Banks Peninsula Water Management Zone Committee
AGENDA

Notice of Meeting:

A meeting of the Banks Peninsula Water Management Zone Committee will be held on:

Date: **Tuesday 21 May 2019**
Time: **4pm**
Venue: **Governors Bay Community Centre, 1 Cresswell Avenue, Governors Bay**

Membership

Chairperson	Benita Wakefield - Te Rūnanga o Wairewa
Deputy Chairperson	Gina Waibl - Community Representative
Members	Rima Herber - Community Representative
	Elizabeth Macpherson - Community Representative
	Ben Manson - Community Representative
	Paula Smith - Community Representative
	Garrick Thorn - Community Representative
	Andrew Turner - Deputy Mayor Christchurch City Council
	Elizabeth Cunningham - Councillor Environment Canterbury
	Manaia Cunningham - Te Runanga o Koukourarata
	Pere Tainui - Te Runanga o Onuku
	Aurora Smith - Te Hapū o Ngāti Wheke/Rapaki

15 May 2019

Committee Advisor
Liz Ryley
Tel: 941 8153
Christchurch City Council

Principal Advisor
Peter Kingsbury
Principal Advisor Natural Resources
Tel: 941 8487
Christchurch City Council

Zone Facilitator
Lesley Woudberg
Zone Facilitator
Tel: 027 706 4273
Environment Canterbury

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https://www.ecan.govt.nz/get-involved/council-and-committee-meetings/

Banks Peninsula Zone Action Plan 2018-2021 – *Finalised 16 October 2018*

This 3-year plan includes the key actions to be delivered by councils, agencies and the community to help make progress toward achieving the priority outcomes from the Banks Peninsula ZIP. The Zone Committee play a key role in supporting the delivering this action plan through:

- **Engaging the Banks Peninsula community**– make connections, be a contact for community members to discuss issues/solutions, be a community voice.
- **Hosting events, workshops, public meetings, fieldtrips** to share information, seek input/feedback, and celebrate success.
- **Using media** to build the profile of the committee, share information and celebrate success.
- **Supporting and celebrating** the work of landowners and community groups.
- **Allocating the IMS biodiversity fund.**
- **Making recommendations** to councils to influence work programmes and influence the priorities of agencies.
- **Reporting** to Councils, Ngai Tahu and the Banks Peninsula Community Board.

ZIP and ZIPA Outcomes	Priority actions for 2018-2021
1. Kaitiakitanga *All waterbodies in Banks Peninsula have Kaitiakitanga as an overarching value and reflect Ki Uta Ki Tai, Mauri, mahinga Kai, Wahi Tapu and Waihi Tonga.* *Wairewa ZIPA Outcome -All streams that flow into the lake are flourishing ecosystems reflecting mauri, kaitiakitanga and mahinga kai values.*	1. **Support the implementation of the Whakaraupō Catchment Management Plan project to complete riparian planting on four streams Ki Uta Ki Tai.** *ZC Role: To be advised once more certainly about the structure for implementing the WCMP plan.* 2. **Mahinga Kai is used as an indicator to help monitor the health of Banks Peninsula Waterways** *Contributors: Rūnanga, Ecan* *ZC Role: Recommend that Ecan integrate this into the science monitoring programmes.* 3. **Increase community understanding of Mahinga kai through FEP workshops, Nature Agents Programme, landowner advice and public events.** *Contributors: Rūnanga, ZC, landowners,* *ZC Role: Rūnanga reps input to FEP workshops and nature agents programme, ZC promote info card, share new research e.g. Whakaraupō Mahinga Kai research.* 4. **Each year, showcase an example of a Ki Uta Ki tai approach on Banks Peninsula.** *Contributors: ZC,Rūnanga, landowners* *ZC Role: Each year ZC select example, advise on communication approach (article, public fieldtrip etc) and contribute to content.*

2. *Water Quality* *People have access to safe drinking water.* *Water quality is monitored, and rules are developed to maintain and improve it where appropriate* *Wairewa ZIPA Outcome -Te Roto o Wairewa is a nationally significant project showcasing outstanding environmental restoration.*	5. **Support communities to have safe and secure drinking water sources.** *Contributors:* CPH, CCC, Ecan, *ZC Role: Help advocate with communities where required/appropriate.* 6. **Assessment of BP marae drinking water supplies and actions plans to address issues.** *Contributors:* Runanga, CPH, Ecan Tuia Team. *ZC Role: Receive regular updates* 7. **Share in depth annual water quality and ecosystem health monitoring results and relevant research with the Banks Peninsula community.** *Contributors:* Councils, DOC, Nature Agents, Research Institutes, Industry Groups, Community *ZC Role: Share information with communities, advise research institutes of local research gaps/opportunities.* 8. **Host two FEP workshops per year which effectively incorporate biodiversity and mahinga kai.** *Contributors: Beef and Lamb, CCC, Ecan* *ZC Role: Host workshop with Beef and Lamb and encourage landowners to attend using your network of contacts.* 9. ***Support all Wairewa landowners to exclude stock from waterways by 2020.*** *Contributors: Ecan, landowners* *ZC Role: Strategies a way to best influence CCC and provide advice on how to communicate these new requirements to ensure people understand the reason why.*
3. Water Quantity *There is enough water available in the Banks Peninsula Zone to meet the needs of daily living, stock water, and fore fighting storage as a priority, and allow allocation for other uses where these priority needs are already being met.* *Allocation of water required to meet these needs is subject to flow and allocation limits so that the unique values of the Banks Peninsula streams are protected.*	10. **Promote water efficiency and provide advice to ensure people understand how they can be more efficient and the reasons why water efficiency is important.** *Contributors:* landowners CCC Ecan, *ZC Role: Provide advice on an effective communication approach to engage community and share messages through networks. Consider public opportunities/events to promote messaging over summer.* 11. **Encourage landowners to develop stock water systems.** *ZC Role: Help promote information and advice.* 12. **Continue investigations into minimum and environmental flows on Banks Peninsula and their relationship to consented and permitted water takes.** ZC role: Recommend that Ecan undertake this work.
4. *Biodiversity* *Banks peninsula is recognised in the region for showcasing flourishing biodiversity. Protection of biodiversity is promoted, supported and celebrated and enhancement undertaken where appropriate. Flag projects are showcased as*	13. **IMS biodiversity fund is strategically allocated and progress celebrated.** *Contributors: ZC, Ecan, landowners* *ZC Role: Approve projects, encourage and support landowners and celebrate projects.* 14. **Improve and update the IMS Project Booklet annually with a coordinated map showing all biodiversity projects and reserves on Banks Peninsula (including IMS, CCC, Trust, DOC reserves etc).**

examples of excellent biodiversity achievement.	*Contributors:* Ecan, CCC, DOC, BPCT, QEII *ZC Role: Use the booklet to celebrate success and utilise the map for helping prioritise projects.* 15. **Address native fish barriers on public land and educate landowners.** *Contributors:* Ecan, DOC, CCC, NZTA *ZC Role: Work with Council staff to ensure that new barriers are not constructed, and that existing infrastructure is upgraded to 'best fish passage practice'.*
5. *Erosion and Sediment* *Sediment discharge into waterways are minimised.* *Sediment build in the harbours is managed sustainably to prevent damage to mahinga kai and Kai Moana from erosion and sedimentation.* *Wairewa ZIPA Outcome- Sediment discharges into waterways is reduced.*	16. **Complete the Whakaraupō Road Cutting Trial by 2021 to determine effective erosion control techniques** *Contributors:* CCC, Ecan, Eos Ecology *ZC Role: ZC representative on working group.* 17. **The Wairewa bank stabilisation pilot project is completed by 2021 and funding is secured to extend the pilot.** *Contributors:* Rūnanga, Ecan, DOC, landowners *ZC Role: Encourage landowners to participate in project and work with rūnanga to secure funding to scale up the project.* 18. **Support forestry landowners and operators to understand the National Environmental Standard for Plantation Forestry and ensure that erosion susceptibility is integrated into any forestry resources.** *Contributors: ZC,* Industry, Ecan, CCC *ZC Role: Engage community and provide advice to industry/councils on how to best communicate requirements with the local community.* 19. **Forestry activities and high-risk construction sites are prioritised for monitoring.** *Contributors:* Ecan *ZC Role: Influence Ecan monitoring programme and receive regular updates on compliance.* 20. **Continue to undertake soil mapping on Banks Peninsula.** *Contributors: Ecan, CCC, Landcare Research* *ZC Role: Receive updates on project progress and help build community awareness about work.*
6. *Wastewater* *Wastewater us not discharged to the harbour but reclaimed to land. Wastewater is treated to a high quality and promoted as an innovative water and irrigation source for the Peninsula.*	21. **Complete a research project on the impacts of onsite domestic wastewater systems on Wainui waterways. Consider research findings and develop an action plan.** *Contributors:* Waterways Centre and Wainui community. *ZC Role: Support researcher with contacts, encourage community participation, consider research findings and suitable actions.* 22. **Raise public awareness about the need to regularly maintain onsite wastewater systems** *Contributors: ZC,* Ecan, community *ZC Role: Provide advice on how to best communicate this message locally, share information through networks, and recommend Ecan prioritise consent monitoring.* 23. ***Advocate for a successful resolution of the Akaroa Wastewater Scheme.*** *Contributors: CCC, community* *ZC Role: Provide input/advice where appropriate.*

7. *Climate Change* *Climate change effects are taken into account in all infrastructure upgrades and planning on Banks Peninsula. As the Climates changes there is adequate water available and flooding is mitigated.* *Wairewa ZIPA Outcome- Risks of flooding are known and understood and flood hazards reduced.*	24. **Consider climate change effects on all actions.** 25. **Promote the development of a contestable fund for flood management.** *Contributors: ZC,* Ecan, community *ZC Role: Recommend to Ecan that a contestable fund be established as part of LTP and provide advice on how this could work.*
8. *Education and Communication* *The Banks Peninsula community is empowered by education in environmental management. Environmental success in the zone are appropriately recognised and publicised.*	26. **Develop and implement 6 monthly zone communication plans. This is to include a range of communication channels including social media.** *Contributors:* ZC, Ecan, CCC *ZC Role: Input to plan and assist with the content and delivery.* 27. **Support and promote freshwater education programmes and community led projects.** *ZC Role: Support groups through attendance at events, raise profile in community through inviting to ZC meeting and sharing information/photos using social media.* 28. **Zone Committee to provide updates to CCC, Ecan, Community Boards and the wider community.** *ZC Role: Quarterly reporting to CCC, annual reporting to Ecan, initiate regular reporting to community board.* 29. **Recommend that 15 streams on Banks Peninsula are labelled.** *Contributors: CCC* *ZC Role: Effectively influence CCC priorities to fund signage.*
9. *Coastal* *The harbours are a natural extension of the rivers and streams. The marine biodiversity of the harbours is protected and restored.*	30. **Ongoing research in the coastal environment to inform the Coastal Plan Review.** *Contributors: DOC, Ecan, CCC, Universities* *ZC Role: Revise and share updates on research where appropriate. ZC participate and contribute to the development of the Plan.*

Banks Peninsula Water Management Zone Committee

Members' Register of Interests at 17 December 2018

Representative's Name and Interests	
Updated:	13 February 2019
Paula Smith	• Member of the Canterbury Aoraki Conservation Board Te Rūnanga Papa Atawhai o Waitaha me Aoraki • Chair of Stoddart Cottage Trust, Diamond Harbour • Friend of Orton Bradley Park • Residential landowner, Diamond Harbour
Gina Waibl	• Owner of a forestry block with a number of springs (67ha) and a small flock of sheep • Predator Free Port Hills Steering Committee • Resident of Lyttelton Harbour
Garrick Thorn	• Resident of Sumner • Operations Engineer at Dept of Chemical and Process Engineering, University of Canterbury, • Experienced: Researcher, Project manager, Process engineer, Environmental engineer (wastewater treatment) • Passionate about science/engineering outreach, engagement and education.

TABLE OF CONTENTS

The meeting will be opened with a Karakia/Timatanga and closed with a Karakia/Whakamutunga

1. Apologies

At the close of the agenda no apologies had been received.

2. Updates from Banks Peninsula Zone Committee Members

An opportunity for members to highlight events/meetings/issues relevant to the Zone Committee. This item has 15 minutes allocated to it.

3. Confirmation of Previous Minutes

That the minutes of the Banks Peninsula Water Management Zone Committee meeting held on Tuesday, 16 April 2019 be confirmed (refer page 9).

4. Matters Arising from the Minutes

5. Deputations by Appointment

There were no deputations by appointment at the time the agenda was prepared.

6. Identification of Urgent Items

7. Identification of General Public Contributions

Banks Peninsula Water Management Zone Committee
OPEN MINUTES

Date: Tuesday 16 April 2019
Time: 5pm
Venue: Okuti Hall, Okuti Valley, Little River

Present

Chairperson	Benita Wakefield - Te Rūnanga o Wairewa
Deputy Chairperson	Gina Waibl - Community Representative
Members	Rima Herber - Community Representative
	Ben Manson - Community Representative
	Garrick Thorn - Community Representative
	Elizabeth Cunningham - Councillor Environment Canterbury
	Pere Tainui - Te Rūnanga o Onuku
	Aurora Smith - Te Hapū o Ngāti Wheke/Rapaki

In Attendance: Environment Canterbury – Lesley Woudberg, Gillian Jenkins, Helen Greenup; Okuti River Project Co-ordinators – Alison Evans and Marcus Puentener

15 April 2019

Committee Advisor
Liz Ryley
Tel: 941 8153
Christchurch City Council

Principal Advisor
Peter Kingsbury
Principal Advisor Natural Resources
Tel: 941 8487
Christchurch City Council

Zone Facilitator
Shelley Washington
Zone Facilitator
Tel: 027 294 5219
Environment Canterbury

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www.ecan.govt.nz/news-and-notices/minutes/Pages/Default.aspx

Prior to the meeting, members undertook a site visit to the Okana and Okuti Rivers. They discussed the progress that has been made to clear willows and about developing a hydrological model as part of the Little River Rating District, and riparian planting by the community that began about 12 years ago. They also received a presentation on the Okuti River Project 2018 by Alison Evans and Marcus Puentener and then undertook another site visit to a nearby section of the Okuti River relating to environmental monitoring and streamside planting for that project.

Elizabeth Cunningham opened the meeting with a Karakia/Timatanga.

The agenda was dealt with in the following order.

7. Identification of General Public Contributions

The Okuti River Project 2018
Alison Evans thanked the Zone Committee for prioritising the Okuti River for funding its project, and noted the support of the Committee was appreciated. Alison noted the following concerns of the participants involved with the project, as:

- the project requires further financial support through the next financial year;
- feedback is sought from the Councils on willow removal from the Okuti River;
- mitigation should be considered for forestry run-off, particularly from Reynolds Valley.

Committee Resolved BPZC/2019/00018

That the Banks Peninsula Water Management Zone Committee:

1. Request staff to work with river engineers to follow up on the priority work undertaken on the Okuti River, in particular the removal of the willow trees.

2. Report the outcome back to the Zone Committee.

Elizabeth Cunningham/Garrick Thorn **Carried**

Te Roto o Wairewa – Lake Forsyth
Joe Power, the Manager of Kinloch was introduced to the meeting. Joe expressed concern about the height of the lake level of Te Roto o Wairewa – Lake Forsyth prior to it being opened as this did not occur until it was at 2.7 metres. With additional rainfall, particularly in winter months, the issue of flooding was a concern.

The Committee members agreed that this matter should be raised with the Christchurch City Council through Deputy Mayor Turner as the Council's elected representative on the Zone Committee, and to provide the Zone Committee with a copy of the Christchurch City Council resource consent in relation to the Lake opening/closing regime.

Benita reminded members that as part of the Zone Committee's role they should help influence decisions, consider a strategic position and pass information received on, rather than becoming involved in operational matters.

1. Apologies

Committee Resolved BPZC/2019/00019

That apologies for absence from Andrew Turner, Paula Smith, Elizabeth Macpherson and Manaia Cunningham, and for early departure from Elizabeth Cunningham, be accepted.

Aurora Smith/Pere Tainui **Carried**

2. Updates from Banks Peninsula Zone Committee Members

Benita Wakefield suggested each issue or event should be mapped to show an overview of the locations on the Peninsula.

Members highlighted particular events relevant to the Zone Committee, including:

1. An attendance at the Regional Committee where the CWMS Fit for the Future project was discussed and requested lakes be added to lowland streams in the targets (Rima).
2. A field trip on Farm Environment Plans is being organised for 14 May 2019.
3. Opening of Te Roto o Wairewa – Lake Forsyth should be opening at drains to allow fish to get to the sea, e.g. tuna (Pere).
4. The Whakaraupō Management Plan has received an award through the Planning Institute – suggestion the adaptation of that Plan could happen in other harbours (Elizabeth C)
5. Any sediment issues relating to the new Sumner to Lyttelton road (Garrick).
6. Annual Report presented to the Christchurch City Council and a CCC workshop on an integrated water strategy is being developed (Gina).
7. Pest management in Little River involving a cyanide drop an issue relating to mahinga kai (Elizabeth C).

3. Confirmation of Previous Minutes

Committee Resolved BPZC/2019/00020

That the minutes of the Banks Peninsula Water Management Zone Committee meeting held on Tuesday, 19 March 2019 be confirmed.

Garrick Thorn/Benita Wakefield **Carried**

4. Matters Arising from the Minutes

A letter from a resident of Okains Bay relating to the Opara River was noted by the Committee. Concerns expressed in the letter related to trees blocking the river flow and creating a loss of vision in a 100 kilometre speed zone. The letter will be passed onto the appropriate staff at the Christchurch City Council for comment, with the request that a progress update be provided to the Zone Committee.

5. Deputations by Appointment

There were no deputations by appointment.

6. Identification of Urgent Items

Rūnanga
Elizabeth Cunningham advised that Rūnanga had received notice from the New Zealand Police to be on high alert and not invite people onto the Marae until further notice. This is post the 15 March Christchurch terror attack.

Benita advised that she and Gina will hold an agenda-setting meeting each month. If members have any matters would want to raise at a meeting, please email Benita.

Meeting concluded at 6.05pm

CONFIRMED THIS 21ST DAY OF MAY 2019

BENITA WAKEFIELD
CHAIRPERSON

8. Immediate Steps Funding Decisions

Reference: 19/523529

Presenter(s): Helen Greenep, Biodiversity Officer
(Timing for item – 45 minutes)

1. Purpose of Report

1.1 The purpose of this report is for the Banks Peninsula Water Management Zone Committee to consider five Immediate Steps Projects for funding.

2. Staff Recommendations

That the Banks Peninsula Water Management Zone Committee:

1. Support the five Immediate Steps Project applications with the 2019/2020 Fund:

a.	Mabel Hope Covenant	$26,750	
b.	Okuti QEII Covenant	$6,500	
c.	Crown Island Covenant	$25,240	
d.	Bill Hill Little Akaloa	$6,000	
e.	Kahukunu Stream Restoration	$30,000	(+ $10,000 per year x2)

2. Report

The Immediate Steps (IMS) funding programme was launched in 2010 as part of implementing the Canterbury Water Management Strategy. Alongside planning and other measures, this funding is used to contribute to aligning or reversing the decline in indigenous biodiversity associated with the increasing use of the water resources in Canterbury.

The Banks Peninsula Zone Committee has $104,500 of Immediate Steps funding per year to spend on projects to protect and restore biodiversity.

IMS WORKSHOP - TIMEFRAME AND STRATEGY

On 16 April 2019 Zone Committee members met for a workshop to consider current project applications.

Helen Greenep (Biodiversity Officer) presented an overview of biodiversity on the Banks Peninsula and the IMS Fund. Key points included:

- Banks Peninsula has lots of amazing indigenous biodiversity to project.
- Protection is the priority, followed by restoration.
- Covenanting is the best bang for buck (in terms of protecting ecological values).
- There is a co-ordinated approach between ECan and CCC for funding IMS projects.
- ECan works with QEII and Banks Peninsula Conservation Trust to prioritise covenants projects. (Covenants are project applications from private landowners not the trust.)

2019/2020 PROJECT APPLICATIONS

This financial year there is total of $100,000 and $10,000 of this has already been committed to the Okuti River Project (as agreed by the Zone Committee in October 2017). There is $94,500 available and five projects for consideration:

2019/2020 Project Applications	
1. Mabel Hope Covenant	$26,750
2. Okuti QEII Covenant	$ 6,500
3. Crown Island Covenant	$25,240
4. Bill Hill Little Akaloa	$ 6,000
5. Kahukunu Stream Restoration	$30,000 (+$10,000 per years x2)
Total	**$94,490**

There are also a number of other projects in the pipeline. These include:

- A Banks Peninsula Conservation Trust covenant in the Pigeon Bay catchment. It requires approximately $35,000.
- A stream fencing project in Little Akaloa requiring $10,000.
- Further fencing of the Wainui Stream. Various landowners in this catchment are keen to fence their section of the stream and tributaries.
- Koukourārata- Peter Ramsden has an idea for a project which also involves the creation of a walking track to create a loop.
- A stream fencing project in Okains Bay requiring $10,000.
- Stage two of the Bill Hill project in Little Akaloa.

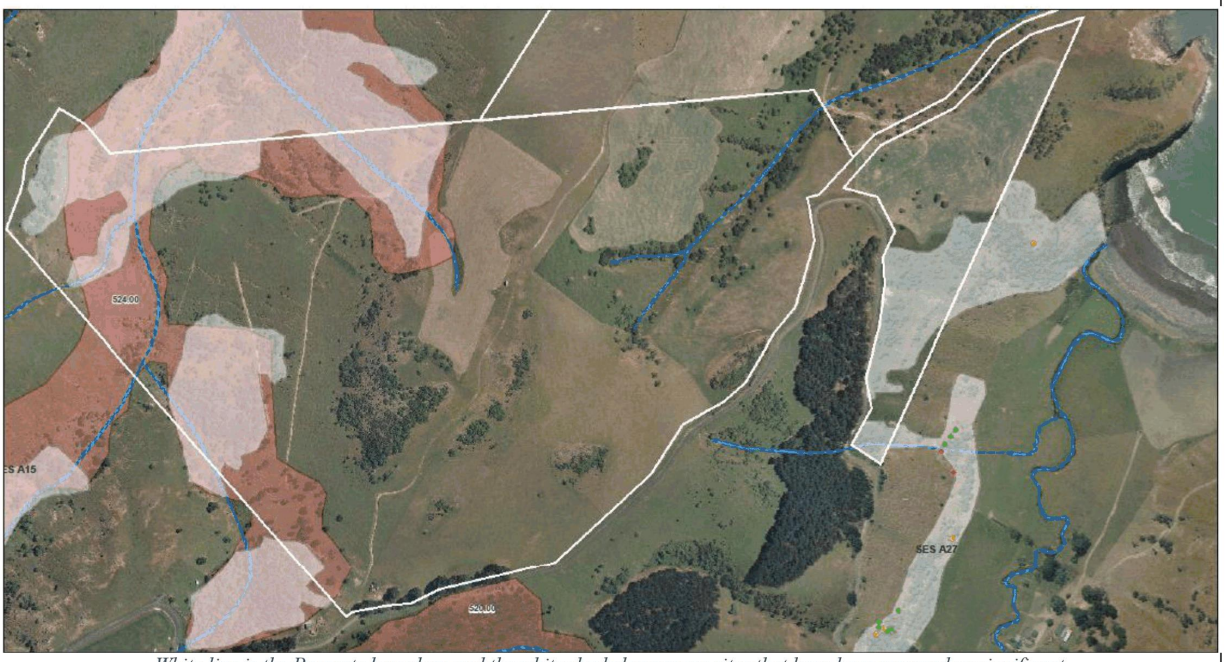
Attachments

No.	Title	Page
A ⇩	IMS Projects	15
B ⇩	List of Immediate Steps Projects	45

Little Akaloa – Bill Hill

Project Images

Areas to be fenced



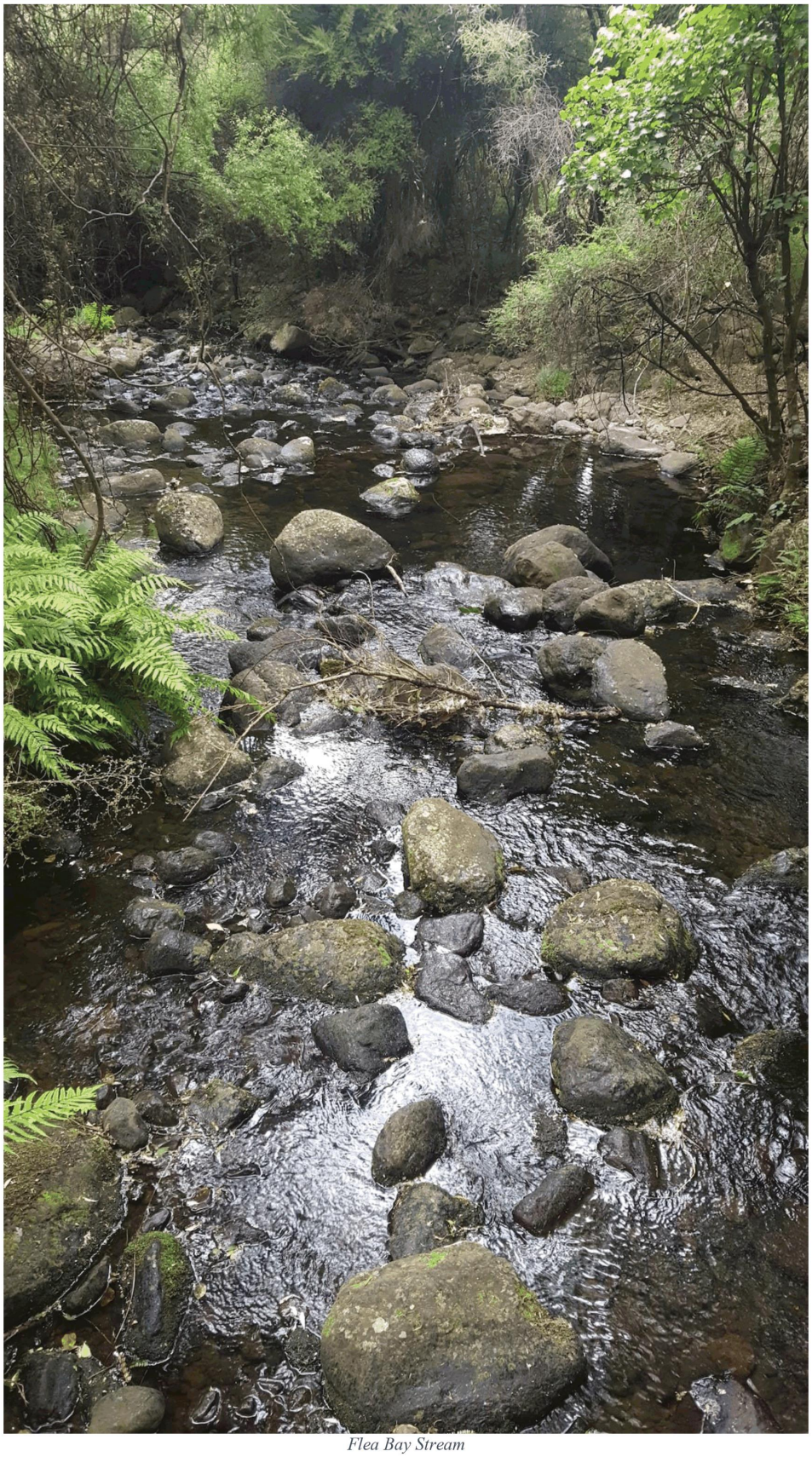
White line is the Property boundary and the white shaded areas are sites that have been assessed as significant

Mabel Hope Covenant - Flea Bay

Project Images

View from the top

Wetland area within the covenant



Flea Bay Stream

Project Summary

Important waterway to Flea Bay supporting the White-flippered blue penguin habitat.
Remnant podocarps and excellent podocarp and mixed broadleaf species regeneration.
Excellent connectivity to other covenants and reserves

Project Details

Project Location	Flea Bay
Nature of Project	Protection
Habitat Type	Banks Peninsula stream and associated wetland
Project Aim (objectives and overall vision)	To protect the biodiversity and habitat values of the area and support the protection and recovery of populations of native species, including White-flippered blue penguin
Project Outcomes (what the project will achieve)	Long term protection of stream habitat and biodiversity values
Actions proposed to achieve outcomes	Installing 1250 metres of fence to protect 4 hectares of bush-lined stream. Ongoing pest control to keep predator numbers down. Covenant to protect in perpetuity.
Supporting Organisation/ Community Group	Banks Peninsula Conservation Trust

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
$26,750.00	$25,300.00	$52,050.00

Project Map

Ecological Assessment	
Fundamental Project Criteria	
1. Reflects the Canterbury Biodiversity Strategy's Guiding Principles	
Y	Focuses on protecting and maintaining what remains
Y	Focuses on restoring what has been lost
2. Contributes to the Canterbury Biodiversity Strategy's Goals (1-6)	
Y	Protects or maintains the health of significant habitats and ecosystems
Y	Restores the natural character of degraded indigenous habitats and ecosystems
Y	Increases the integration and sustainable use of indigenous species in modified environments (e.g. farm, urban, lifestyle blocks).
	Enhances the public's awareness, understanding and support of biodiversity
Y	Encourages, celebrates and supports action by landowners and communities to protect, maintain and restore biodiversity
	Improves the range and quality of knowledge and information about Canterbury's biodiversity for its sustainable management
3. Project Viability	
Y	Project is feasible, cost-effective and an efficient use of funds.
Y	Project will realistically achieve outcomes/gains it is aiming to.
Y	Project is sustainable (e.g. any ongoing or future management requirements are identified and affordable).
	No other potential costs (e.g. consent costs) that may make the project less viable and/or affordable
4. Landowner Support	
Y	Project has landowner support
5. Eco-sourced Plants	
	Eco-sourced plants being used
Y	Not applicable
6. Is some or all of the work required under the Regional Pest Management Strategy?	
	RPMS
7. Is some or all of the work required under a District/Regional Council Plan?	
	District/Regional Council Plan
8. Proportion of cost	
80	Protection
20	Restoration
0	Creation
0	Monitoring

Existing Ecological Values		
Criteria	**Score (0 - 3)**	**Comments**
Representativeness	3	This is a broadleaf forest with emergent podocarps (totara and matai) and titoki, pigeon wood etc. Penguins also nest in this area.
Rarity or Distinctiveness	2	The area to be covenanted sits within the "less than 10% original vegetation remaining" classification. There is limited information available on ECan maps but the stream has been classified as a significant waterway (CCC)
Diversity and Pattern	3	The site supports a number of indigenous species. This includes the stream, the forest area and the penguin nesting sites.
Ecological Context	3	The site is surrounded by numerous other reserves and covenants as the owners have other covenants on the property and have gifted land to DOC further up the valley. The stream has good connection with the coast as does the rest of the site which allows for successful penguin nesting.
Project Protects a Threatened Environment	3	area containing less than 10% original vegetation
Project Protects a Wetland or Coastal Dunes	3	Covenanted area includes a small wetland
Project Protects Rare or Threatened Species	3	white flippered penguin - acutely threatened
Sub-total	20	

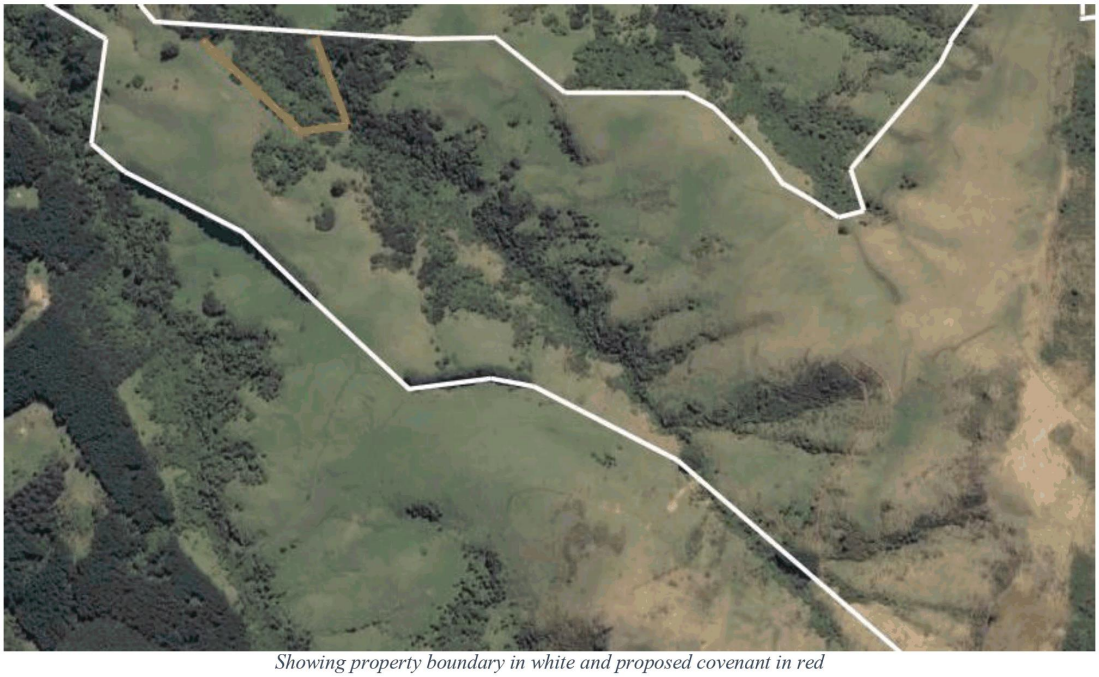
Potential Ecological Values (in 10-15 years' time – based on likely change)		
Criteria	**Score (0 - 5)**	**Comments**
Project Design is Effective/Addresses Key Threats	5	Long term exclusion of grazing and the ongoing pest control work. The landowners have built a business on supporting the penguins and surrounding landscape and carry out intensive pest control
Project Potential/Positive Impact Ecologically	3	Current threats are low due to current landowners, however if the property was to end up with new owners with a different vision then this covenant will be key to maintaining the ecological benefits of stock exclusion
Value for Money or Cost-benefit	5	Ecan are contributing $23,.000 to protect 4ha of coastal forest and stream in perpetuity.
Sub-total	13	

Other Criteria (non-ecological or cultural)		
Criteria	**Score (0 - 3)**	**Comments**
Legally Protected	3	BPCT covenant2
Educational or Partnership Value	2	Partnership with CCC BPCT, landowner and ECan

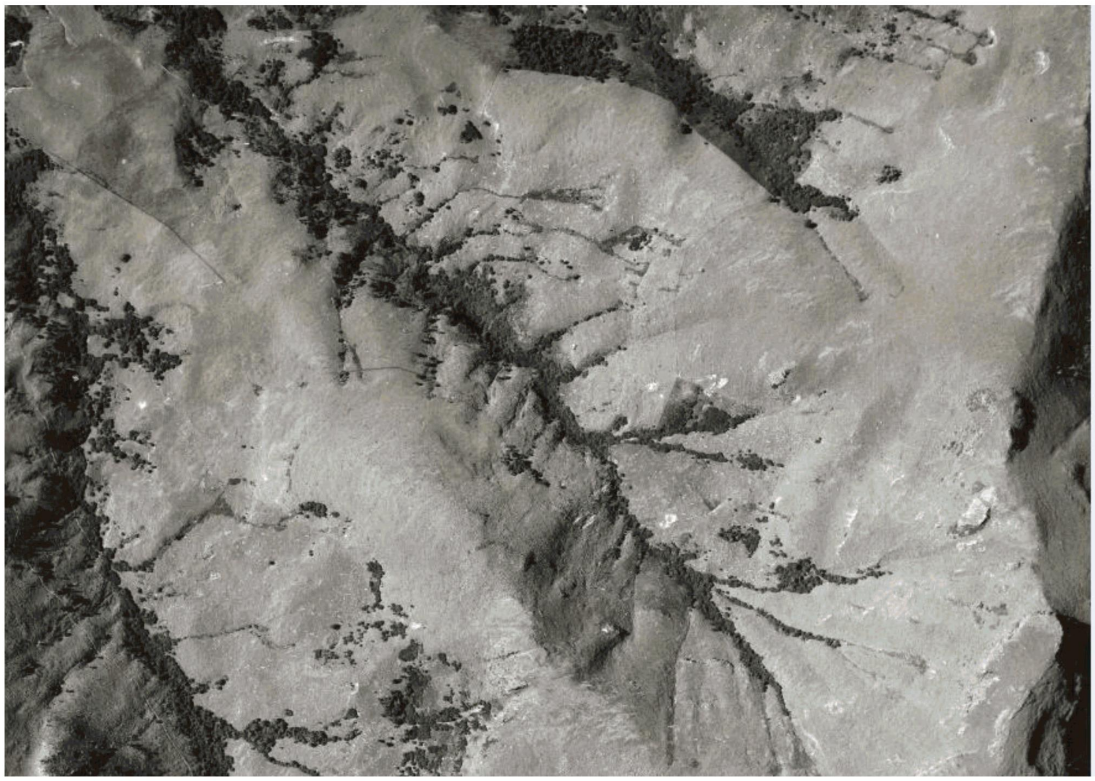
Overall Assessment Scores		
Criteria	**Score**	**Comments**
Ecological Assessment Score (Existing and Potential) /39	33	
Cultural	Very High	Waitaha, Mamoe, Ngai Tahu Midden sites, Pounamu, Hangi pits, Bone hooks, Kumara beds. Pa Site Original Rhodes settlement.
Other Criteria Overall Rating	High	

Okuti QEII Covenant

Project Images



Showing property boundary in white and proposed covenant in red



Site in 1941 showing vegetation cover has remained intact since then

Project Summary

This is a property that stretches from the Wainui Catchment over the hill to the Okuti catchment. The landowner has covenants on the property on the Wainui side and is keen to protect the upper section of the Okuti River

Project Details

Project Location	Top of the Okuti River catchment - Torcross farm
Nature of Project	Protection
Habitat Type	Banks Peninsula Stream
Project Aim (objectives and overall vision)	Long term protection of the upper section of the Okuti River through a QEII conservation covenant
Project Outcomes (what the project will achieve)	Enhanced biodiversity values within the Okuti River catchment through protection and stock exclusion of the upper section of the Okuti River.
Actions proposed to achieve outcomes	Install stock proof fencing to allow the regeneration of vegetation within the forest canopy and to improve the stream ecosystem health
Supporting Organisation/ Community Group	QEII Conservation Trust

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
$6,500.00	$10,000.00	$16,500.00

Project Map

Ecological Assessment	
Fundamental Project Criteria	
1. Reflects the Canterbury Biodiversity Strategy's Guiding Principles	
Y	Focuses on protecting and maintaining what remains
Y	Focuses on restoring what has been lost
2. Contributes to the Canterbury Biodiversity Strategy's Goals (1-6)	
Y	Protects or maintains the health of significant habitats and ecosystems
Y	Restores the natural character of degraded indigenous habitats and ecosystems
Y	Increases the integration and sustainable use of indigenous species in modified environments (e.g. farm, urban, lifestyle blocks).
	Enhances the public's awareness, understanding and support of biodiversity
Y	Encourages, celebrates and supports action by landowners and communities to protect, maintain and restore biodiversity
	Improves the range and quality of knowledge and information about Canterbury's biodiversity for its sustainable management
3. Project Viability	
Y	Project is feasible, cost-effective and an efficient use of funds.
Y	Project will realistically achieve outcomes/gains it is aiming to.
Y	Project is sustainable (e.g. any ongoing or future management requirements are identified and affordable).
	No other potential costs (e.g. consent costs) that may make the project less viable and/or affordable
4. Landowner Support	
Y	Project has landowner support
5. Eco-sourced Plants	
	Eco-sourced plants being used
Y	Not applicable
6. Is some or all of the work required under the Regional Pest Management Strategy?	
	RPMS
7. Is some or all of the work required under a District/Regional Council Plan?	
	District/Regional Council Plan
8. Proportion of cost	
80	Protection
20	Restoration
0	Creation
0	Monitoring

Existing Ecological Values		
Criteria	**Score (0 - 3)**	**Comments**
Representativeness	2	The bush currently shows sign of cattle so the understory is not as full as it should be
Rarity or Distinctiveness	2	The stream supports rare and threatened fish species such as long fin eel and lamprey.
Diversity and Pattern	2	The covenant will protect the stream and the surrounding forested hill side.
Ecological Context	3	There are a number of conservation covenants close by including two others on this property. There is also a DOC reserve downstream and a community stream enhancement project further downstream
Project Protects a Threatened Environment	2	the proposed covenant spans areas where <10% through to 20-30% original vegetation remains
Project Protects Rare or Threatened Species	3	long fin eel, pouched lamprey
Sub-total	14	

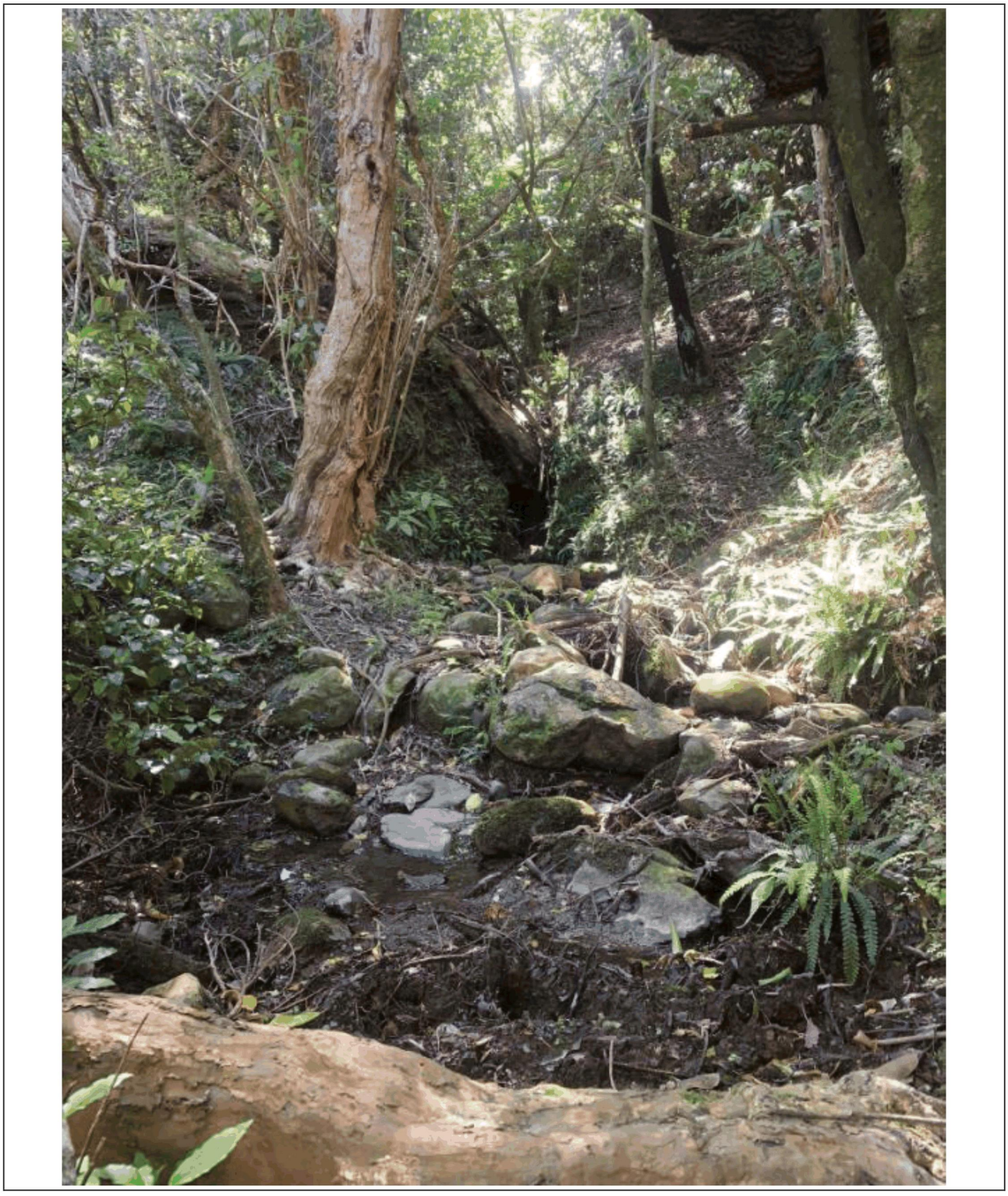
Potential Ecological Values (in 10-15 years time – based on likely change)		
Criteria	**Score (0 - 5)**	**Comments**
Project Design is Effective/Addresses Key Threats	5	Key threat is stock grazing and farmer maximising grazing areas. Fencing and covenanting will address both of these threats. QEII visit covenants every two years to check on weeds.
Project Potential/Positive Impact Ecologically	5	A covenant protecting the top end of the stream and retention of the forest will help maintain high stream biodiversity
Value for Money or Cost-benefit	5	Land owner is putting in some fencing and CCC biodiversity fund will add to this.
Sub-total	15	

Other Criteria (non ecological or cultural)		
Criteria	**Score (0 - 3)**	**Comments**
Legally Protected	3	QEII
Educational or Partnership Value	0	

Overall Assessment Scores		
Criteria	**Score**	**Comments**
Ecological Assessment Score (Existing and Potential) /39	29	
Cultural	High	The Okuti community is taking an active interest in enhancing the biodiversity values of the Okuti River and although not part of that project, will contribute to the communities objectives
Other Criteria Overall Rating		

Crown Island Covenant

Project Images



Project Summary

This project will result in a Banks Peninsula Conservation Trust Covenant protecting approximately three hectares of good quality Banks Peninsula remnant forest containing a Banks Peninsula stream. Protection of this forest patch will help protect the ecological values in the stream.

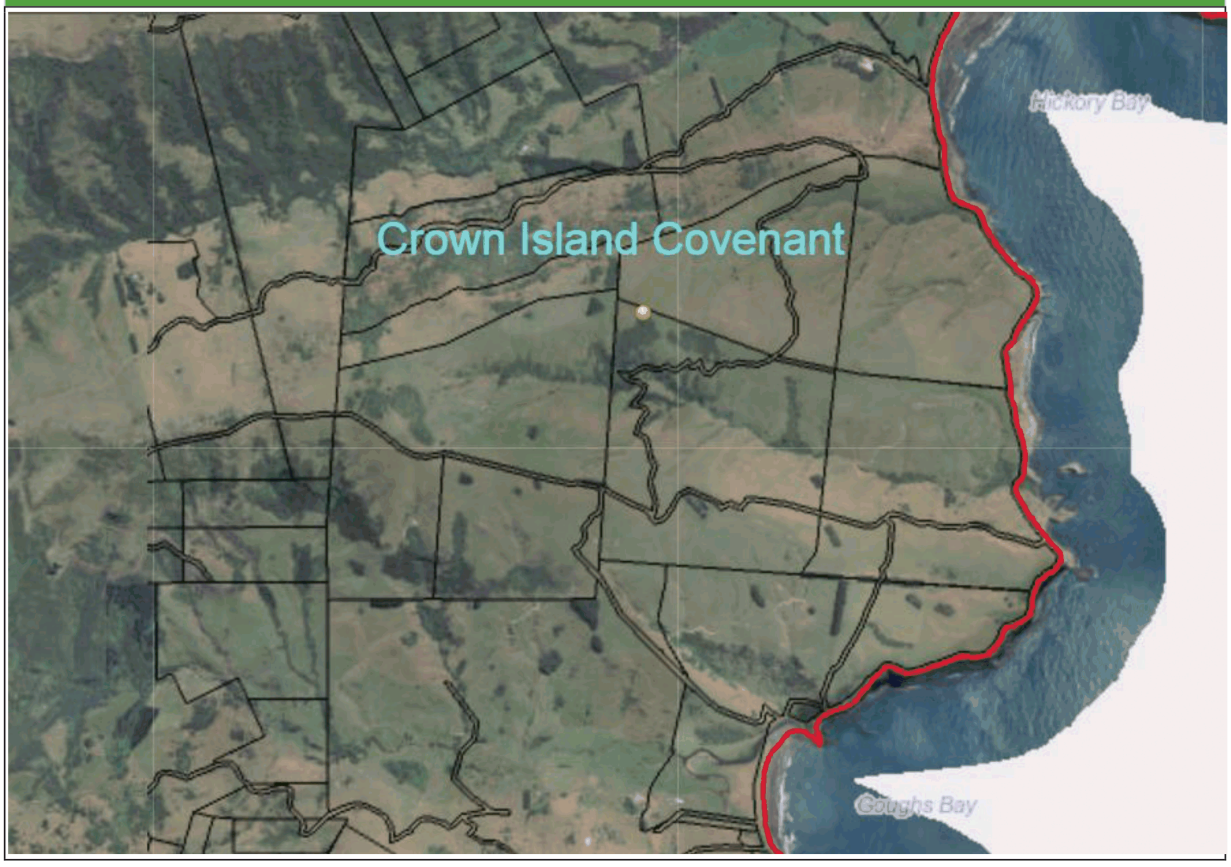
Project Details

Project Location	Goughs Bay
Nature of Project	Protection
Habitat Type	Banks Peninsula Stream, Hill Country Catchment
Project Aim (objectives and overall vision)	To protect Banks Peninsula biodiversity values through conservation covenants
Project Outcomes (what the project will achieve)	Three hectares of Banks Peninsula forest and associated stream protected
Actions proposed to achieve outcomes	Install 540 metres of stock proof fence and register a covenant through Banks Peninsula Conservation Trust
Supporting Organisation/ Community Group	Banks Peninsula Conservation Trust

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
$25,240.00	$18,500.00	$43,740.00

Project Map



Ecological Assessment	
Fundamental Project Criteria	
1. Reflects the Canterbury Biodiversity Strategy's Guiding Principles	
Y	Focuses on protecting and maintaining what remains
Y	Focuses on restoring what has been lost
2. Contributes to the Canterbury Biodiversity Strategy's Goals (1-6)	
Y	Protects or maintains the health of significant habitats and ecosystems
Y	Restores the natural character of degraded indigenous habitats and ecosystems
Y	Increases the integration and sustainable use of indigenous species in modified environments (e.g. farm, urban, lifestyle blocks).
	Enhances the public's awareness, understanding and support of biodiversity
Y	Encourages, celebrates and supports action by landowners and communities to protect, maintain and restore biodiversity
	Improves the range and quality of knowledge and information about Canterbury's biodiversity for its sustainable management
3. Project Viability	
Y	Project is feasible, cost-effective and an efficient use of funds.
Y	Project will realistically achieve outcomes/gains it is aiming to.
Y	Project is sustainable (e.g. any ongoing or future management requirements are identified and affordable).
Y	No other potential costs (e.g. consent costs) that may make the project less viable and/or affordable
4. Landowner Support	
Y	Project has landowner support
5. Eco-sourced Plants	
	Eco-sourced plants being used
Y	Not applicable
6. Is some or all of the work required under the Regional Pest Management Strategy?	
	RPMS
7. Is some or all of the work required under a District/Regional Council Plan?	
	District/Regional Council Plan
8. Proportion of cost	
80	Protection
20	Restoration
0	Creation
0	Monitoring

Existing Ecological Values		
Criteria	**Score (0 - 3)**	**Comments**
Representativeness	3	Mixed podocarp/broadleaf forest including matai and totara, titoki and treeferns
Rarity or Distinctiveness	3	The area to be covenanted sits within the "10-20% original vegetation remaining" classification. There is limited information available on ECan maps. Contains kanuka which is now on the threatened species list
Diversity and Pattern	2	Too small to contain significant diversity but sits among other high quality sites. A small stream runs through the covenant area
Ecological Context	2	The stream has good connectivity to the sea with numerous other forested areas.
Project Protects a Threatened Environment	3	The area to be covenanted sits within the "10-20% original vegetation remaining" classification
Project Protects Rare or Threatened Species	0	Not aware of any rare or threatened species, however the forest would present idea lizard habitat so threatened species are likely. Note - Kanuka is now on the threatened species list so does contain threatened species
Sub-total	13	

Potential Ecological Values (in 10-15 years time – based on likely change)		
Criteria	**Score (0 - 5)**	**Comments**
Project Design is Effective/Addresses Key Threats	5	Primary threat is stock damage. Fencing to exclude stock will address this.
Project Potential/Positive Impact Ecologically	5	Exclusion of stock and ongoing long term protection.
Value for Money or Cost-benefit	5	A good quality area of Banks Peninsula forest covenanted to protect in perpetuity.
Sub-total	15	

Other Criteria (non ecological or cultural)		
Criteria	**Score (0 - 3)**	**Comments**
Legally Protected	3	
Educational or Partnership Value	0	

Overall Assessment Scores		
Criteria	**Score**	**Comments**
Ecological Assessment Score (Existing and Potential) /39	28	
Cultural	Very High	Pounamu, Ades, Hangi pits, Midden sites Maori Village
Other Criteria Overall Rating		
Immediate Steps Rating		

Project Summary

Through the Christchurch District Plan SES program several SES have been identified on our property. One particular paddock (Big Hill) has two separate SES. Through our Farm Environmental Planning and discussions with CCC Natural Environment Advisor we have identified opportunities to protect, enhance and voluntary enlarge by 3.37ha the SES on the Big Hill block.
This requires two separate fencing and planting sites at the bottom and top of Big Hill paddock. Currently around 2ha does not host indigenous planting and this plan aims to fill those areas with plants through an indigenous planting plan. Previous attempts by Banks Peninsula landowners on similar sites to fence off areas and allow natural indigenous regeneration has proved unsuccessful due to the competitive nature of the pasture in this climate. There for we have been advised to ensure a fencing plan is supported by a planting plan.
Our primary aim for the Bottom Big Hill and Top Big Hill sites*:
• We will construct a 520m (Bottom Big Hill) and 813.1m (Top Big Hill) long fence by end of December 2019 to be able to exclude stock grazing. As indicated on map (part of the sites have existing paddock and boundary fences).
• We will plant eco-sourced native species over 2 ha (1ha per site) as indicated on the map provided by end of June 2021 to fill the areas currently not inhabited with indigenous plants.

Project Details

Project Location	Little Akaloa
Nature of Project	Enhancement, Protection
Habitat Type	Banks Peninsula Stream. Hill country catchment
Project Aim (objectives and overall vision)	To protect native vegetation by reducing grazing To enhance and extend the native vegetation by planting eco-sourced plants. Maintain newly planted natives
Project Outcomes (what the project will achieve)	Nine hectares of remnant native vegetation protected from grazing and enhanced through careful planting of eco-sourced plants
Actions proposed to achieve outcomes	Fence 1333.1m around area on map (2 blocks) 2 ha @ 2m spacing Plant 2 ha of plants on area identified on map to support the regeneration of fenced off area. Spray and weed
Supporting Organisation/ Community Group	CCC

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
$6,000.00	$70,000.00	$76,000.00

Project Map


Decanter Bay
Little Akaloa Bay
Pompo Bay
Stony Beach
Chorlton
Bill Hill
Little Akaloa
North West Bay
Okains Bay

Ecological Assessment	
Fundamental Project Criteria	
1. Reflects the Canterbury Biodiversity Strategy's Guiding Principles	
Y	Focuses on protecting and maintaining what remains
Y	Focuses on restoring what has been lost
2. Contributes to the Canterbury Biodiversity Strategy's Goals (1-6)	
Y	Protects or maintains the health of significant habitats and ecosystems
Y	Restores the natural character of degraded indigenous habitats and ecosystems
Y	Increases the integration and sustainable use of indigenous species in modified environments (e.g. farm, urban, lifestyle blocks).
	Enhances the public's awareness, understanding and support of biodiversity
Y	Encourages, celebrates and supports action by landowners and communities to protect, maintain and restore biodiversity
	Improves the range and quality of knowledge and information about Canterbury's biodiversity for its sustainable management
3. Project Viability	
Y	Project is feasible, cost-effective and an efficient use of funds.
Y	Project will realistically achieve outcomes/gains it is aiming to.
Y	Project is sustainable (e.g. any ongoing or future management requirements are identified and affordable).
	No other potential costs (e.g. consent costs) that may make the project less viable and/or affordable
4. Landowner Support	
Y	Project has landowner support
5. Eco-sourced Plants	
Y	Eco-sourced plants being used
	Not applicable
6. Is some or all of the work required under the Regional Pest Management Strategy?	
	RPMS
7. Is some or all of the work required under a District/Regional Council Plan?	
	District/Regional Council Plan
8. Proportion of cost	
50	Protection
50	Restoration
0	Creation
0	Monitoring

Existing Ecological Values		
Criteria	**Score (0 - 3)**	**Comments**
Representativeness	2	This is part of a site that has been recognised by CCC as a schedule B SES. This area is dominated by kanuka and is currently impacted by grazing.
Rarity or Distinctiveness	3	The site is within the area where less than 10% of original vegetation extent remains. The site contains species that are threatened including Psuedopanax ferox and Olearia fragrantissima,
Diversity and Pattern	2	The two sites in this proposal do not contain a high degree of diversity and pattern, however they are part of a larger site that stretches down through gullies to a salt marsh area and sandy beach.
Ecological Context	2	The site is surrounded by other sites that have been assessed as significant through the CCC SES process. The two patches being assessed here are just a portion of one site identified as an SES but together make up 9 hectares.
Project Protects a Threatened Environment	3	Within an area where less than 10% of original vegetation extent remains
Project Protects a Wetland or Coastal Dunes	1	Although no wetland within the site, the site is part of a larger area that has been identified as significant by CCC which includes both a wetland area and coastal dunes
Project Protects Rare or Threatened Species	3	Pseudopanax ferox, Olearia fragrantissima and part of a larger site that supports more threatened plants and fish
Sub-total	16	

Potential Ecological Values (in 10-15 years time – based on likely change)		
Criteria	**Score (0 - 5)**	**Comments**
Project Design is Effective/Addresses Key Threats	3	Key threats that have been identified include stock damage to the understory and this project will address that. The score is 3 rather than 5 because a conservation covenant would provide a greater level of protection
Project Potential/Positive Impact Ecologically	3	Removing stock access will allow the understory to regenerate. There is good seed source in the surrounding landscape so regeneration should happen naturally. The landowners are keen to speed the process up and are applying for funding through Billion Trees to assist the regeneration process. The intend to collect seed from their own property to ensure locally sourced genetics
Value for Money or Cost-benefit	5	The amount of money requested is 12.5% of the total cost of the project.
Sub-total	11	

Other Criteria (non ecological or cultural)		
Criteria	**Score (0 - 3)**	**Comments**
Legally Protected	0	
Educational or Partnership Value	0	

Overall Assessment Scores		
Criteria	**Score**	**Comments**
Ecological Assessment Score (Existing and Potential) /39	27	
Cultural	Unknown	
Other Criteria Overall Rating		
Immediate Steps Rating		

Kahukunu Stream Restoration

Project Images

Showing the section of stream to be planted and how it is an important connection between Kakanui covenant and the coast.

Showing the previous restoration planting that provides the connection to the coast. At the time of this planting Koukourarata did not have permission of the landowner to plant the upper section. Permission has now been given and the Koukourarata are keen to finish this part of the restoration.

Project Summary

Restoration planting to complete the connection between the Kakanui conservation covenant and coast.
This stream / gully could be seen as the umbilical cord that connects Kakanui which represents Papatūānuku and Te Ara Whanui Makawhui (Koukourarata Bay) which represents Tangaroa.

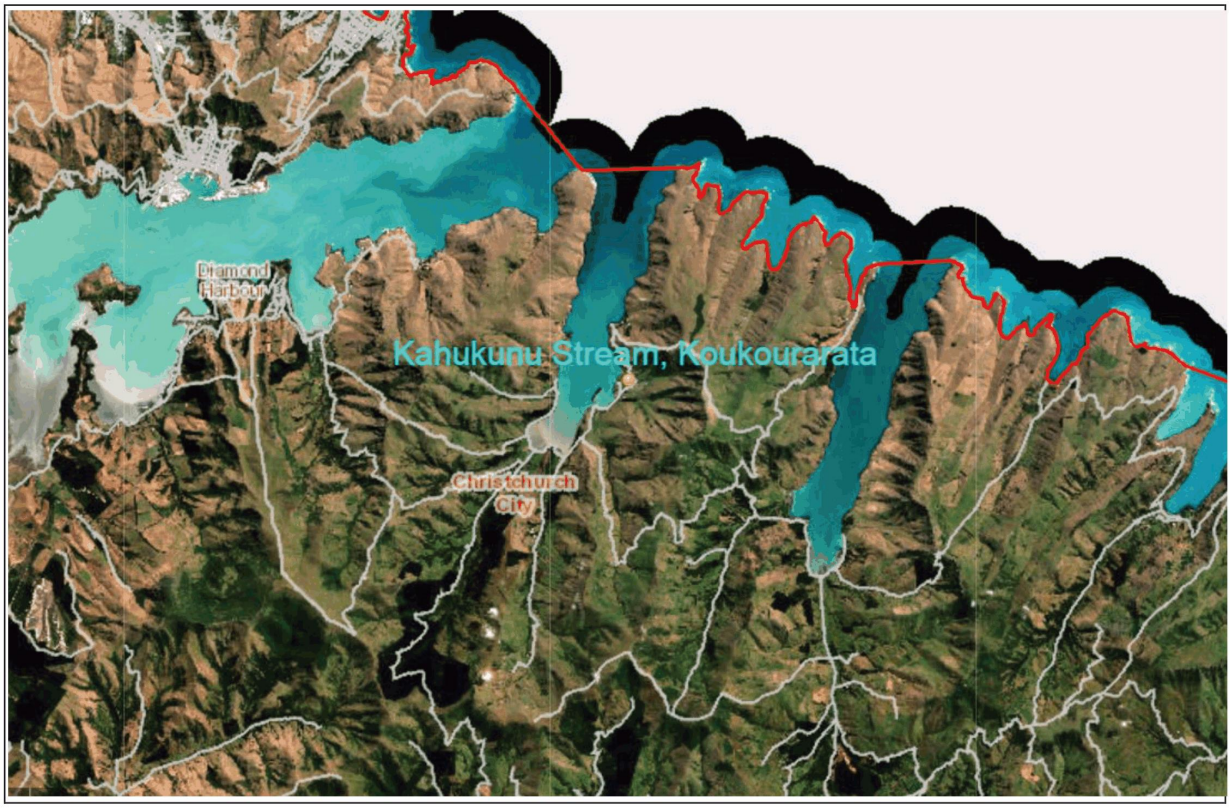
Project Details

Project Location	Kahukunu Stream, Koukourarata
Nature of Project	Enhancement
Habitat Type	Banks Peninsula Stream. Hill country catchment.
Project Aim (objectives and overall vision)	To protect and enhance the mauri of Koukourarata through caring for the natural values. Koukourarata stream has been protected and planted to the coast and Kakanui is a covenant that sits above and looks down on Koukourarata. Restoration of the streams and gullies supports Kakanui and Kakanui supports the streams and gullies.
Project Outcomes (what the project will achieve)	The restoration of the connection from the peaks to the coast - Papatuanuku to Tangaroa
Actions proposed to achieve outcomes	Fence off the last section of this stream and carry out restoration planting to restore the connection from the peaks to the coast
Supporting Organisation/ Community Group	Koukourarata Rūnanga Ramsden Peter Te Rangihiroa

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
$50,000.00	$25,000.00	$75,000.00

Project Map


Diamond Harbour
Kahukunu Stream, Koukourarata
Christchurch City

Ecological Assessment	
Fundamental Project Criteria	
1. Reflects the Canterbury Biodiversity Strategy's Guiding Principles	
Y	Focuses on protecting and maintaining what remains
Y	Focuses on restoring what has been lost
2. Contributes to the Canterbury Biodiversity Strategy's Goals (1-6)	
Y	Protects or maintains the health of significant habitats and ecosystems
Y	Restores the natural character of degraded indigenous habitats and ecosystems
Y	Increases the integration and sustainable use of indigenous species in modified environments (e.g. farm, urban, lifestyle blocks).
Y	Enhances the public's awareness, understanding and support of biodiversity
Y	Encourages, celebrates and supports action by landowners and communities to protect, maintain and restore biodiversity
Y	Improves the range and quality of knowledge and information about Canterbury's biodiversity for its sustainable management
3. Project Viability	
Y	Project is feasible, cost-effective and an efficient use of funds.
Y	Project will realistically achieve outcomes/gains it is aiming to.
Y	Project is sustainable (e.g. any ongoing or future management requirements are identified and affordable).
Y	No other potential costs (e.g. consent costs) that may make the project less viable and/or affordable
4. Landowner Support	
Y	Project has landowner support
5. Eco-sourced Plants	
Y	Eco-sourced plants being used
	Not applicable
6. Is some or all of the work required under the Regional Pest Management Strategy?	
	RPMS
7. Is some or all of the work required under a District/Regional Council Plan?	
	District/Regional Council Plan
8. Proportion of cost	
0	Protection
100	Restoration
0	Creation
0	Monitoring

Existing Ecological Values		
Criteria	**Score (0 - 3)**	**Comments**
Representativeness	1	This stretch is currently part of a paddock. Restoration planting has already happened below this stretch and above has remnant native vegetation which leads up to the conservation covenant. This section has low representativeness but is an important link to an area of very high value.
Rarity or Distinctiveness	2	Restoration of vegetation at a site where less than 10% of original vegetation extent remains
Diversity and Pattern	1	Part of a system that will stretch from the source to the sea.
Ecological Context	3	Connects the coast to Kakanui conservation covenant which sits above.
Project Protects a Threatened Environment	2	An area where less than 10% of original vegetation extent remains
Sub-total	9	

Potential Ecological Values (in 10-15 years time – based on likely change)		
Criteria	**Score (0 - 5)**	**Comments**
Project Design is Effective/Addresses Key Threats	3	Key threat is cattle access to the stream /gully. Fencing and planting will reduce sediment runoff into the coastal area
Project Potential/Positive Impact Ecologically	3	Connection between the peaks where a conservation covenant now protects this area, and the coastal edge. Papatūānuku to Tangaroa
Value for Money or Cost-benefit	3	Restoration planting is an expensive exercise, but this is a worthwhile linkage so worth the investment. It also supports and is supported by other planting in the area
Sub-total	9	

Other Criteria (non ecological or cultural)		
Criteria	**Score (0 - 3)**	**Comments**
Legally Protected	0	
Educational or Partnership Value	2	

Overall Assessment Scores		
Criteria	**Score**	**Comments**
Ecological Assessment Score (Existing and Potential) /39	18	
Cultural	High	Highly significant for Koukourarata. This project is the umbilical cord between Papatuanuku and Tangaroa. Kakanui represents Papatuanuku and Te Ara Whanui Makawhui (Koukourarata Bay) represents Tangaroa
Other Criteria Overall Rating		
Immediate Steps Rating		

List of Immediate Steps Biodiversity Projects in the Banks Peninsula Zone September 2011 – May 2019

Project Name	Project Aim	Approval Year	Status	Total Approved Funding ($)
Projects Under Way				
Haylocks Stream	Protected, healthy, naturally-regenerating coastal stream riparian vegetation dominated by native plant species, which can support mahinga kai (birds). A healthy in-stream habitat which has the ability to support healthy populations of invertebrates and fish.	February 2012	Complete	$11,100
Okana River Restoration	A healthy river with low levels of sedimentation, healthy populations of native riparian plants, fish, invertebrates and birdlife, which is utilised to demonstrate good waterway management to surrounding community.	April 2012	Complete	$7,900
Opuahou Stream Restoration	A healthy river with low levels of sedimentation, healthy populations of native riparian plants, fish, invertebrates and birdlife, which is utilised to demonstrate good waterway management to surrounding community. Improved water quality within the river and consequently Te Roto o Wairewa (Lake Forsyth).	October 2012	Complete	$20,300
Owhetoro Stream Restoration	To improve the in-stream habitat and native riparian vegetation of Owhetoro Stream to enable the support of healthy populations of native birds, fish and invertebrates.	February 2013	Due for Audit	$8,232
Allandale Stream Reserve	Regenerating native bush and riparian vegetation around the headwaters of the Allendale Stream and protected in-stream habitat of the stream to provide good habitat for native fish, birds and invertebrates.	July 2013	Complete	$41,775
Mannys Reserve Covenant	Protected, healthy, naturally-regenerating coastal stream riparian vegetation dominated by native plant species, which can support mahinga kai (birds).	July 2013	Complete	$45,000
Le Bons Stream Restoration	Section of Le Bons Stream dominated by native riparian vegetation cover, allowing better in-stream habitat for native fish and invertebrates as well as improved habitat for native birds and land invertebrates within the riparian areas.	August 2013	Complete	$2,863
Koukourārata Stream Restoration	Improved habitat for native fish and invertebrates within the Koukourārata Stream as well as providing habitat to support populations of native birds.	August 2013	Complete	$22,400
Te Wharau Stream	A healthy stream with clear gravels and thriving populations of native riparian plants, fish and invertebrates, which is utilised to demonstrate good stream management through educational programmes and interpretation panels for the public.	August 2013	Complete	$28,000
Okana Confluence Restoration	To improve the in-stream habitat and native riparian vegetation of Ōkana River and Lake Forsyth to enable the support of healthy populations of native birds, fish and invertebrates.	February 2014	Complete	$6,976
Te Rapu Stream Restoration	Improve the quality of habitat for native fish and invertebrates within the Teddington Stream, by reducing sedimentation, nutrient leaching, erosion and faecal contamination as well as increasing leaf litter, shading the water and increasing available habitat.	February 2014	Complete	$51,560
Morgans Gully Restoration	To restore native vegetation to the entire gully area and improve the water quality of the stream while increasing the food sources available for native birds and insects.	May 2014	Complete	$13,600
Allandale Stream Reserve Phase 2	Regenerating native bush and riparian vegetation around riparian buffer of the Allendale Stream tributary and protected in-stream habitat of the stream to provide good habitat for native fish, birds and invertebrates.	February 2015	Complete	$50,887
Koukourārata Stream Restoration - Phase 2	Improved habitat for native fish and invertebrates within the Koukourārata Stream as well as providing habitat to support populations of native birds.	October 2015	Complete	$22,794
Wildside Trapping Project	A healthy catchment with high ecological integrity in recognition that stream health is dependent on the functioning of the whole catchment	April 2016	Commenced	$23,750
Akaroa School Saltmarsh Restoration	Integration of biodiversity in highly visible public area and improved ecological functioning	April 2016	Commenced	$6,000
Allandale Stream Reserve Phase 3	Regenerating native bush and riparian vegetation around riparian buffer of the Allendale Stream tributary and protected in-stream habitat of the stream to provide good habitat for native fish, birds and invertebrates.	June 2016	Complete	$22,479
Haley Stream Fencing	A Banks Peninsula stream with high native biodiversity and healthy ecological function	June 2016	Complete	$9,478
De Vries Stream Fencing	A clean and healthy stream from the source to the sea	June 2016	Complete	$9,890
Okuti Confluence	Healthy stream habitat and improved overall biodiversity.	November 2016	Complete	$11,869
Opuahou Stream Riparian Restoration	Improve the health and support biodiversity of the Opuahou Stream	November 2016	Project Commenced	$10,052
Opakia Covenant (Le Petite Carenage)	Permanently protect coastal forest that has not been grazed for 20 years	November 2016	Complete	$8,691
Wainui Catchment QEII Covenant	Complete forest cover and long term protection of this sub-catchment of the Wainui Stream tributary	November 2016	Complete	$51,610
Torcross Kanuka Covenant	Long term protection of as much original vegetation within this sub-catchment of the Wainui Stream tributary as possible	November 2016	Complete	$20,000
Wairewa Bank Stabilisation Project	To reduce the amount of sediment entering Wairewa / Lake Forsyth during high rainfall events	2017	Under development	$60,000
Ohinetahi Valley Stream	Enhance the biodiversity and habitat value of the stream. Protect water quality and mauri, native freshwater invertebrates and fish including koura, and cultural connections.	April 2017	Project Commenced	$11,585

	Set an example to neighbouring landowners			
Ohinetahi Valley Fire Recovery	To assist with reinstating fences around Ohinetahi Reserve after the fires in Feb 2017	March 2017	Complete	$35,000
Okuti River Community Project	The protect and enhance the habitat and biodiversity within the Okuti River system. Five year's funding at $10,000 per year	2017	Project Commenced	$10,000
Stony Bay	Long term protection of the stream, alongside protection and regeneration of native habitats within the Stony Bay catchment.	October 2017	Project Commenced	$51,255
Orton Bradley Stream & Wetland	Improved in-stream habitat and riparian vegetation within Te Wharau Stream Wetland - Improved biodiversity opportunity of wetland, improved habitat quality	October 2017	Project commenced	$12,612
Belleau Wood	Improve habitat quality in the stream and surrounding forest.	October 2017	Complete	$10,460
Projects Funded 2018				
Upper Goughs Bay Stream	A Banks Peninsula stream with high native biodiversity and healthy ecological function	July 2018	Complete	$3,262
French Farm Stream Community Project	Fencing of French Farm stream to protect inanga spawning habitat.	July 2018	Complete	$9,672
Wainui Stream Community Project	A community initiative to protect and enhance the biodiversity values in the stream	July 2018	Complete	$18,933
Beacon Hill	This project will see another 10 hectares of the Wainui River catchment area protected through a covenant.	July 2018	Project Commenced	$16,008
Nelcimor	Long term protection of the stream, alongside protection and regeneration of native habitats within the Stony Bay catchment.	July 2018	Project Commenced	$14,413
Balguerie Stream	Protecting and enhancing biodiversity, as well as excluding grazing stock.	July 2018	Project Commenced	$12,496
Paua Bay Covenant	This project will result in the long-term protection, through legal covenant, of 4 hectares of Banks Peninsula forest and stream.	July 2018	Project Commenced	$19,478
Okuti River Community Project	Continuation of the five year project to protect and enhance the habitat and biodiversity within the Okuti River system.			$10,000
			Total Amount Awarded	**$802,280**
Project proposals for 2019				
Mabel Hope Covenant – Flea Bay	To protect the biodiversity and habitat values of the area and support the protection and recovery of populations of native species, including White-flippered blue penguin			$26,750
Okuti QEII Covenant	To protect the biodiversity and habitat values of the area and support the protection and recovery of populations of native species, including White-flippered blue penguin			$6,500
Crown Island Covenant	To protect the biodiversity and habitat values of the area and support the protection and recovery of populations of native species, including White-flippered blue penguin			$25,240
Bill Hill – Little Akaloa	Nine hectares of remnant native vegetation protected from grazing and enhanced through careful planting of eco-sourced plants			$6,000
Kahukunu Stream Restoration	The restoration of the connection from the peaks to the coast - Papatūānuku to Tangaroa			$30,000
Okuti River Community Project	Continuation of the five year project to protect and enhance the habitat and biodiversity within the Okuti River system.			$10,000
				$104,490

9. Whakaraupo Catchment Management Plan - Head of the Harbour Project

Reference: 19/525414

Presenter(s): Lesley Woudberg, Zone Facilitator
(Timing for item – 45 minutes)

1. Purpose of Report

1.1 The purpose of this report is to provide the Banks Peninsula Water Management Zone Committee with background information on the *Whaka-ora, Healthy Harbour –Ki Uta Ki Tai Catchment Management Plan*.

2. Staff Recommendations

That the Banks Peninsula Water Management Zone Committee:

1. Receive the background information as the basis for discussion on the Whaka-ora, Healthy Harbour –Ki Uta Ki Tai Catchment Management Plan and the Head of the Harbour Project.

1. List ideas for how the Zone Committee can support the project and add further value to the project.

2. Report

http://www.healthyharbour.org.nz/

When the Lyttelton Port Recovery Plan came into effect in November 2015, so too did a commitment to create a Whakaraupō/Lyttelton Harbour Catchment Management Plan.

The purpose of the plan is to restore the ecological and cultural health of Whakaraupō/Lyttelton Harbour as mahinga kai while also addressing other environmental, cultural and social concerns, including the needs of recreational users and the needs of a working port.

Since August 2016, the Canterbury Regional Council, Te Hapū o Ngāti Wheke, Te Rūnanga o Ngāi Tahu, Christchurch City Council and Lyttelton Port Company Limited have been working together with input from many others to bring this plan to fruition.

Whaka-Ora Healthy Harbour presents a way forward for all of us as a community to ensure that the ecological and cultural health of Whakaraupō/Lyttelton Harbour is restored for us and our children after us.

Attachments

No.	Title	Page
A ⇩	Executive Summary Whaka-ora Healthy Harbour Plan	49

Executive Summary

Whakaraupō/Lyttelton Harbour is an important place for many different people: the mana whenua of Ngāti Wheke, the residents of all of Whakaraupō/Lyttelton Harbour's bays, the employees and wider Lyttelton Port community, the tourists and visitors that visit our parks and walkways and take a break at Lyttelton's great eateries, and the business owners working within the harbour. We all share a love for this special place, and a love for engaging with it. This engagement can look like gathering seafood in the shallows and streams, walking our favourite tracks in the hills with our children, showing our family and friends our favourite beaches, or sailing and paddling out in the harbour to get to our favourite fishing spots.

Mahinga kai is important to the whole Whakaraupō/Lyttelton Harbour community – although we all may call it different things. It is a term that is used by mana whenua to represent their customary harvesting practices, and all activities, places and relationships related to this, but it also speaks about things done by everyone who calls Whakaraupō/Lyttelton Harbour home. We all have a desire and a responsibility to ensure that Whakaraupō/Lyttelton Harbour is looked after so that those who come after us can also engage in these mahinga kai activities into the future.

Whaka-Ora, Healthy Harbour sets out a way forward for all of us as a community to ensure that the ecological and cultural health of Whakaraupō/Lyttelton Harbour as mahinga kai is restored for us and our children after us. The key purpose of this plan is to ensure that Whakaraupō/Lyttelton Harbour is a healthy, abundant, and interconnected environment for people to practice mahinga kai – however that may look to them.

We look across the whole harbour from the rocky outcrops to the deep harbour waters – "ki uta ki tai"- and set aspirational goals for where we want Whakaraupō/Lyttelton Harbour to be in the future. After comparing this aspirational state with the current state of the environment we have then identified some key focus areas in which we can undertake actions to move us toward where we want to be. These actions focus on some key areas: erosion and sedimentation, pollution, terrestrial indigenous biodiversity, and marine indigenous biodiversity; and are being addressed in multiple ways including through practical projects, research projects, monitoring programmes, changes to regulation, and education initiatives. The actions will be tracked annually to ensure that we are doing what we said we would, and will be reviewed every three years so that we are continually moving toward a better future for our harbour.

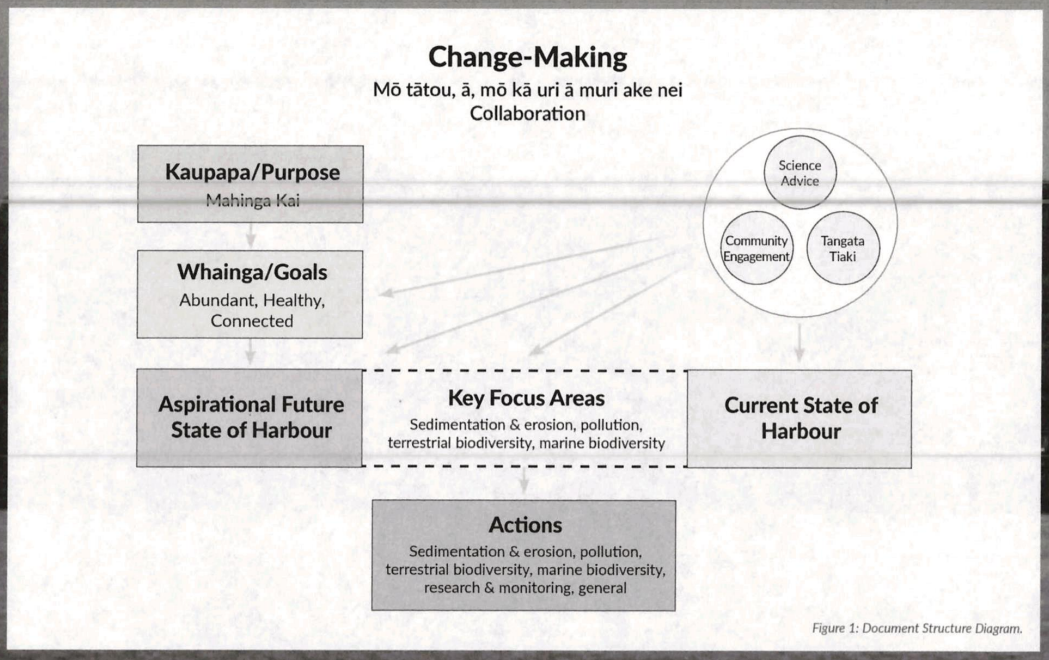


Figure 1: Document Structure Diagram.

Three key pou – or guiding principles – were chosen for this plan. They have influenced the decisions made throughout this document. These pou are:

Change-making

The idea that everyone can be a change-maker with the power to influence the future of Whakaraupō/Lyttelton Harbour, and that we all must change our habits for the sake of our harbour

'Mō tātou, ā, mō kā uri ā muri ake nei' (for us and our children after us)

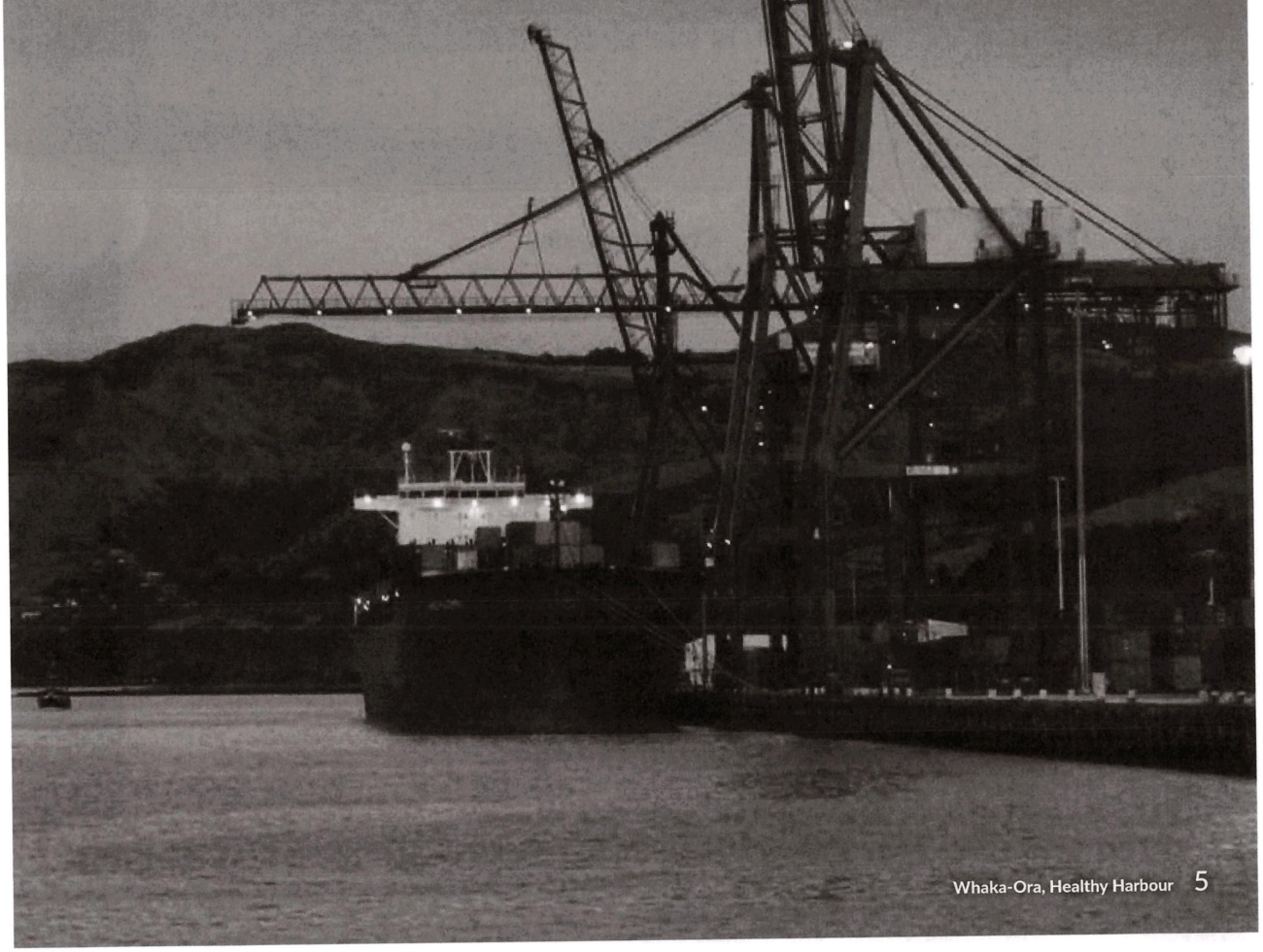
The idea that in this first version of the plan we need to focus on laying a foundation for those who will be protecting our harbour in the future

Collaboration

The idea that we must all work together to achieve our lofty goal of restoring the cultural and ecological health of Whakaraupō/Lyttelton Harbour for mahinga kai

We have also used the imagery of a korowai (traditional cloak) throughout this plan to represent the way we are caring for and protecting our harbour through our actions.

We acknowledge that many groups and individuals who already have, and are, working hard to restore and protect our harbour, and we hope that *Whaka-ora, Healthy Harbour* supports them to continue their great work. We also hope that it helps to build a strong relationship between the different groups including mana whenua, the wider Whakaraupō/Lyttelton Harbour community, the Port, and councils so that we can work together to achieve more than we ever could working alone.



10. Facilitator's Update - 21 May 2019

Reference: 19/525461
Presenter(s): Lesley Woudberg, Zone Facilitator

1. Purpose of Report

1.1 The purpose of this report is to inform the Banks Peninsula Water Management Zone Committee of:

1.1.1 Recent and upcoming community engagement events

1.1.2 Update on matters raised at previous meetings.

2. Staff Recommendations

That the Banks Peninsula Water Management Zone Committee:

1. Receive the Facilitator's Report.

2. Report

1. RECENT EVENTS

Event	Target Audience
Banks Peninsula ZC 2018 Annual Report Presentation to Environment Canterbury * Benita Wakefield – Chair 16 May 2019	ECan Councillors

2. UPCOMING EVENTS

Event	Target Audience
Banks Peninsula ZC – Quarterly Report to Christchurch City Council Presentation to Christchurch City Council * Gina Waibl – Deputy Chair 23 May 2010	CCC Councillors
Film Premiere – Fools and Dreamers The Story of Hinewai Reserve and Hugh Wilson	Public

https://happenfilms.com/fools-and-dreamers 28 June 6pm – Hollywood Cinema, Sumner 30 June matinee – Akaroa Cinema	
Okuti River Project Planting Day Sunday 25 August 2019	Wairewa community, ZC and friends 

3. UPDATE ON MATTERS RAISED AT PREVIOUS MEETINGS

Matter	Update
ZC Communications Article on last meeting's catch up on the Little River Rating District and Okuti River Project	Lesley Woudberg (ECan) – pending
Q&A's for Landowners • Immediate Steps funding • What landowners can do without consent	Ben, ECAN and CCC staff – pending CCC brochures?? - Peter Kingsbury pending
Okains Bay – drainage update	Peter Kingsbury (CCC) Refer minutes 16 April
Forestry National Environmental Standards Compliance	Our Forestry officer, Sarah Helleur is reporting good interest from forestry companies in having her on their site and she is seeing good sediment control practises. At the last ZC meeting, some members were curious about a particular harvest site and whether it was under control. Sarah visited the site the day after heavy wind and rain and reported that all measures on site were working well. She was very impressed with the measures the contractor put in place. Gillian Jenkins – Zone Lead ECan
Possum control	Meeting scheduled with Rūnanga

• Public and private land • Rating district • Pest Free Banks Peninsula	Information, maps and Q&As – ECan/DoC pending
Akaroa Waste Water	**May 2019 update** **Work targets Akaroa's old wastewater pipes** Akaroa's aging wastewater infrastructure is about to be overhauled in preparation for work to replace the town's wastewater treatment and disposal systems. Christchurch City Council senior project manager Kylie Hills says the work will be disruptive but is essential, with parts of the town's wastewater pipes nearing the end of their expected service life. "To minimise the impact of the disruption, we have waited until the cruise ship season is over and until after Easter," Mr Hills says. The Council is still working on options for disposing of the town's treated wastewater, but Mr Hills says the work being done now will be needed regardless. There are several aspects to the work, which centres on reducing the amount of extra water getting into the wastewater system through ingress and infiltration from groundwater, from roof gutters and downpipes illegally connected to the network (down pipes are supposed to be connected to the stormwater system or roadside kerbs) and from private gully traps that receive surface water runoff. Last year Council completed a survey of the Akaroa wastewater network using a system called distributed temperature sensing. This identifies where colder groundwater and rainwater have been entering the network and where pipe repairs or replacements may be needed. "The survey showed that ingress and infiltration makes up about 40 per cent of the annual volume of wastewater reaching the Beach Road treatment plant," Mr Hills says. "That's much higher than we would like, and this work aims to reduce the volume of wastewater from Akaroa and improve the quality of treated wastewater being discharged into the harbour. It will also reduce the size and cost of the new disposal system, whichever option is chosen." Throughout 2019 Council will undertake detailed inspections so that repairs can be priced and will complete the first wave of renewal and repair work, initially focusing on work north of the fire station. The work includes:

	• Wastewater main replacement (from the domain to the fire station): the new main will be bigger and able to support future changes planned for the network. • Private property and lateral inspections: 138 properties are suspected to be discharging stormwater or groundwater to the wastewater network. The contractor will visit each property to do a CCTV camera inspection of the wastewater pipe to check for damage. Where gutters or downpipes are connected to the wastewater network property owners will be advised how to direct the flow to the stormwater network. Property owners are responsible for repairing wastewater laterals inside property boundaries. • Manhole inspections: 73 manholes are suspected to be allowing rain water or ground water to enter the wastewater network. Each of these will be inspected to scope repair or replacement work. Many of these manholes are more than 75 years old and near the end of their service life. • Additional pipe repairs: 86 sections of wastewater pipelines in the council's part of the network are suspected to be a source of groundwater ingress and infiltration. These pipes will be cleaned and inspected with CCTV so that repair or replacement work can be planned.
Winter Grazing	**The winter grazing remote sensing project** May 2019 **What is the winter grazing remote sensing project?** This winter Environment Canterbury is looking at the location and extent of winter grazing on farms across Canterbury, using available satellite photos. As a science project it will be run by Manaaki Whenua (Landcare Research) with the analysis proved to Environment Canterbury later in the year. It follows on from a similar pilot project run during the winter of 2016. **Why is it being done?** Better information on winter grazing will help us improve our plans and rules and in turn reduce the impact of the activity on waterways. The information will help the implementation of the winter grazing rules in Plan Change 5 (Nutrient

	Management). It will also improve the accuracy of catchment-wide nutrient modelling. **Why not ask farmers directly for the information?** We could have run a voluntary survey but are very aware of how busy farmers already are. A voluntary survey is also unlikely to be as accurate as a random survey. **How do you know the information is accurate?** The interpretation of the satellite photos will be checked on the ground at a small number of sites, working in advance with land-owners to seek permission and help them understand the scope and intent of the project. **What will happen with the information from individual farms?** The project is about understanding and modelling nutrient loads at the catchment level and while it uses information from individual farms, the data will be collated and aggregated for the analysis and modelling work. **Could this sort of information be used in the future for compliance and monitoring?** Yes – this technology is already here and publicly available – and is complementary to Environment Canterbury's existing compliance, monitoring and enforcement (CME) regime. New technology such as this should reduce the cost of CME to both ratepayers and farmers, while at the same time improving environmental outcomes. **Why now?** The project is part of ongoing work to improve the efficiency of Environment Canterbury's compliance, monitoring and enforcement activities. Our approach over the past decade has been to encourage the adoption of farming good management practices, focus on monitoring higher risk activities and repeat offenders (rather than monitoring every consent), reward good operators (reduced monitoring), as well the use of new technology and systems. **Is there anything I need to do?** No – and you will be asked in advance for your permission if your property is a good site for ground-checking. If you say no, we will respect that and find another location.

	Where do I get more information? If you have a question about the science project contact Brodie.Young@Ecan.govt.nz or if you want to know about compliance contact Paul.Hulse@Ecan.govt.nz .

Attachments

No.	Title	Page
A ⇩	NIWA Article on Sediment	57
B ⇩	Oarshore 2019	62
C ⇩	Banks Peninsula ZC action tracker - updated 14 May 2019	64

REDUCING SEDIMENTATION

N2 is a land of erosion

NIWA Water & Atmosphere October 2018

We're losing about 192 million tonnes of soil a year, according to the latest report *Our Land 2018*, from the Ministry for the Environment and Statistics NZ. It says New Zealand is contributing about 1.7% percent of the sediment delivered to the world's oceans annually due to soil erosion, even though the country accounts for just 0.2% of global land area.

A lot of this lost soil comes from natural erosion. However, over 40% of the soil entering our rivers comes from pasture.

According to Dr Andrew Swales, an estuarine physical processes scientist who leads NIWA's Catchments to Estuaries programme, New Zealand is particularly susceptible to erosion due to the country's steep lands. They have more erosion potential due to their slope, their geology, high intensity rainfall and earthquakes.

It's a potent mix: many places have highly erodible sedimentary rocks, earthquakes destabilise hillslopes, and rain triggers slope failure and landslides.

While soil erosion and sedimentation are entirely natural processes, the rates increased markedly due to loss of forest landcover with the arrival of people in New Zealand, says Dr Swales. Deforestation and present-day land-use practices have increased New Zealand's existing susceptibility to erosion.

Prior to human arrival, sedimentation rates in our estuaries were typically much less than 1mm per year on average. As catchments were deforested, the average sedimentation rates increased 10-fold.

"Typical rates in upper North Island estuaries over the last century are in the order of 2–5mm per annum," says Dr Swales.

The result of this accelerated sedimentation has been the formation of intertidal mudflats in place of the sandflats that characterised many estuaries prior to catchment deforestation.

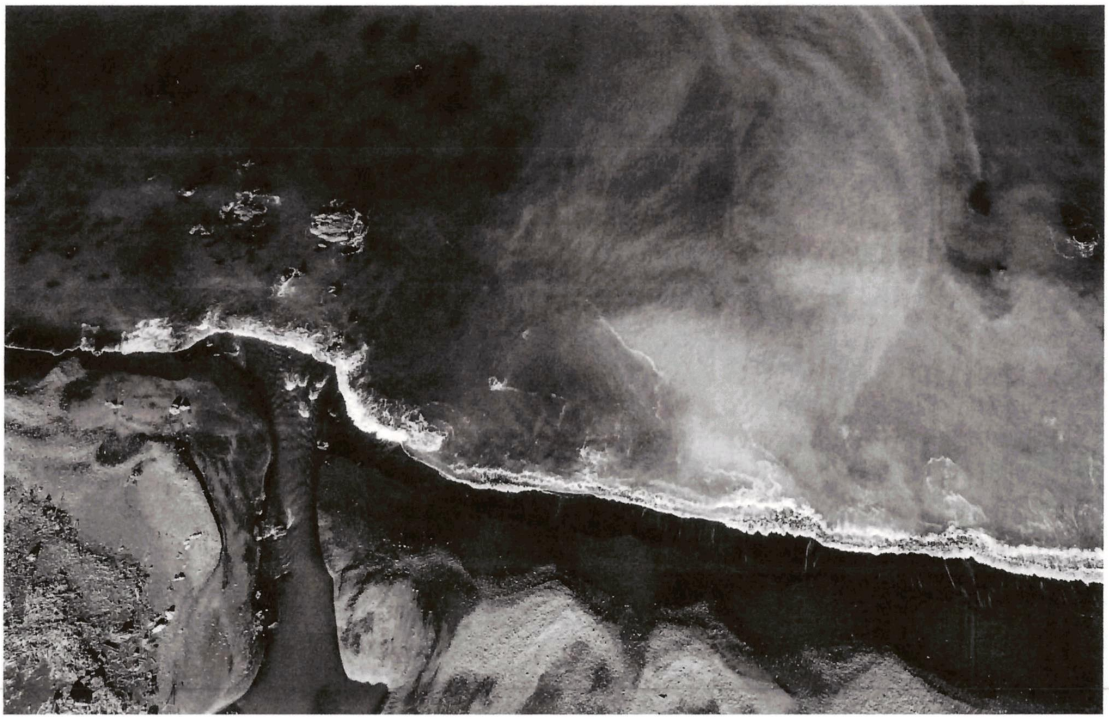
In upper North Island estuaries, these rapidly accreting mudflats have been colonised by mangroves, where shellfish previously lived.

"It's a double whammy," he says. "We're losing productive soils from the land, and these eroded soils are having adverse effects in estuaries."

Known as the "universal contaminant", some of the most damaging effects of fine sediments accumulating in our

NIWA staff working with representatives from Manaaki Whenua, Auckland Council, Ngai Tai Ki Tamaki and the local residents association in the Aroaro valley catchment near Clevedon. The catchment is useful to study because the land has a variety of purposes, such as livestock, orchards and forestry, in a relatively small area. Water samples are gathered and processed using a mass spectrometer, and the sample's isotopic signature is then used to trace the source of fine sediment in the water. (*Dave Allen*)

Reducing sedimentation



New Zealand is a land of erosion. We're losing about 192 million tonnes of soil a year. (*Hamish McCormick*)

estuaries are related to clays that are less than 4 microns in diameter.

"They're the most effective at decreasing sunlight ... they reduce the visual clarity of the water. Many predatory species, including fish and birds, are visual predators, using their eyes to find their prey," says Dr Swales.

Fine sediments carry other contaminants with them, including heavy metals, organic contamination from stormwater runoff, and microbes which are harmful to human health.

"A fraction of that contamination is conveyed by fine sediments and deposited in estuaries," says Swales. "In rural settings the fine sediments carry phosphorus with them as well."

Erosion can be reduced by changing the type or scale of land use or adopting practices to mitigate losses. But before we can do that, we need to work out which land use is responsible for the sediment.

Tracing sediment

Dr Swales says one way to trace the sources of fine sediments is by using stable isotopes. These are non-radioactive forms of atoms found in almost all of the first 80 elements in the periodic table. They have been used as a kind of natural ecological recorder, to trace things like sources of water, sources of various foods, and even tracking counterfeit money.

Dr Swales's colleague, emeritus scientist Dr Max Gibbs, was the first person to identify that compound-specific stable isotopes (CSSI) and their isotopic signatures could be applied to tracing the sources of fine sediments. He published his work on the CSSI sediment tracing method in 2008.

All organic life has fatty acids. All plants secrete their fatty acids into the surrounding soil. The fatty acids of plants like native trees, forestry pine, grass and food crops typically have different ratios of the two main isotopes of carbon, 12C and the slightly heavier 13C.

These isotopic signatures can still be found in sediment, which means you can label sediment by the land use from which it originated.

"When you collect sediment from an estuary, lake or river, it's going to come from a mixture of various sources," says Dr Swales. "We analyse samples for their stable isotopic signature, and use a model to unmix that mixture. That allows us to apportion the average contribution of different plant communities, which gives an outline of the contribution of different land uses."

> "We're losing about 192 million tonnes of soil a year ... about 1.7 percent of the sediment delivered to the world's oceans annually"

Stable isotopes provide information on the sources of sedimentation. When combined with measurements from radioisotopes, the rate of sedimentation can be determined.

The CSSI method can analyse a dated sediment core taken from an estuary or a lake and provide information about how sources have changed over time.

Other studies

NIWA is participating in a study with the International Atomic Energy Agency (IAEA) and the Food and Agricultural Organization (FAO).

NIWA is bringing together the CSSI and radioisotope methods to capture persistence information from sediment cores as well as determining how land-use change influences the isotopic signatures of soils. NIWA's contribution to this international study includes a case study that has measured rates of change in soil isotopic signatures associated with a pine-to-dairy land-use change near Taupo that has occurred since the 1980s.

In New Zealand, the Ministry for the Environment has been commissioning research into sediments, primarily the effects of sediments in rivers. Dr Swales says it is likely that in the future there will be more focus on estuaries, as well as setting limits for different contaminants, including fine sediments.

Separately, NIWA's Managing Mud programme is providing new knowledge and tools to underpin better management of fine sediments and their effects.

More sediment likely

Dr Swales warns that climate change will have a further impact on sedimentation. It is likely that New Zealand will be subject to more of the high intensity and frequent rainfall events that have massive erosion potential.

"There might be a need to modify the pattern of our land use. Potentially, that's both in space and timing of what we

Planting along waterways lower in the catchment can reduce sedimentation and pollution as well as provide shade for the stream. (*Dave Allen*)

grow, and where we do things to mitigate the effects," he says.

The solution is not necessarily as obvious or easy as planting trees. Dr Swales notes that landslides from high intensity rainfall events can even occur in regenerating native forests.

"It's taken us 150 years to get to this point. Trying to change the trajectory we're on, or mitigate the effect, is going to take some time and quite a lot of effort."

How much can fish handle?

Based on seven years of research, NIWA has established turbidity limits to protect fish in New Zealand rivers.

Turbidity is the measure of cloudiness in water. It is caused by tiny particles in the water, including fine sediments.

The application of turbidity limits to protect fish depends on knowledge of both the distributions and life history patterns of sensitive species. To help water managers apply turbidity limits, NIWA has developed a decision support system (DSS).

The DSS has two parts: one for peak-flow (that is, floods) and one for base-flow. In floods and other peak-flow conditions, extreme turbidity may kill fish. Whereas in base-flow conditions, long-term exposure to sublethal toxicities can reduce populations and affect fish behaviour.

The DSS can be used for planning purposes, monitoring, and restoration, but only covers direct effects of increased turbidity on common riverine fish. It does not address the potentially more insidious, indirect effects of settled solids on river or steam habitats. Current NIWA-led work for the Ministry for the Environment is addressing both direct and indirect effects.

Some freshwater fish species such as eels can tolerate a relatively high level of turbidity, while others such as inanga and smelt tend to struggle in murky water. (*Stuart Mackay*)

Are trees the answer?

Planting trees is one solution to the problem of sedimentation.

Trees change several processes in a catchment, according to NIWA hydrologist Dr Christian Zammit.

Firstly, the soil is anchored both by the tree roots and organic matter generated under the tree. "Tree roots grab the soil, which avoids soil being moved further downstream", says Dr Zammit, who is the Programme Leader – Water Resources at NIWA.

Trees can also slow water running off land surfaces during high rainfall events. "This will impact the velocity at which the soil is moved," he says.

Trees also intercept much more precipitation than grass. "This means there is less water received by the soil. Less water means a bigger proportion infiltrates through the soil instead of creating direct runoff."

In addition, trees provide a path for water to go directly to the root system, and deeper into the soil. "Basically, reducing the amount of surface flooding that could generate sediment runoff," says Dr Zammit.

He cautions that all that water-redirection and retention can have consequences when using trees for erosion control, as it typically reduces the amount of water available for uses such as water catchment.

Acknowledging that trees have many benefits (including an impact on soil erosion), the Government has committed to planting one billion trees over the next ten years.

"Planting trees reduces erosion by helping to keep the soil on the land and improving pasture productivity and water quality," Julie Collins, Head of Forestry, Ministry for Primary Industries told *Stuff* in April.

The programme "will see us go from [planting] 55 million trees this year, to 70 million a year in 2020, to 90 million in 2021. From there we will be aiming for 110 million a year over the next seven years," said Forestry Minister Shane Jones in a media release in February.

A billion trees over ten years doubles the current number of trees being planted in New Zealand. At the moment, there are 50 million trees planted each year, or 500 million over ten years.

At present it is unclear exactly how the one billion tree programme will work. "I suspect sometime next financial year, one of the funded projects will start looking at what needs to be done, what type of trees need to be planted, where, and at which density," says Dr Zammit.

Ms Collins echoes this. "An important focus is about

Planting the right trees in the right locations can reduce erosion by helping to keep the soil on the land. (*Paul Sutherland*)

planting the right tree, in the right place, for the right purpose."

According to Minister Jones, planting will include exotics and natives and will focus on commercial crops as well as environmental and regional gains. "We want to enable planting of a mix of permanent and harvestable forestry, using both exotic and native tree species on private, public and Māori-owned land. Species include radiata pine, redwood, tōtara, eucalyptus, Douglas fir and mānuka," he said in a statement.

Dr Zammit believes the programme is a "great opportunity to redesign the New Zealand landscape to be sustainable under climate change."

To mitigate sedimentation, forest planting is usually conducted at the top of a catchment where precipitation falls the most. However, one of the ideas that could be explored would be to "redesign land management at a catchment scale by planting some forest further downstream at a lower density," he says. Planting along waterways lower in the catchment would reduce the amount of soil lost to streams, but at the same time provide an ecological corridor and refuge under climate change. It would also "provide shading for the stream, so maintaining fish populations at a longer time span," says Dr Zammit.

The Government is currently considering a proposed research strategy for the one billion tree programme, including whether a model should be established to indicate the best position and density for the trees. Minister Jones has said that he expects to make more announcements about where trees will be planted in coming months.

(*Dave Allen*)

OARSHORE 2019

POSSUM CONTROL - FACTSHEET

What's happening?

Excell Biosecurity wishes to advise landholders that a ground-based possum control operation is to be completed near Little River, Banks Peninsula. This operation is being conducted as part of the Banks Peninsula Community Initiated Possum Control (CIP) Project managed by Environment Canterbury.

Where is it happening?

Control work encompasses 2,458 ha around the Oarshore area. Work will commence at the southern end of the block around Tumbledown Bay and Magnet Bay, and work north and west towards Lake Forsyth, and finish at Kinloch.

When will this happen?

The operation is to be completed between May 2019 and October 2019. Excell personnel will keep in close contact with landholders regarding exact timeframes and methods on individual properties.

Who will do the survey?

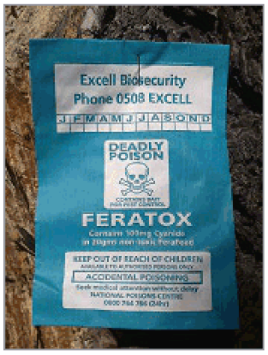
Excell Biosecurity has been contracted by Environment Canterbury to undertake the work.

Who is Excell?

Excell Biosecurity have experienced staff and depot facilities located from Kaikoura in the north to Cromwell in the south. All staff are trained professionals with high levels of skill and experience in all aspects of vertebrate pest control and survey work.

What control methods are being used?

Due to the varied land use within the area a variety of ground methods will be used:



Feratox (in bait bags)
Feratox is a small capsule containing cyanide poison (about the size of a small pea). In bait bags the cyanide capsule has been placed into a green non-toxic peanut paste inside a small blue biodegradable bag. The blue bags (see picture) are attached to trees and fence posts in possum habitat approximately 50 cm off the ground. In areas where stock is present, bait will be placed above stock height.

Warning: POISONS are TOXIC to HUMANS and ANIMALS

Leghold traps and kill traps
These are set in areas away from domestic animals in habitat where possums frequent. Leghold traps are checked daily.

Cage traps
Any non-target animals caught in a cage trap can be released without injury. Cage traps are checked on a daily basis and are ideal for use near dwellings.

These methods have proven to work extremely well in this operational area. Appropriate control methods for each property will be discussed with each landholder prior to work commencing.

What do you need to know about these pesticides?

When using pesticides there is a poisoning risk to humans and domestic animals. Poisoning can occur by eating poisonous baits, however there is a very low risk of secondary poisoning with Feratox (i.e. dogs eating possum carcasses).

Dog owners are advised:

- Keep dogs under supervision at all times – don't allow them to roam.
- If you must walk your dog in the area, keep it on a leash.
- Don't let dogs scavenge carcasses.

General warning!

Poison warning signs will be in place and maintained throughout the operation to advise where poisons have been used. The area should be treated with caution until signs are removed.

- Do not touch any poison bait
- Do not touch any traps
- Do not touch any of the poisoned possum carcasses
- Keep all pets under control; do not let dogs eat poisoned carcasses
- Do not let young children into the area unattended
- Tell any visitors to the area of the danger

What do I do if I suspect poisoning?

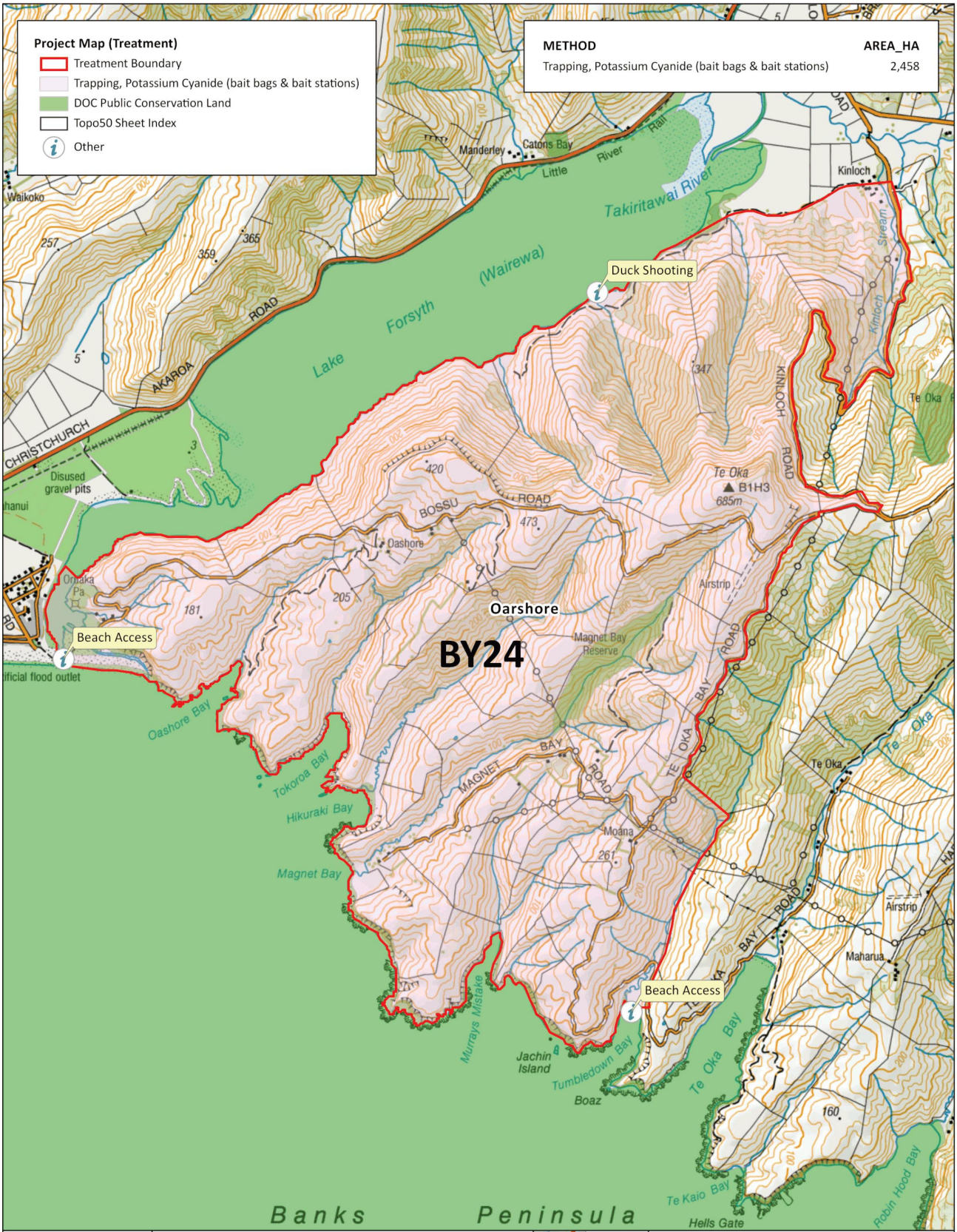
In the case of poisoning, always contact your:

- Local Hospital, Medical Centre or dial 111
- National Poisons Centre 0800 764 766

In the case of a domestic animal being poisoned, contact a local veterinarian.

Who do I contact for more information?

Project Supervisor (Central South Island)
0508 EXCELL (0508 392 355)


Project Map (Treatment)
Treatment Boundary
Trapping, Potassium Cyanide (bait bags & bait stations)
DOC Public Conservation Land
Topo50 Sheet Index
Other
METHOD
AREA_HA
Trapping, Potassium Cyanide (bait bags & bait stations)
2,458
BY24
Oarshore
Duck Shooting
Beach Access
Beach Access
Takiritawai River
Lake Forsyth (Wairewa)
Little River
Manderley
Catons Bay
Kinloch
Waikoko
AKAROA ROAD
CHRISTCHURCH
Disused gravel pits
Onuaka Pa
Oashore
BOSSU ROAD
KINLOCH ROAD
Te Oka
B1H3
685m
Airstrip
Magnet Bay Reserve
MAGNET BAY ROAD
TE OKA BAY ROAD
Oashore Bay
Tokoroa Bay
Hikuraki Bay
Magnet Bay
Moana
Maharua
Murrays Mistake
Jachin Island
Tumbledown Bay
Boaz
Te Oka Bay
Te Kaio Bay
Robin Hood Bay
Hells Gate
Banks Peninsula
Excell
Oarshore Possum Control
Project: 2673
Activity: Ground Control Output 18/19
Customer: Environment Canterbury
Contractor: Excell Biosecurity
Subcontractor: n/a
Christchurch
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Map series: Topo50 | Topo250
Map prepared: 10/05/2019 3:08 PM
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Coordinate System: NZGD 2000 New Zealand Transverse Mercator
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Committee	Status	Meeting Date	Report Title / Agenda Section	Resolution / Decision	Action Notes
Banks Peninsula Water Management Zone Joint Committee	**DUE AUG 2019**	**16/10/2018**	Banks Peninsula Stream Labelling Project	That the Banks Peninsula Water Management Zone Joint Committee agree to: 1. Write to the Chair of the Christchurch City Council's Infrastructure, Transport and Environment Committee, copying in Deputy Mayor Turner as the Council's representative, to ask for the streams named in the report to be labelled. 2. Direct staff to work with members of the Council's Te Hononga Committee to ensure that: (a) macrons are used; (b) the correct Maori names are used.	04 Apr 2019 - Revised Target Date changed by: John Filsell From: 30 Apr 2019 To: 31 Aug 2019 - Reason: Allow for engagement with runanga, project scoping, and prioritisation and resourcing.
Banks Peninsula Water Management Zone Joint Committee	**DUE JUL 2019**	**16/04/2019**	Part C Recommendation	That the Banks Peninsula Water Management Zone Committee: 1. Request staff to work with river engineers to follow up on the priority work undertaken on the Okuti River, in particular the removal of the willow trees. 2. Report the outcome back to the Zone Committee.	18 Apr 2019 – Peter Kingsbury and Brad Baxter have followed up with CCC. Ben Manson worked with local landowner and sent letter to CCC/ZC regarding concerns. The letter was included in the April ZC agenda.