BEFORE THE COMMISSION
APPOINTED BY THE OTAGO REGIONAL COUNCIL

UNDER	the Resource Management Act 1991 (RMA)
IN THE MATTER	Of an application by Dunedin City Council for resource consent being processed with reference RM20.280
BY	**ŌTOKIA CREEK AND MARSH HABITAT TRUST** **Submitter**

STATEMENT OF EVIDENCE OF TRUSTEES ON BEHALF OF ŌTOKIA CREEK AND MARSH HABITAT TRUST

DATED 6 MAY 2022

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STATEMENT OF EVIDENCE OF TRUSTEES OF ŌTOKIA CREEK AND MARSH HABITAT TRUST

Introduction

1. This evidence is provided by the following Trustees of the Ōtokia Creek and Marsh Habitat Trust (the Trust) who are authorised to speak on behalf of the Trust.

    (a) Simon Laing is the Chairperson of the Trust. Simon and his family have made their home on the bank of the Ōtokia Creek estuary with a view over the creek where it meets Brighton Beach. He has worked in frontline management within construction for 20+ years, is currently Owner/Manager of both a commercial apiary operation and an investment company, an active Volunteer Firefighter and Medical First Responder.

    (b) Viktoria Kahui is the Treasurer of the Trust. She has lived on the Ōtokia Creek overlooking its marsh for nearly 20 years and works at the University of Otago as an economics lecturer. She has taught large undergraduate classes in the field of microeconomics, environmental economics and wellbeing economics for over 15 years.

2. In addition several Trustees have submitted their evidence separately where it relates to material within their direct experience and expertise:

    (a) Matthew York is the Secretary of the Trust and has submitted his brief of evidence related to the monitoring of water quality on the Ōtokia Creek separately.

    (b) Ann-Claire Mauger is a Trustee and has submitted her evidence related to the cultural and archaeological significance of the Ōtokia, including the practice of mahinga kai, separately.

    (c) Andrew David Hutcheon is a Trustee and has submitted his evidence relating to his experience of river flows and predator control programmes and lizard management separately.

(d) Dennis Kahui is a member of the Trust and has submitted his brief of evidence related to the Ōtokia Creek in te Ao Māori separately.

(e) Loveday Why is a member of the Trust and has submitted her brief of evidence related to how she and her family engages with the Ōtokia Creek separately.

3. The Trust was formed 22 September 2020 with the purpose of:

(a) Protecting and improving the recreational, aesthetic and amenity values of the Ōtokia creek catchment area, Brighton and in surrounding areas;

(b) Educating and informing the public and raising awareness about practices which advance the objects set out in the preceding clause;

(c) Promoting the importance of the need to protect the waters and wildlife of the Ōtokia creek catchment area, Brighton and in surrounding areas;

(d) Promoting the restoration of the Ōtokia creek catchment area, Brighton and surrounding areas by organising campaigns to plant native species of trees;

(e) Establishing projects that actively encourage, promote and support the involvement of local school pupils and members of the community in the restoration of the Ōtokia creek catchment area, Brighton and surrounding areas;

(f) Providing education to the members of the community about native wildlife and wetland restoration;

(g) Collaborating with and providing assistance to other charitable organisations involved in advancing the same or similar charitable purposes as the Trust;

(h) Collaborating with and providing assistance to local, regional and central government to advance the purposes of the Trust;

(i) Collaborating with local and national coastal protection agencies and with other non-governmental organizations to advance the purposes of the Trust;

(j) Representing the local community in meetings, working groups or resource management process that concern the Ōtokia creek catchment area, Brighton and surrounding areas;

(k) Undertaking other activities and providing assistance whether by way of financial assistance, support, or otherwise, of a charitable nature to individuals in need and generally do all such acts, matters or things which are incidental or conducive to achieving all or any of the Trust's charitable purposes set out in the preceding clauses; and

(l) Advancing such other charitable purpose(s) and doing all things which the Trustees may consider necessary or expedient for the purposes set out above, and any other similar charitable purposes.

Scope and Structure of Evidence

4. The Trust's evidence will address the following matters:

   (a) The significance of the Ōtokia Creek and Environment.

   (b) The biodiversity on the Ōtokia Creek and Marsh.

   (c) The role of the Trust in the community.

   (d) The effect of the real and perceived risk of leachate from the landfill on the Ōtokia Creek environment and community.

Ōtokia Creek and Environment

5. The Township of Brighton was created by surveyors in 1863 to attract farming families. It became a popular holiday destination in the late 1800s. The Ōtokia Creek is 13km long and has a catchment area of 27.1 km^2. The catchment has a mixture of land uses, including 2 large farms, a large amount of exotic forestry, lifestyle blocks and areas of native bush and gorse on Department of Conservation (DOC) land. The Creek gains about 100m in elevation from its mouth at Brighton Beach to its headwaters at Smooth Hill. Most of the lower channel is at or below sea level; followed by a steady rise up to McLaren Gully Road.

6. There are 2 large named tributaries (McColl Creek and Scrub Creek) and several smaller ones. The Creek mostly flows along a narrow channel with a pool and riffle type flow pattern. It has several constructed ponds and crossing points along its length before it widens out and slows down into its lower estuary about 3 kms from the beach at Brighton. Along this lower section there are flood plains on both sides of the Creek with extensive slow-flowing semi-saline marsh areas. The estuary section can be tidal at times after a good flood or storm has opened the mouth to the sea. At times the estuary gets warm (up to 18 degrees) causing a large amount of algae film to develop.

7. The marsh area is gently rolling to flat, and has had channels cut though it that make it a collection of small islands that native birds nest on. The Marsh, which drains into Brighton Beach, has been cleared and grazed by sheep and cows as part of a larger farm in the early years. The area of marsh at the end of Bath Street has been mostly unchanged for the last 40 years. At some stage, a couple of ponies were grazed there but these moved out around 20 years ago and the marsh has slowly become more natural since.

8. The marsh on the McIntosh Road side of the Creek has been changed by drainage in the form of channels that were cut through it. This has split the area into a series of small islands, which has allowed many species of wetland birds to come in and nest safely. However, the area

has also been affected by grazing and the arrival of noxious weeds such as gorse, broom and black berry.

9. The estuary system relies on a good flood to open the mouth, which allows seawater to rush in at high tide and the level in the upper estuary to drop, such that the Creek is flushed out. The mouth then blocks up over some time allowing the level in the estuary to build up until it either breaks out in a flood by itself, or the Otago Regional Council (ORC) opens the mouth by digging a channel across the beach.

10. Water quality in the overall Ōtokia Creek and marsh has improved since a sewer system was installed at the end of the 1980s, decreasing the amount of septic tank run off. Matthew York's brief on monitoring water quality discusses these improvements in greater detail.

11. The Ōtokia Creek and Marsh holds significant cultural, recreational and spiritual value for Brighton residents, with many people kayaking on it, swimming in it, watching birds and spending time in quiet contemplation by the Creek. The Ōtokia Creek also has intrinsic value, with its own history and relationship with previous generations. These values are described by in the evidence of Anne-Claire Mauger, and Loveday Why, and in Dennis Kahui's waiata Ko Ōtokia Ahau.

Photo 1. Overlooking the Ōtokia Marsh from Bath Street. Photo taken by Trustee in 2021.

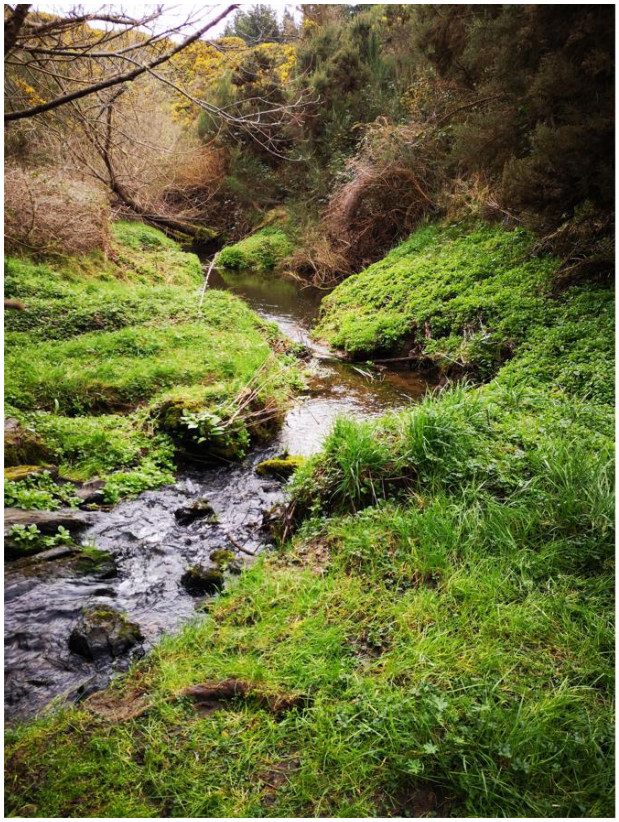


Photo 2. Ōtokia Creek running through (previous) landowner Andy Hutcheon's land along McIntosh Road. Photo taken by Trustee in 2020.

Photo 3. Child of Loveday Why swimming in the upper Ōtokia estuary. Photo taken in 2021.

Photo 4. Family kayaking on the Creek. Photo taken by a Trustee in 2021.

Photo 5. Trustee Matthew York navigates natives across the Marsh for planting. Photo taken by Trustee in 2022.

Photo 6. Members of the Trust along the Creek moving natives. Photo taken by Loveday Why in 2022.

Biodiversity on Ōtokia Creek and Marsh

12. A global assessment report on biodiversity and ecosystem services by the IPBES[1] estimates that over 1 million species are threatened with extinction and that nature is declining at rates unprecedented in human history.

13. In New Zealand, indigenous fauna and flora has also been declining rapidly and the ORC's Biodiversity Action Plan emphases as one of its guiding principles that biodiversity projects are led or co-led by local communities with much of active management of biodiversity taking place at the community level (Guiding Principle 2).

14. The ORC lists the Ōtokia marsh as "*Scarce in Otago in terms of its ecological or physical character. Less than 15% of marshes remain in Otago*." [2] The area is about 3 ha and falls into "Schedule 9 Regionally Significant Wetland, no.89, Maps F54"

15. As noted by Anne-Claire Mauger, on the coast between the Otago Peninsula/Dunedin and Taieri Mouth, there are **only two wetlands**.

16. The ORC recognises the Ōtokia marsh provides habitat for water fowl and Black Stilt/Kaki (*Himantopus novaezelandiae*).

17. Part of the marsh includes the QEII covenant 5/12/083, owned by Linda Duckett, who protected the area 10 years ago for black stilt habitat.

18. Matthew York has sighted royal spoonbills, mallard ducks, oyster catchers, white herons (which are rare), pied stilts and Paradise ducks. Recently, white herons and royal spoonbills can be seen on most days.

19. Further up the Creek, New Zealand Falcons, Tuis and Bell Birds nest in the native bush and forest areas.

[1] https://ipbes.net/global-assessment
[2] https://www.orc.govt.nz/managing-our-environment/water/wetlands-and-estuaries/dunedin-district/lower-otokia-creek-marsh

Photo 7. Photo of Royal Spoonbill on the Ōtokia Marsh by Hobby wildlife photographer Gary McClintock (with his permission). Photo taken in December 2021.

Photo 8. Trustee Matthew York recording images along the Creek on kayak.

Photo 9. Facebook post of baby Black Stilt on the Ōtokia Marsh in spring 2021.

20. Members of the Trust have observed many native fish species including Long and Short Fin Eels, Giant Kokopu, Common Bullies and Banded Kokopu. There are also Koura in various sections of both the main creek and its tributaries, along with a variety of insect life. Sea run trout have been spotted when the mouth is open to the sea and flounder and white bait have been caught during fish surveys by Matthew York over the last few years.

Photo 10. Giant Kokapu seen in the Ōtokia Creek in 2013. Photo taken by Andy Hutcheon.

Photo 11. Long fin eel caught in the Ōtokia Creek in 2013). Photo taken by Andy Hutcheon.

21. The sightings by members of the Trust are supported by an eDNA sample taken in 2021 which shows that of species assessed, 76% of indigenous freshwater fish are classified as threatened with or at risk of extinction, including the longfin eel, giant kokopu, bullies, shortfin eel, redfin bully, banded kokopu, galaxias & mudfish, Crans bully, bellbird, mud snails, freshwater bivalve, freshwater snail. Please refer to eDNA results attached to Matthew York's evidence.

Photo 12. Facebook post on eDNA sampling by the Trust.

22. The banks and marsh areas of the creek have a mixture of native, non-native and noxious plant species. The native plants in the area are mainly in the middle section of the catchment with a good mix of species, with larger patches of bush in some areas. The channel has a lot of willows in it that do affect the flow pattern and channel alignment. The upper catchment area of the Ōtokia Creek is situated in pine forest. The lower marsh area is a mix of grass lands, noxious plants and native plants.

The role of the Trust

23. The Trust has been established with the long-term, 30-year vision to restore and regenerate the native habitat and wildlife on the Ōtokia Creek and Marsh, and to provide a voice for the Ōtokia Creek. The efforts of the Trust align wholly with the National Policy Statement for Freshwater Management 2020, which focuses on the importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment.

24. *Te Mana o te Wai* is about restoring and preserving the balance between the water, the wider environment, and the community.

25. *Te Mana o te Wai* prioritises, in the following order
    (a) The health and well-being of water bodies and freshwater ecosystems
    (b) The health needs of people
    (c) The ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

26. The following shows the efforts of the Trust to prioritise the wellbeing of the Ōtokia Creek and Marsh, the wellbeing of the wider Brighton Community and the ability of the Ōtokia Creek and Marsh to support the wellbeing of future generations.[3]

[3] The Trust can provide further supporting documentation if that would be of assistance.

Photo 13. Signing of the Deed of Trust in 2020 by Trustees Andy Hutcheon, Viktoria Kahui (Treasurer), Matthew York (Secretary), Simon Laing (Chairperson) and Anne-Claire Mauger (left to right).

Photo 14. Members of the Trust visiting Hopehill monitoring station at in 2021.

27. The Trust has been able to secure funding from regional and local bodies for its planting and restoration activities. Table 1 shows the amount of funding awarded to date.

Date	Funding body and round	$ (GST excl.)
Dec2021	Downer Delights	1,000
Nov2021	Stephenson Fund QEII (with owner Linda Duckett)	2,100
Nov2021	Dunedin City Council (Biodiversity Fund) (with landowner Phil Newman)	5,000
Nov2020	Otago Regional Council (ECOFund)	21,659
Nov2020	Saddle Hill Community Board	1,000
Sep2020	Saddle Hill Community Board	500
	Total	**31,259**

Table 1. Amount of funding awarded.

Photo 15. Trust's Facebook post acknowledging the ORC's ECO Fund.

28. The Trust has engaged actively with the community, regional bodies and wider public. Table 2 lists all forms of engagement to date. The Trust takes an active role in advocating on behalf of the Ōtokia Creek in all matters and maintains a Facebook site with regular updates, educational materials and all things relevant to the Creek. The Trust has its own email address, which is regularly monitored.

Social media	
13Sep2020	https://www.facebook.com/Otokiatrust
Articles in print/website	
July2021	'Dead muddy ditch' is in fact teeming with life; Environmental Protection Authority
08Apr2021	Ōtokia Creek a 'very special place'; The Star
17Dec2020	Planting trees 'best way to learn'; The Star
01Oct2020	Trust focuses on protecting habitat; The Star
Submissions to council plans/hearings	
26Jan2022	Submission on OpenSpace Policy by DCC
10Dec2021	Submission against the landfill to ORC
21May2021	Public submission to the ORC Long term Plan Hearing Livestreamed at https://www.youtube.com/watch?v=g-HjAZvJUzo&t=6022s
09May2021	Submission for the ORC Long term Plan
28Apr2021	Submission against the Landfill to DCC 10-year-plan
05Aug2020	Public forum submission in front of the DCC against the proposed landfill Covered in newspaper: Things have changed, landfill opponents say; Otago Daily Times, 6 August 2020 Livestreamed at https://www.youtube.com/watch?v=9AHGocKhq6Q&t=370s (from 7:35)

Table 2. Engagement with community, public, media and councils.

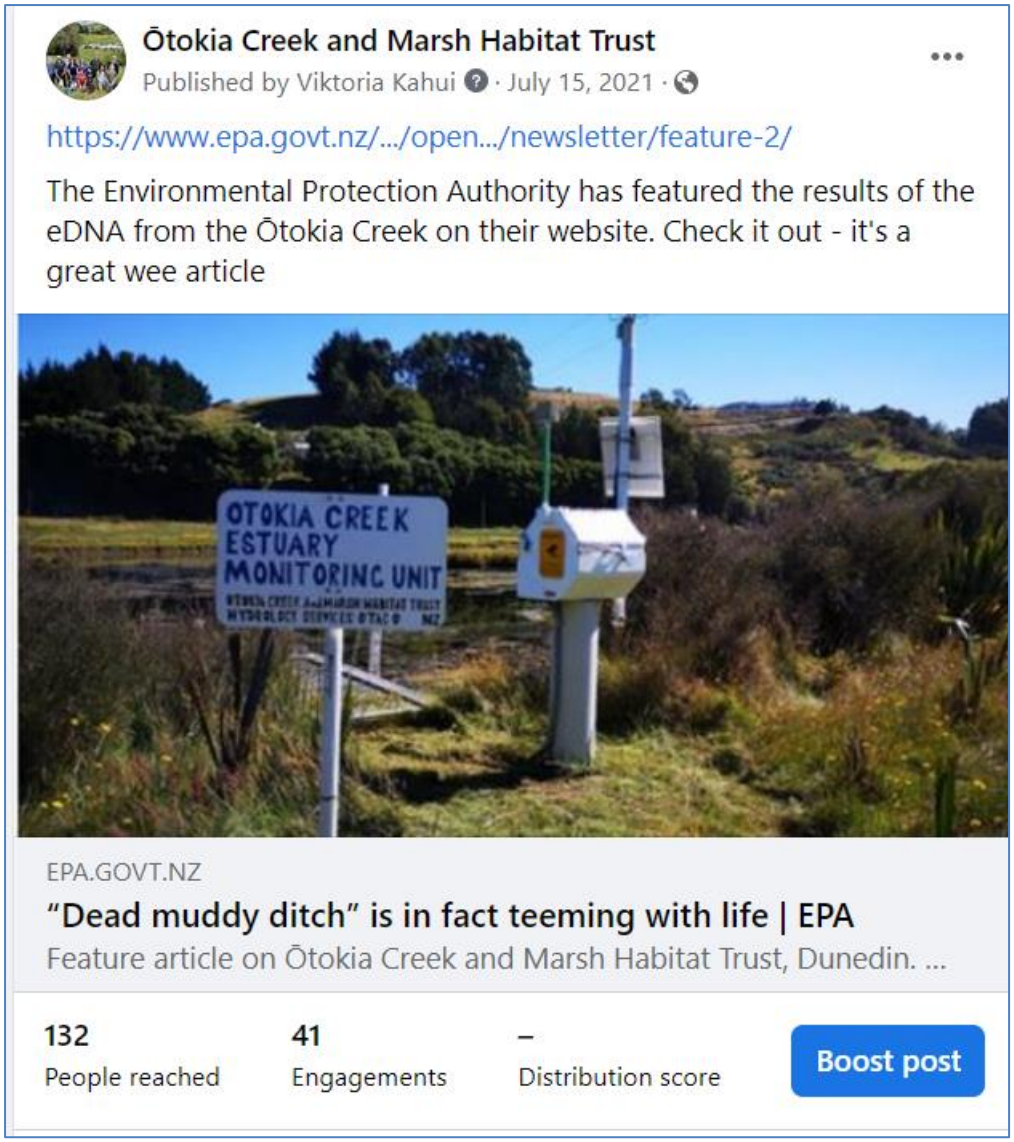


Photo 16. Facebook post featuring one of its publication.

29. The Trust engages with the community, including Big Rock Primary School in Brighton, the Community Care Trust in Dunedin and the wider Brighton community. Table 3 shows the community events facilitated by the Trust.

Date	Event	No. Persons	No. Plants
1May2022	Brighton Community Planting day	40	2000
28Mar2022	Community Care Trust (Youth with disabilities)	(youth) 2	20
24Mar2022	Community Care Trust (Youth with disabilities)	(youth) 4	20
04Mar2022	Community Care Trust (Youth with disabilities)	(youth) 4	20
25Jan2022	Community Care Trust (Youth with disabilities)	(youth) 4	20
05Dec2021	Kahui Whanau from Taranaki Planting day	(adults) 10	20
13Oct2021	Alliance Française Holiday Programme Planting day	(children) 7	10
24Sep2021	Big Rock Primary School Planting day	(children) 25	75

Table 3. Community events facilitated by the Trust.

30. The most recent community planting event on the marsh occurred on 1 May 2022. It was facilitated in partnership with landowner Phil Newman, who cleared large sections of gorse at his own expense. We worked with Phil to secure Biodiversity funding from the DCC and organised the community event, where approximately 40 people planted over 2000 natives. It was a fantastic event for the community to meet, explore the marsh, experience its beauty and feel pride in doing something for their children and future generations. The Trust received great feedback and is planning to have the next planting day on Linda Duckett's marsh land, who is another large marsh landowner. The Trust has worked with Linda to secure some funding from the Stephenson Fund and is currently applying for the ECOFund 2022.

31. All of the Trust's activities are community focused, working 'with people' in a positive way, supporting families to feel pride in their natural assets and fostering a sense of connection. We work with people and children to feel responsible for the environment and actively protecting and enhancing it by planting natives. All these actions are wholly in line with the ORC's Biodiversity Action Plan, and the National Policy Statement for Freshwater Management.

Photo 17. Facebook post by the Trust about the community planting day on 1 May 2022.

Photo 18. A volunteer planting a kowhai on the marsh in 2021.

Photo 19. Facebook post by the Trust about a School planting day.

32. The Trust has produced environmental data and educational material as outlined in Table 4. The Strategic Biodiversity Plan attached to the evidence of Kelvin Lloyd and the Marsh Restoration Plan (Attachment 1), in particular, have been instrumental to the Trust's effort to restore the Ōtokia Creek and Marsh Habitat as they have guided the decisions about what work to prioritise.

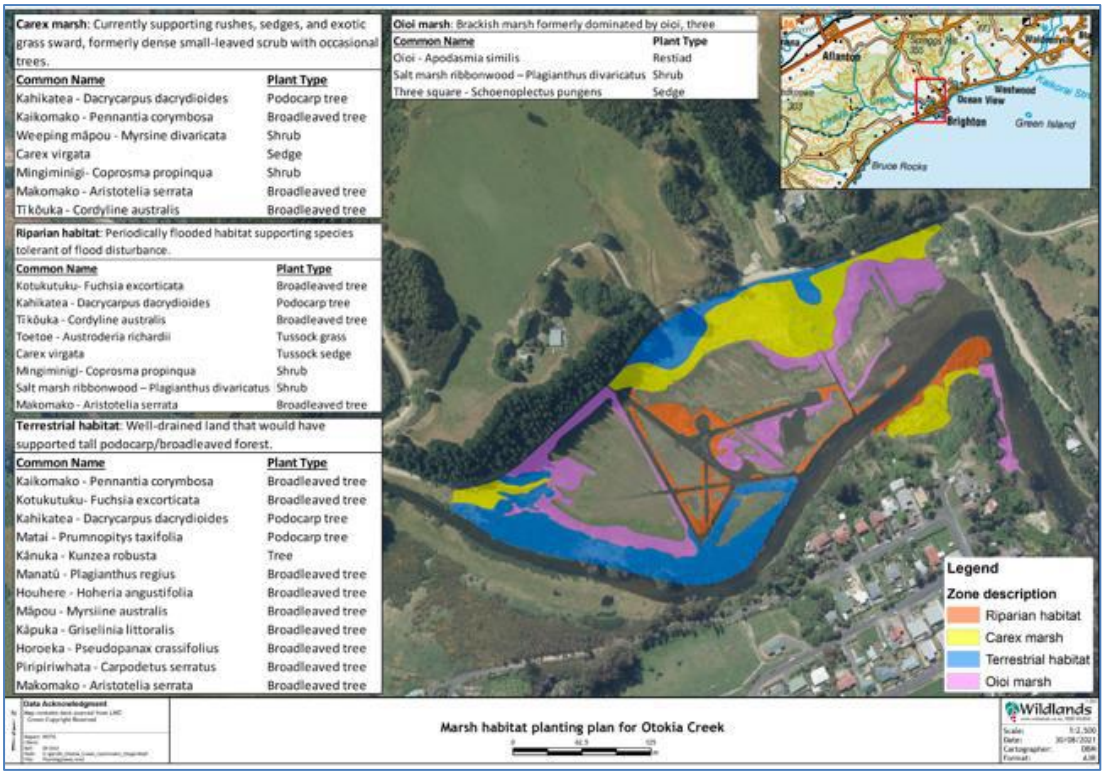
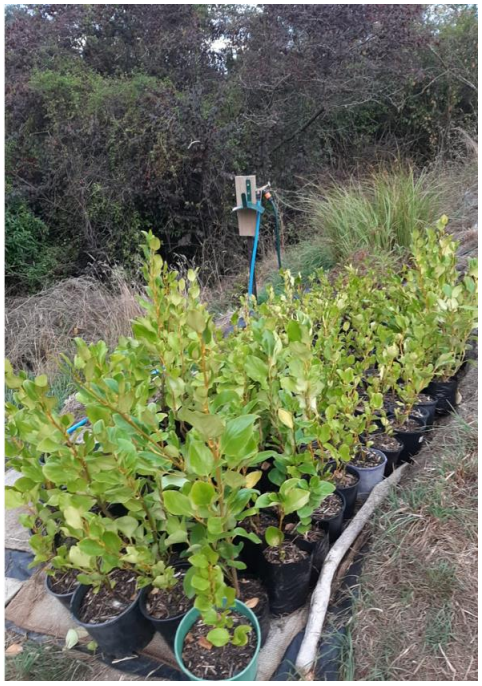


Photo 20. Marsh restoration Plan by Wildlands Consultants.

Date	Output	Description
28Nov2021	Ōtokia Creek Restoration Annual Report	Produced by Trustee Claire Mauger
28Nov2021	Hydrology Report	Produced by Trustee Matthew York
26Nov2021	Ōtokia School Presentation and Quiz	Educational material about Ōtokia Marsh produced and presented by Trustee Claire Mauger
06Oct2021	Bird survey on the Ōtokia Marsh	Produced by a volunteer
21May2021	eDNA Sample Results	Wai Tūwhera o te Taiao; A free programme by the Environmental Protection Agency
07Sep2021	Marsh Habitat Planting Plan for Ōtokia Creek	Detailed planting plan for the marsh area commissioned by the Trust and developed by Wildlands Consultants
30Apr2021	Strategic Biodiversity Plan for the Ōtokia Creek and Marsh Habitat Trust	Commissioned by the Trust and developed by Wildlands Consultants

Table 4. Environmental data and educational material produced.

33. The Trust has established a small community nursery that has produced over 2,000 natives so far. The nursery overlooks the marsh area and is a place where volunteers meet every Sunday for potting, chatting and spending time on the marsh.



Photos 21. Potting at the nursery in 2022.

34. The Trust has also engaged in ongoing surveys of the Creek for possible sources of contamination, and in two years has identified five separate contamination sources. When contamination issues are discovered the Trust directly works with property owners to rectify these issues, and where necessary passes on information to the ORC Pollution Response Team to take further action (see Table 5).

Year	Contamination event and action taken
2022	Recently a Trust survey of the area discovered a leaking/overflowing raw sewage pipe discharging its contents onto the riverbank of the Creek estuary, possibly after being disturbed by large tree roots. Property owners were informed who promised to rectify. ORC Pollution Team also informed. This issue is yet to be resolved at time of writing.
2022	It has been reported to the Trust that not long before its closure as a rental accommodation facility, a resident of the Brighton Caravan Park was seen discharging the contents of what appeared to be a chamber pot / bedpan bucket of strongly discoloured liquid into the creek early in the mornings. The facility has since changed ownership and its current use ensures that residents will have greater accountability in how they deal with their waste. The trust considers this issue resolved
2021-2022	Backfilling of mixed solid fill material into saltmarsh by rural landholder causing silting up and discolouration of water. Details passed onto ORC Pollution Team, and action by ORC is ongoing. Issue has alleviated substantially but recent works in that location may be contribute to further water contamination in the future, namely hydrocarbon leaching into water via rain water running off of asphalt dumped near estuary. This issue is ongoing between landholder and ORC.
2021	One grey water discharge. This was rectified by the property owner soon after the trust discovered the issue, appealed to the property owner to rectify grey water discharge system, and passed details on to the ORC Pollution Team
2020	Unidentified strongly coloured liquid discharged to creek estuary through stormwater system. Information was passed to ORC Pollution Team. ORC responded, tested the substance and investigated source with no results. This contamination source has not repeated and appears to be a singular event.

Table 5. Contamination events recorded and dealt with by the Trust.

Photo 22. Facebook post by the Trust about contamination issues.

Photo 23. Facebook post by the Trust about contamination issues.

35. Table 5 provides a summary of the Trust's efforts. The Trust has taken an active role in advocating, protecting and restoring the Ōtokia Creek and Marsh Habitat. The Trust has spent over 1,500 volunteer hours, planted nearly 5000 natives, spent over 300 hours monitoring the Creek and has established a small community nursery.

36. The Trust has organised 8 community events, dealt with 5 contamination issues, produced 7 surveys/educational reports and engaged actively with the community via Facebook (i.e. on average we have reached 146-630 people per post; and have reached a maximum of 6.5K per post in 2022).

Output	2021[4]	2022	2023 (as of 4 May 2022)
Fieldwork			
Nursery/planting work volunteer hours	-	631.5	75
Administrative volunteer hours	-	546	13
Total number of volunteer hours	300	1,177.5	88
Total number of regular active volunteers	10-12	10-12	10-12
Total number of natives planted along Ōtokia Creek/Marsh	715	2000	2000
Number of plants produced from Ōtokia Nursery	-	2,000	-
Total number of hours spent monitoring water	146	163	38
Number of community planting/nursery events (Table 9)	-	7	1
Contamination issues reported/dealt with	1	1	3
Dissemination and submissions			
Number of surveys/educational reports	-	7	-
Number of articles in print/website	2	2	-
Number of submissions to council plans/hearings	1	5	-
Funding amount successfully applied for and received	$23,159	$8,100	-
Facebook - Followers	135	171	181
Facebook - Total number of posts	44	42	8
Facebook - Average reach per post	146	374	630
Facebook - Maximum reach per post	1.5k	6.5k	3.7k
Facebook - Average engagement per post	29	39	58

Table 5. Summary of Trust's outputs.

[4] E.g. year 2021 indicates 1 April 2020 – 31 March 2021 to align with the financial year.

Effects of the real and perceived risk of leachate from landfill on the Ōtokia Creek environment and community

37. Having lived alongside the Creek and marsh for many years, members of the Trust and community understand the Creek's intrinsic, recreational and aesthetic value and its practical value to landholders through whose property it flows.

38. It is the heart of a thriving aquatic, arboreal and avian ecosystem. The ecosystem is slowly recovering and the Trust and Community has spent an incredible amount of effort and time to protect, restore and be the Creek's voice since its inception in 2020. The restoration and advocacy efforts of the Trust are completely voluntary. As detailed above, members of the Trust and the community have given generously of their time and resources to support our important work.

39. The five main drivers of the biodiversity crisis are habitat loss, direct exploitation of species, climate change, pollution, and invasive species.

40. The Trust is extremely concerned about locating a permanent municipal waste landfill at the headwaters of the Ōtokia Creek because doing so poses unacceptable risks to biodiversity including:

    (a) Habitat loss

    (b) Pollution and the

    (c) Introduction of invasive species.

41. The real and perceived risk of leachate from the landfill, and the effects that flow from it, are at the core of the Trust's opposition to the landfill.

42. Escaped leachate will travel down the Creek, through ecologically sensitive marsh habitat. This could happen in as little as 40 minutes, potentially damaging a limited marsh habitat resource for endangered native wildlife as explained by Matthew York.

43. Compounding this concern are the myriad ways that such an escape could occur – from landfill system failures like liner failure and leachate collection system failure to intense weather events like storms or

flooding, to seismic events or any combination of these. The Trust does not find it credible that none of these events will occur during the construction, operation or after closure periods which make up the very long lifetime of the landfill.

44. Landfills attract mustelids and other species which are particularly problematic for the native wildlife identified within the Ōtokia Creek and Marsh; even with trapping plans the attractant of an easy food source such as a municipal waste landfill is likely to affect endangered populations of birds and lizards.

45. Though a transfer station is proposed at Green Island it is likely that the landfill at Smooth Hill will increase the volume of litter from trucks carting wastes into the Creek and Marsh. Wildlife get trapped and choke on litter, countering the Trust's dedicated efforts to restore and increase biodiversity.

46. In general, the Trust is concerned that the information provided by the applicant does not adequately address the real risk and consequences of contaminants escaping from the landfill. For example classifying the risk of contamination of the waterway as 'low' using an online estimating tool to predict flood flows for the Ōtokia Creek and the landfill catchment fails to properly capture the high and low flow regimes that Andrew Hutcheon describes in his evidence.

47. In light of this, the proposed attenuation basin may be inadequate in the face of extreme rainfall events (particularly as these are expected to increase in frequency and intensity as climate change progresses).

48. The Trust is also concerned that any leachate contamination could have increased impact during periods of very low flow when it may be more concentrated. The leachate monitoring outlined by the DCC is unlikely to be responsive enough to detect contamination flowing into the Creek quickly enough to act. This may have devastating effects on both wildlife and the wellbeing of Brighton residents and children swimming in the Creek. Nor is it clear from the proposal what action would be able to be taken downstream if leachate escape occurred.

49. Finally, the Trust is deeply concerned about the perceived risk of leachate. Even before leachate escape occurs, locating a permanent landfill at the headwaters of the Ōtokia Creek has a **demoralizing** effect on the efforts of the Trust and community to restore and protect the Ōtokia Creek. It runs directly against the message we have been receiving and acting on from the ORC and the Government about how important communities coming together to protect the environment are.

50. As a Trust, we have demonstrated our incredible efforts to protect the beautiful and recovering habitat of the Ōtokia Creek and Marsh, which holds intrinsic, recreational and spiritual values to the Brighton residents. As a community, we are passionate about coming together to restore and care for our environment for our future generations.

51. It is extremely depressing and detrimental to the efforts of the Trust to continue to invest people's goodwill, time and effort to restore and protect our natural environment from contamination, when our City Council frustrates our efforts by constructing a class 1 landfill at the headwaters of this sensitive environment.

52. The proposed landfill goes against the intention and spirit of the ORC's Biodiversity Action Plan and the National Policy Statement for Freshwater Management 2020 and devalues our efforts.

53. Based on the information provided by the Applicant, and our own experiences, the Trust has no confidence that the risks to native wildlife, biodiversity, water quality and the wellbeing of the Brighton community have been adequately or accurately addressed nor that there has been any realistic solution proposed for when things go wrong.

54. Some may perceive this issue as NIMBYism, but as a Trust we are passionate about minimizing waste and protecting natural environments in all of Aotearoa. The Ōtokia Creek and Marsh is a special and unique environment and the proposed landfill amounts to a permanent threat to that environment.

55. The Trust seeks that the Ōtokia Creek and Marsh is protected from these effects by the consent being declined in its entirety.

Simon Laing and Viktoria Kahui

On behalf of the Ōtokia Creek and Marsh Habitat Trust

5 May 2022

Attachment 1

Marsh Plan

Carex marsh: Currently supporting rushes, sedges, and exotic grass sward, formerly dense small-leaved scrub with occasional trees.

Common Name	Plant Type
Kahikatea - Dacrycarpus dacrydioides	Podocarp tree
Kaikomako - Pennantia corymbosa	Broadleaved tree
Weeping māpou - Myrsine divaricata	Shrub
Carex virgata	Sedge
Mingiminigi- Coprosma propinqua	Shrub
Makomako - Aristotelia serrata	Broadleaved tree
Tī kōuka - Cordyline australis	Broadleaved tree

Riparian habitat: Periodically flooded habitat supporting species tolerant of flood disturbance.

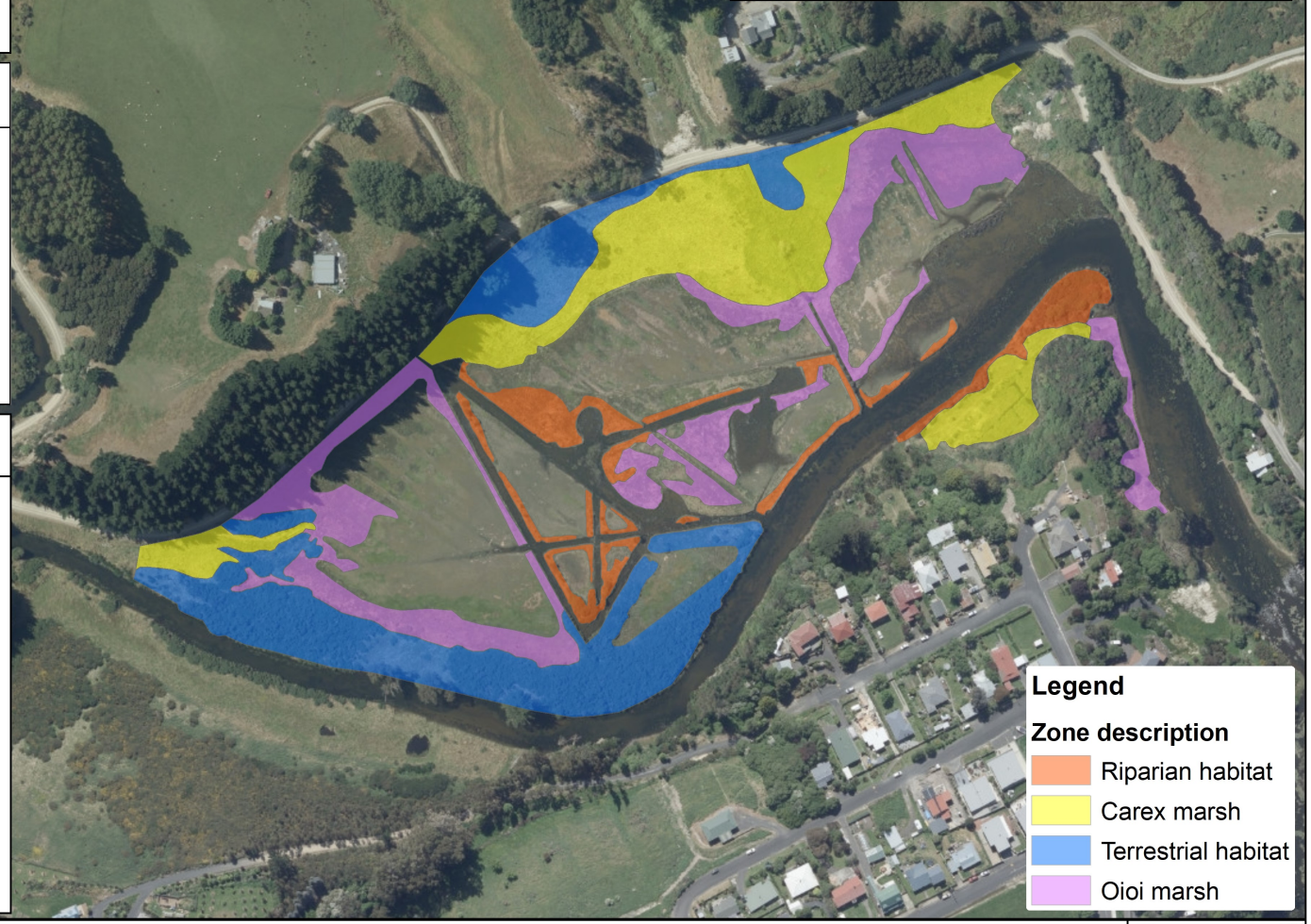
Common Name	Plant Type
Kotukutuku- Fuchsia excorticata	Broadleaved tree
Kahikatea - Dacrycarpus dacrydioides	Podocarp tree
Tī kōuka - Cordyline australis	Broadleaved tree
Toetoe - Austroderia richardii	Tussock grass
Carex virgata	Tussock sedge
Mingiminigi- Coprosma propinqua	Shrub
Salt marsh ribbonwood – Plagianthus divaricatus	Shrub
Makomako - Aristotelia serrata	Broadleaved tree

Terrestrial habitat: Well-drained land that would have supported tall podocarp/broadleaved forest.

Common Name	Plant Type
Kaikomako - Pennantia corymbosa	Broadleaved tree
Kotukutuku- Fuchsia excorticata	Broadleaved tree
Kahikatea - Dacrycarpus dacrydioides	Podocarp tree
Matai - Prumnopitys taxifolia	Podocarp tree
Kānuka - Kunzea robusta	Tree
Manatū - Plagianthus regius	Broadleaved tree
Houhere - Hoheria angustifolia	Broadleaved tree
Māpou - Myrsiine australis	Broadleaved tree
Kāpuka - Griselinia littoralis	Broadleaved tree
Horoeka - Pseudopanax crassifolius	Broadleaved tree
Piripiriwhata - Carpodetus serratus	Broadleaved tree
Makomako - Aristotelia serrata	Broadleaved tree

Oioi marsh: Brackish marsh formerly dominated by oioi, three

Common Name	Plant Type
Oioi - Apodasmia similis	Restiad
Salt marsh ribbonwood – Plagianthus divaricatus	Shrub
Three square - Schoenoplectus pungens	Sedge



Report: R5770
Client:
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File: PlantingZones.mxd

Marsh habitat planting plan for Otokia Creek

0 62.5 125 m

Wildlands © 2021
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:2,500
Date: 30/08/2021
Cartographer: DBM
Format: A3R

Attachment 3

ŌTOKIA CREEK AND MARSH HABITAT TRUST

ANNUAL REPORT (NOVEMBER 2021)

ŌTOKIA CREEK AND MARSH HABITAT TRUST

Trustees

Hutcheon, Andrew

Kahui, Viktoria

Laing, Simon

Mauger, Anne-Claire

York, Matthew

ANNUAL GOALS 2020-2021	**Trust purposes (see below)**
1/ Initiate biodiversity restoration and wildlife habitat enhancement within and in the vicinity of the Ōtokia marsh	(a), (d)
2/ Provide monitoring of species and water quality	(a)
3/ Engage with community and provide opportunities for enjoyment, education and replication	(b), (c), (d), (e), (f),
4/ Initiate collaboration with different bodies of our local and greater environment	(g), (i), (k),

Purposes of the Trust

(a) Protecting and improving the recreational, aesthetic and amenity values of the Brighton Ōtokia Creek and Marsh area;

(b) Promoting the importance of the protection of the Ōtokia creek, marsh, waters and wildlife in the greater Brighton Ōtokia Creek and Marsh area;

(c) Educating and informing the public and raising awareness about practices which advance the objects set out in the preceding clause 4.1 (a);

(d) Promoting the restoration of the Ōtokia creek, marsh and waters in the greater Brighton Ōtokia Creek and Marsh area by organising campaigns to plant native species of trees;

(e) Establishing projects that actively encourage, promote and support the involvement of local school pupils and members of the community in the restoration of the Ōtokia Creek, marsh and waters in the greater Brighton Ōtokia Creek and Marsh area;

(f) Providing education to the members of the community about native wildlife and wetland restoration;

(g) Collaborating with and providing assistance to other charitable organisations involved In advancing the same or similar charitable purposes as the Trust;

(h) Collaborating with and providing assistance to local, regional and central government to advance the purposes of the Trust;

(i) Collaborating with local and national coastal protection agencies and with other non-governmental organizations to advance the purposes of the Trust;

(j) Representing the local community in meetings, working groups or resource management process that concern the greater Brighton Ōtokia Creek and Marsh area;

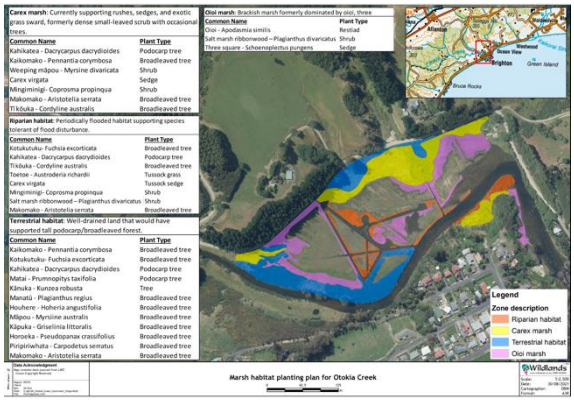
(k) Undertaking other activities and providing assistance whether by way of financial assistance, support, or otherwise, of a charitable nature to individuals in need and generally do all such acts, matters or things which are incidental or conducive to achieving all or any of the Trust's charitable purposes; and

(l) Advancing such other charitable purpose(s) and doing all things which the Trustees may consider necessary or expedient for the purposes set out above, and any other similar charitable purposes.

1/ Restore biodiversity and enhance wildlife habitat within and in the vicinity of the Ōtokia marsh

- **Development of a biodiversity plan, including a short and long term strategy**

An ecological restoration plan was commissioned to Wildlands (see attachment), to develop a short and long term biodiversity plan, including immediate enhancement of the marsh vegetation. Consequently, planting maps and a plant guide were created as educational material.



- **Develop sustainable and enviro-friendly practices**

Sustainable practices are implemented, using recycled materials whenever possible, environmental-friendly methods such as hand-weeding, natural fertilizers such as seaweed and compost, and banning any type of chemicals.

- **Establish a nursery**

A small nursery was built with adequate shading and access to water, to allow propagating our own seedlings, and storing acquired plants. It was constructed with recycled and purchased material, including sheds, planting shelves, rain water collector, and seaweed soup containers.

Donation of pots from the community enabled immediate sowing of collected local seeds such as kowhai, manuka, pittosporum etc. (see Facebook for postings), notably with the involvement of local children.



- **Initiate regular planting**

Over 900 natives have been officially planted so far under the Trust umbrella (see spreadsheet attached). Additionally, Trust member Kris Mullen from Wildwood Eco-Forestry has, on his own account, planted over 1000 natives.


- **Predator trapping, to support enhancement of wildlife**

Four traps were set in the vicinity of the marsh: a stoat/rat trap in Hope hill, a rat trap in Hope Hill forest, a rat trap and a possum trap on the lower Ōtokia estuary. Monitored weekly, predator catching failed due to suspected low predator numbers.

2/ Provide monitoring of species and water quality

- **Recording water variations in quality and flow, from headwater to estuary**

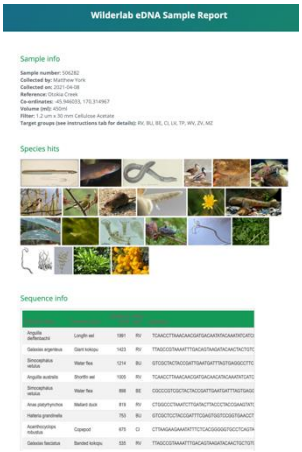
Weekly water monitoring is performed by trustee, Matthew York from Hydrology Services Otago, who has surveyed the river for 30 years. Monitoring include the measurement of flow oscillation, and quality markers such as nitrate, oxygen, and phosphorus (see report attached).

- **Initiating regular surveys of aerial and terrestrial wildlife**

Bird surveys have been carried for more than a decade by our hydrologist Matthew York. This year, Keara and Tom Brennan, veterinary epidemiologist, carried a transect bird pilot test, to develop an annual strategic survey.

- **Monitor aquatic wildlife**

We joined the Wai Tūwhera o te Taiao programme from the Environmental Protection Agency, that funds environmental DNA testing in freshwaters. Our sample test from May revealed the eDNA presence of 133 species in the river. Results highlighted markers for 12 native endangered species, which added to 4 other aerial species surveyed by land.



3/ Engage with community and provide opportunities for enjoyment, education and replication

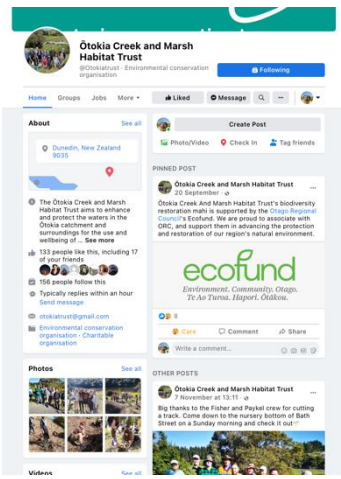
- **Develop educational events with local school Big Rock Primary**

Following consultation with principal David Grant at Big Rock Primary school regarding participation and adequacy with curriculum, our first planting day attracted approximately 25 senior schoolers (21 Sep 2021), who, after a Power point presentation at school, were introduced to the nursery, the marsh and the tracks. A pittosporum seedling was donated to each kid to encourage replication and discussion back home with their parents.

Following encouraging feedback, another planting day was organised with a group of children from the Alliance Française Holiday Programme (13 Oct 2021), with similar presentation, visit and pittosporum donation.

- **Create pathways to engage with community**

A Trust Facebook page was created, to engage with the public and reach different types of audience. Regular posts of various nature aim to spike interest and open discussions. The Facebook page has enabled communication with people who later participated in our planting sessions, or donated natives or planting pots.



See https://www.facebook.com/Otokiatrust

Another way of engaging with community is through community planting days. Unfortunately, due to covid restrictions, and lack of native plants in bulk, we did not get the chance to hold one this year. However, we shall hold at least one more school and one community planting day in first quarter, 2022.

The wider community is also getting involved through corporate charity work, for example the visit of a Fisher & Paykel crew two years in a row, who assisted us with track cutting.

- **Develop materials and opportunity for education**

The most obvious way for us to enjoy the marsh rejuvenation is to visit it. Hence the restoration of existing **tracks** and their extension through bush cutting appeared as a priority in our to-do list. With the help of volunteers, short tracks have now become popular, and enable visitors to observe wildlife through the bush.

Graphic material was created to support educational planting and presentations.

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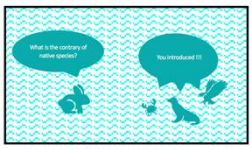
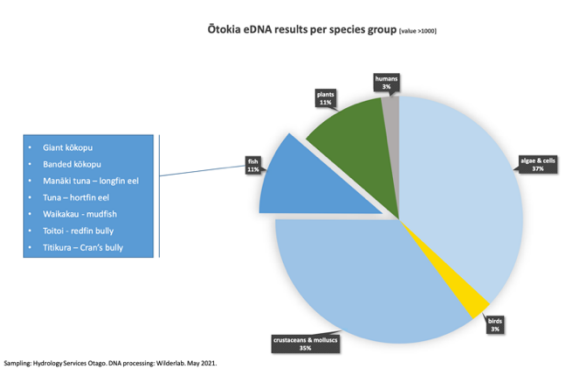
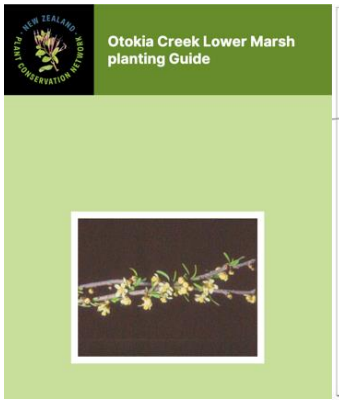


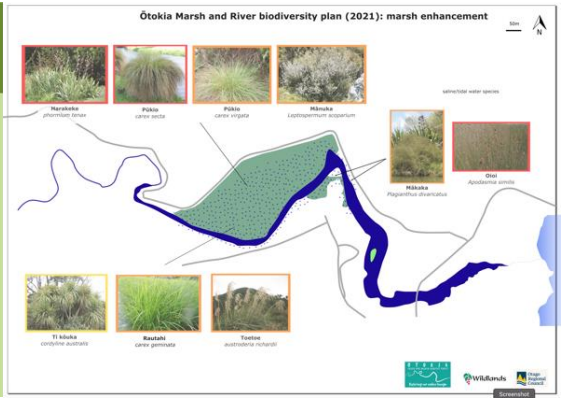
13

A native **planting guide** especially made for our local environment is available to volunteers and visitors, along with educational **planting maps**.

These are also displayed in our **Power Point presentation**, along with pictures, and eDNA result graphs. Our presentation encompasses the Ōtokia environment, concepts such as biodiversity and ecosystems, and a cultural and archaeological component.







4/ Initiate collaboration with different bodies of our local and greater environment

- **Initiate discussion with landowners in the vicinity of the marsh**

We have engaged with landowners Phil Newman and Linda Duckett, who own most of the marsh area. Both are supportive of the Trust's restoration efforts and we have help them to apply for the DCC's Biodiversity Fund and the QEII's Stephenson Fund, respectively. The first one was granted, the result of the latter application is pending.

- **Initiate relationships with similar environmental groups in the greater community**

Visits to the Tomahawk Smaills Beach Care Trust, the Sinclair Wetlands and the Sawyers Bay Hatchery group enabled discussion around strategies and methods, notably about plant sourcing. Visits to the Yellow Eye Penguin Trust led to plant acquisition and donation.

- **Initiate collaboration with government bodies**

Whenever concerns about water quality arise, the Trust notifies the ORC Pollution Response Team, especially in the case of unlawful dumping of solid fill in the marsh area. The ORC has responded and successfully dealt with the issue. Discussion was initiated with several staff at the DCC regarding volunteer management, water quality monitoring, and the establishment of our nursery. Collaboration with the Saddle Hill Community Board has been ongoing, and small funds have been granted two years in a row.

- **Initiate collaboration with coastal protection agencies**

Our collaboration with the Environmental Protection Agency through the Wai Tūwhera o te Taiao programme led to a solid wildlife assessment, that is included in a national database. This will enable monitoring of species along with other water bodies (Visit https://www.wilderlab.co.nz/explore).