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The Director
Sustainable Fisheries Section
Department of the Environment
GPO Box 787
CANBERRA ACT 2601

February 24, 2015

RE: Ecological Assessment of the South Australian Beach-Cast Seagrass and Marine Algae Fishery

Dear Director,

The Nature Conservation Society of South Australia (NCSSA) welcomes the opportunity to provide further comments on the Ecological Assessment of the South Australian Beach-Cast Seagrass and Marine Algae Fishery report prepared by Primary Industries and Regions South Australia (PIRSA).

As South Australia's primary nature conservation advocacy organisation, NCSSA has been a long term advocate for the protection of biodiversity in South Australia with particular attention being paid to nationally and state listed threatened plants, animals and ecological communities.

Although we acknowledge the commercial harvesting of beach-cast seagrass and marine algae is a relatively small but growing industry in South Australia, NCSSA has serious concerns regarding the current lack of quantifiable data to inform the ecological assessment of this fishery. We strongly recommend that both the Federal and State Governments provide further commitment to resourcing an effective long-term monitoring program to demonstrate the ecological sustainability of the fishery.

Please refer to the following pages for our comments on the Assessment Report that are primarily focussed on the Macro-algae component of the fishery as we consider this to have a greater impact on long-term conservation of the State's biodiversity. If you would like to clarify or discuss any of the points raised please contact me on (08) 7127 4633 or via email at nicki.depreu@ncssa.asn.au

Yours sincerely,

Nicki de Preu

Conservation Ecologist

NCSSA provides the following comments on the specific sections of the assessment report ‘Ecological Assessment of the South Australian Beach-Cast Seagrass and Marine Algae Fishery’

2 Purpose

We acknowledge the revisions to the original assessment provided to DotE in 2014 with respect to comments received from the previous community consultation process. The report has addressed some of the key issues raised in these submissions and we endorse the inclusion of the following aspects in the revised report:

- Application of a spatially explicit approach to harvesting activity in an attempt to minimise the ecological footprint of the fishery;
- Differentiating the commercial macro-algal fishery in South Australia from the removal of seagrass wrack for amenity purposes in terms of the ecology of these communities and geographic areas where they occur; and
- Inclusion of data on the distribution of shore-bird species in the licence area (Appendix 2) and using these to refine the spatial management strategy applied to the macro-algal wrack harvest under Licence Y078.

We do, however, still have some serious concerns regarding various sections of the report that are outlined below:

3.3.1 History

As per our comments on the previous version of the assessment report, we support the statement that “In the absence of this scientific data and because of concerns regarding the possible impact on coastal fisheries and the environment from the removal of wrack accumulations, PIRSA has adopted a ‘precautionary approach’ to the harvesting of wrack”. Given the potential future expansion of the fishery we would strongly recommend that a regular monitoring program is implemented to document changes in the distribution and biomass of beachwrack in areas where commercial licences apply. We also recommend that a precautionary approach is applied to the potential impact the removal of beach-cast macro-algae will have on nationally and state listed shorebird species that rely on this resource for feeding, nesting and shelter.

The report states that “irrespective of an absolute estimate for the sustainable harvest level international best practice for wrack fisheries recommends that harvest rates should not exceed 50% of the total wrack biomass” and refers throughout the report to the PhD Thesis by Orr (2013) to support this statement. We have serious concerns about the extrapolation of data from this study to the South Australian fishery and interpretation of the findings in relation to ecological sustainability. Chapter 6 of the PhD Thesis contains a summary of the predicted impacts of kelp harvest and concludes that harvest levels of 30-50% of the wrack in a given geographic areas would require a 13-18 year recovery time for waders (Orr, 2013) and we have been advised by the author that the ‘minimal impact’ scenario ecologically speaking would be to harvest less than 10% of the wrack (Orr pers. comm. 2015).

3.3.2 Commercial Harvesting

We acknowledge the inclusion of more detailed maps showing the areas where commercial licences apply and exclusion zones in the current version of the assessment report along with maps in Appendix 2 that show the distribution of shorebird species with conservation significance that occur in the area. We strongly recommend that the Habitat Protection Zones for the Upper and Lower South East Marine Parks are also included in the current assessment reports.

The assessment report states that “PIRSA Fisheries and Aquaculture has amended the licence conditions for Licence Y078 to ensure that harvesting meets with the requirements to ensure sustainable harvesting in this region” and that macro-algal beach wrack will be excluded from “All areas within a Marine Park that have been zoned as Habitat Protection, Sanctuary or Special Use Zones (noting that there are currently no such areas in the area covered by the licences).” The area covered by Miscellaneous Fishery Licence Y078 does, in fact, include Habitat Protection Zones

and Special Purpose Areas located around Wright Bay and German Point to Nora Creina Bay that the report has not acknowledged. We strongly recommend further consideration is given to addressing this oversight.

The report states that “Harvesting is sporadic, being carried out opportunistically whenever significant quantities of wrack are deposited on the foreshore” and “As a result, the majority of harvesting takes place during winter and spring when peak accumulations occur after storms or periods of strong wind” citing Kirkman & Kendrick 1997 and Duong 2008. Historical data from the 2003 assessment report indicates that harvesting occurs throughout the year so could potentially impact bird species of international and national conservation significance that utilise beachwrack for shelter, nesting and feeding at key times of the year. Christie and Jessop (2007) identified the Beachport (Rivoli Bay) area as a site potentially threatened by macroalgal harvesting. This area was considered to have internationally significant numbers of Ruddy Turnstone, and the second highest number of shorebirds of the nine ocean beaches surveyed (across 13 species). We strongly recommend that the fishery introduce a closed season during times when birds are dependent on wrack, e.g. around the arrival and departure time for migratory birds (particularly during moulting) and nesting season for the resident species Hooded Plover, Red-capped Plover and Pied Oystercatcher. This approach has been adopted and proven successful in the King Island southern bull-kelp industry that the South Australian fishery is most closely aligned with.

We acknowledge that the quantity of wrack harvested from the area covered by Licence Y078 has been low compared with other wrack fisheries, such as the King Island southern bull kelp industry. However, we have serious concerns about how this comparison is used throughout the report to justify the expansion of the South Australian industry without reliable baseline data to assess the current impact of the fishery.

We acknowledge the use of ‘exclusion zones’ interspersed within harvest sites in the areas accessible to commercial harvesting as an input control to effectively limit harvest volumes. The previous version of the assessment report limited harvesting to no more than 75% of the estimated biomass however the current assessment report has removed this limit and replaced with a spatial management strategy. As stated in the assessment report “Within the areas where harvesting is permitted all macro-algal material may be harvested.” It would therefore be possible for the approximately 50% of the coastline available for harvesting to be totally denuded of any beach-cast material. Whilst it is claimed that the industry would not have the capacity to remove this amount of material, if approved the licence would allow them to do so with subsequent adverse impacts on shorebird populations. We strongly recommend that a limit is placed on the amount of material to be harvested within the areas accessible to commercial harvesting as per the original assessment report.

3.4.4 Birds

We strongly recommend this section of the assessment report acknowledge the importance of the beaches and lakes of the Limestone Coast for shorebirds in South Australia (Christie 2006) and refer to the WWF Report that reviewed shorebird records for this area (Christie and Jessop 2007). This report found that the Limestone Coast (including the area between Cape Jaffa and Beachport covered by Miscellaneous Fishery licence Y078) regularly supports an estimated 45,000 shorebirds, with seven species occurring in internationally significant numbers including Ruddy Turnstone, Sanderling, Red-necked Stint, Sharp-tailed Sandpiper and Curlew Sandpiper. The report also found that this area is the second most important site in Australia for Sanderling and provides habitat for two migratory species that occur in nationally significant numbers and internationally significant numbers of Banded Stilt (Christie and Jessop 2007). More recent surveys by members of the Australasian Wader Studies Group have recorded internationally significant numbers of Ruddy Turnstone at Wright Bay and Sanderling at Stinky Bay near Nora Creina. These areas are within the harvest areas for Miscellaneous Fishery Licence Y078 and require further careful consideration in terms of the impact of wrack harvest before any extension of the licence is approved.

4. ESD Assessment of the Management Regime Against Principle 1 and 2

Table 2: Principle 1

Objective 1: The fishery shall be conducted at catch levels that maintain ecologically viable stock levels at an agreed point or range, with acceptable levels of probability

Assessment

1.1.4 There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.

The 2004 assessment recommended further research to determine ecologically sustainable beach-cast harvest levels, including a timetable for implementation, and for the program outline to be made publicly available by July 2005. We advocate strongly that this recommendation be included in the current assessment with a commitment for regular, long-term monitoring of the fishery to demonstrate its' ecological sustainability.

Table 2 refers to a report by Chalupa (2014) that is not cited in the report references.

Management responses

1.1.6 There are reference points (target and/or limit), that trigger management actions including a biological bottom line and/or a catch or effort upper limit beyond which the stock should not be taken.

The assessment report states "there are no formal reference points to trigger management actions and no research basis from which to determine ecologically sustainable beach-cast wrack harvest levels" and that "any assessment of wrack abundance is problematic because of the highly patchy and mobile nature of the resource". We acknowledge the application of the precautionary principle and input controls including the spatial management strategy to ensure regulation of the fishery. We strongly recommend that key performance indicators and reference points in Tables 5 & 6 of the 2004 (Pages 18-19) assessment are addressed in the current assessment to enable guidelines for ongoing management and evaluation of the industry.

We also strongly recommend that the Federal Government require a commitment by PIRSA to finalise the management plan for the fishery in South Australia within 12 months of completion of the current assessment.

1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.

The assessment report states that "Future commercial wrack harvest for proposed new areas will be managed through exploratory and developmental fishing permits under the *Fisheries Management (Miscellaneous Developmental Fishery) Regulations 2013*." This statement is of serious concern given that if approved Licence Y078 will have access to 50% of the coastline excluding non-harvest areas and demonstrates the lack of foresight on PIRSA's behalf about the potential growth of the industry and subsequent impacts on shorebirds.

Table 3: Principle 2

Objective 2: The fishery is conducted in a manner that avoids mortality of, or injuries to, endangered, threatened or protected species and avoids or minimises impacts on threatened ecological communities

Assessment

2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.

The assessment report acknowledges that "Beach-cast wrack does provide a basis for the food chain of a range of migratory species of shorebirds (Appendix 2) as well as providing habitat to vulnerable or endangered species of wildlife, such as the hooded plover and the orange-bellied parrot". We strongly recommend that an assessment of the impact of the fishery on these species is undertaken in line with the EPBC Significant Impact Guidelines that consider habitat destruction and disturbance key factors that have potential to have significant impacts on shorebird populations.

The assessment report states that "Any proposed increase in access or the granting of new licences will be subject to further environmental impact assessments to indicate that this proposed change to management arrangements

would be ecologically sustainable". Given the highly variable spatial and temporal distribution of the resource and current lack of long-term monitoring we question whether the impact of the fishery on endangered, threatened or protected species can be effectively evaluated. Although methodology and parameters to be measured have been clearly stipulated, practical implementation to enable assessment of impact is more difficult requiring rigorous survey design and analysis. We strongly recommend that further resources are provided for local shorebird experts to undertake regular monitoring of commercial harvest areas as part of broader surveys to assess shorebird numbers across the region.

8 Appendix 2 – Shorebird mapping data used as a basis for definition of exclusion zones.

Table 4 provides a list of shorebird species of conservation significance and for which distributional data is available based on data provided by SA DEWNR that is incomplete and ignores more detailed and most up to date data in the Shorebird Sites of the Limestone Coast South Australia report (Christie & Jessop 2007). We also question the accuracy of some of the distribution maps contained in Appendix 2. For example, the distribution of Ruddy Turnstone, Sharp-tailed Sandpiper and Curlew Sandpiper are shown to be widespread throughout the area, however, known records and therefore actual distribution are much more restricted than the maps show.

We also recommend that the Table include EPBC ratings of the species listed given that this assessment is being undertaken under to fulfil the requirements of part 13 and 13(a) of the *Environment Protection and Biodiversity Conservation Act 1999*.

References

- AGDEH (2004) Assessment of the South Australian Beach-cast Seagrass and Marine Algae Fishery. Australian Government Department of Environment and Heritage.
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- Kirkman, H. & Kendrick, G.A. 1997. Ecological significance and commercial harvesting of drifting and beach-cast macro-algae and seagrasses in Australia: a review. *Journal of Applied Phycology* 9: 311-326.
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