



Sea Urchin Harvest Pty Ltd

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Senate Standing Committees on Environment and Communications
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The following is a submission by Sea Urchin Harvest Pty Ltd to the inquiry into the spread of climate-related marine invasive species. If you require any further information about this submission or other matters, please contact me on .

Yours sincerely
Christopher Theodore

Sea Urchin Harvest
12 October 2022

In making this submission, we offer a way forward to remove greater numbers of *Centrostephanus Rodgersii* (long spined urchin) from the Great Southern Reef in southern NSW and north-eastern Victorian coastal waters.

By enabling **total access to all NSW and Victorian coastal waters**, including Marine Parks and surrounding sanctuary zones and revising the Victorian Fisheries Authority (VFA) *Sea Urchin Fishery Baseline Management Arrangements* (the Arrangements) by removing the existing **quota on long spined urchin** and having a **large number of access licence holders** will:

- i) Assist in the recovery of kelp forests, seaweed and seagrass beds and fish habitats by significantly increasing the harvest of long spined urchin;
- ii) reduce the transference of long spined urchin in the Eastern Australia Current into Tasmanian waters
- iii) provide economic benefit whilst building a strong commercial long spined urchin fishery.

Background – Sea Urchin Harvest Pty Ltd

My family are long-term Victorian abalone shareholders in the Eastern Zone (EZ), fishing out of Mallacoota. I am the sole director of Sea Urchin Harvest (SUH) and along with my wife Rachael Theodore, General Manager of SUH, we have developed our small business in Tomakin, on the far south coast of NSW into a successful urchin processing facility.

A commercial abalone diver for 25+ years on the far south coast of NSW and around Mallacoota in Victoria (EZ), I saw firsthand the condition of the reefs and kelp forests, witnessing the explosion in long spined urchin numbers and the resultant degradation along the coastline. In response, our goal was to create a commercially viable long spined sea urchin fishery that could assist in the recovery of kelp forests, seaweed and seagrass beds and fish habitats and provide economic benefit for the community.

SUH harvests and sources long spined urchin for processing into a range of roe products ready for consumption by a strong domestic market, with wholesale and retail customers in each mainland state. We have recently invested heavily in building a large, export quality processing factory in Moruya, NSW and are on track to achieve accreditation and commence exports in early 2023.

(a) the existing body of research and knowledge on the risks for and damage to marine biodiversity, habitat and fisheries caused by the proliferation and range shifting of non-endemic long spined sea urchins

There is a vast array of research that finds long spined urchin numbers are a threat species, creating an imbalance in the marine ecology and impacts other high value fisheries.

The long spined urchin is endemic to NSW and north-east Victoria; movement of this species into Tasmanian waters has been attributed to the warming East Australian Current. It is therefore likely that, if the initial long spined urchin arrived in Tasmania in the 1970's was a result of the warming current, then the proliferation of long spined urchin in southern NSW and Victorian waters would continue to bolster populations in Tasmanian waters.

In response to the impact on the marine ecosystems and high value fisheries, the Tasmanian government, through the Abalone Industry Reinvestment Fund (AIRF), demonstrated that using commercial harvest as a method of applying control over the proliferation of the long spined can be effective. Scientists working on the long spined problem in Tasmanian waters are of the view that the harvest of this specific urchin as an effective, immediate strategy for reducing populations. For example, the 2019 *Centrostephanus* Forum #2 highlighted:

“... the successful harvest of Centro [long spined], **in excess of 560 tonnes, over the last 12 months. This has provided a new fishery, with substantial employment opportunities**, added a significant product to the Tasmanian premium seafood brand and **reduced the impact of Centro [long spined] on our reefs and fisheries.**”

A 2022 fishery independent survey of long spined urchin in EZ waters recently reported 45,000 tonne (excluding population on barrens). There is no current survey in NSW to assess long spined urchin biomass.

Reference point (b) management options, challenges and opportunities to better mitigate or adapt to these threats, and governance measures that are inclusive of First Nations communities;

The Victorian, Tasmanian and New South Wales governments have recognised the threat posed by the long spined urchin to the diversity and quality of the marine ecosystems and the impact on the high value fisheries of abalone, lobster and other species. Tasmania and NSW have applied a commercial approach to research and harvest of long spined urchin. The Tasmanian abalone industry approached the threat of the long spined urchin by combining research and commercial prospects to create a viable long spined fishery industry with a no quota system. Fishery management arrangements are listed in Table 1 below.

Table 1 - Fishery management arrangements

	NSW	VICTORIA	TASMANIA
Management authority	Sea Urchin and Turban Shell Fishery (SUTS)	Sea Urchin Fishery Baseline Management Arrangements - June 2014	Commercial Dive Fishery
Number of sea urchin dive licences	37	6 -Up to 3 divers allowed on each access licence -Licences are non-transferable -No cap on the total number of licences however an applicant for a new access licence must secure a minimum number of quota units (equivalent to 20 tonnes of quota) to append to their licence if an existing licence holder is willing to sell quota	53
Total Allowable Commercial Catch	None set	Eastern Sea Urchin Zone (EZ): -114 tonnes -(3% harvestable biomass) -1140 quota units	None set
Quota on long spined urchin	No	TACC managed by Quota Management System (QMS) and allocation of Individual Transferable Quota (ITQ) units The application of minimum quota and/or ITQ unit holdings equivalent to 20 tonnes per licence will	No
Reporting to regulatory agency	Yes	Yes	Yes

Opportunities

There is clear evidence that where long spined urchin have been commercially harvested, the kelp forests regenerate in a matter of a year or two, allowing seaweeds to colonise the substratum and regaining biodiversity through restoring habitat with the potential for increasing abalone, lobster and other fish populations in the longer term.

Targeted sea urchin fishery arrangements can address the excessive population of long spined urchin and the resultant impact on ecosystem integrity and function. Jobs growth and export potential would be assured in addition to a return to health of high value fisheries such as abalone, lobster and to other fisheries and potentially reduce long spined larvae entering the East Australian Current and continue into Tasmanian waters.

The NSW and Victorian Marine Parks and sanctuary zones (“no take areas”) allow long spined urchin to flourish. Incentivising commercial sea urchin divers by enabling unlimited access to long spined urchin throughout southern NSW and east Victorian sanctuary zones can create a growth industry that has a sharp focus on reducing long spined urchin numbers sustainably.

SUH is cognisant of opposition to allowing commercial fishing into marine parks, however, the positive impact on the marine ecology when long spined numbers are reduced, allowing other fish species to regain habitat in the medium to longer term, proves the value of concurrent commercial and environmental management activities within sanctuary zones.

Furthermore, by dismantling the quota and revising the licencing arrangements in the EZ Victoria fishery, urchin divers can be incentivised to undertaken focussed harvest activities, having a positive impact on marine conditions in Victorian waters, and the ongoing transference of the species into Tasmanian east coast waters.

(c) funding requirements, responsibility, and pathways to better manage and co-ordinate stopping the spread of climate-related marine invasive species;

A fishery independent long spined urchin biomass survey in southern NSW would prove to be of great value by **confirming the magnitude of the species and assist government and industry to develop targeted fishery arrangements.** Data is a tool that provides evidence to drive control mechanisms. Consolidated data (NSW and Victorian biomass) can also inform the status of the long spined urchin throughout the Great Southern Reef.

The approach taken by the Tasmanian government to provide significant funding to the AIRF to specifically investigate long spined urchin activity has been an effective use of research and commercial pursuits.

SUH is a private family company that has been developing the infant NSW urchin industry since 2010, hiring contract sea urchin divers to take the long spined urchin off the reefs for processing into quality roe products, creating benefit for community and environment essentially for free. The availability of similar funding as in Tasmania would provide immeasurable help in taking urchin off the reef and assist our small family business to compete with large, well-established and experienced seafood export businesses. Such funding would assist in supporting diver costs and processor costs such continuous quality improvements and growing business sophistication.

Reference point (d) the importance of tackling the spread of invasive urchin ‘barrens’ to help facilitate marine ecosystem restoration efforts (such as for Tasmanian Giant Kelp *Macrocystis pyrifera*);

Barrens created by long spined urchin present exactly as it sounds, barren bare rocks. The prevention of barrens is integral to protecting marine ecosystems and rebuilding marine biodiversity, habitat and fisheries. **Prevention is where commercial harvest works best**, stopping incipient barrens turning into barrens and saving the reef that is still existing.

Research supports our view about prevention; for example, studies by Dr John Keane, University of Tasmania, found that **“early, preventative urchin removal before urchin density reaches a tipping point ($c > 2.2$ urchins m^2) and barrens begin to form is an effective way to control the expansion of urchin barrens.”**

(e) any other related matters.

Wild caught long spined urchin are an abundant food resource harvested via ecologically sustainable fishing practices (harvested by hand), enabling zero by-catch and without damage to the reefs or sea grasses as no anchor is used by the dive boat.

It is the processor that creates demand. Urchin roe is highly regarded as a delicacy in many cultures, especially Asian cultures, that places urchin roe on a par with caviar.

It is fair to say that **demand for long spined urchin far outweighs supply**, thanks in part to our efforts in creating domestic demand and in attracting international interest which has given us a ready set of customers once we commence export activities. **Our aim by 2025 is to process over 30 tonne** each week. With the assistance of a grant from the NSW government, SUH has built a new processing factory to enable a tripling of processing tonnage to meet export demand (due to commence in 2023).

Our processing business prospers from long spined harvest, but we are as engaged in the recovery of the marine ecosystem as in creating a long term, viable domestic and export seafood business. SUH was awarded the *Excellence in Environmental Practice* award in 2017 and 2019 at the bi-annual Sydney Fish Market Excellence Awards.

The processing lifespan is labour intensive and SUH currently employs a team of around 20. We expect to provide around 60 new jobs over the next five years through an increase in export. This includes increasing the number of people engaged in existing job types. We also support local businesses and contribute to building greater local industry capability throughout the far south coast region, sourcing supply chain products and services whilst our harvest divers live, work and spend in their home areas.

Harvesting long spined sea urchin for the Australian and international seafood markets can achieve environmental, economic, social and cultural benefits to the NSW far south coast and Victorian communities.

Supporting sea urchin processors is the only known way to help reduce the prolific long spined population in the Great Southern Reef.