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Submission to the Joint Select Committee on Northern Australia regarding opportunities for expanding the aquaculture industry in Northern Australia.

To the Joint Select Committee on Northern Australia,

Tasmanian Seafoods is grateful for the opportunity to report on our progress in developing the use of aquaculture in Northern Australia specifically with reference to our research and development in the Northern Territory, Western Australia and Queensland.

Tasmanian Seafoods is a national seafood company which focuses on high value seafood products destined for the export market. Our company started in 1969 in the abalone industry in Tasmania and has since expanded to include factories and market depots in Smithton (TAS), Margate (TAS), Dandenong (VIC), Cairns (QLD) and Darwin (NT).

We have been investing in research and development to establish Sea Ranching for the Northern Territory sea cucumber fishery, with a long term vision to expand this into Western Australia and parts of Queensland and the Torres Strait.

The technical risk associated with this research has been substantial and a large amount of credit for recent successes has to be attributed to our hatchery staff including our former employee Mr William Bowman and current Hatchery Manager Mr. Luke Turner.

The sea cucumber or 'trepan' fishery has a long history dating back to the Maccassan fishers that visited Northern Australia prior to Flinders completing his circumnavigation. These visits reportedly commenced after the Dutch fleet invaded Maccassar in the 17th Century. Catches were documented by Alfred Searcy from Victoria Point in Port Essington to exceed 2000t per annum.

The fishery continued but waned soon after the turn of the 20th Century due to parochial interests pushing for a local industry to be established. It is likely that sea cucumber populations had been severely depleted by this time and the pattern of exploitation necessary for continued success was not readily employed by the new industry. Despite this a small industry continued into the 1930's and just prior to World War II. Some sporadic effort existed in the post war years but the lack of market connection due to the effects of war saw low demand enable stocks to replenish.

The survey by the Northern Territory Museum conducted by Lyle Vail (Vail 1989) and Neville Gill, as well as expeditions by John Chatterton saw the industry redevelop to some degree in the late 1980's. Prices however were low and the profitability was marginal, if not elusive. Tasmanian Seafoods entered the industry at this time with a view of taking a more professional approach to industry development and with an eye for developing the required economics of scale.

After several years of large harvests in the late 1990's and early to mid-2000's pressure on the stock was clear and research into the fishing pattern of the divers showed that a new system was needed to spread effort to maintain productivity.

Recruitment limitation is the cause of the reduced productivity in this fishery. We started to investigate ways to overcome this some 10 years ago through hatchery production of juvenile sea cucumber. In 2009 we were successful in obtaining funding through the Australia Seafood CRC which allowed us to invest in the study of the genetics of the wild population of the sea cucumber 'Sandfish' (*Holothuria scabra*). This was a bold undertaking but necessary as, having seen the need to quantify the genetic structure of wild populations subject to hatchery augmentation in Seattle, USA during the World Symposium on Stock Enhancement and Sea Ranching, we knew that it would be required for environmental regulatory compliance and for the long term sustainability of the resource. The analysis of this data was completed by Mike Gardiner and Allison Fitch of Flinders University. This included parentage analysis of hatchery reared juveniles to estimate the effective population size required to maintain genetic diversity.

Having dived through the Northern Territory, it is important to note the observation that there is a separation of juveniles and adult Sandfish. The juveniles occur in the shallow waters associated with sand flats and seagrass. The adults however migrate to waters deeper than 2 m where they gain much body wall thickness that allows them to be marketable. If there were some form of division of the fishery along the intertidal zone, there would be recruitment over fishing for low value product.

Our research included co-operation with the ALC on Groote Eylandt and trial stocking of juveniles with the community of Umbakumba in the process of assessing wild populations, monitoring seeded juveniles, the presence of crocodiles and the harvesting and initial processing of the product. While Tasmanian Seafoods is just a business, we have goodwill toward NT coastal communities and wish to engage them in the business on the same commercial arrangements expected from our current divers. This is a non-paternalistic approach that is subject to reciprocal good will and willingness to engage with us with respect to the community in question. In the Umbakumba trial, the harvesters were trained and were happily engaged in the project and finally paid with the community benefiting from the harvests. Whilst some compliance concerns exist, we are willing to continue to engage with NT coastal communities in this manner. This is a win-win approach and in line with the recommendations of the National Native Title Tribunal with respect to engagement of indigenous communities in the Fishing and Aquaculture industry. Sea ranching only requires approximately 12 working weeks per annum for harvesting. However, Tasmanian Seafoods engaging in this manner will increase the self-sufficiency of remote NT coastal communities. The additional program of hiring a master fisherman (former Tasmanian Seafoods employee) to teach the community fishing techniques was another great initiative as the mullet and milkfish caught were highly sought by the community and much cheaper and healthier than the red meat imported into the community and the community leaders deserve to be commended for following through on this idea.

Our current challenge for the sea cucumber now revolves around increasing scale. Our trial runs of stocking hatchery reared juveniles were around 20,000 sandfish per run. Our scale has now increased to potentially produce 100,000 per run although we are still learning the intricacies of the production method. We wish to try expanding fivefold and want to research the logistical constraints to doing this effectively.

Our research also included pond grow-out but found this to be ineffective due to density dependent growth. Body wall did not increase to a size required for premium product grades. Sandfish need the deeper habitats to enable this body wall to develop.

Another challenge the project faces is the regulatory environment. Whilst there appears to be willingness for the project to proceed, the Notice of Intent approval process seems cumbersome we suggest that we need to work with the Government to improve the timeliness and streamlining of this process.

This project requires whole of Government support if it is to succeed. We have visited Dalian in China and have seen the scale we need to replicate if it is to be a success. If we do not have support, Australia's market advantage and access will be inhibited and lost.

Our goal is to increase this fishery back to an intermediate goal of 300-400t per annum levels. Considering the value of this product through the value chain, this would become a significant economic contributor as well as having positive social externalities in terms of indigenous employment and engagement in remote communities.

Access to land to develop the industry is another issue that holds development back. We are currently in talks with the NT Government who have been very supportive at a Ministerial level. We hope that this level of co-operation continues into the future.

Expansion of the project is envisaged for the Kimberley in Western Australia including Napier Broome Bay, Vansittart Bay, the Osbourne Island group and the Pilbara. Current plans for Marine Protected Areas in the region need to take account of this future development.

Currently there is a prohibition on sea ranching on the Great Barrier Reef. A firm policy surrounding these issues needs to be established as we have demonstrated a sound model for providing environmental assurances around the use of hatchery based juvenile production to enhance wild populations. Due to their value, the sea cucumber species, Black Teat (*Holothuria whitmaei*) and White Teat (*Holothuria fuscogilva*) are prime candidates for sea ranching.

This includes the Torres Strait region although the lack of a compliance presence on Yam Island prevents investment. We look forward to working with Australian Government to help grow the productivity of this industry into the future for the benefit of Australia.

As requested, I am happy to make further submissions in person before the committee.

Best Regards,

Grant Leeworthy

Fisheries Research Manager

Tasmanian Seafoods Pty Ltd