



GUARDIANS OF PĀUATAHANUI INLET

with

Porirua Harbour and Catchment Community Trust

Date: February 2020

To: Grant Nalder, Harbour Master/Manager, Harbours, Greater Wellington Regional Council

From: Te Awarua-o-Porirua Harbour and Catchment Community Trust and the Guardians of Pāuatahanui Inlet

Email: phacctsec@gmail.com and pauainlet@gmail.com

Contacts: Mark Neeson(Chair PHACCT) Lindsay Gow (Chair GOPI)

Submission on the Navigation and Safety Bylaws Review

The Submitters

Guardians of Pāuatahanui Inlet

The Guardians of Pāuatahanui Inlet (GOPI) is an incorporated society and registered charity established in 1991 to address concerns about the Pāuatahanui Inlet. It has membership by subscription and enjoys wide support and respect from the community and local organisations and councils.

The objectives of GOPI are:

1. Consistently with its ecological values, to encourage, promote, protect, maintain and foster the natural, historic and cultural values of the Pāuatahanui Inlet.
2. To promote recognition locally, regionally, nationally and internationally of the ecological values and standing of the Inlet.
3. To educate all persons, corporations, organisations, governments and their agencies in the values set out in objectives 1 and 2.
4. To represent all members of the Society and the views and interests of the citizens of the region in matters affecting the Inlet.
5. To publish such materials, cause appearances and representations to be made in any forum or circumstance and to hold such conferences, forums and hui as required for the promotion of any of the Society's objectives.
6. To carry out research, surveys, and investigations of all kinds which *may* be

considered in any way of benefit or use to the Society or its members in furthering the objects of the society hereinbefore set out.

7. To work with or support any other person or group, whether incorporated or not, with similar objects, for the benefit of the Pāuatahanui Inlet (or any other part of New Zealand when matters of practice or law or statute are viewed by the Management Committee as a precedent affecting the Inlet).
8. To consult with the communities around the Inlet and to provide opportunities for the public to share in celebrating and caring for the Inlet.
9. Generally, to do all such other things as may be incidental or conducive to attainment of the above objects or any of them or any part of any of them.

In 1994 GOPI received the Wellington Regional Environmental Agency Environmental Award. In 1998 GOPI won a Ministry for the Environment's Green Ribbon Award 'for outstanding leadership and commitment to environmental protection'. In 2004 GOPI's environmental efforts again received public recognition when it won in the Heritage and Environment category of the Wellington Airport Regional Community Awards. In 2006, 'in recognition of outstanding effort in the World of Water Science and Technology Promotion' GOPI was awarded a Certificate of Achievement by Partners Porirua, jointly with Plimmerton School. GOPI's most recent recognition came in September 2014, when GOPI was again the Porirua winner in the Heritage and Environment category of the Wellington Airport Regional Community Awards.

GOPI was responsible for the formation of the Pāuatahanui Inlet Community Trust in 2002. By 2015 that Trust felt it was important to expand its operations in to the wider Te Awarua-o-Porirua Harbour and the Porirua Harbour and Catchment Community Trust was formed.

Porirua Harbour and Catchment Community Trust

The Te Awarua-o-Porirua Harbour and Catchment Community Trust (PHACCT) (also known as the Porirua Harbour Trust) was established in 2011 to have an overseeing role of sustainable catchment and harbour management of the Porirua Harbour (Te Awarua-o-Porirua): comprising the Onepoto Arm, the Pāuatahanui Inlet and the outer harbour and its catchment.

The objectives of the Trust are to promote the sustainable management of the Porirua Harbour and its catchment by:

- (a) Advocating for the sustainable management of the harbour and its catchment;
- (b) Fostering the understanding of ecological and environmental issues associated with the harbour and its catchment through education and community awareness;
- (c) Coordinating input from community groups on issues relating to the harbour and its catchment;
- (d) Supporting, promoting and contributing to programmes and projects aimed at improvements to the Porirua harbour and its catchment where appropriate;
- (e) Engaging in any other activities and processes that are complementary to any of the

forgoing objectives.

The trust received regional recognition for its work in 2013 when it was the Porirua runner-up in the Heritage and Environment category of the Wellington Airport Regional Community Awards. It received further recognition when it was the 2015 winner in the same category.

The Pāuatahanui Wildlife Reserve Management Committee also contributed to this process.

General

The Navigation and Safety Bylaws have not been reviewed since 2009 and both GOPI and PHACCT are grateful that they have been invited to contribute towards the draft Review.

The whole of the harbour has been documented as;

- “Te Awarua-o-Porirua Harbour is an important environment for many fish species that require estuaries for all or part of their life stages. Forty-three species of fish were recorded from surveys of the harbour in 2013. The most common species were yellow-eyed mullet, kahawai, and spotties (Lyon et al, 2013). Importantly, the harbour provides a nursery ground for juvenile rig sharks We also know that a range of whale and dolphin species live or traverse along the west coast directly offshore from the Whaitua (Berkenbusch et al., 2013)” (GWRC Whaitua Report)
- The part of the Harbour which forms the Pāuatahanui Inlet has been documented as ‘the only large estuarine wetland left in the lower half of New Zealand’s North Island’ (GWRC website)
- ‘Pāuatahanui Inlet is the largest relatively unmodified saltmarsh in the lower North Island. In the reserve there are wetland habitats from tidal mudflats to large saltmarshes and shrub lands to a remnant manuka coprosma propinqua forest. The wetland habitats in Pāuatahanui Inlet are fragile but they contain a wide variety of plant life, insects and other invertebrates, freshwater fish, and lots of birds’. (Forest and Bird website)

However, it has also been documented that;

- The number of coastal birds using the Pāuatahanui Inlet has declined over the last 30 years. Surveys carried out by the Ornithological Society of New Zealand over this period show that the total number of birds using the Inlet has declined by about 50%. While most of this decline is due to a large reduction in the numbers of common species (eg, black-backed gulls), the numbers of some regionally and nationally threatened species have also declined. This includes familiar species such as shags (80-85% population decline) and red-billed gulls (70% decline). Reasons for declines in some species are as yet unclear and it should be noted that other species, such as royal spoonbill and banded dotterel, have increased their populations over the same period.

- The Pāuatahanui Inlet contains the most significant salt marsh in the lower North Island and is ranked second for conservation importance in the Wellington region (Michaels & Wells, 2014). The Inlet contains many resident and migratory native birds and a succession of native vegetation communities from tidal mudflats to coastal forest (DOC & Forest & Bird,). Over half of the wetland bird species recorded in the Inlet have conservation threat rankings of threatened or at risk. (GWRC Publications Whaitua/Biodiversity of Te Awarua-o-Porirua)
- Salt marsh has been reduced by around 50% in the Pāuatahanui Inlet and over 95% in the Onepoto Arm. (GWRC Publications Whaitua/Biodiversity of Te Awarua-o-Porirua)
- Shellfish beds have been contaminated by pollutants (GWRC Publications Whaitua Biodiversity of Te Awarua-o-Porirua)
- Seagrass beds (*Zostera*) have been lost. (GWRC Publications Whaitua Biodiversity of Te Awarua-o-Porirua)
- GWRC in 2012 analyzed the seagrass beds in Porirua Harbour and compared results from previous surveys. The results showed that around 40% of the seagrass beds have been lost since the 1960-1980 period. About 32 hectares has been lost from Pāuatahanui Inlet since 1980, approximately 4 hectares lost from the head of the Onepoto Arm since the 1960's and around 3 hectares was lost with the development of the Mana Marina at the confluence of the two arms.

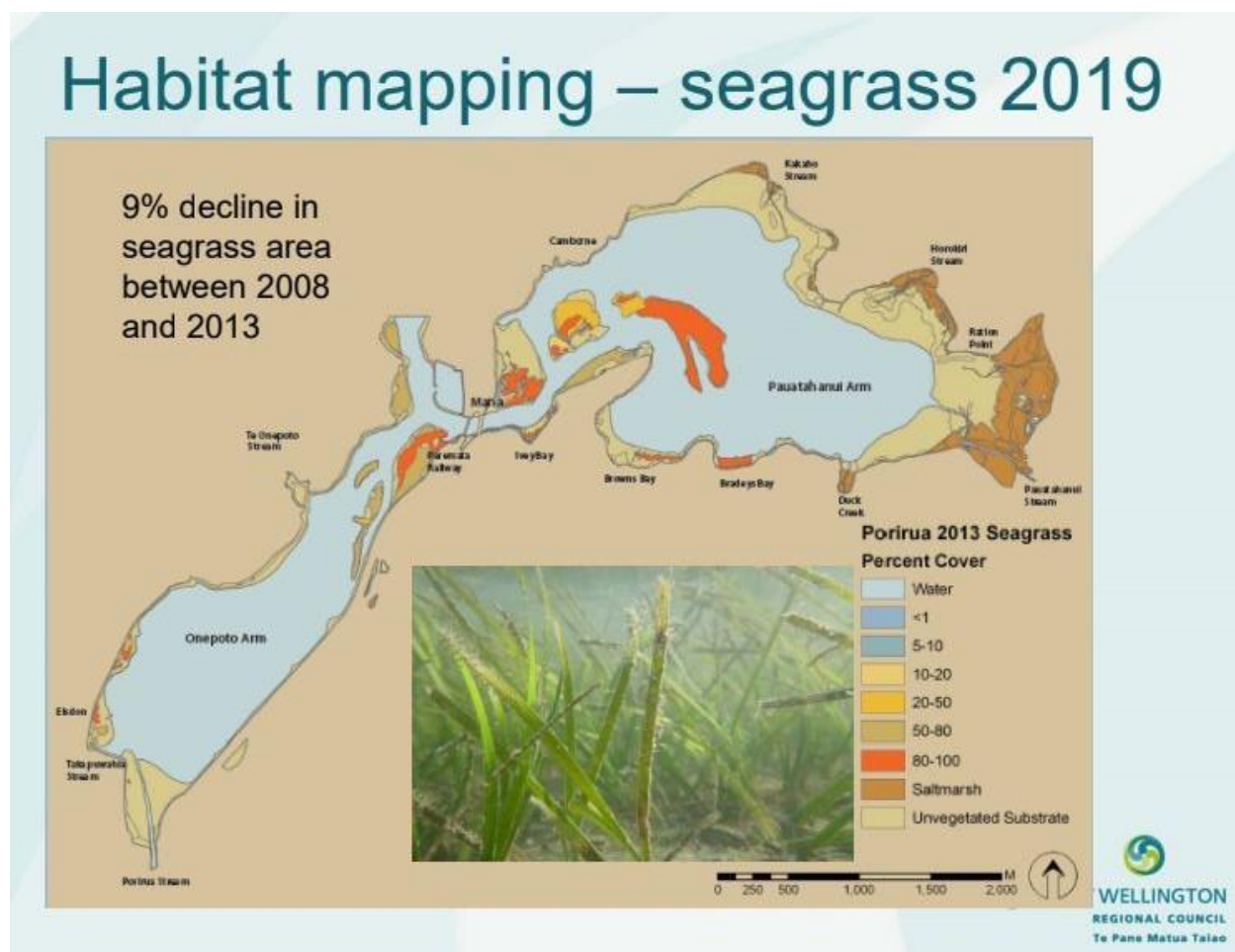
Why are we worried about Seagrass?

NIWA's website gives a good summary of the importance of seagrass;

- It requires shallow water to thrive - it needs sunlight
- The interconnecting rhizomes of the seagrass meadow help to bind together the sand particles and decrease erosion of the tidal flat. Dense meadows of seagrass can stabilise the sea bed and reduce erosion.
- When covered by the tide the upstanding leaves form a 'forest' that gives shelter to many small animals, including the young juvenile stages of several fish species.
- The 'forest' slows down water currents, causing small particles to settle out on the leaves or the sand. Much of this is organic debris coming from the death and decay of plants in the salt marsh at the head of the Inlet.
- The particles provide food for numerous species of animals from microscopic crustaceans to worms, cockles and fishes.
- This entrapment of fine particles directly improves water clarity in the Inlet and thus enhances the environment for other aquatic plants such as algae on the sea bed and diatoms in the plankton.
- By absorbing nutrients from water and seabed and releasing oxygen as they photosynthesize, seagrass plants help to offset the damaging effects of excess nutrient flow from the Inlet catchment.

- The small animals that live in the seagrass beds are an important food source for fish (e.g. yellow-eyed mullet, stargazer, and juveniles of flatfish, snapper, trevally, garfish, spotty) and wading birds (e.g. oystercatcher, pied stilt, spoonbill).
- Decaying seagrass is decomposed by bacteria and fed on by small marine animals (particularly snails but also worms, bivalves, and crabs), both within and adjacent to seagrass meadows, supporting the marine food web.
- The small crustaceans and worms that live in seagrass meadows are important sources of food for wading birds (such as the South Island oyster catcher, pied stilt, royal spoonbill, bar-tailed godwit) and fish (such as mullet, stargazers and juvenile flatfish). Snapper and leatherjacket juveniles, mullet, trevally, garfish, parore, spotties, pipefish and triplefins are often abundant in subtidal seagrass meadows in particular, but also reside in intertidal meadows when the tide is in.'

Seagrasses have been called “the lungs of the sea” because they release oxygen into the water through the process of photosynthesis.



This map produced by GWRC in September 2019 shows the areas within Te Awarua-o-Porirua Harbour with seagrass - mainly the sandbars in Pāuatahanui Inlet and near the Paremata Railway Station in the Onepoto Arm . There are several other vulnerable areas on the foreshores of both arms of the Harbour

What has this got to do with the GWRC Navigation & Safety Bylaws?

Over recent decades several changes have occurred in the harbour.

- It is increasingly shallower due to surrounding development.
- It has more sediment
- It has variable sandbanks
- These sandbanks are hosting the densest areas of seagrass
- Sandbanks cannot legally be described as foreshore. These vulnerable areas therefore cannot be protected from effects from powered vessels which can sit just below high tide and be traversed, or landed on at low tide. The foreshore is protected in the Navigation and Safety Bylaws by a 200-metre boat free zone
- It has more recreational vessels on it.
- Has become less attractive to birds
- The Inlet has a concrete pathway along its northern and eastern shores. The northern part from Camborne to Kakaho is yet to be completed but it is consented and will lie on current bird high-tide feeding areas.
- There are more people wanting to use the harbour for recreational purposes. There are limited access points to the water for the general public. The entire foreshore at Camborne/Grays Road is reserved for jet ski launch.
- Powered vessels using the harbour pass over the vulnerable areas.

There is much evidence to show that the presence of powered vessels creates waves and stirs up sediment. This results in increased turbidity and physical damage to seabed life and, in particular, the fragile seagrass meadows that we referred to above.

For a small sample of some evidence see;

- ❑ Sunshine Coast to ban jet skis...threatens marine wildlife which graze in the shallow waters
- ❑ "Bountiful seagrass under threat"...Seagrass beds are being destroyed by nutrient enrichment from human sewage, from heavy fishing activities, and even by yachting and jet-skiing, say the editors of the World Atlas of Seagrasses, produced by the Cambridge-based World Conservation Monitoring Centre in conjunction with the United Nations Environment Programme. New Zealand Herald
- ❑ Video "Effects of jet skis on seagrass"
http://coolclassroom.org/files/adventures/3/Experts_Boats.htm effects of jet skis on seagrass describes the ripping out of the seagrass, the resuspension of sediment causing turbidity, the time needed for seagrass recovery - 18 months to 4 years.

There is much evidence to show that the presence of powered vessels disturbs birds and prevents them from feeding and going about their normal activity. They are also disturbed from nesting sites.

There is evidence to suggest that the noise created underwater, and vibration from bubbles created by powered vessels, has an effect on fish's ability to go about their normal activities.

Research on the effects of powered vessels on fish is in its infancy but already shows a clear relationship between the two - a more recent article being McCormick, M.I., Fakan, E.P., Nedelec, S.L. *et al.* Effects of boat noise on fish fast-start escape response depend on engine type. *Sci Rep* 9, 6554 (2019). <https://doi.org/10.1038/s41598-019-43099-5>

Jet skis and other personal watercraft have been banned from all American national parks. Similarly, bans are being increasingly placed in Australia, particularly in similar shallow estuaries.

We acknowledge the two year research project being done by NIWA and University of Waikato, to improve our understanding of seagrass, and help to improve management and restoration efforts in order to protect this valuable habitat, and that this work is being supported by GWRC.

Pāuatahanui Inlet is popularly used by wind assisted vessels such as windsurfers, paddle boarders and yachts. The Paremata Boating Club uses a small powered vessel for safety and rescue reasons.

We ask, through its Navigation and Safety Bylaws, a reduced speed limit for powered vessels for the entire Pāuatahanui Inlet, and for those vulnerable areas of the Onepoto Arm, of no more than 5 knots, excluding rescue craft.

Mark Neeson

Lindsay Gow