0825 (1) which will reduce the number of Sea Urchin Permits required to activate the lottery from 30 to 12 permits.
EFFECTIVE DATE	April 1, 2016

ISSUE 2

PROHIBIT THE USE OF ENRICHED AIR WHILE DIVING FOR SEA URCHINS OR SEA CUCUMBERS

ANALYSIS

Red sea urchins typically occur from the lower intertidal zone seaward to depths of 200 feet. In Oregon, the vast majority of commercial divers collect red sea urchins from depths shallower than 60 feet, using compressed atmospheric air. Because Oregon divers rarely harvest red sea urchins from depths greater than 60 ft, a *de facto* deep water refuge

exists that contributes to the populations in shallow water and to sustainability of the sea urchin fishery.

Oregon's sea urchin divers traditionally use only compressed atmospheric air while working underwater. Atmospheric air contains about 80% nitrogen and 20% oxygen. Breathing compressed atmospheric air under pressure results in the buildup of toxic levels of nitrogen in the bloodstream, and divers must adhere to strict guidelines to maintain safe operations. In CA and WA, however, divers sometimes use enriched air (that contains less nitrogen and more oxygen) to allow for substantially longer bottom times, particularly during repetitive dives. This practice allows divers to: (1) remain underwater for longer periods of time; (2) conduct multiple deep dives during a single day; and (3) harvest greater numbers of sea urchins from deep water habitats. Use of enriched air also poses a safety hazard for divers because it increases the likelihood for oxygen toxicity during repetitive dives.

Data from fishery independent surveys show that most red sea urchins occur at depths between 40 and 70 ft, and their densities generally increase with depth. Historical and recent logbook data provide evidence that the current harvest is partially dependent on red sea urchins that immigrate into shallow harvestable depths (*i.e.* 40 to 50 ft) from neighboring deep waters >60 ft. The deep water population also provides spawning stock that contributes to the supply of larvae that help replenish populations at more distant locations and establish new generations of sea urchins.

ODFW shellfish managers and the Oregon commercial sea urchin industry are both concerned that use of enriched air in the future may increase the overall level of harvest and pose a risk to the sea urchins that inhabit deep water. Prohibition of any gas mixture other than atmospheric air for diving for sea urchins or California sea cucumbers will not affect current fishery practices in Oregon, and is recommended by both ODFW shellfish managers and Oregon's commercial sea urchin fishery.

OPTIONS

1. Amend 635-005-0845 (4) as proposed by staff.
2. No action (status quo).

STAFF RECOMMENDATION

1. Adopt option 1

DRAFT MOTION	I move to adopt the staff recommendation to amend OAR 635-005-0845 (4) which will prohibit the use of enriched air for the commercial harvest of sea urchins and/or California sea cucumbers.
EFFECTIVE DATE	April 1, 2016

ISSUE 3

ADDITION OF CALIFORNIA SEA CUCUMBERS TO THE SEA URCHIN PERMIT

ANALYSIS

Commercial harvest of California sea cucumbers (*Parastichopus californicus*) has increased in recent years along the West Coast, and the dive fisheries are currently robust in Alaska, British Columbia, Washington, and California. In Oregon, however, harvest of California sea cucumbers has been historically limited to relatively low harvest levels carried out on an intermittent basis by a small number of commercial sea urchin divers. Commercial landings occurred in 11 out of 21 years over the period from 1993 to 2014, and an average of 2,638 lbs of California sea cucumbers were harvested from Oregon waters during each year of active harvest.

Currently, the California sea cucumber fishery operates in Oregon as an open access fishery which requires a general Commercial Shellfish Harvest Permit (CSHP). We recommend addition of California sea cucumbers to the species that may be harvested with a commercial Sea Urchin Permit, and to amend the permit title to reflect inclusion of sea cucumbers. Addition of California sea cucumbers to the Sea Urchin Permit will effectively remove them from eligibility for harvest under the open access CSHP. This action will place the commercial harvest of California sea cucumbers into a limited entry system which will serve to: (1) restrict the number of permitted harvesters; and (2) safeguard the populations of California sea cucumber stocks into the future. Since >95% of California sea cucumbers have been historically landed in Oregon by active holders of Sea Urchin Permits, we anticipate that the impact to the current fishery will be negligible.

We propose an annual minimum landing value of 500 lbs per year for California sea cucumbers. This value is based on the average landings per permit holder during years when the fishery was active. We also propose to establish a requirement of 2,000 lbs per year for transfer of the permit, which is calculated by the same formula applied to the red sea urchin fishery (*i.e.*, 4 times the annual landing requirement).

OPTIONS

1. Amend language throughout 635-005-0790 through 635-005-0845 to include California sea cucumbers as proposed by staff.
2. No action (status quo).

STAFF RECOMMENDATION

1. Adopt option 1

DRAFT MOTION I move to adopt the staff recommendation to amend OARs 635-005-0790 through 635-005-08454 which will place commercial harvest of California sea cucumbers into a limited entry fishery as shown in Attachment 3.

**EFFECTIVE
DATE**

April 1, 2016