ORDINARY MEETING

OF

ENVIRONMENT COMMITTEE

AGENDA

Time: **9.15am**
Date: **Tuesday, 16 December 2014**
Venue: **Committee Room 1**
Ground Floor, Council Offices
101 Wakefield Street
Wellington

MEMBERSHIP

Mayor Wade-Brown

Councillor Ahipene-Mercer
Councillor Foster
Councillor Free
Councillor Lee
Councillor Pannett (Chair)
Councillor Ritchie
Councillor Sparrow

Have your say!
You can make a short presentation to the Councillors at this meeting. Please let us know by noon the working day before the meeting. You can do this either by phoning 803-8334, emailing public.participation@wcc.govt.nz or writing to Democratic Services, Wellington City Council, PO Box 2199, Wellington, giving your name, phone number and the issue you would like to talk about.

AREA OF FOCUS

The Committee will focus on climate change initiatives, enhancing the city's open spaces, protecting biodiversity in plant, bird and animal life, and ensuring there are high quality outdoor areas for residents and visitors to enjoy. The committee is also responsible for waste minimisation, energy efficiency and the three waters (drinking water, stormwater and wastewater).

Quorum: 4 members

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4.3 Island Bay Seawall Project

The report was not available at the time the agenda went to print, and will be circulated separately.

1 Meeting Conduct

1. 1 Apologies

The Chairperson invites notice from members of apologies, including apologies for lateness and early departure from the meeting, where leave of absence has not previously been granted.

1. 2 Conflict of Interest Declarations

Members are reminded of the need to be vigilant to stand aside from decision making when a conflict arises between their role as a member and any private or other external interest they might have.

1. 3 Confirmation of Minutes

The minutes of the meeting held on 16 October 2014, 27 November 2014 and 3 December 2014 will be put to the Environment Committee for confirmation.

1. 4 Public Participation

A maximum of 60 minutes is set aside for public participation at the commencement of any meeting of the Council or committee that is open to the public. Under Standing Order 3.23.3 a written, oral or electronic application to address the meeting setting forth the subject, is required to be lodged with the Chief Executive by 12.00 noon of the working day prior to the meeting concerned, and subsequently approved by the Chairperson.

1. 5 Items not on the Agenda

The Chairperson will give notice of items not on the agenda as follows:

Matters Requiring Urgent Attention as Determined by Resolution of the Environment Committee.

1. The reason why the item is not on the agenda; and
2. The reason why discussion of the item cannot be delayed until a subsequent meeting.

Minor Matters relating to the General Business of the Environment Committee.

No resolution, decision, or recommendation may be made in respect of the item except to refer it to a subsequent meeting of the Environment Committee for further discussion.

2. Strategy

A 12 MONTH REPORT ON IMPLEMENTATION OF OUR CAPITAL SPACES STRATEGY - AN OPEN SPACES AND RECREATION FRAMEWORK 2013 - 2023

Purpose

1. To report back to the Environment Committee on progress in implementing the actions in Our Capital Spaces

Summary

2. Our Capital Spaces was approved in September 2013 and sets the framework for managing and developing open space in Wellington. The plan provides a framework for related policies and area management plans.
3. An implementation plan was approved and key initiatives were funded through the 2014/2015 Annual Plan.
4. This 12 month report outlines progress towards implementing the plan to date.
5. Future reporting will be through the quarterly report and annual report.

Recommendation

That the Environment Committee:

1. Receive the information.

Background

6. Our Capital Spaces was approved by the Council on 28th August 2013.
7. Public expectations were high around translating the intent of Our Capital Spaces into actions. In order to deliver the actions under Our Capital Spaces, this Committee and the Council agreed to prioritise and resource priority actions.
8. During the 2014/2015 annual plan several key actions from Our Capital Spaces were consulted on and approved for funding.

Project name	**$**				
	14/15	*15/16*	*16/17*	*17/18*	*ongoing*
Community biodiversity and biosecurity support - *Extra plants for community greening and tools for pest control*	Opex 55000	55000	55000	55000	Yes
	Capex 20800	20800	20800	20800	Yes

Project Halo partnership project *Funding the establishment of additional traps and bait stations, including subsidy for private homes*	Opex 47000	45080	45080	16800	Yes
Smart and Connected *Audit signage at all major open space destinations and review park signage at suburban parks. The audit is followed with implementation in years 2 to 5.*	20000 opex				
	Capex 20000	30000	20000	20000	Yes 20k in yr 5
Our Capital Spaces: Makara Peak partnership funding	Opex 40000	40000	40000	40000	Yes
	Capex 28000	28000	28000	28000	Yes
Open Space Access Plan implementation *Reinstated track funding*	Capex 150000	150000	150000	150000	Yes
Harbour Escarpment Walk		Capex 30000	350000	350000	No
Mountain bike and track capital of the world	30000 opex				No
		Capex 50000	150000		No

10. As well as the priority actions outlined above, there will be other programmes and projects that will be carried out as normal business within existing baselines and / or continue long term commitments.

11. This progress report provides feedback on the first twelve months following implementation of Our Capital Spaces and following approval for funding of several projects through the 2014/2015 Annual Plan. Future reporting will occur through the Council's quarterly report and annual report.

Discussion

12. Progress towards the projects outlined in Our Capital Spaces is as follows:

Mountain Bike and Track Capital of the world (under Outcomes 1 and 3)

Project	**What we plan to do?**	**Progress report**
Take a proactive approach to the development of mountain biking as one of the key visitor attractions *Priority/Action 3.4*	Facilitate a forum to develop a strategy for mountain bike tourism Work with the mountain bike community so that they have "one voice" supporting their preferred strategy / priorities, and resources Work with Positively Wellington	Officers are working with an external group called the Mountain Bike Economic Growth Initiative (MBEGI) on a Wellington (and wider region) business plan for mountain biking promotion and investment in supporting infrastructure. This project is sponsored by WCC through the Wellington Economic Initiative

	Tourism to align mountain biking strategies and to pool marketing resources for maximum effectiveness Timing: Year 1	Development Fund and includes a WCC officer on the Governance group. Beginner MTB events programmed during Summer City period. Improvements to WCC's website to make MTB information more accessible. Focus is on signage, access to information and promotion of trails.
Coordinate and manage mountain-biking track and facility development on a regional basis *Priority/Action 3.4*	Co-ordinate and manage mountain-biking track and facility development Timing: Years 1-6	Regional TA trail manager meetings have been initiated to work towards a regional strategy.
Maintain, operate and develop Makara Peak Mountain Bike Park *Priority/Action 3.4*	Support development of Makara Peak Mountain Bike Park Timing: Ongoing	Work with the Makara Peak Supporters in developing a sustainable model for the maintenance of tracks in Makara Peak. - An annual capital commitment of 28k has been confirmed for trail renewal/upgrade. - Additional opex resources have been confirmed to assist with trail maintenance at Makara Peak.
Complete the track network with a priority on connecting communities and open spaces *Priority/Action 1.9*	Complete the **Skyline Track** and the **Harbour Escarpment Walk** and links to adjacent suburban communities Timing: Years 1 - 3	The Environment Committee have agreed on an indicative route for the Skyline track on the eastern side of Stebbings Valley. A paper has been prepared for the December meeting of the Environment Committee outlining timeframes for construction. Funding for both tracks as follows: Harbour Escarpment – planning 2015/16, construction 2016 – 2018. Skyline – 2017/18 Tracks being built in 2014/2015 include grade 2 (accessible) bike trails in Karori Park and Centennial Park, upgrades in Makara Peak, and community track projects in Mt Victoria, Polhill, Makarerua and the Skyline Track.
Active transport and the role of the open space network	Identify opportunities for active transport routes through the open spaces network as part of the Transport Strategy review	This objective was included in the draft Urban Growth Plan recently consulted on. No specific details have been identified at this stage.

Priority/Action 1.9.4	Timing dependent on Transport Strategy Review	

Smart and Connected (under Outcome 1)

Project and relevant priority / action in "Our Capital Spaces" Section 4	**What we plan to do?**	**Progress report**
Provide accessible street and on-site signage for the open space network *Priority/Action 1.1.2*	Review parks signage during development of the **suburban reserves management plan** Timing: Years 3-8 (implementation)	An audit of signage is being carried out over the summer and signage guidelines developed for the hierarchy of parks and tracks throughout the city. This will form the basis for a prioritised implementation plan for new signage in years 2 and 3.
Develop easily accessed information on the open space network *Priority/Action 1.1.1*	Review and develop smart phone applications and websites, including interactive mapping of walking and cycle ways and park spaces. Make this information, where possible, user friendly for all, including those with disabilities Timing: Years 1 - 3	Re-established web pages for over 40 reserve areas. New website pages for mountain biking, buggy walks, top five family spots and summer fun for work places. Working with PWT on their review and update of the Welly Walks app. Developed a webmap priority list for website. This includes MTB tracks, playgrounds/areas, walkways, parks and reserves, beaches and coasts, Rec facilities, and gardens.

Multi-Use Spaces (Sports, Recreation and Parks) (under Outcome 1)

Project	**What we plan to do?**	**Progress report**
Develop and enhance well-located park spaces as local destinations that provide a range of activities and experiences Priority/Action 1.7	The **suburban reserves management plan** will identify priority open spaces for development Timing: Ongoing	Completed the redevelopment of **Grasslees Reserve** in Tawa including the installation of a new playground. The draft Suburban Reserves Management Plan has identified Kilbirnie and Miramar Parks as key multi use hubs for development. In addition it has identified gaps in provision for open space and playgrounds in several places throughout the city. Plan currently out for public consultation. **Newlands Park** redevelopment being proposed for Charles Plimmer Bequest funding.

Provide recreation and sports facilities that meet the needs of communities Priority/Action 1.2	Work with sporting groups to develop sporting hubs at Wakefield Park, Hataitai Park and Alex Moore Park Timing: Ongoing	**Hataitai Park:** A number of meetings have been held with sports groups based at Hataitai Park to encourage collaboration and development of a "sportsville" hub. Development of a Master Plan for the park has also commenced. **Alex Moore Park:** Officers have continued to liaise with the Alex Moore Park Sport and Community Inc. group in the development of a hub at the park. Following completion of the artificial sportsfield, perimeter walking/cycling track, and landscaping improvements, the focus is now on development of a new multi-sport building. **Wakefield Park:** Officers are continuing to support clubs based at the park and surrounds and to encourage collaboration.

Enhancing the Halo and Biodiversity (under Outcome 2)

Project	**What we plan to do?**	**Progress report**
Protect and restore indigenous biodiversity, and demonstrate kaitiakitanga (guardianship) *Priority/Action 2.1*	Review the **Biodiversity Action Plan** Prepare a **restoration planting strategy** Timing: Years 1 - 3	Draft Biodiversity Strategy and Action Plan going to the December Environment Committee meeting for approval to consult. This will occur in February/March next year. There has already been extensive pre-consultation and engagement with key stakeholders. Restoration criteria and guidelines for restoration work are incorporated into the new Biodiversity Strategy. Once these have been consulted on and approved, they will be used to develop a 5 year restoration planting implementation plan. The June 2013 storm caused significant damage to large areas of trees within the Wellington Town Belt and reserve land. The main areas of work are in pine blocks adjacent to Finnimore Tce, Hutchinson Road and Dover St that have already been felled or are due to be felled in 2015,as well as Tawatawa and Southgate Reserve. The Council has commenced a five year programme to plant, release and maintain 5 areas of land following this tree felling. Some planting has already been undertaken in three of these areas.

Develop a halo (or ecological buffer zone) around biodiversity hotspots *Priority/Action 2.3*		The Botanic Gardens of Wellington Management Plan approved in August 2014 proposes an ecological buffer zone around Otari – Wilton's Bush. Secured funding to extend our animal pest control around Zealandia. Provided additional traps and advice to the community group working in Polhill to protect birds nesting within that reserve. Sending out 'kereru friendly plant' tags to local nurseries to promote native species. Working with DOC to run community workshops in animal pest control. Matched funding ($5000) from the Morgan Foundation for traps in people's backyards. Supported the animal pest free community being established on the boundaries of Otari-Wilton's Bush and Forest & Bird to protect and restore Chartwell Reserve on the boundary of Otari.
Promote and facilitate the protection of open space *Priority/Action 2.4*	**Investigate and facilitate the protection and/or acquisition of:** • Watts Peninsula • Palmer Head • Belmont Gully • The Outer Green Belt between Johnsonville and Tawa • Harbour Escarpment Timing: Ongoing on case by case basis	An MOU has been signed with the Crown and Port Nicholson Block Settlement trust to develop a joint vision for Watts Peninsula and the development of a heritage destination. No progress Preparing reserves agreement for Hunters Hill which will include the acquisition of this land. The proposed route for the Skyline Track has now been moved to Marshall Ridge rather than Bests Ridge to the west. There are no plans to acquire any further land except in Stebbings Valley as part of future greenfield subdivision. A reserves agreement has been signed to vest 37 hectares of land as reserve as part of a future Bellevue subdivision.

The Blue Belt Concept

Project	What we plan to do?	Progress report
Develop an integrated approach to the management of coastal open space. *Priority/Action 2.5.1*	Work with partners to identify potential areas for Marine Protection Ensure relevant WCC plans recognise importance/value of the harbour	The Draft Biodiversity Strategy and Action Plan (going to the December Environment Committee) discusses the Blue Belt as a city-wide concept which can be met through a number of opportunities including green infrastructure, coastal clean ups, and identifying and interpreting key habitat for iconic species.
Work with partners on developing and implementing a "Blue Belt" programme which recognises and celebrates the harbour and its many values, as part of the wider "Our Living City" programme *Priority/Action 2.5.2*	Explore a Wellington Harbour Strategy	We have passed the Water Sensitive Urban Design Guide to help Council asset managers and developers implement techniques that improve water quality and reduce run-off.

Attachments

Nil

Author	Michael Oates, Open Space and Recreation Planning Manager
Authoriser	Greg Orchard, Chief Operating Officer

Item 2.1

SUPPORTING INFORMATION

Financial implications
Specific projects have been funded from the 2014/2015 Annual Plan

Policy and legislative implications
None

Risks / legal
None

Climate Change impact and considerations
None

Communications Plan
Not applicable

OUR NATURAL CAPITAL - BIODIVERSITY STRATEGY AND ACTION PLAN

Purpose

1. To seek the agreement of the Environment Committee to consult on the draft Our Natural Capital – Biodiversity Strategy and Action Plan.

Summary

2. Our Natural Capital (the Plan) provides a set of principles, goals and actions that build on the work achieved since the 2007 Biodiversity Action Plan. A key new focus is on connecting people to biodiversity which aligns with the 'doing it together' priority in Our Capital Spaces: an open space and recreation framework for Wellington (2013). The Strategy and action plan will replace the 2007 Biodiversity Action Plan, and will also replace Wellington City Council's Pest Management and Implementation Plan (2004).
3. Natural capital can be understood as our stocks of natural assets, which includes our biodiversity as well as earth, air and water. Our Natural Capital recognises that healthy biodiversity enables healthy environments and contributes to our economic sustainability.
4. The Plan shows what we are currently doing, but also suggests new actions and expansion of some existing programmes. These may require additional Council funding over time subject to Annual Plan or Long Term Plan processes, and provides flexibility to ensure cost effective approaches to achieving the outcomes, but firstly we need to test our thinking with the community.

Recommendations

That the Environment Committee:

1. Receive the information.
2. Recommend that the draft Our Natural Capital – Biodiversity Strategy and Action Plan (Attachment 1) be approved for public consultation.
3. Delegate to the Chief Executive Officer and portfolio leader the authority to approve minor wording, formatting and content changes as agreed by the Committee.
4. Instruct officers to meet directly with mana whenua and key stakeholder organisations as part of the consultation process.
5. Note that no additional budget is being requested at this stage, while we test our priorities with the community. Any additional funding to implement Our Natural Capital would be subject to normal Annual Plan or Long Term Plan processes. Officers will also investigate other funding options
6. Note that public consultation on the draft Our Natural Capital – Biodiversity Strategy and Action Plan will occur from 22 January 2015 – 6 March 2015 and will be presented to Environment Committee for final approval in May 2015.

Background

5. Wellington City Council protects indigenous biodiversity as part of its role under the Resource Management Act (RMA) 1991 and to give effect to the Regional Policy Statement for the Wellington Region. A commitment was made in the current Biodiversity Action Plan (2007) that there would be a full review, involving community consultation, after five years.

6. On 6 August 2014 the Environment Committee was informed of Biodiversity Action Plan (2007) review and the intention to bring a draft plan back to them for approval prior to consultation.

7. Officers also reviewed and identified the most important actions to focus on from other key Council plans including the existing Biodiversity Action Plan, the Pest Management Plan, Reserve Management Plans, Our Capital Spaces, Wellington Urban Growth Plan and Central City Framework, Climate Change Action Plan and regional and national plans such as the Greater Wellington Biodiversity Strategy and the NZ Biodiversity Strategy. Officers also drew from other local authority biodiversity strategies and latest international best practice to come out of the ICLEI - Local Governments for Sustainability Guidelines for Local Government Biodiversity Strategy and Action Plans.

8. There has been extensive pre-consultation during the development of this draft. Information gathered in past workshops through the Environment Forum (2013) and the development of Our Capital Spaces (2013) was used in the review of the plan. During the period of August – November 2014 there was also specific consultation with key groups such as the Environmental Reference Group, Greater Wellington Regional Council, Department of Conservation, Port Nicholson Block Settlement Trust, Te Runanga o Toa Rangatira, Wellington Botanical Society, Zealandia, Wellington Zoo and two workshops with environmental community groups.

9. Officers have listened to our key stakeholders through this pre-consultation. Some clear and consistent messages have been provided:
    - We need to more clearly explain our rationale behind decision making and actions
    - We need to be accountable for the actions in the action plan, therefore they need to be more specific
    - We need to strengthen our role in connecting people with nature, realising that the only way to achieve our biodiversity goals is through mainstreaming biodiversity
    - We need to protect significant ecological values on private land and work collaboratively with private landowners
    - We need to actively engage with research, including monitoring, so we can ensure we are using resources effectively, set realistic goals and measure whether we are achieving them
    - We need to acknowledge the role we play in the marine environment, and the impact of land-based effects
    - We need to improve our management and protection of streams
    - We are already doing a good basic job when it comes to pest control and restoration programmes, but it is time to take the next step to become the leaders in urban ecology.

10. Taking into account this feedback, officers have completed preparation of a draft plan for public consultation.

Discussion

What is Our Natural Capital?

11. The draft plan (Attachment 1) creates a shared vision for Wellington City's biodiversity. It outlines our vision, goals and objectives and contains the action plan that shows how these will be implemented. It provides a set of guiding principles to underpin this work and identifies the rationale behind the approaches we have chosen to take.

12. Our Natural Capital combines the Biodiversity Action Plan (2007) and the Pest Management Plan (2004). We have done this for two main reasons. Firstly, the outcomes are complementary and it makes sense to have a single framework to guide decision making. Secondly, it allows Council to better compare investment decisions and explore more effective ways of meeting our outcomes.

13. The Plan will clearly communicate to our engaged community, our partners and other organisations involved in biodiversity work what our priority actions are and the rationale behind setting those actions. A healthy environment leads to social, recreation, health and economic benefits.

14. Current research clearly shows the link between a healthy environment and a healthy economy. Our natural areas and the species that occupy them provide us with a competitive advantage and form our sense of place. People live, visit and work here because of them. They give our residents the quality of life they are looking for, and offer the meaningful experiences that businesses want for their staff. They are crucial for child development and for people's health and wellbeing, including mental health. This is particularly important for lower socio-economic communities as they are a no-cost facility to access. People can also get direct benefits through engaging with biodiversity in their own backyards. This investment in a quality environment, and the social benefits from them, not only attracts people to the city, but retains them.

15. This plan is a document for everyone working around indigenous biodiversity in Wellington. This includes the Council, our partner organisations involved in biodiversity management (government and NGO's), our engaged community and our Treaty partners. It outlines our operational activities, our level of service and the reasons for our direction.

16. This plan takes into account regional strategies and is consistent with their direction. It is designed to be a leading document for the region and a model which other TA's could follow.

17. The draft plan is structured around four main themes to establish healthy and resilient indigenous biodiversity within Wellington. We need to protect what we have, we need to restore what is degraded, we need to connect people to nature and we need to research the requirements of our biodiversity and the best methods for is management.

Key issues, opportunities and actions

18. The Plan proposes some overall changes in approach, in particular:
    - An increased emphasis on leadership locally, nationally and internationally in the field of urban ecology and restoring biodiversity within an urban environment (for example the proposed actions about engaging our citizens and trialling new restoration techniques).
    - A much larger focus on research and monitoring to support the scientific community and ensure our programmes are managed in the most effective and efficient way.

- Stronger recognition of the role that people play in biodiversity conservation, and the role that biodiversity plays in people's health and wellbeing.
- Supporting and resourcing community groups to increase their ability to run effective restoration programmes.
- A new approach to supporting community groups based on selected criteria.

19. There are also more specific objectives and actions under each of the four themes.

Action Plan

20. The action plan is divided into the four themes and covers the specific actions we need to take to reach our goals, objectives and vision. Actions have been prioritised, given timeframes and categorised into new initiatives, existing programmes or expansion of existing programmes.

Context

21. These sections contain the reasoning behind the actions for biodiversity managed within Wellington City. They also contain guidelines to inform how the Council will carry out the actions in the plan. These are new sections and come about from a community desire to know more about our rationale for actions and transparency in our reasoning.

22. Protect: This section aims to ensure that as a result of our protection, there has been no further loss of species indigenous to Wellington. There has also been no further decline in rare, threatened or locally significant species, or reduction in size of ecologically significant areas or areas with the potential for future restoration.

23. Main proposals in the plan include:
    - Develop a revised pest management implementation plan
    - Expansion of the animal pest control programme to ensure that it is sufficient to allow for the survival of our threatened species (plant and animal)
    - Review the District Plan Conservation Sites and associated protection measures for biodiversity on land not classified as reserve
    - Protecting aquatic ecosystems through mapping, water sensitive urban design, education, District Plan provisions and Integrated Catchment Management Plans.
    - Ensuring we meet the target of having 75% of Council managed land under integrated pest control
    - Increasing the area of land under integrated pest control by supporting community groups and residents to carry out pest control
    - Working with landowners to educate them on initiatives they can take to protect biodiversity

24. Restore: This section aims to ensure that all known original ecosystems within Wellington are represented and are self-sustaining, within which a range of indigenous biodiversity thrives. These areas provide source populations that are able to disperse to surrounding areas, assisting in the ecological restoration of the city's wider habitats.

25. Main proposals in the plan include:
    - Continuing to refine our restoration planting programme by ensuring that a representative range of ecosystems is restored and that our plant selection and planting technique is appropriate
    - Identifying, prioritising and gradually modifying or removing barriers to fish passage in key natural stream systems
    - We will focus on the habitat needs of species important to Wellingtonians, such as cavities for cavity nesting birds

26. Connect: This section aims to ensure that Wellingtonians are connected to nature. They are knowledgeable and passionate about Wellington's biodiversity and want to live in a city of abundant nature that is in close proximity to them. They have become kaitiaki of the natural environment and take action to support its protection and restoration.

27. The main proposals in the plan are to:
    - Reconnect people to the natural environment within the central city through urban design and green infrastructure
    - Use technology to connect people with nature
    - Review our role in environmental education and the coordination with partner organisations
    - Facilitate individuals and households to take action to support biodiversity eg trapping
    - Look at how we structure the support we give to our community groups
    - To create natural playscapes where possible and connect children with the natural environment
    - Engage the community in Citizen Science projects
    - Work with our partners and other organisations to ensure we have a coordinated approach to biodiversity management

28. Research: This section aims to ensure that we are leaders in managing indigenous biodiversity in an urban context. We actively seek and share knowledge, support research and use the information we gain to continually improve our management of our natural resources.

29. The main proposals in the plan are to:
    - Work collaboratively with research institutions and support scientific research, especially by students
    - Identify and monitor locally important species and their habitat requirements
    - Extend our monitoring programme (terrestrial and aquatic) to ensure it measures our progress towards our objectives and allows us to undertake adaptive management
    - Facilitate information sharing networks between professionals and to share the findings of Council research with the public.

Expectations and costs

30. It is important that we meet any public expectations that are set by adopting Our Natural Capital. Many of the actions in the plan build on our existing programmes and will be carried out with existing funding.

31. However, there are new activities and expanded activities that will require resourcing which have been identified and that are currently not planned for. They do not have to be met immediately, but delivering all the outcomes in Our Natural Capital will require some additional investment. Subject to public consultation and future funding allocations, this is likely to be in the order of 20K to 100K, depending on the nature of the action. Investing in environmental management now means we will have to invest less in the future.

32. Implementation of this plan requires working in partnership with others and gaining leverage from partner programmes and initiatives. This includes supporting the community, which give us a return of at least $4 for every $1 spent.

Consultation and Engagement

33. Council consultation policy dictates that consultation be publicly notified and available for comment for no less than 30 days and submitters must have the opportunity to be heard in front of Committee prior to recommending the plan for approval. Accordingly, the submission period will run from late January 2015 until early March 2015 and will be advertised in Our Wellington page in the Wellingtonian.

34. Anyone who wishes to be heard in support of their submission will have the opportunity to speak to the Environment Committee. This will happen in March 2015.

35. The final management plan with proposed amendments as a result of public consultation will be presented to the Environment Committee for approval in May 2015.

36. The communication plan for Our Natural Capital includes the use of:
    - Media releases
    - Council website plus Facebook page
    - Direct distribution to key stakeholders and previous submitters and meeting with them if required.
    - Distribution to libraries and Service Centre
    - Meetings with the Council's Treaty Partners

Long Term Plan considerations

37. The final plan will include a series of initiatives that will be considered for inclusion in the 2015 – 2016 Annual Plan.

Next Actions

38. Following approval by Environment Committee the next actions will be:
    - Consultation on the draft plan for six weeks between 22 January 2015 and 6 March 2015.
    - Oral hearings if required to be heard by Environment Committee in March 2015.
    - Approval of final plan by Environment Committee in May 2015.

Attachments

Author	Myfanwy Emeny, Team Leader Biodiversity and Urban Ecology
Authoriser	Greg Orchard, Chief Operating Officer

SUPPORTING INFORMATION

Consultation and Engagement

Officers have undertaken workshops, research and met with key stakeholders and Council officers to help inform the draft. The draft strategy and action plan will go out for public consultation between 22 January and 6 March 2015. Council's Environment Committee will hear oral submissions on 19 March 2015. Officers will seek final Council approval in May 2014.

Treaty of Waitangi considerations

We acknowledge the special relationship that Māori have with indigenous biodiversity and have worked with both Port Nicholson Block Settlement Trust and Te Runanga o Toa Rangatira through the development of the draft. Both Treaty partners have jointly written the section on the Māori and mana whenua relationship to biodiversity.

Financial implications

At this stage no additional funding is being proposed. As part of Our Natural Capital, any additional Council funding will be subject to normal Annual Plan or Long Term Plan processes. Some actions within the plan will also be jointly funded with partners and external funding will be sought from philanthropic trusts.

Policy and legislative implications

This plan has been developed with input from Greater Wellington and is consistent with the Regional Policy Statement, the Regional Plan and the GWRC Biodiversity Strategy. It is also consistent with other Council policy.

Risks / legal

There are no known legal risks within this plan.

Climate Change impact and considerations

Our Natural Capital incorporates the Council Climate Change Work Programme. This draft seeks to preserve and enhance our natural environment which contributes to the Councils climate change objectives.

Communications Plan

Communications for consultation on the draft plan will occur through the standard Council channels.

Item 2.2 Attachment 1

Our Natural Capital

Wellington's DRAFT biodiversity strategy and action plan 2014

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Cover photo: **Juvenile New Zealand fur seal at Frank Kitts Park, Wellington City.**
The main Wellington seal colony is at Sinclair Head on the edge of Te Kopahau Reserve. This is a 'haul out' area for New Zealand fur seals during winter (May-October) while breeding season is November-January. New Zealand fur seals are also seen around Wellington Harbour. NZ fur seals, particularly within the central city, connect people with the natural world and represent the link between the marine and terrestrial environments.

CONTENTS

1. SUMMARY

Our Natural Capital is the Wellington City Council's Biodiversity Strategy and Action Plan. It creates a shared vision for Wellington City's biodiversity. The strategy outlines our vision, goals and objectives, and sets the priorities that give our work direction and purpose, underpinned by a set of guiding principles.

The main aim of the strategy is to protect and restore our indigenous biodiversity. But we also recognise that Wellington is an urban environment and will continue to contain a wide range of exotic and indigenous vegetation. We need to take into account the role of all species in contributing to our cultural identity, the survival of our native species, and our role in protecting species that are threatened in their original habitat.

The strategy realises that healthy biodiversity contributes to healthy environments and that creates healthy people. It also recognises that healthy biodiversity contributes to our economic sustainability, through tourism and by providing a desirable base for businesses.

It is the Council's responsibility to maintain indigenous biodiversity, but that we won't be able to achieve our desired outcomes without working closely with our partners – mana whenua, community groups, the Department of Conservation (DOC), Greater Wellington Regional Council (GWRC), Wellington Zoo, Zealandia and our wider community.

The strategy ensures that international, national and regional targets relating to biodiversity are translated into local action, and that Wellington City is positioned as a world leader in urban biodiversity. We will actively engage in research to achieve this status.

To achieve our biodiversity goals we will aim to protect the ecologically significant areas on both private and public land. We will restore these areas, create safe buffer zones around them and connect them together. We will reduce pest numbers throughout Wellington City to a point where our native species can survive and expand. Throughout the urban environment we will focus on raising awareness of the issues facing indigenous biodiversity and connecting people to their natural environment. We will enable our community to continue restoration work across all of our reserves and we will support them in these efforts.

Our Natural Capital covers biodiversity within Council boundaries, but acknowledges that biodiversity does not recognise these boundaries.

Wellingtonians identified a vision for Wellington's landscape and ecosystems through the development of the Long Term Council Community Plan (2006/07 – 2015/16). This strategy provides substance to the following community outcomes.

- Wellington will promote the sustainable management of the environment, and support increased opportunities for the exercise of kaitiakitanga or environmental guardianship.
- Wellington protects and showcases its natural landforms and indigenous ecosystems.
- Pest animals and plants are eliminated as methods become available, and no new pests will become established.
- Wellington will preserve and improve its parks, trees and open spaces.
- Wellingtonians will protect and have access to public green open spaces and the coast.

The emphasis of Our Natural Capital is Wellington's indigenous biodiversity. The term "Wellington's biodiversity" means the indigenous biodiversity that occurs or occurred naturally in Wellington.

2. INTRODUCTION

This plan supports Wellington's wider vision to be the "Smart Capital", and be internationally recognised for its connection with and love of nature. Wellington's open spaces and natural areas (including the ; our green belt; and, equally importantly, our blue belt – the harbour and rugged south coast – are part of what makes Wellington an exciting and vibrant city in which to live, work and visit.

Wellington is a city that fosters connections between nature and the urban environment. This creates better lifestyles for its inhabitants and an attractive and healthy city environment. Nature plays a key role in our excellent quality of life, which as a city is our greatest strength. How close we are to nature makes us special compared to other capital cities, as does the Council managing a significant area of publically owned open space land (around 4500 hectares).

2.1 What is natural capital?

We are a "Natural Capital" due to our natural environment and our nature-driven attractions. It is part of what makes us the "coolest little capital in the world". It is an important part of what makes people want to live and work here, and helps to attract visitors. Our environment carries significant ecological, social, and cultural value, and creates economic opportunities for the city.

Natural capital is our stock of natural assets, which includes biodiversity as well as earth, air and water. Cities depend on a healthy natural environment that continuously provides a range of benefits, known as 'ecosystem services'. Healthy ecosystems are the foundation for sustainable cities, influencing and affecting human well-being and most economic activity.

Biodiversity is an integral part of this range of services. The cost to replace, replicate or restore these ecosystem services far outweighs the cost of maintaining and protecting these functions today. The biodiversity that contributes to these services exists in our reserves, parks, urban gardens, waterways, wetlands and coast.

2.2 What is biodiversity?

Biological diversity – or biodiversity – is the complete variety of life on earth, and people are an integral part of this. Biodiversity is easiest to understand when you think of the different kinds of plants and animals around us and all the species that support and link them. "High biodiversity" can mean that there are a lot of different species, while "biodiversity loss" means that these species become extinct. Biodiversity is more than plants and animals, however. Biodiversity also includes:

- genetic diversity, which is the variability in the genetic make-up amongst individuals of the same species
- species diversity, which is the variety of species within a particular area
- ecosystem diversity, which is the variety of ecosystem types and associated biological communities or habitats (eg scrubland, forest, sand dunes, wetlands, streams).

All Wellingtonians (including the Council) have a positive or negative effect on biodiversity, both global and local. This comes through political choices, jobs, economic activities, and daily actions. There is a huge opportunity for all of us to become more aware and more responsible; to enhance biodiversity generally through positive actions, small and large. Perhaps the greatest challenge is to make everyone realise that they have an impact on biodiversity and can play a part in its conservation.

Biodiversity incorporates all biological life, including fungi and micro-organisms, the genes they contain and the ecosystems of which they form a part. These life forms contribute to essential ecological processes.

Global biodiversity
The protection of biodiversity is a global issue and is an essential ingredient of sustainable development. The Convention on Biological Diversity (CBD) recognises that biodiversity is about plants and animals as well as people and our need for food, medicines, fresh air and water, shelter, and a clean and healthy environment. The CBD was reviewed at the 11th Conference of Parties (COP11) in Aichi, Japan in 2011 and a new strategic plan *Living in Harmony with Nature* was developed.

New Zealand is a signatory to the CBD and is bound by the Aichi agreement. *New Zealand Biodiversity Strategy* (2000) was prepared as part of New Zealand's commitment to biodiversity protection, and established national goals to "turn the tide" on biodiversity decline and included action points for local authorities. Retaining a high level of indigenous biodiversity will result in a high level of global biodiversity. The New Zealand Government is in the process of updating the *New Zealand Biodiversity Strategy* to incorporate the Aichi Targets.

Globally, biodiversity is in decline and the rate of biodiversity loss is accelerating.

Indigenous Biodiversity
New Zealand is an internationally recognised 'hotspot' for biodiversity. This is because we have exceptionally high numbers of endemic species (species found nowhere else in the world). This high endemism is largely the result of our long isolation from other land masses and diverse habitat and climate, which has allowed unique flora and fauna to develop. Around 90 percent of New Zealand's insects and marine molluscs are endemic. This is also true for 80 percent of our vascular plants (which includes trees, ferns and flowering plants); 25 percent of bird species; all of our 60 reptiles; our four remaining species of frog and all our species of bat. In comparison, Britain which is a similar size to New Zealand has only two endemic species.

Biodiversity conservation is about ensuring the:
- **viability *of naturally occurring local populations of species***
- **resilience *of the range of habitats and ecosystems that makes Wellington unique***

2.3 Why is this important?

Humans depend on our natural capital (including biodiversity) for a wide range of services, often called ecosystem services, which make life possible. Resilient and stable ecosystems are essential to sustain all of our activities in a functioning environment. The most obvious ecosystem services include the food we eat, the water we drink, and the plant materials we use for fuel, fibre, building materials and medicines.

There are also many less visible ecosystem services, such as water management, the millions of tonnes of carbon stored by our forests, natural storm defences provided by sand dunes, or the pollination of plants by insects. Without healthy biological resources and ecosystem processes, we would be without basic services such as the production of raw materials, clean water, waste decomposition, soil conservation and climate regulation.

Even less visible are cultural ecosystem services such as the inspiration we take from wildlife and the natural environment, which influences our health and wellbeing. Much of Wellington's distinctive identity, its sense of place, is bound in its natural areas. Ecotourism is important in attracting national and international visitors who visit areas such as the Makara Peak Mountain Bike Park, Otari-Wilton's Bush, Wellington Botanic Garden and Zealandia. There is also intrinsic value in biodiversity and for many, particularly Māori; it is an essential part of their world view.

All life on earth – humans included – depends on a varied and diverse natural environment.

The ecosystem services that have the greatest relevance to Wellington are:

- **Freshwater** – Wellington is reliant on drinking water from outside the city boundaries, but this freshwater is reliant on healthy forest catchments and healthy groundwater supplies from artesian wells in the Hutt City area
- **Local climate and air quality regulation** –natural vegetation helps to moderate extremes, and plays a role in improving air quality and reducing pollution
- **Energy** – much our energy comes from solar and wind power
- **Carbon sequestration and storage** – the City's native bush and exotic forestry is an important part of Wellington's climate change strategy and helps Wellington move towards being carbon neutral
- **Moderation of extreme events** – natural ecosystems may have an increasing important role in protecting infrastructure and housing from increasingly frequent and severe weather events.
- **Waste-water treatment** – at present streams and the coastal environment are a vital part of our waste-water network. Ecosystems such as wetlands also filter waste and act as a natural buffer to the surrounding environment
- **Pollination services** –healthy ecosystems and a diverse range of pollinators will pollinate all plants, including edibles and ornamentals
- **Recreation and mental and physical health benefits** - recreating in green space is not only a good form of physical exercise but also lets people relax.
- **Tourism** – Wellington's natural environment is increasingly one of our selling points for domestic and international tourists, which in turn provides considerable economic benefits
- **Cultural and spiritual wellbeing and sense of identity** - language, knowledge and the natural environment have been intimately related throughout human history. Biodiversity, ecosystems and natural landscapes have been the source of inspiration for much of our art, culture and increasingly for science. Nature is a common element of all traditional knowledge, and associated customs are important for creating a sense of belonging.
- **Soil formation and stabilisation -** soil filters our wastewater, provides essential nutrients to our forests and crops, helps regulate temperature and is the foundation for our cities and towns

3. MĀORI AND MANA WHENUA RELATIONSHIP TO BIODIVERSITY

"Toitū te marae a Tāne, Toitū te marae a Tangaroa, Toitū te iwi"
"Care for the domain of Tāne Mahuta (Guardian of the Forest) and Tangaroa (Guardian of the sea), so too will the people endure."

We acknowledge the mana whenua status of Taranaki Whānui ki te Upoko o te Ika and Ngāti Toa Rangatira to the Wellington City area and we will work in partnership with iwi groups in the development and delivery of this strategy. We will also support and work with other Māori groups who are active in restoring the mauri of the area. In achieving the vision for Our Natural Capital we will work in partnership with Māori, acknowledging the connection tangata whenua have with our city's natural taonga and weaving the principles of tikanga Māori, kaitiakitanga and manaakitanga through the work we do.

We acknowledge the unique relationship Māori have with New Zealand's natural taonga – our indigenous biodiversity - as tangata whenua, and their role as kaitiaki. We also recognise and value the Māori world view in understanding and communicating the unique status of our natural taonga. The holistic approach of the Māori world view is increasingly relevant in our understanding of the interconnectedness of species and ecosystems, and the importance of managing at an ecosystem and a landscape scale. It also encompasses the need for the sustainable management of natural resources.

We have strived to ensure the strategy is aligned with Māori approaches to resource management by looking at whole systems, the relationships between these systems, and by recognising the connection of the people with the land.

4. POLICY FRAMEWORK

Wellington City Council is charged with the maintenance of indigenous biodiversity as part of its role under the Resource Management Act (RMA) 1991 and is required to protect biodiversity in accordance with the Regional Policy Statement for the Wellington Region 2014. The Council also carries out biodiversity management in accordance with the wishes of its community, as expressed through the Community Outcomes in the Long-term Plan prepared under the Local Government Act 2002. Under the RMA 1991, the Council's role is to promote the sustainable management of natural and physical resources and must take into account a number of matters of national importance in doing this.

Under the Biosecurity Act 1993, Greater Wellington Regional Council (GWRC) takes primary responsibility for pest management and produces a Regional Pest Management Plan (RPMP). Wellington City Council has a primary responsibility as a significant land manager under the RPMP. Wellington City Council will assist with the eradication or control of pest species listed by GWRC as being Total Control Species. We will control pests on land that we own or occupy (including roadside verges for which we are responsible) in accordance with the RPM/P rules. We will control species that occur on and threaten sites that are considered ecologically significant. Pest control is considered good land management practice.

The New Zealand Government is also a signatory to the International Convention on Biological Diversity (CBD). This convention, signed by 193 nations, recognises the global scale of the threats to biodiversity and provides targets for countries to achieve at a national scale. The New Zealand Biodiversity Strategy (NZBS) reflects New Zealand's commitment to the CBD. It sets out national goals and principles for managing New Zealand's biodiversity.

This plan is prepared in the context of the following Council outcomes.

- Making Wellington *more liveable*, where Wellington's natural environment is more accessible to all for a wide range of social and recreational opportunities that do not compromise environmental values
- Creating a *stronger sense of place*, where Wellington recognises and protects significant features of its natural heritage
- *More actively engaged*, where a collaborative participatory approach is pursued for environmental kaitiakitanga (guardianship) by information sharing and establishing partnerships
- *Better connected*, where Wellington has a network of green space
- *More sustainable*, where Wellington's environmental impact will be reduced by making efficient use of natural resources
- *Safer*, including clean water and air to protect public health and ecosystems
- *Healthier*, with the protection of land and water based ecosystems to sustain natural processes
- *More competitive*, with a high quality environment attracting more visitors

Alignment between Our Natural Capital and other Council strategies

Wellington 2040

The Council's vision for Wellington is focussed on the future development of the city over the next 30 years. It builds on Wellington's current strengths, acknowledges the challenges the city faces now and over the medium to long term, understands the changing role of cities, and is informed by Wellington's communities. The vision is supported by four community outcomes based on the city's competitive advantage. These are: eco-city; connected city; people-centred city; and dynamic central city. These goals are central to the Council's Long-term Plan 2012–2022.

Our Capital Spaces

Our Capital Spaces is an open space and recreation framework for managing and protecting our parks, reserves, and sport and recreation activities over the next 10 years.

There will be a range of initiatives that fall under the following outcomes.

- Getting everyone active and healthy
- Protecting our birds, nature, streams and landscapes
- Contributing to Wellington's outstanding quality of life
- Doing it together

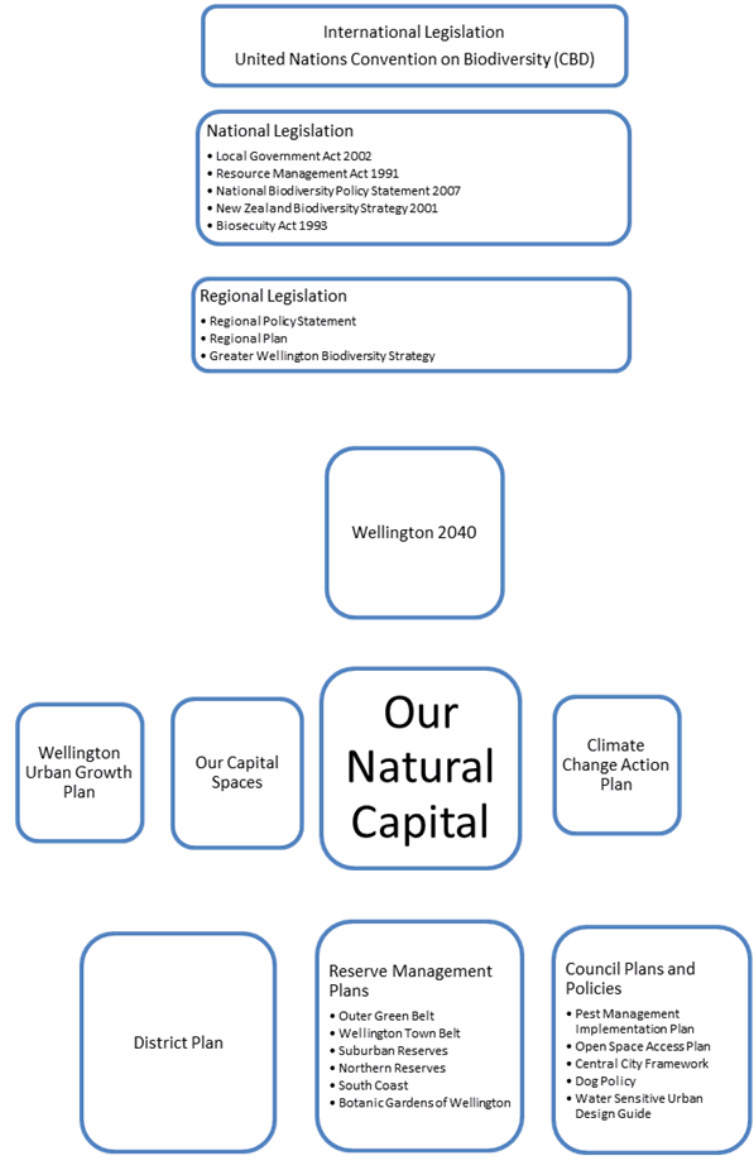
Climate Change Action Plan
This plan identifies cost-effective initiatives for Council operations and the community that will help the Council achieve its carbon neutral vision and promote sustainable behaviour. It also aims to enhance green infrastructure and biodiversity.

Wellington Urban Growth Plan
The Wellington Urban Growth Plan is the Council's guide for directing investment and supporting development in growth areas. It provides a framework for sustainable development. It provides strategies to manage the city's future growth while protecting our environment and heritage, and builds on the things that make the city special.[1] The Natural Environment action area is about promoting and investing in actions to reduce the negative impacts of the city's growth and development on the environment.

[1] DRAFT Wellington Urban Growth Plan 2014-2043

Item 2.2 Attachment 1

Our Natural Capital Policy framework:



5. BIODIVERSITY OVERVIEW

Wellington would have once had fauna as diverse and abundant as any other coastal site in the lower North Island. With no large rivers or estuaries and relatively few freshwater wetlands, the wildlife would have reflected the predominantly coastal and lowland forest character of the peninsula.

Early European settlers and naturalists wrote often of the birdlife and described a number of birds that then became locally or nationally extinct including saddleback, piopio, robin, kokako, stitchbird, banded rail, little spotted kiwi, weka, and huia. Local Māori brought kereru and kaka to the Thorndon village for barter and kakariki were prolific. In total, 50 species of forest bird would have been present, and perhaps a further 100 species of coastal and marine bird.

The saltmarsh, dunes and hill areas of the Miramar isthmus attracted prolific birdlife including "the indigenous quail, plover (banded dotterel), and oyster catcher". The two main wetland areas – Te Rotohuia Lagoon and the Basin Reserve wetlands – were dominated by flax, rush, raupo and cabbage tree and were "abounding in eel and wild ducks".

Geckos and skinks were easily found in the forests and within the coastal shrublands, grasslands, open screes and boulder banks. Native frogs lived in dark forested streambeds, or hid under logs and in rock piles on damp slopes.

In summer the forest would have been deafening with several species of cicada (kihikihi), and alive with winged insects, the many butterflies (pepe), beetles, native bees, wasps, flies and swarming ants. Near open water, damselflies (kihitara) and dragonflies (kapokapowai) would have dodged the beaks of falcon, fantail, and kingfisher. At night, the giant puriri moth and the huhu beetle would have joined the many insects being hunted by morepork (ruru) and laughing owl (whekau). The calls of brown and little spotted kiwi would have echoed throughout the forests and open country of the peninsula.

The major Wellington stream systems – the Karori, Makara, Ohariu, Owhiro, Kaiwharawhara, Porirua, Waitohu and Takapu – had abundant eel, koaro, bullies, koura, various galaxiid species and summer swarms of mayflies and other freshwater insects.

The narrow rocky coastline of the south coast was the winter haul-out for large groups of male fur seal. Weka cruised the beaches investigating seaweed and driftwood. Large numbers of little blue penguin would have emerged from the surf each night and scrambled into the low coastal forest to roost. The summits of the coastal ranges would have featured large numbers of sooty and fluttering shearwater burrows. Tuatara would have scurried through the open coastal forests feeding on large insects, small lizards and sea bird eggs.

The coastal waters and harbour would have supported a great number and diversity of fish. From time to time the harbour would have been visited by whales, dolphins and porpoises.

Many of these species are still found within Wellington, or have been reintroduced into Wellington thanks to the efforts of Zealandia. Their numbers, however, are still low compared with the proliferation of wildlife found by the early settlers, as described above. Wellington will never return to its pre-human state and the species that have survived or been reintroduced need to find a way to survive in this urbanised environment.

Much has been achieved over the past decade, however.

- We now have a good picture of Wellington's ecologically significant sites and these have been mapped.

- Our bird monitoring programme has expanded and we have conducted the first study showing the distribution of native lizards within the city.
- The combination of the work of Zealandia and the ongoing predator control by the city and regional councils now means a number of iconic (and formerly rare or locally extinct) bird species are now commonly experienced by Wellingtonians. Not only tui but also kaka have become a regular sight and sound in Wellington and, along with saddleback and kakariki, are breeding outside the safety of a fence on the mainland for the first time in over 100 years.
- Taputeranga Marine Reserve was approved in 2008. Only minutes away from downtown Wellington, it gives residents and visitors the opportunity to experience the highly biodiverse marine life of the Cook Strait.
- The number of community groups and level of community involvement in protecting biodiversity continues to increase. In 2004 there were 12 community organisations working to protect the city's natural values. In 2014 there were 113.
- Key Council plans increasingly reference our indigenous biodiversity. This includes Our Capital Spaces, the Town Belt Management Plan, the Central City Framework and the Wellington Urban Growth Plan.

We now have 517 identified ecologically significant sites across the city (see Map 1), most of which are protected on public land. These sites were identified using the criteria in Appendix 1. Some of the areas with outstanding values include:

- Otari-Wilton's Bush, which contains our largest intact primary forest remnant
- Makara estuary, which is the largest saltmarsh in the city and ranks highly from a regional perspective due to the general condition of the plant and animal communities, and is also highly valued as an inanga spawning area and for its shag colony
- the coastal shrublands around Wellington's south coast, which contains the only known population of matagouri on the western side of Wellington harbour
- the sand dune at the bottom of Kinnoull Station, which is our best example of a remnant dune and the only dune of its type in the Cook Strait ecological district.

These ecologically significant sites form the basis of what we are seeking to protect and restore. But we want to extend these areas to ensure more resilience for our biodiversity across the city. Our key focus areas to maintain indigenous biodiversity are as follows.

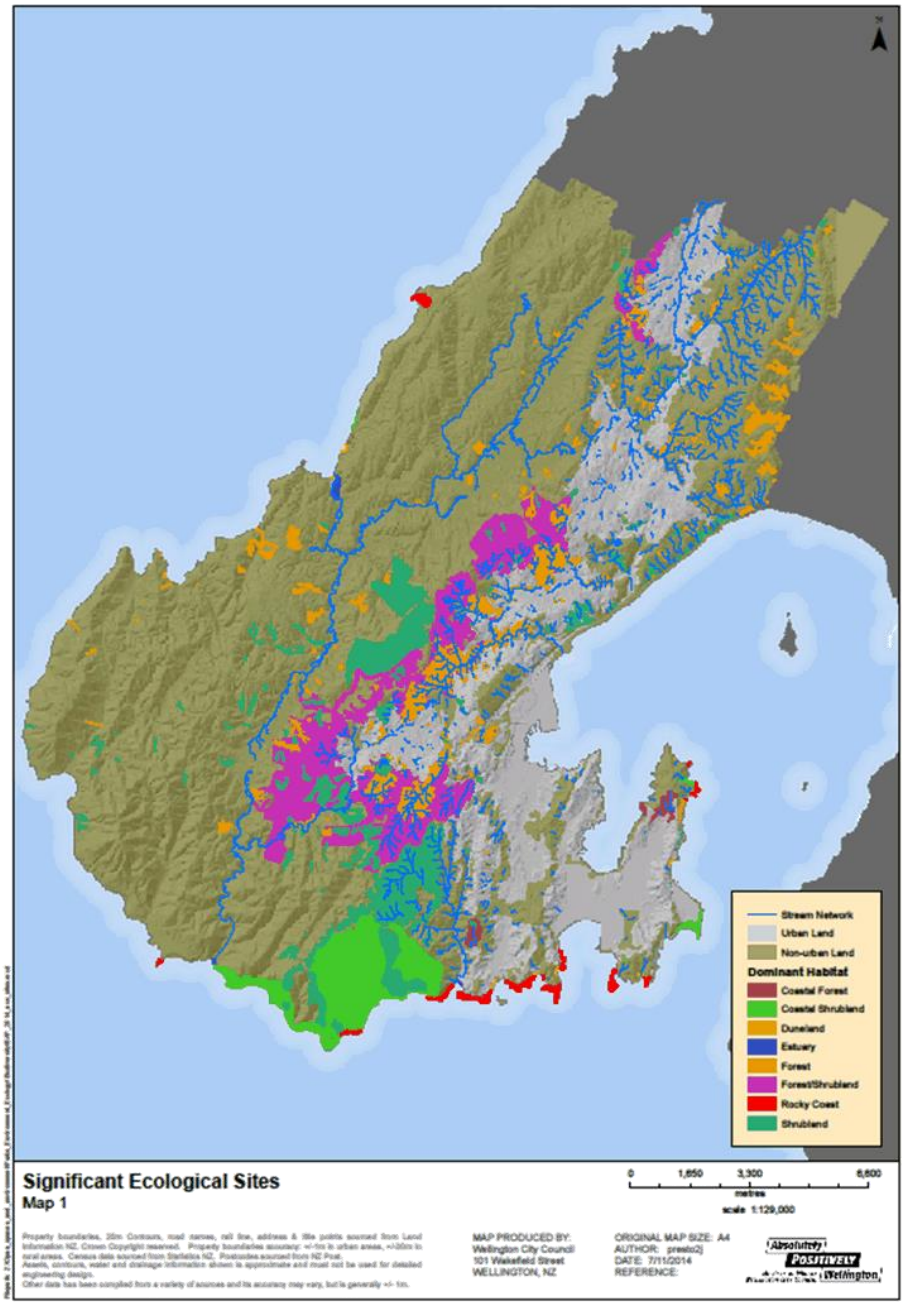
- **Ecologically significant sites** – These are areas that are still largely "natural" or "intact" – that is, they closely resemble Wellington's original natural environment pre-human settlement (or pre-European). The closer an ecosystem is to its original state, and the more original species that still exist, the higher its value. We value these systems because they are rare and irreplaceable.

- **Locally iconic or significant species** – These may be species that are locally endemic, locally iconic or play a "keystone role" in a particular ecosystem. These species may not be rare or threatened in New Zealand as a whole, but they are uncommon or important in Wellington, or their loss would threaten the functioning of remaining indigenous ecosystems.

- **Ecological functions** – These are the functions provided by species diversity or habitat structure that ecosystems require to work. Examples of ecological functions include nutrient cycling, pollination, seed dispersal, and genetic exchange through dispersal and recruitment of species.

- **Remaining "natural" open spaces** – Other areas of largely natural but lower value (less intact) open space that support indigenous biodiversity or ecosystem services, or which have the potential for future restoration (see Map 2). These areas can provide food and habitat for a smaller range of native species but are still important. They can form an important component

in wider ecological networks, providing connections or buffer zones, or future restoration sites to enhance ecosystem function at a landscape scale.



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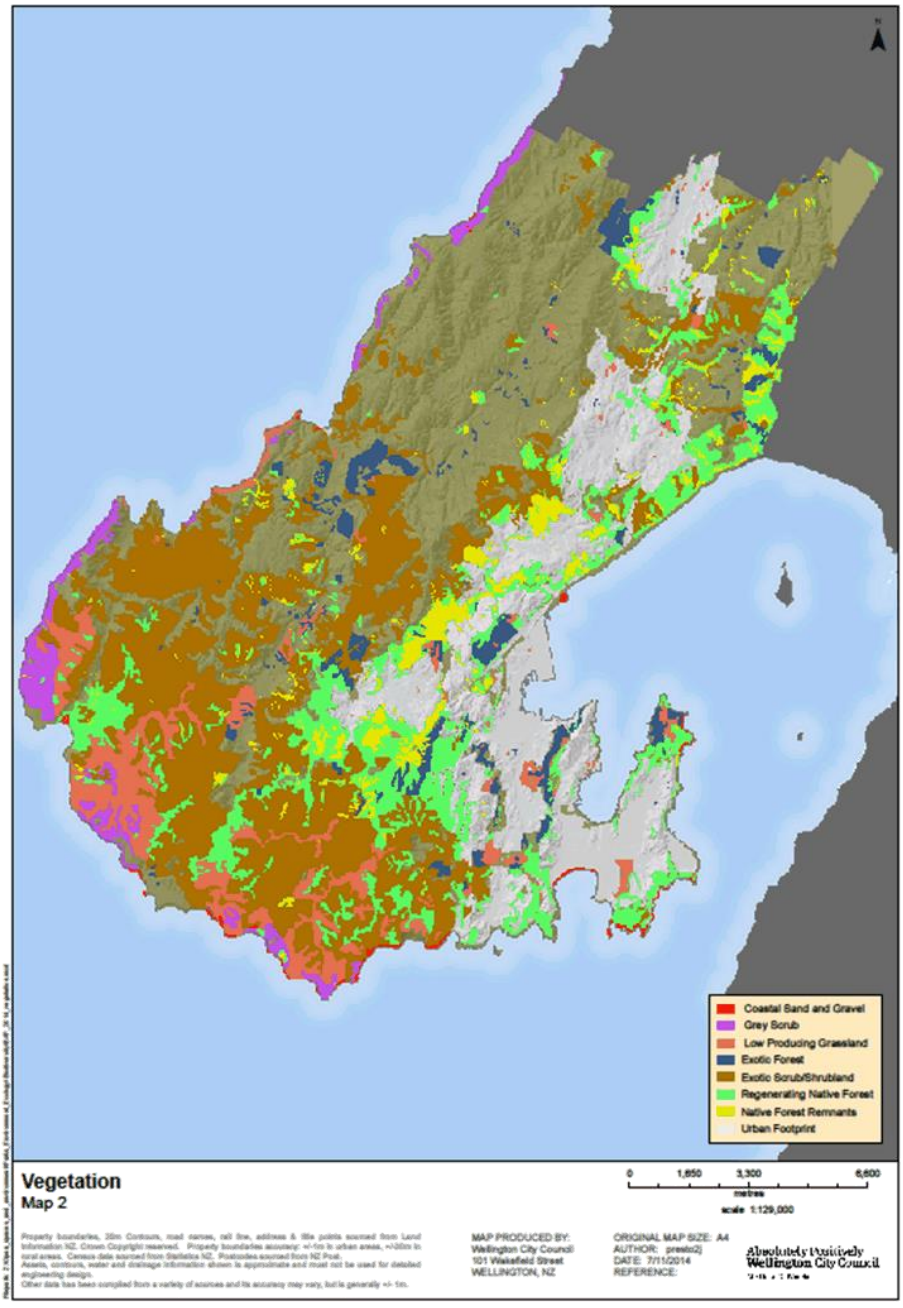
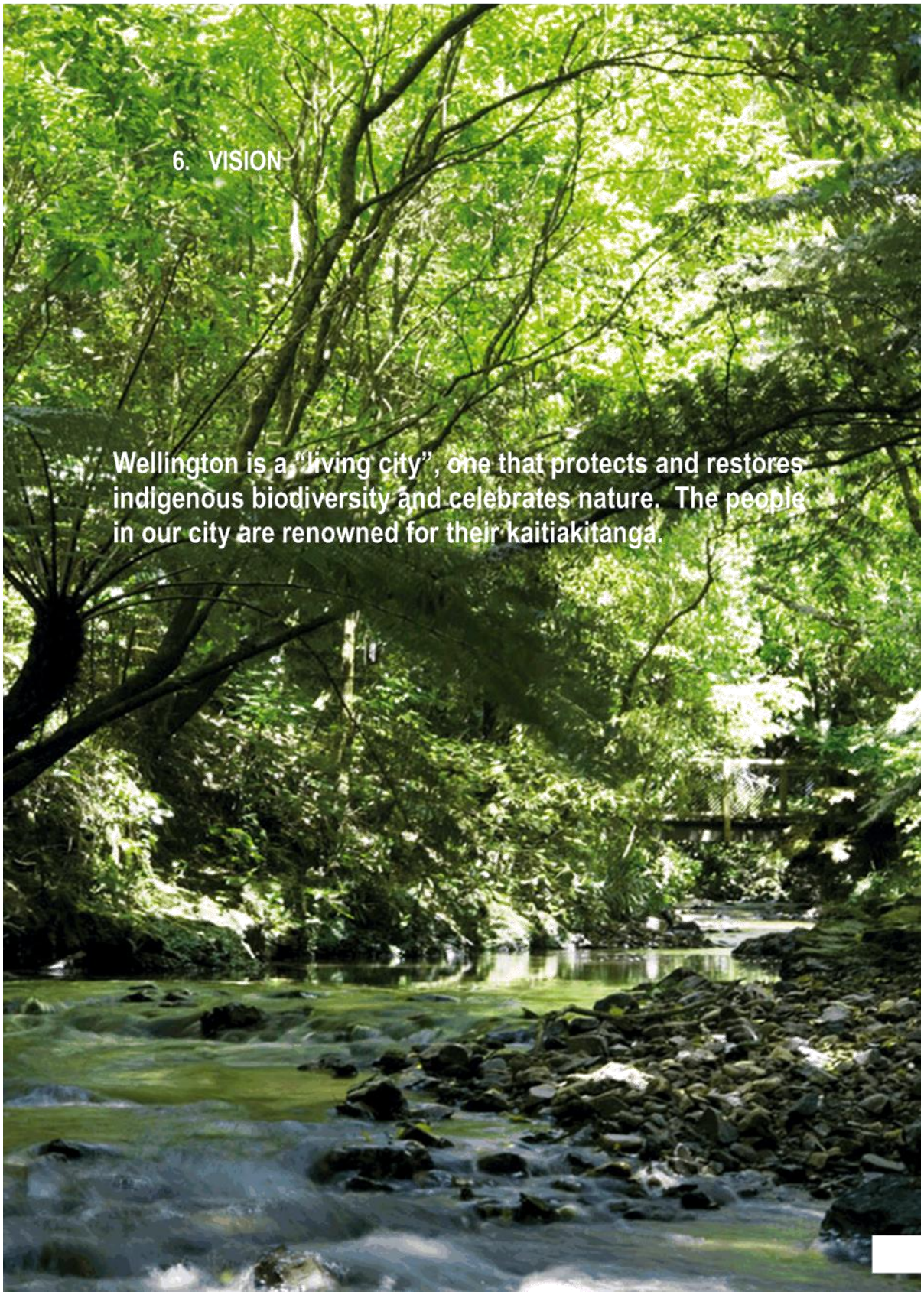



6. VISION
Wellington is a "living city", one that protects and restores indigenous biodiversity and celebrates nature. The people in our city are renowned for their kaitiakitanga.

7. GUIDING PRINCIPLES

We will build on our natural capital

This strategy will help to build and enhance Wellington's natural capital. We will respect the importance of indigenous biodiversity and its right to exist. The Council's work to protect and restore Wellington's indigenous biodiversity will recognise this. We will protect the high value areas, and restore other areas that allow the city's biodiversity as a whole to thrive.

We will acknowledge our urban context

Wellington's natural environment has been heavily modified and consists of a complex mixture of species and habitats. While some introduced species pose a threat to native ecosystems, many do not and are part of Wellington's rich cultural heritage. This strategy acknowledges this and our biodiversity management will work within these novel ecosystems. We will focus on the function provided by species and recognise that ecological function can sit across a range of different land uses.

We will weave biodiversity through our city's DNA

Our indigenous biodiversity is part of our local economy and its conservation is an investment that will yield benefits for present and future generations. Everything we do will seek to bring the importance of nature into mainstream thinking. We will do this by telling the stories of the city's natural and cultural heritage, celebrating and sharing success, and promoting the role of biodiversity in creating a unique identity and sense of place for Wellington, in New Zealand and in the world.

We will provide direction and leadership

As a city, Wellington will provide leadership in highlighting the value of incorporating indigenous biodiversity in urban sustainable development, and will promote the importance of cities that have a connection with and respect for nature. The Council will provide leadership that reflects these values through our policies, strategies and management plans.

We will work collaboratively

The Council is committed to working with iwi, government, agencies, landowners, businesses and the community. We recognise that we needto share knowledge, costs and benefits, to be clear about our different roles and responsibilities, and to have the capability and resources to contribute.

We will recognise the significance of people's connection with nature

We will recognise the importance of public awareness and education for ensuring the conservation of biodiversity. All Wellingtonians engage with nature at some point in their daily lives and we will acknowledge and build on these experiences. We will promote and enhance people's awareness of and connection to nature. We recognise that these experiences actively contribute to people's sense of health and wellbeing.

We will learn from the relationship between Māori and biodiversity

Matauranga Māori and the wealth of traditional knowledge in the conservation, management and sustainable use of biodiversity will be recognised, promoted and used with the involvement of those who possess this knowledge. We will learn from the principles of manaakitanga, wairua, and kaitiakitanga and include these in everything we do.

We will actively engage with research

The actions in Our Natural Capital will be evidence-based and monitored, informed by research where this exists. We recognise that we do not fully understand the complex interactions between the urban environment, introduced species and native ecosystem functioning. We will not avoid action because of a lack of knowledge, but will instead use this as an opportunity to

increase our knowledge. We will be adaptive and aim for continual improvement as new knowledge is gained, and we will actively seek and share this knowledge.

8. GOALS AND OUTCOMES

Goals to protect biodiversity

- Priority biodiversity sites on public and private land are protected
- Rare, threatened or locally significant species are protected
- Pest species are controlled to sufficient levels to protect our biodiversity
- The impact of urban growth and human activity on all ecosystems and remaining habitat is managed

Outcome
As a result of our protection, there has been no further loss of species indigenous to Wellington. There has also been no further decline in rare, threatened or locally significant species, or reduction in size of ecologically significant areas or areas with the potential for future restoration.

Goals to restore biodiversity

- The loss or decline of our indigenous biodiversity is reversed and self-sustaining and resilient ecosystems created
- Aquatic ecosystem health across the city is maintained and/or improved
- Restoration programmes are in place for rare, threatened or locally significant species
- Ecological networks are developed across the landscape

Outcome
All known original ecosystems within Wellington are represented and are self-sustaining, within which a range of indigenous biodiversity thrives. These areas provide source populations that are able to disperse to surrounding areas, assisting in the ecological restoration of the city's wider habitats.

Goals to connect people to biodiversity

- Biodiversity is a common experience for all Wellingtonians
- People understand the importance and value of biodiversity to their wellbeing
- More people take action to protect and restore biodiversity
- We work with a range of partners towards a shared vision for Wellington's biodiversity

Outcome
Wellingtonians are connected to nature. They are knowledgeable and passionate about Wellington's biodiversity and want to live in a city of abundant nature that is in close proximity to them. They have become kaitiaki of the natural environment and take action to support its protection and restoration.

Goals to research biodiversity

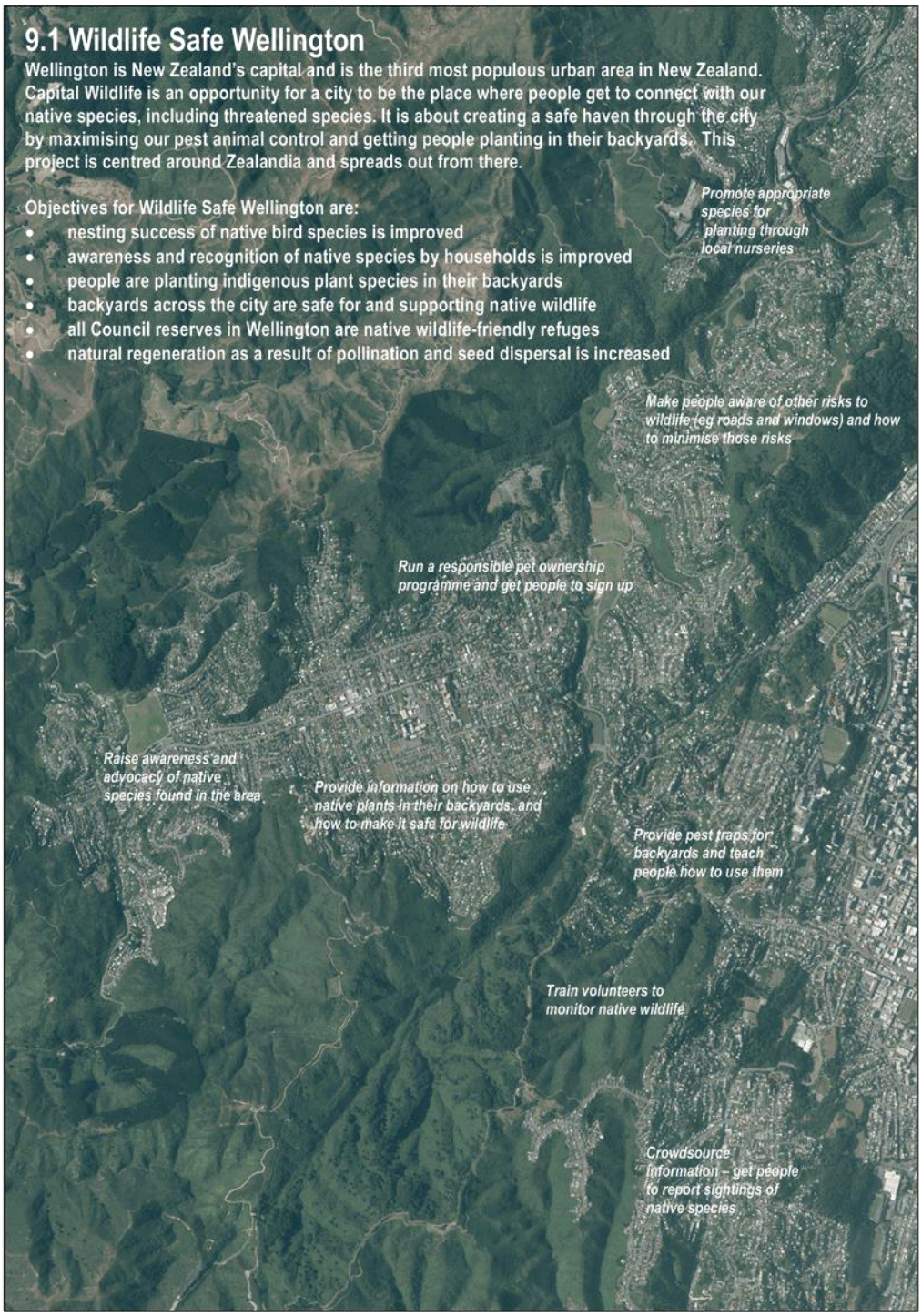
- Wellington City Council has increased understanding and knowledge of biodiversity
- Environmental monitoring is consistent across the city, region and country and informs our biodiversity management
- We actively seek and share knowledge about Wellington's biodiversity
- We have built our capacity to protect and restore Wellington's biodiversity

Outcome
We are leaders in managing indigenous biodiversity in an urban context. We actively seek and share knowledge, support research and use the information we gain to continually improve our management of our natural resources.

Later in the document there is more in-depth discussion about the reasoning behind these goals.

9. BIODIVERSITY CONCEPT PLANS

These plans are concept only. They demonstrate the wider approach outlined in the guiding principles and what could be achieved.



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10. ACTION PLAN

The actions outlined in this plan cover a range of initiatives to protect, restore and research our indigenous biodiversity and to connect people to it.

Many of the actions will be funded through budgets developed for the relevant asset management plans and annual plans.

Other actions will be funded through alternative budget sources. This means funds will be sought from sources such as sponsorship and grants in liaison with key internal and external partners such as government agencies, educational institutes and non-government-organisations. The actions outlined in this plan will be reviewed annually as part of Wellington City Council's planning and budgeting processes.

Funding: N = New initiative programme, E = Existing programme, Ex = Expand existing programme
Priority: 1 = Action required immediately, essential to success of plan; 2 = Action definitely required but not urgent, important to the success of plan; 3 = Action would be useful to the success of the plan.
Time frame for completion: Ongoing, Short (1-3 years), Medium (3-5 years) or Long (5-10 years).

Shaded actions are actions that are new since the 2007 Biodiversity Action Plan.

1. PROTECT

GOAL 1.1 – Priority biodiversity sites on public and private land are protected				
Objectives	Actions	Funding	Priority	Timeframe
1.1.1 Protect all areas of ecological significance on Council-owned land through active management	a. Ensure that all ecologically significant areas on Council-owned land are vested as reserves	*E*	*1*	*Ongoing*
	b. When reviewing or preparing reserve management plans, ensure that biodiversity is recognised and provided for	*E*	*1*	*Ongoing*
	c. Create ecological management plans for all areas of ecologically significant public land, linking with local community groups, GWRC and iwi where applicable	*E*	*1*	*Long*
	d. Ensure that a master plan for Te Kopahau Reserve protects existing ecological values by limiting new development	*Ex*	*1*	*Short*
1.1.2 Identify and protect all areas of ecological significance on privately owned land through District Plan protection	a. Review Conservation Sites listed in the District Plan as part of the DP review	*E*	*1*	*Short*
	b. If there is an ecologically significant site on Open Space zoned land, investigate changing that zone to Conservation	*E*	*3*	*Medium*

GOAL 1.2 – Rare, threatened or locally significant species are protected				
Objectives	Actions	Funding	Priority	Timeframe
1.2.1 Work with partners, including the Department of Conservation (DOC), Greater Wellington Regional Council (GWRC), community groups and others, to ensure that no nationally or regionally threatened or locally significant species is lost to Wellington, and ensure that genetic diversity is retained as far as possible	a. Partner with relevant organisations for the in-situ and ex-situ protection of threatened species	*E*	*1*	*Ongoing*
	b. Be actively involved in the New Zealand Indigenous Flora Seed Bank by contributing knowledge, seeds and appropriate permits.	*E*	*3*	*Ongoing*

1.2.2 Ensure that animal predator control is sufficient to allow for the survival of key species	a. Develop a set of guidelines for predator control methods based on the biodiversity outcomes we want to achieve	*E*	*1*	*Short*
	b. Establish the optimal bait station network across our reserve network and the frequency with which this network needs to be maintained	*Ex*	*2*	*Short*
	c. Establish a methodology to decide which species within Wellington warrant additional protection if discovered through monitoring programme	*Ex*	*2*	*Short*

GOAL 1.3 – Pest species are controlled to sufficient levels to protect our biodiversity				
Objectives	Actions	Funding	Priority	Timeframe
1.3.1 Control pest animals and plants that threaten sites of ecological significance	a. Develop a revised pest management implementation plan and review the pest management programme to determine whether the size, scope, scale, intensity and duration are likely to sustain viable populations of key species (including vegetation and processes, birds, lizards and invertebrates) within the Council's open space network	*Ex*	*1*	*Short*
	b. Expand the number of hectares of ecologically significant public land under integrated pest control to meet agreed target of 75%, as directed by ecological management plans	*Ex*	*1*	*Long*
	c. Gaps in the possum control network will be identified and addressed, particularly within Te Kopahau Reserve	*N*	*2*	*Medium*
1.3.2 Control pest animals and plants with the greatest potential to have adverse impacts on areas of ecological significance	a. Work with GWRC to maintain a list of pest plants with the greatest potential to increase their range and pose a threat to areas of ecological significance	*E*	*1*	*Ongoing*
	b. Carry out weed control based on priority sites in accordance with ecological significance criteria and priority threats	*E*	*1*	*Ongoing*
	c. Protect key lizard populations, review pest control for mustelids and rodents; particularly in south coast parks such as Red Rocks, Moa Point, Point Dorset, Tarakena Bay and Palmer Head	*Ex*	*1*	*Short*
	d. Continue sustained control of feral goats across the south-west peninsula	*E*	*2*	*Ongoing*
	e. Work closely with the New Zealand Transport Agency (NZTA) and OnTrack to address environmental weed issues on transport corridors not owned by the Council	*N*	*3*	*Medium*
1.3.3 Increase the area of land under integrated pest control by supporting landowners, occupiers and community groups to take an active role in controlling pest plants and animals and preventing the spread of pests in the city	a. Support the capacity of new and existing community groups to engage in pest control	*Ex*	*1*	*Short*
	b. Implement animal pest control in the areas of rural land to the south-west of Zealandia	*E*	*2*	*Short*

GOAL 1.4 – The impact of urban growth and human activity on all ecosystems and remaining habitat is managed				
Objectives	Actions	Funding	Priority	Timeframe

1.4.1 Ensure that all ecological and recreation values of open spaces are recognised in the District Plan, including for their future potential as part of a city green network, and for the ecosystem services they deliver such as health and wellbeing benefits	a. Identify all sites of ecological significance and sites that are important, or could be, for maintaining or enhancing connectivity between ecologically significant sites. Ensure that all these sites on public land (including important buffer zones and corridors) are listed as Conservation Sites or Open Space in the District Plan	*E*	*1*	*Medium*
	b. Identify areas of road reserve that could be reclassified as reserve and carry out road stopping, where those areas are not needed for roading purposes, they contain forest remnants or significant vegetation over 0.5ha in area and adjoin an existing reserve	*N*	*2*	*Long*
1.4.2 Increase regulatory protection through the District Plan provisions for all sites of ecological significance (including ecological linkages) to prevent further clearance and fragmentation	a. Provide specialist ecological advice on District Plan changes and conditions on consents	*E*	*1*	*Ongoing*
	b. Ensure District Plan changes adequately protect biodiversity values through goals, policies and rules	*E*	*1*	*Ongoing*
	c. Monitor regulatory effectiveness to ensure that compliance around biodiversity protection and restoration is achieved	*Ex*	*2*	*Ongoing*
1.4.3 Reduce impacts of urban development and land-use on aquatic ecosystems	a. Assist Wellington Water to complete Integrated Catchment Management Plans for citywide catchments within Wellington: Lambton Harbour/Oriental Bay, Evans Bay, Island Bay/Houghton Bay, Lyall Bay, South-east Coast, Owhiro Bay, Kaiwharawhara, and Onslow/Ngauranga/Horokiwi	*E*	*1*	*Ongoing*
	b. Work with GWRC and within the Council to ensure no new barriers to fish passage are created through works in streams	*E*	*1*	*Ongoing*
	c. Ensure that Council chemical use has no net negative impact on aquatic ecosystems	*E*	*1*	*Ongoing*
	d. Build on our relationship with partners working on the protection of the marine environment, focussing on education programmes.	*E*	*1*	*Ongoing*
	e. Under District Plan provisions, and considering the approach set out in Policy 43 of the RPS (protecting the aquatic ecological function of water bodies), prevent any further loss of whitebait spawning sites, and require that any significant works within whitebait spawning areas restores their operation	*E*	*1*	*Short*
	f. Integrate best practice WSUD into Council projects where practicable	*E*	*2*	*Ongoing*
	g. Complete mapping of streams as part of asset mapping of all stormwater infrastructure	*E*	*2*	*Short*
	h. Develop technical detail of Water Sensitive Urban Design (WSUD) in the Code of Practice for Land Development	*E*	*2*	*Short*
	i. Develop updated guidelines for earthworks on small sites in collaboration with GWRC	*E*	*2*	*Short*
	j. Identify and prioritise streams that should be kept in their natural state and strengthen provisions in the District Plan for their protection	*E*	*2*	*Short*
	k. Ensure there are provisions in the District Plan to protect and enhance streamside (riparian) strips alongside streams where practicable	*E*	*2*	*Short*
	l. Ensure that all contractors working in and around	*Ex*	*2*	*Medium*

	streams have undertaken sediment control training			
	m. Develop at least one example of best practice WSUD in a high-profile location	*N*	*3*	*Long*
1.4.4 Ensure existing biodiversity is conserved and enhanced on proposed development sites	a. Develop criteria for track development (eg amount of track permitted within ecologically significant sites, design of earthworks, proximity to streams, tree species to be avoided) within reserves to ensure it does not impact on biodiversity values	*E*	*1*	*Short*
	b. Educate and advise landowners and developers around methods for protecting natural values in developments and sub-divisions, including enhancing ecosystems and recreational opportunities through habitat creation, low-impact urban design and water sensitive urban design	*Ex*	*1*	*Medium*
	c. Provide consent officers with access to up-to-date information and interpretation of information so they can make informed decisions	*E*	*2*	*Ongoing*
1.4.5 Advocate for biodiversity values to be included in all Council plans, strategies and programmes that potentially impact on these values	a. We will incorporate biodiversity principles into Council plans and policies such as the Code of Practice for Land Development, Subdivision Design Guidelines.	*E*	*1*	*Ongoing*
	b. Consider the impact of future climate change on all biodiversity management activities	*E*	*2*	*Ongoing*

2. RESTORE

GOAL 2.1: The loss or decline of our indigenous biodiversity is reversed, and self-sustaining and resilient ecosystems created				
Objectives	Actions	Funding	Priority	Timeframe
2.1.1 Create resilient and self-sustaining ecosystems	a. Continue the Council's restoration planting programme of at least 45,000 native eco-sourced plants annually to achieve the target of having planted two million trees between the years 2000 and 2020.	*E*	*1*	*Ongoing*
	b. Create a city wide planting strategy to ensure a representative range of sites across the different ecosystems – forest, shrubland, wetland, streamside (riparian), rocky shore and coastal – are included as part of the Council's restoration planting programme	*E*	*1*	*Ongoing*
	c. As part of the strategy, ensure that a mix of plant types is included in the restoration planting programme, including emergent trees, climbers and groundcovers	*E*	*1*	*Ongoing*
	d. Write citywide guidelines for enrichment planting, including where best to source plant propagules, different species' habitat requirements, the importance of mycorrhizal associations, and the most effective methods of propagation	*E*	*2*	*Short*
2.1.2 Continue to use eco-sourced plant material and promote it to the wider community	a. Continue the provision of eco-sourced plants through Berhampore Nursery	*E*	*1*	*Ongoing*
	b. Work with community and private nurseries to ensure they all have seed collection permits and are following eco-sourcing guidelines	*E*	*1*	*Short*
2.1.3 Restore the function of	a. Evaluate the ecological function of large exotic	*E*	*1*	*Ongoing*

ecosystems, recognising the role that all species may play	trees on public land and consider replacing that function before removals occur			
	b. Research and trial ways of restoring native forest underneath and beside a canopy of exotic conifers	*E*	*1*	*Short*
	c. Initiate a programme to gradually replace over-mature conifers with native vegetation over 20–30 years, in accordance with priorities in existing management plans such as the Wellington Town Belt Management Plan	*E*	*2*	*Ongoing*
	d. Ensure that future Council amenity and landscape planting (including street trees) will not threaten indigenous biodiversity	*E*	*2*	*Ongoing*
	e. Trial the practice of damaging weed trees where appropriate and leaving them standing (veteranisation) to create cavities for birds, lizards and insects	*Ex*	*2*	*Short*

GOAL 2.2: Aquatic ecosystem health across the city is improved				
Objectives	Actions	Funding	Priority	Timeframe
2.2.1 Continue stream restoration programmes in accordance with community and catchment priorities	a. Continue streamside (riparian) planting programme (including indigenous vegetation buffers)	*E*	*1*	*Ongoing*
	b. Ensure all Council works in stream are in accordance with GWRC best practice guidelines.	*E*	*1*	*Ongoing*
	c. Conduct walkover of Kaiwharawhara, Owhiro and Haape streams to map and identify barriers to fish passage	*N*	*1*	*Short*
	d. Prioritise barriers to fish passage and schedule their modification or removal as part of an annual programme	*N*	*2*	*Medium*

GOAL 2.3: Restoration programmes are in place for rare, threatened or locally significant species				
Objectives	Actions	Funding	Priority	Timeframe
2.3.1 Ensure threatened fauna has the habitat needed to complete lifecycles	a. Plant food species as part of restoration planting programmes	*E*	*1*	*Ongoing*
	b. Install suitable nesting sites for cavity nesting species in reserves where these species are known to be present.	*N*	*2*	*Short*
2.3.2 Re-establish populations of threatened plants in Wellington	a. Propagate threatened species at Council nurseries for planting as part of the restoration planting programme	*E*	*1*	*Ongoing*
	b. Work with community and professional nurseries on the propagation of threatened species	*E*	*1*	*Ongoing*
	c. Monitor the survival of all planted threatened species to improve knowledge of microhabitat requirements	*E*	*2*	*Ongoing*
2.3.3 Work in partnership with other organisations to develop restoration programmes	a. Work with DOC to ensure the Council is following 'threatened species recovery plans' where these are in place	*E*	*1*	*Ongoing*
	b. Consult other organisations to ensure current species restoration programmes are being followed	*E*	*2*	*Short*
	c. Work with relevant organisations to investigate the restoration of indigenous fauna through reintroduction programmes	*N*	*2*	*Medium*

GOAL 2.4: Ecological networks are developed across the landscape				
Objectives	Actions	Funding	Priority	Timeframe
2.4.1 Create connections between reserves for key plant and animal species (ie create a Green Network Plan)	a. Identify key species for which connections would be beneficial and can be achieved	*E*	*1*	*Short*
	b. Identify individual dispersal mechanisms and requirements for each of these key species and where current populations are located	*E*	*1*	*Short*
	c. Carry out restoration planting where practicable to allow for travel of these key species between core areas	*E*	*2*	*Medium*
	d. Prepare a discussion paper on roadside reserves as potential corridors between remnants	*E*	*2*	*Medium*
	e. Work with private landowners to close gaps between identified ecologically significant areas where the reserve network is not sufficient	*N*	*2*	*Long*
2.4.2 Work with private landowners to restore areas of ecological significance	a. Assist landowners with seeking grants to fund the ecological restoration on these sites	*E*	*1*	*Ongoing*
	b. Identify and prioritise the areas of private land that contain large areas of prime and secondary forest remnant or wetlands	*E*	*1*	*Short*
	c. Give advice to private landowners on restoration planting	*E*	*2*	*Ongoing*
	d. Work with QEII to protect ecologically significant sites on private land	*Ex*	*2*	*Short*
	e. Identify, create and implement incentives to get people to care for biodiversity on private land	*Ex*	*2*	*Medium*
	f. Work with private landowners to create ecological restoration plans for areas of ecological significance	*Ex*	*2*	*Long*
2.4.3 Work with Porirua City Council, Lower Hutt City Council, GWRC and DOC to ensure cross-boundary management of important catchments and ecosystems	a. Work with Porirua City Council, GWRC and Ngāti Toa on the implementation of the Porirua Harbour Strategy	*E*	*1*	*Ongoing*
	b. Work with GWRC on the establishment and implementation of the Porirua and Wellington Harbour Whaituas	*E*	*1*	*Short*
	c. Work with GWRC to identify the spread of species between Belmont Regional Park and Council Northern reserves	*Ex*	*3*	*Medium*

3. CONNECT

GOAL 3.1: Biodiversity is a common experience for all Wellingtonians				
Objectives	Actions	Funding	Priority	Timeframe
3.1.1 Ensure all Wellingtonians encounter nature on a daily basis	a. Promote and increase use of native plantings in Council amenity planting, road planting etc	*E*	*1*	*Ongoing*
	b. Investigate the use of live feed cameras on bird nests (eg kaka and/or little blue penguin, and/or underwater marine environment in inner harbour) and promote these images to the public	*N*	*2*	*Medium*
	c. Increase the number of large trees planted in the central city, focussing in particular on the east-west connections. Explore the use of suitable native tree species.	*Ex*	*2*	*Long*
	d. Make green infrastructure and water-sensitive urban design (WSUD) standard as part of new buildings and upgrades within the Council network	*N*	*2*	*Long*

	e. Incorporate indigenous biodiversity into Wellington's urban design strategies	*E*	*3*	*Medium*
	f. Include New Zealand nature and natural imagery into public space upgrade projects	*E*	*3*	*Medium*
	g. Explore opportunities for installing a green roof on at least one public building in the central city and surrounds	*N*	*3*	*Medium*
3.1.2 Ensure Wellingtonians connect with nature as part of recreation activities	a. Ensure all Wellingtonians in suburban areas can access a natural space within a 10-minute walk	*E*	*1*	*Ongoing*
	b. Support the development of community gardens and edible planting groups	*E*	*2*	*Ongoing*
	c. Restore natural areas near key recreational areas such as sportsfields and playgrounds	*E*	*2*	*Medium*
	d. Promote cycling and walking links through and along the appropriate green and blue networks	*E*	*3*	*Ongoing*
	e. Ensure legal protection over private land provides for public access where practicable	*E*	*3*	*Ongoing*
	f. Explore Shinrin-yoku (forest bathing) and its effects on mental health and wellbeing. Investigate the establishment and promotion of an area suitable for this in Wellington	*N*	*3*	*Long*

GOAL 3.2: People understand the importance and value of biodiversity to their wellbeing

Objectives	Actions	Funding	Priority	Timeframe
3.2.1 Raise Wellingtonians' awareness of the significance and value of biodiversity	a. Educate the public around Council use of indigenous vegetation to increase community awareness and appreciation of local plants eg through Otari-Wilton's Bush, garden beds and traffic island displays; identify suitable indigenous species for specimen planting where appropriate	*E*	*1*	*Ongoing*
	b. Celebrate our indigenous biodiversity and our successes in relation to its conservation	*E*	*2*	*Ongoing*
	c. Create and install interpretive signage within key reserve areas to educate people about the biodiversity values of that area	*N*	*2*	*Medium*
	d. Create and install interpretation materials telling stories of cultural and natural history and promoting community restoration initiatives	*N*	*3*	*Long*
3.2.2 Use technology to connect people with biodiversity and ensure that people have access to current information on biodiversity	a. Inform and educate the public through a number of activities and programmes, including production of communications such as our e-newsletter Branch Out	*E*	*1*	*Ongoing*
	b. Promote Nature Watch as a citizen science tool to collect information on biodiversity and environmental pest species	*Ex*	*2*	*Ongoing*
	c. Have all biodiversity information and research available through the Council website	*E*	*2*	*Medium*
	d. Develop a species identification guide for lizards and implement standardised lizard reporting procedures	*Ex*	*3*	*Short*
	e. Create a physical public research hub where the community can access research advice and reference collections	*N*	*3*	*Medium*
3.2.3 Promote and support increased ecological literacy amongst children and young people	a. Create the Children's Garden at the Wellington Botanic Garden	*N*	*1*	*Short*
	b. Create opportunities for schools to get involved in conservation initiatives and edible planting and	*E*	*1*	*Short*

	identify which schools are near to reserves that could be "adopted"			
	c. Continue to produce educational resources at Otari-Wilton's Bush to enhance visits by schools and other interested parties	*Ex*	*2*	*Ongoing*
	d. Where appropriate and aligned with our strategy, continue support for environmental education programmes eg Enviroschools, Wellington Zoo's Bush Builders programme and the Zealandia education programme	*E*	*2*	*Ongoing*
	e. Review the Council's environmental education approach and develop a more coherent approach to working with children, schools and other environmental education providers	*E*	*2*	*Short*
	f. Create at least one natural playscape and use natural elements in other playground upgrades	*N*	*2*	*Medium*

GOAL 3.3: More people take action to protect and restore biodiversity				
Objectives	Actions	Funding	Priority	Timeframe
3.3.1 Promote responsible pet ownership to protect wildlife in our open spaces	a. Review the animal control bylaw and use it to minimise the impact of pets on native biodiversity	*E*	*2*	*Short*
	b. Work with partner organisations to reduce the impact of cats (domestic, stray and feral) on our indigenous wildlife. Run education and awareness programmes to encourage people to desex cats and keep them indoors as much as possible	*N*	*2*	*Short*
	c. Work with partners to run a behaviour change programme informing people of the need to keep dogs on leashes near sensitive wildlife areas, such as penguin habitat, especially during crucial periods like fledging	*N*	*2*	*Medium*
3.3.2 Celebrate and promote action to protect and restore biodiversity	a. Publicise the Council's and other organisations' activities, events and achievements relating to Wellington's biodiversity through social media, media articles and publications	*E*	*1*	*Ongoing*
3.3.3 Promote enhanced biodiversity awareness in all Council practices	a. Work with all Council business units to have input into relevant Council standards and policy	*E*	*1*	*Ongoing*
	b. Run at least one internal training programme per year on issues relating to biodiversity. These should initially focus on threatened environments such as streams and dunes	*E*	*2*	*Ongoing*
3.3.4 Increase participation in decision-making affecting biodiversity (RMA processes, submitting to Council, joining ERG etc)	a. Promote opportunities for people to submit through Branch Out and existing networks	*E*	*2*	*Ongoing*
3.3.5 Increase active participation in biodiversity projects and actions	a. Publicise biodiversity projects through Council channels and work with NatureSpace portal to assist people to volunteer and get involved	*E*	*1*	*Ongoing*
3.3.6 Engage the wider community in Citizen Science projects	a. Continue involvement in the annual backyard bird survey and the Kereru Count	*Ex*	*2*	*Ongoing*
	b. Engage the community in other species-based programmes such as lizard monitoring, potentially using NatureWatch as a tool	*N*	*2*	*Ongoing*
	c. Lead one BioBlitz (terrestrial and aquatic) within Wellington every 5 years, to build on ones undertaken at Otari-Wilton's Bush and	*N*	*2*	*Short*

	Taputerange Marine Reserve.			
3.3.7 Encourage and support individuals and households to take action to support biodiversity	a. Continue to support annual initiatives with partner organisations that encourage people to remove weeds from their gardens and plant native plants instead	*E*	*1*	*Ongoing*
	b. Implement an awareness programme about environmental weeds (including native weeds), the impact of garden dumping and risk of birds and wind spreading seeds to nearby parks and reserves	*E*	*1*	*Short*
	c. Encourage people to have wildlife friendly backyards by providing information on creating habitat and planting food species.	*E*	*1*	*Short*
	d. Promote backyard trapping by providing information and facilitating the supply of equipment	*N*	*1*	*Short*
	e. Provide and promote information on the impact of household activities, such as car washing and the use of paint and chemicals, on water pollution	*Ex*	*2*	*Ongoing*
	f. Investigate possible options to get more green waste from the city going to the compost facility at the Southern Landfill	*Ex*	*2*	*Medium*

GOAL 3.4: We work with a range of partners towards a shared vision for Wellington's biodiversity				
Objectives	Actions	Funding	Priority	Timeframe
3.4.1 Work in partnership with iwi and other Māori groups	a. Ensure local mana whenua have the opportunity to be involved in conservation initiatives	*E*	*1*	*Ongoing*
	b. Identify areas of traditional Māori use and biodiversity value, and work with iwi to conduct an assessment of biodiversity sites of cultural significance	*E*	*2*	*Medium*
	c. Identify opportunities on Council parks and reserves where rongoa Māori can be celebrated, plants labelled and interpretation provided	*E*	*3*	*Medium*
	d. Explore opportunities to use appropriate traditional structures and buildings in our interpretation (for example pou whenua, waharoa	*E*	*3*	*Long*
3.4.2 Collaborate with partners to achieve agreed goals, effectively utilising resources and creating strong partnerships	a. Continue relationships between organisations with a strong biodiversity focus, such as Wellington Zoo , WWF-New Zealand, and Zealandia	*E*	*1*	*Ongoing*
	b. Partner with other agencies to support the NatureSpace portal for community restoration work	*E*	*1*	*Ongoing*
	c. Continue to support Restoration Day	*E*	*1*	*Ongoing*
	d. Facilitate discussions to agree a shared direction for Wellington region's biodiversity outcomes with partners to ensure efficiencies by not duplicating work and responsibilities	*E*	*1*	*Short*
3.4.3 Work with partners to identify opportunities for increased business involvement and support	a. Pursue opportunities for business involvement and partnerships including sponsorship, planting programmes, encouraging sustainable business practices. Support and encourage corporate volunteer programmes	*E*	*2*	*Ongoing*
	b. Develop criteria with other organisations that use corporate volunteers, such as DOC and GWRC,	*E*	*2*	*Medium*

	to establish which sites corporates should engage			
3.4.4 Support and build the capacity of existing and new community groups engaging in biodiversity projects	a. Continue the Living City grants scheme with an ongoing financial commitment of at least $80,000 per annum to support projects on public and private land that have biodiversity benefits for Wellington	*E*	*1*	*Ongoing*
	b. Continue support for environmental restoration groups through the provision of plants, materials, technical advice and in-kind support	*E*	*1*	*Ongoing*
	c. Develop an annual programme of training and workshops to complement Restoration Day (in partnership with DOC, GWRC and NGOs)	*Ex*	*1*	*Short*
	d. Facilitate the establishment of a community plant nursery network to promote best practice, access to training opportunities and cooperation	*E*	*1*	*Short*
	e. Ensure information on funding sources is available for community groups to carry out biodiversity conservation work. Promote funding sources available for private landowners to protect and manage biodiversity on their own land (including carbon credits)	*E*	*2*	*Ongoing*
	f. As part of a city wide planting strategy, identify where groups are working in areas with missing plant species, and ensure those groups have the ability to plant those species	*E*	*2*	*Medium*

4: RESEARCH

Goal 4.1: Wellington City Council has increased understanding and knowledge of biodiversity				
Objectives	Action	Funding	Priority	Timeframe
4.1.1 Identify and monitor locally important sites and species	a. Ensure that all known populations of threatened plants are captured digitally and monitored	*Ex*	*1*	*Ongoing*
	b. Ensure that staff collect information on new populations of locally important species	*E*	*1*	*Ongoing*
	c. To ensure we have accurate information, re-survey the boundaries of ecologically significant sites	*N*	*1*	*Short*
	d. Conduct a bat survey to establish whether populations are present in Wellington	*N*	*2*	*Short*
	e. Follow up surveys for Ngahere geckos, barking geckos, spotted skinks, Kupe skinks and ornate skinks using more intensive methods in surveyed parks and reserves with good habitat	*N*	*2*	*Short*
	f. Support researchers gathering information on invertebrates	*N*	*3*	*Medium*
4.1.2 Identify habitat requirements for key species, including breeding requirements	a. Compile information on the nesting requirements for key bird species and work out where species are present with limited breeding habitat	*E*	*1*	*Short*
	b. Compile information on habitat and dispersal requirements for all freshwater fish species	*E*	*1*	*Short*
	c. Establish the dispersal requirements of sensitive forest-dependent species, such as North Island robins	*Ex*	*2*	*Medium*
4.1.3 Ensure the Council has relevant and current information on the requirements of threatened species	a. Establish regular meetings with DOC biodiversity staff to ensure all information on rare, threatened or locally significant species is shared, including reports of dead animals and recent sightings	*E*	*2*	*Short*

Goal 4.2: Environmental monitoring is consistent across the city, region and country and informs our biodiversity management				
Objectives	Actions	Funding	Priority	Timeframe
4.2.1 Follow international best practice for citywide biodiversity monitoring	a. Carry out the City Biodiversity Index and re-evaluate every 5 years to monitor progress	*E*	*1*	*Short*
4.2.2 Monitor biodiversity indicators and outcomes in collaboration with partners	a. Set up consistent terrestrial outcomes monitoring framework and annual programme (incorporating existing monitoring work) in a collaborative approach with other key organisations – to include vegetation monitoring, bird monitoring, lizard monitoring	*Ex*	*1*	*Short*
	b. Set up consistent biosecurity output monitoring to evaluate effectiveness of pest control programmes	*N*	*1*	*Short*
	c. Ensure common indicators for biodiversity monitoring are used so data can be easily aggregated	*E*	*1*	*Short*
	d. Carry out a monitoring programme for Wellington's streams using the Macroinvertebrate Community Index (MCI)	*N*	*1*	*Medium*
	e. Work with other organisations to establish monitoring techniques suitable for community groups and individual landowners	*E*	*2*	*Short*
	f. Establish best practice monitoring for urban environments	*Ex*	*2*	*Medium*
4.2.3 Monitor effects of stormwater runoff on the freshwater and marine environment	a. Work with Wellington Water to implement the intent of the global discharge consent	*E*	*1*	*Ongoing*
	b. Continue to work with GWRC and Hutt City Council on Wellington Harbour sediment investigation monitoring looking at levels of sediment build-up and effects on biodiversity	*E*	*2*	*Ongoing*
	c. Support research through Victoria University Coastal Ecology lab on the effects of heavy metals and sediment on the marine environment	*N*	*2*	*Medium*
4.2.4 Set up systems to ensure monitoring information is used to improve management of biodiversity, taking climate change into consideration	a. Continue review of Council restoration programmes through monitoring planting success	*E*	*1*	*Ongoing*
	b. In order to obtain information on predator presence, conduct chew card monitoring for pests in all the parks with high numbers of lizard or bird densities and species	*N*	*1*	*Medium*

Goal 4.3: We actively seek and share knowledge about Wellington's biodiversity				
Objectives	Actions	Funding	Priority	Timeframe
4.3.1 Continually identify and coordinate local research needs	a. Fund two Masters students per annum to work on projects aligned with the Council's urban ecology research needs	*Ex*	*1*	*Short*
	b. Maintain a research database collating all past and potential research topics	*E*	*2*	*Medium*
4.3.2 Establish a biodiversity network for information sharing	a. Facilitate discussions with key people to decide the best method for interagency cooperation and collaboration on biodiversity related matters, and ensure the implementation of an agreed system	*E*	*1*	*Short*
	b. Support initiatives from other organisations on the development of a biodiversity information-sharing mechanism	*E*	*2*	*Medium*

4.3.3 Have one source of information for everyone	a. Capture all biodiversity information (eg location and species data) related to the Council in one location	*E*	*1*	*Short*
	b. Develop processes so that information available to the public is updated at the same time as other Council databases	*Ex*	*3*	*Medium*

Goal 4.4: We have built our capacity to protect and restore Wellington's biodiversity				
Objectives	Actions	Funding	Priority	Timeframe
4.4.1 Continue to improve our internal expertise and capacity in biodiversity conservation	a. Ensure staff have the ability to set up and monitor forest plots and the ability to carry out rapid vegetation assessment surveys	*E*	*1*	*Short*
	b. Remain informed about the impact of climate change to ensure current species selection is appropriate	*E*	*2*	*Ongoing*
4.4.2 Ensure that the community can get involved in research, including monitoring	a. Faciitate training programmes for community groups that want to carry out monitoring across all terrestrial and aquatic environments	*E*	*2*	*Short*
	b. Develop a meaningful community water monitoring programme and a mechanism for the collection and sharing of that information	*N*	*3*	*Medium*
4.4.3 Promote best practice in biodiversity protection locally, regionally, nationally and worldwide	a. Ensure that all knowledge gained through Council programmes is shared through appropriate forums and the NatureSpace website	*E*	*1*	*Short*

11. MEASURING WELLINGTON CITY COUNCIL'S PERFORMANCE

The following indicators are from the City Biodiversity Index[2] and will be used as a baseline measure for the city, and then a measure by which we can assess our progress.

- Proportion of natural areas in Wellington City
- Connectivity measures to counter fragmentation
- Native biodiversity in built-up areas (bird species)
- Change in number of native species
- Proportion of protected natural areas
- Proportion of invasive alien species (as opposed to native species)
- Regulation of quantity of water
- Climate regulation: carbon storage and cooling effect of vegetation
- Amount of accessible green space
- Number of formal education visits per child to natural areas
- Number of biodiversity projects implemented by the city annually
- Number of agencies/private companies/NGOs/academic institutions/international organisations with which the city is partnering in biodiversity activities, projects and programmes
- Number of outreach or public awareness events held in Wellington City per year

Our targets will also help us measure our performance.

- At least 45,000 native plantings are undertaken by the Council annually*
- At least 34,000 native plants are provided annually by the Council for community planting*
- Two million trees planted in Wellington by 2020
- Integrated pest control (both weed control and control of at least two animal pests) across 70 percent of Council reserve land by 2020*
- Protection mechanisms (such as legal protection, restoration planting and pest control) in place across a representative range of Wellington's biodiversity by 2020.
- All Wellington City Council-owned areas with ecological significance vested as reserves by 2020
- Four ecological management plans created per year for sites of biodiversity value
- Two programmes each year created with the aim of changing human behaviours that have a negative impact on biodiversity
- One training programme provided for across-Council biodiversity awareness per year

Our Natural Capital – Biodiversity Strategy and Action Plan will undergo a comprehensive review, with community consultation, after 5 years, and the action plan updated.

* LTP measures

[2] Convention on Biological Diversity. User's Manual for the City Biodiversity Index. 2012.

12. WELLINGTON'S BIODIVERSITY

Wellington's indigenous biodiversity is maintained by habitats that can be broadly grouped into nine different categories.

Habitat	Current cover (ha)
• Lowland forest	932
• Coastal forest	59
• Scrub and shrublands	116
• Coastal scrub	813
• Coastal fringe	1.5
• Offshore islands	3.4
• Wetlands	3.5
• Streams	260km
• Urban area	4190
• Harbour and coastal waters	8900

Each of these habitats supports a unique community of species and faces a different range of threats; although habitat loss and pest species are common threats across all habitats.

12.1 Forest

Lowland forest

Wellington was once cloaked by about 20,000 hectares of lowland broadleaf-podocarp forest. Trees such as northern rata, with its bright red flowers, would have been a common sight, along with rimu, matai, kahikatea and totara. These would have been emerging through a solid canopy of tawa, kohekohe, kamahi, titoki, pukatea and kowhai. The forest interior would have been thick with climbers like kiekie and supplejack, and the forest floor carpeted with ferns[3,4].

Today, less than 5 percent of this forest remains, mostly in gullies and remote areas out of the reaches of development, fire and early logging. Some areas have also been preserved by early Wellingtonians. Otari-Wilton's Bush and the Wellington Botanic Garden native forest remnant are some of the best examples of these.

These remaining areas of ancient forest are now accompanied by regenerating forest dominated by the ever-present mahoe. These new forests are growing up through the gorse that colonised Wellington's retired farmland and are now a valued part of Wellington's open space[5]. They also have an important role in buffering the ancient forest from the effects of fragmentation.

The remnants of original forest are important seed sources for the regenerating areas. The regenerating areas are important for the health and eventual restoration of many forest species, including birds such as kaka, kakariki and bellbird, and even the long-tailed bat.

Threatened species

Many animals that would have once occurred in Wellington's forests are now extinct in the region, while others – such as Wellington's green gecko – are thought to be in critical decline. However, conservation efforts by Zealandia, Wellington Zoo and DOC are helping to reintroduce some of these species. Birds such as the little spotted kiwi, stitchbird/hihi and saddleback/tieke can now all be seen at Zealandia. Tuatara have also been reintroduced to the sanctuary, as have giant weta, while some lizards have

[3] Gabites, Isobel (1993). *Wellington's Living Cloak: A Guide to the Natural Plant Communities.* Wellington Botanical Society/Victoria University Press, Wellington.
[4] Boffa Miskell (1998). *Wellington's Native Vegetation: A Brief Survey of Early Historical Records.* Prepared by Boffa Miskell Ltd for Wellington City Council.
[5] Park, Geoff (1999). *An Inventory of the Surviving Traces of the Primary Forest of Wellington City.* Prepared for Wellington City Council.

been identified as having translocation potential. Invertebrates such as the giant pill millipede and large land snails may also be released in the sanctuary one day.

Coastal forest
The wind-buffeted and salt-laden coastal escarpments facing the Cook Strait (Wellington's south coast), as well as the harbour escarpments, were once covered with a mix of coastal forest, dense coastal scrub, flax and tussockland, and scree. The coastal forest was dominated by kohekohe, ngaio, northern rata, akiraho and kowhai, while the dense coastal scrub was characterised by tauhinu, mingimingi, matagouri, prostrate kowhai, pohuehue and speargrass. Both also featured scree, coastal flax and tussock.

Today, less than 1 percent of coastal forest remains. Some small remnants can be found along the Harbour Escarpment, as well as some areas along the south coast. Spooky Gully within Te Kopahou Reserve is a good example of a south coast forest remnant, with its spectacular tree hebe forest interwoven with scramblers such as native jasmine and native clematis.

Threatened species
The coastal escarpment is an important habitat for many species that are now threatened, due mainly to habitat loss. One example is the speargrass weevil. The speargrass weevil and Hutton's speargrass weevil live on speargrass around the south coast. However, speargrass has been decreasing due to grazing, pig rooting and out competition by weeds, so the weevil's habitat is being lost. DOC has an active programme translocating the weevils to offshore islands to try to ensure their survival. Another example is the geometrid moth, a striking orange, black and white moth. Again, the main threat to this species is habitat loss, in this case the decline of its host plant pinatoro.

12.2 Scrub and shrublands

Wellington has two main kinds of scrub and shrubland communities: grey scrub and manuka/kanuka shrubland. These ecosystems are a special part of Wellington's biodiversity, are important transitional communities in ecological succession, and are essential habitat for lizards, insects, and some birds.

Grey scrub
Grey scrub tends to occur in the relatively exposed environments of Wellington's south-west peninsula. Grey scrub is characterised by small-leaved divaricate shrubs (shrubs that have fine, right-angled branches with a woody, tangled appearance), and climbers such as pohuehue. It is called grey scrub because it appears grey from a distance. In Wellington's grey scrub, you will generally find small leaved coprosmas, pohuehue, coastal tree daisy, tauhinu, kowhai, manuka and bush lawyer. Te Kopahou has one area of dracophyllum, which is locally significant. Grey scrub is also habitat for the nationally vulnerable plant shrubby tororaro and regionally threatened matagouri.

Manuka/kanuka shrubland
Manuka/kanuka shrubland is generally found on disturbed, previously forested land and lightly grazed hill country. It has become relatively rare in Wellington as gorse has taken over its ecological niche. Wellington's remaining manuka/kanuka shrublands are important to protect to maintain a natural process of forest succession. Research has found that forest growing up through gorse has less diversity of species than forest that grows up through kanuka/manuka, and that some plant groups, such as podocarps, orchids, and small leaved shrubs, are less common in gorse than in manuka/kanuka shrubland[6].

Coastal scrub

[6] Sullivan, J.J.; Williams, P.A.; Timmins, S.A. (2007). Secondary forest succession differs through naturalised gorse and native kānuka near Wellington and Nelson. *New Zealand Journal of Ecology* 31.

The scrub of the coastal scarp has fared a little better than the coastal forest but is still in serious decline[7]. Matagouri is now endangered in the Wellington area, however pohuehue, mingimingi, tauhinu and taupata are still a relatively common sight along the coast, as are flax-clad cliffs.

12.3 Coastline

Coastal fringe

Wellington's coastal fringe is a dynamic mix of rocky foreshore, coastal turf communities, and coastal dunes.

Wellington's rocky foreshore defines the "wild coast" experience, but on closer inspection the rocky foreshore is actually an intricate mix of coastal turf communities (or herbfields), coastal shrubland, sedges, grasses, and rushes. A great example can be found at Hue-te-Taka (Moa Point).

The unifying feature of Wellington's coastal communities is that they are adapted to tolerate very salty and windy environments. The coastal turf communities are characterised by low-growing dense mats of herbs, often with very fleshy leaves that protect the plant from desiccation (for example NZ iceplant, shore bindweed, glasswort). Sedges, grasses and rushes growing in these areas are also specialists at withstanding salt and dehydration. Many also tolerate very low nutrient levels and shifting sands. You can also find coastal shrubs in some of these areas, including tauhinu, sand pimelea and sand coprosma.

Coastal dunes form where there is shelter from strong waves, a supply of sand, and onshore winds[8]. The side closest to the sea (foredune) is very dynamic, and sand-binding plants have an important role. The two main native sand-binders are pingao and spinifex; however, the introduced marram grass is now most commonly seen. Other native species of coastal foredunes are sand tussock, sand coprosma, and sand daphne. An important site for coastal dunes in Wellington is from Owhiro Bay to Karori Stream. In the past, all five native foredune species have been recorded in this area, but in the last 10 years only sand tussock and pingao have been found. This area is one of the only sites in the North Island where "Marlborough minimac" geckos occur. Common, brown, and copper skinks and common geckos have also been recorded here[9].

Coastal wildlife

The coastal fringe is an important place for many bird species, but many of these bird species are now threatened. The banded dotterel is one example; this bird nests in soil, shingle or sand dunes using little, if any, nest material. This means that its breeding ground is easily disturbed by vehicles, people, and pets. The little blue penguin is another example. The "little blue" is the smallest penguin in the world, and adults come ashore in Wellington between May and June to prepare nests, laying eggs from August to November. The landscape has been modified, and their habitat destroyed as a consequence. While many of them have adapted to nest under houses or reserves around the coast, many are killed by vehicles, pets, ferrets and stoats.

Wellington's wild coast also has a number of seal "haul-outs"; the most accessible site is at Red Rocks/Sinclair Head. Between May and October, male fur seals rest up here between feeding. Fur seals are the most common seal around New Zealand and are slowly recovering from commercial sealing in the 1870s.

Offshore islands

The only island that sits within Wellington District is Tapu Te Ranga in Island Bay. Tapu Te Ranga is typical of Wellington's south coast environment and, as an island, potentially offers a safer place for

[7] Sawyer, J.W.D (2004). *Plant Conservation Strategy: Wellington Conservancy 2004-2010.* Department of Conservation, Wellington.
[8] Milne, R. & Sawyer, J. (2002). *Coastal foredune vegetation in Wellington Conservancy.* Department of Conservation, Wellington.
[9] Melzer S & Bell, T. (2014).Lizard survey of Wellington City Council-administered parks & reserves: final report. Unpublished EcoGecko Consultants Ltd report prepared for the Wellington Council, June 2014.

nesting and roosting seabirds. Tapu Te Ranga is designated as a Conservation Site in the District Plan. It is characterised by flaxland, salt marsh and scrubland, and is home to two rare plants found nowhere else in Wellington: *Crassula moschata* and *Suaeda novae-zelandiae*.

Coastal waters

Wellington's coastal waters are home to marine mammals such as the common dolphin and orca, and Wellington Harbour has unique marine features including a giant kelp forest and a population of rare sponge. The waters of Wellington's south coast support a rich and varied mix of plants and animals, due partly to a complex topography and wide variety of habitats. The high biodiversity is also due to the collision of three major oceanic currents, the result being a mix of warm Pacific and cold sub-Antarctic waters. The community of plants and animals found here is unique in New Zealand, with many species occurring at the northern and southern limits of their range. At least 100 different species of algae (seaweed) have been recorded on the south coast, and sea horses, many fish species, crayfish and paua can all still be found. Even Wellington's intertidal zone is filled with a rich number of seaweeds, shellfish and other invertebrates.

Nationwide, scientists estimate that as much as 80 percent of New Zealand's indigenous biodiversity may be found in the sea. Yet less than 1 percent has ever been surveyed. On average, seven new marine species are identified every fortnight.

The marine environment is also very important for many of our freshwater fish species. Almost half of them are diadromous, using both the streams and the sea to complete their life cycle. Our native eels are thought to breed in deep ocean trenches somewhere near Tonga. Their larvae return to New Zealand on the ocean currents and re-enter the stream systems. The adults never return as they die after spawning.

The Council's management extends only as far as the mean high water level. However, there is no doubt that what happens on the land influences what happens to the harbour and coastal ecosystems. Land management practices have flow-on effects down to the sea, especially via streams. Despite many environmental pressures, the general condition of Wellington's intertidal sandy beaches and estuaries is currently healthy[10].

12.4 Freshwater

Streams

Streams are one of the Wellington region's threatened ecosystems. The streams are also affected by what happens in their catchments, which is the area of land drained by that stream system. Wellington's streams can be described simply as rural streams and urban streams. Rural streams include lower Karori Stream, Makara Stream and Ohariu Stream – as well as some of the more remote or "wilderness" streams, such as Oteranga Stream. Much of the country associated with these rural streams has a long history of farming and grazing, and these streams are often characterised by a lack of streamside (riparian) vegetation. Some rural streams, such as Waiariki and Opau Streams, also flow through areas of fragmented or regenerating forest.

Urban streams include Owhiro Stream, Kaiwharawhara, Ngauranga and the Porirua Stream system, as well as the "lost streams" (now piped) of Te Aro, Houghton Bay, Miramar and the inner city. The Porirua Stream system, or catchment, is the largest in Wellington, running north from Johnsonville to exit at Porirua Harbour. Urban streams have been, and continue to be, heavily modified and influenced by residential development and urban living.

[10] Stevens, L., Robertson, B. & Robertson, B. (2006). *Broadscale habitat mapping of Sandy Beaches and River Estuaries – Wellington Harbour and South Coast*. Report prepared for Greater Wellington, by Cawthron Institute, Nelson.

Streams provide habitat and food for hundreds of plants and animals – from algae to eels. They also provide freshwater for people and animals to drink and places for people to play[11]. Although many of Wellington's streams are small, and some are even dry at certain times of the year (ephemeral), their biological health is important both for the species they support and also for the harbour and sea they flow into.

Stream margins, or riparian areas, are an important part of stream biodiversity – providing riparian habitat as well as improving water quality and habitat by providing shelter for fish, lowering water temperature, removing sediment, filtering out some pollutants, preventing damage to stream banks, and increasing bird and insect life.

Threatened species
Nearly all of New Zealand's freshwater fish species migrate between freshwater and the sea during their lives and this is an important part of their breeding cycle. This means that if streams are lost, or if there are barriers to fish passage, then fish will become extinct from that particular stream. Giant kokopu, long finned eel and short jawed kokopu are all nationally threatened fish that are known to live in Wellington.

Wetlands
Wetlands include swamps, bogs, shallow lakes and salt marshes – essentially, any area of land covered by water for some period of time[12]. Man-made ponds are not normally considered to be a wetland. Wetlands are important places for biodiversity – they support more bird species than any other ecosystem. Wetlands are also important places for water purification (trapping sediment and removing excess nutrients), for preventing flood damage, for healthy fisheries, and for recreation[13].

Most of Wellington's wetlands have been drained, filled and built on. Those that remain are mostly small swamps, usually characterised by raupo, carex and harakeke. These include a raupo wetland in Opau Valley, a carex wetland in Hawkins Hill and a wetland in Takarau Gorge. There is also a small estuary at the mouth of the Kaiwharawhara Stream.

Salt marsh estuary
Wellington's only salt marsh estuary is located at Makara Beach. It is the only area in Wellington suitable for inanga spawning[14]. Estuaries are incredibly rich biodiversity spots due to the combination of terrestrial and wetland plants, seashore life and wading birds. At Makara Beach Estuary there is a community of saltmarsh ribbonwood, as well as salt turf, sedges and rushes. It is an important area for white-faced heron, rare freshwater snails, and black flounder breeding.

12.5 Urban Areas

Approximately 5500 hectares of Wellington are in a built urban environment, compared with 4207 hectares of Council-owned open "green" space. The urban environment also includes 1200 kilometres of road reserve.

It is possible for an amazing amount of biodiversity to be found in this environment. There are about as many wild native plants in New Zealand cities (350–550 species or 14– 22 percent of the flora) as in National Parks (440–660 spp. or 17–26 percent) (Given & Meurk 2000)[15].

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[11] Report from the Parliamentary Commissioner for the Environment, Water quality in New Zealand: Understanding the Science, March 2012
[12] Greater Wellington (2003). Wetland Action Plan.
[13] Russi D., ten Brink P., Farmer A., Badura T., Coates D., Förster J., Kumar R. and Davidson N. 2013. "The Economics of Ecosystems and Biodiversity for Water and Wetlands." IEEP, London and Brussels; Ramsar Secretariat, Gland.
[14] Taylor, M.J. & Kelly, G.R. (2001) Inanga spawning habitats in the Wellington Region, and their potential for restoration. NIWA, report prepared for Wellington Regional Council.
[15] Given, D.; Meurk, C. D. (2000). Biodiversity of the urban environment: the importance of indigenous species and the role urban environments can play in their preservation. *In*: Stewart, G. H.; Ignatieva, M. E. *ed.* Urban biodiversity and ecology as a basis for holistic planning and design. Proceedings of a workshop held at Lincoln University 28–29 October 2000. *Lincoln University International Centre for Nature Conservation No. 1*. Christchurch, Wickliffe Press. Pp. 22–33.

Much of Wellington's land environment[16] that has been identified as acutely threatened[17] sits within the built urban area. The majority of this land is privately owned. Planning that protects and restores the indigenous remnants within this area is critical to the survival of many species, mitigating the effects typical of urbanisation[18].

Private gardens can greatly contribute to the overall biodiversity of the city through suitable plant choice and gardening practices. This not only provides a habitat for the plants themselves, but also creating an attractive environment for indigenous birds, lizards and insects.

People's interaction with the natural environment also plays a key role; it is within the urban area, including Wellington's central business district, that most people experience these interactions. An awareness of the value of biodiversity in our own backyards can lead to an appreciation of the ecological importance of the wider landscape. In this context, social objectives can be as important as ecological outcomes[19].

Introduced species

New Zealand is characterised by a mix of native and introduced species, which make up the country's total biodiversity. New Zealand has the highest number of introduced mammals of any country in the world and the second highest number of introduced birds. We also now have more introduced species of vascular plants in the wild than native ones, and this number is increasing all the time.

Many of the pressures on New Zealand's indigenous biodiversity are from plants and animals that were introduced with the arrival of humans. These species were introduced into Wellington from other parts of the country, as well as from overseas. However, these introduced species are neither all "good" nor all "bad".

Introduced species can threaten our indigenous biodiversity through processes such as out-competition, hybridisation, predation, and browsing. But they can also provide benefits depending on the situation in which they are found.

Introduced species can provide complementary food for a range of indigenous species. For example, the presence of bottlebrush from Australia provides a feeding source for tui. A forest stand, whether indigenous or exotic, provides an extra dimension of habitat (height) in comparison with grassland. This is reflected in the indigenous insect and bird populations that find cover in these habitats.

Our primary production is dependent on introduced biodiversity in agriculture, horticulture and forestry. The revenue from this introduced biodiversity also enables us to further protect our indigenous biodiversity.

Introduced species can be used to effectively convey conservation messages and used as examples for education purposes, such as at Wellington Zoo and the Wellington Botanic Garden. The messages of conservation and sustainability can be shared regardless of the provenance of the species involved. These places also run breeding and propagation programmes, safeguarding global genetic biodiversity in a controlled environment.

Wellingtonians value many introduced species for aesthetic, cultural, and heritage reasons. Introduced species can enable the community to identify with the city by providing evidence of its past in the existing environment. For example, the Wellington Botanic Garden has some of the oldest radiata pine

[16] Leathwick, J; Morgan, F; Wilson, G; Rutledge, D; McLeod, M; Johnston, K. (2003). Land Environments of New Zealand: Technical Guide. Auckland: David Bateman Ltd.
[17] Walker, S; Price, R; Rutledge, D. (2005). New Zealand's remaining indigenous cover: recent changes and biodiversity protection needs. Report no: LC0405/038 prepared for Department of Conservation, by Landcare Research.
[18] Clarkson, B; Wehi, P; Brabyn, L. (2007). Bringing back nature into cities: Urban land environments, indigenous cover and urban restoration. CBER report No. 52. University of Waikato, Hamilton.
[19] Kilvington, M; Allen, W. (2005). Social aspects of biodiversity in the urban environment. *In* Greening the City. Royal New Zealand Institute of Horticulture (Inc.).

in the country (dating back to the 1860s), which went on to become New Zealand's main timber tree. One area of significance to local iwi is a karaka grove between Red Rocks/Pariwhero and Sinclair Head/Te Rimurapa, which is associated with a pre-European Māori settlement site. Karaka is native to the north of the North Island, but has been introduced to Wellington. Pohutukawa, another introduction to Wellington from the north of the North Island, is also of cultural significance and contributes to Wellington's sense of place.

The challenge is to find a balance between the benefits provided by introduced species and the threats they may present to local biodiversity. This balance is best determined on a case-by-case basis.

Surrounding districts

Wellington's biodiversity does not end at the edge of Wellington City's boundaries, and neighbouring areas are very important. For example, many birds migrate to and from Kapiti Island in the north-west, the Tararuas to the north, and the Rimutakas to the east. Stream systems, such as that drained by the Porirua Stream, can incorporate multiple districts within their catchment area. Although this action plan focusses on Wellington City's biodiversity, we must be aware that it is not confined to legal boundaries and ensure that we work with our neighbours to ensure local biodiversity protection.

13. CONTEXT FOR GOALS, OBJECTIVES AND ACTIONS

This section contains the reasoning behind the goals, objectives and actions for biodiversity management within Wellington City.

In order to establish healthy and resilient indigenous biodiversity within Wellington, we need to focus on certain areas. We need to protect what we have, we need to restore what is degraded, we need to research the requirements of our biodiversity and the best methods for looking after it, and we need to connect people to it.

These actions are covered under the following areas: protect, restore, connect and research.

This section also contains guidelines to inform how the Council will carry out the actions under the four areas. These guidelines are for the Council and will be implemented throughout the Council's activities.

13.1 PROTECT

13.1.1 Outcome

As a result of our protection, there has been no further loss of species indigenous to Wellington. There has also been no further decline in rare, threatened or locally significant species, or reduction in size of ecologically significant areas or areas with the potential for future restoration.

13.1.2 Introduction

The current state of our indigenous biodiversity is a legacy of human settlement and subsequent land-use changes. Much of Wellington's original habitat has been lost and altered beyond recognition. As a result there are now only small remnants that still resemble their original state. These are all modified to some extent, influenced by human processes and introduced animals and plants, many of which pose an ongoing threat. Although there has been a change in attitude to the environment, there are still a number of ongoing threats to indigenous biodiversity.

This strategy recognises that we need to address these threats if we are to halt the decline of indigenous biodiversity in Wellington, and sets priorities for its protection. Our priorities for the sites we protect will be decided using our criteria for ecological significance – described in the last section. The strategy uses the Pressure-State-Response framework, developed by the Organisation for Economic Co-operation and Development (OECD) and used by the New Zealand Ministry for the Environment, to identify and address threats.

- **Pressure** – Human activities exert pressures on the environment, changing both its quality and the quantity of natural resources.
- **State** – These changes alter the state, or condition, of the environment.
- **Response** – The human responses to these changes include any organised behaviour or policy that aims to reduce, prevent, or mitigate undesirable changes.

13.1.3 What do we need to protect biodiversity from?

13.1.3 (a) Environmental pests

Pressure and state

Environmental pests (Appendix 4) are one of the greatest pressures on indigenous biodiversity. Pest animals have a negative effect on native species – including birds, reptiles and invertebrates – impacting ecosystems through predation and competition, as well as browsing damaging native vegetation. Pest plants can alter ecosystems, displacing native species, preventing natural succession and, in some cases, leading to canopy collapse.

Plants

Approximately 11 percent (2068 species) of all plants introduced to New Zealand have become established in the wild. Many of the 24,700 introduced species present could establish in the wild in the future. The greatest source of new pest plants is garden escapes and dumping of garden waste (it is estimated that 75 percent of terrestrial and 50 percent of freshwater weeds became established in this way). There are a number of pathways for pest plant spread and these will be considered by GWRC's Regional Pest Management Plan (RPMP). Roads and railways are one pathway for infestation.

Pest plants pose a threat to native ecosystems as they can out-compete and prevent natural succession of native species. Replacement of native plant communities by exotic communities can isolate populations, reducing genetic variability. Closely related exotic species can hybridise with indigenous

species (such as South African iceplant (*Carpobrotus edulis*)). Non-local indigenous species can also be invasive. Karo (*Pittosporum crassifolium and P. ralphii*), karaka (*Corynocarpus laevigatus*), houpara (*Pseudopanax lessionii)* and pohutukawa (*Metrosideros excelsa*), all native to the northern North Island, have been introduced to the Wellington area and in some locations they are altering local plant communities.

To determine management options relating to pest plants and other exotic species, a number of factors need to be considered. Some exotic or non-local species have cultural or historic associations that will influence their management in specific sites or circumstances. For example, some karaka groves are culturally significant for local iwi and therefore protected. The value of some non-native species also needs to be recognised in providing valuable food and habitats for native species.

Animals

New Zealand also has a large number of introduced animal species – some of which are invasive and pose a significant threat to native ecosystems. These include mustelids (stoats, ferrets and weasels), possums, rats, hedgehogs, mice, cats and browsers such as goats, pigs, deer and rabbits.

These species pose a serious threat to native fauna. They find easy food in native ground and cavity-nesting bird species including saddleback, kakariki and kaka. Mustelids, possums, rats, cats and hedgehogs all predate on eggs, chicks, lizards and invertebrates. Mice feed on lizards and invertebrates. Of the mustelids stoats pose the greatest threat as they occupy a broader range of habitats and breed more quickly. Possums, rats and mice also consume vegetation and seeds, altering the composition of indigenous plant communities, and compete with native species for food. Browsers consume large quantities of vegetation thereby changing the structure of plant communities, preventing regeneration and, in some cases, resulting in removal of vegetation and the compaction of soils – aggravating erosion and creating sites for weed invasion.

Some introduced birds compete with indigenous species for resources, such as Eastern rosella. Introduced fish, including trout, threaten freshwater ecosystems through predation, competition and habitat alteration. There are also a number of introduced invertebrates that pose a threat, including German and common wasps and Argentine ants.

There are a number of trends that may increase the risk of new pest plants and animals becoming established in Wellington and potentially making existing species harder to control. There may also be opportunities offered by national and local developments, and the development of new tools and techniques in pest management.

Response

The Council controls a range of pests on its land in accordance with its responsibilities under the National Pest Plant Accord, the Regional Pest Management Strategy (RPMS) and other statutory responsibilities. Our primary focus for pest plants in recent years has been the control of species identified under the RPMS as the responsibility of landowners, specifically old man's beard, cathedral bells, wild ginger and banana passionfruit, as well as site-led management at sites of ecological significance.

Wellington City Council funds possum control work across most of the city. They are controlled in partnership with GWRC within three areas designated as GWRC Key Native Ecosystems. This work has also controlled rats as by-kill. Other species have been controlled in response to the needs of specific sites and available funding. Goat control has been carried out in response to growing goat numbers in the south-west of the city, and rabbits have been controlled in localised areas dependent on biodiversity needs.

Approaches to pest control

The pests to be controlled within a site are those that have the potential to adversely affect the biodiversity values of the site. These are generally the widespread species, but can also include species that are currently localised in distribution but have the potential to become significant in the future. A precautionary approach is used. The best time to eradicate or contain a pest species, if it poses a future threat, is in the early stages of infestation, when populations are small and localised. Control costs at this point are relatively low. The more widespread and established a pest, the more difficult and expensive it is to control.

These species are prioritised in accordance with their ability to cause significant damage and the sites are prioritised in accordance with the criteria in Appendix 1.

Species led programmes
Species-led programmes are proactive, concentrating on a specific species throughout the region and what is required to control and restrict that species to minimise future threat. Species-led programmes are particularly relevant in managing weeds and pest animals in the early stages of establishment, when numbers are low and/or distribution is limited, and there is potential to minimise future control costs and environmental impacts. Species-led management must assess the potential impacts of a species, how fast and how well it establishes and spreads, and how practical it is to eradicate, contain or manage it. Rapid response to a species is the optimum, but factors such as the size of the infestation, ease of control, effectiveness of control methods and the need for the cooperation of other parties will also have an influence.

Site-led programmes
Site-led programmes focus on protecting identified values in ecologically significant sites. The focus is not on individual species but on the site, the values within the site and the threats to those values. These may be specific sites of ecological significance and/or rare, threatened or locally significant species. The sites may be whole sites such as a reserve, several sites in close proximity with similar values, or part of a bigger site, such as primary remnant forest in a larger park.

Pest control on private land
Plant and animal pests occur across both public and private land. Where the Council is intensively managing pests on land with significant biodiversity values, it is essential to consider how the reinvasion of these sites from adjoining non-Council land can best be managed. Education of private landowners is one method but is generally a long-term project. There are certain circumstances where Council control of pests on neighbouring land would help prevent re-infestation of Council land and reduce the need for additional pest control. Landowner/occupier consent would have to be obtained to access the land.

A priority is to look at pest control on private land to create buffer zones around our ecologically significant areas. The impacts of private land ownership and the mobility of pest animals make it more difficult to implement, but for effective control of many pest animal species the co-operation of the community is essential.

As new subdivisions are developed, we also have to consider the future threat of garden escapes, introduction of weeds and some pest animals (including domestic cats) into these areas that have previously been only lightly affected. Land uses that disturb or alter the environment also have the potential to open up new areas to invasion by weeds.

Integrated pest control
Consideration must also be given to the impacts of pest control on the environment, and the control of pests should not create opportunities for further and possibly worse pests. Within an urban context, the impact of removing one pest species on the rest of the ecosystem needs to be considered. To achieve integrated pest management, a "suite of pests" approach needs to be considered, targeting multiple pest species at once to bring their levels down together. This is particularly applicable to predators and

will assist in avoiding competitor release and mesopredator release. For example, control of mustelids can result in explosions in rat numbers presenting an equal threat to many species.

Methods used

Agrichemicals are the main method used for controlling pest plants. *Vertebrate toxic agents* are primarily distributed through ground control involving a network of bait stations, and are used across most Council land, primarily targeting possums and reducing rodent numbers. *Trapping* is the most effective method for targeting some animal pest species, primarily mustelids and hedgehogs, rats and complements the use of toxins. Some species cannot be trapped or poisoned, and *hunting* is the only option for control. These species include feral goats, pigs, rabbits and hares. *Biological control* is the use of naturally occurring parasites, predators and pathogens to control target species. Biological control is primarily used against pest plants, and is strictly controlled and researched nationally to ensure the agent cannot adversely affect native ecosystems. The benefits of biological control include reductions in the use of chemicals, cost-effectiveness and being highly targeted. *Fencing* is the most effective means for excluding goats, pigs, deer and livestock from sites with high biodiversity values or where the natural regeneration of native vegetation is the management objective.

13.1.3 (b) Habitat loss and fragmentation

Pressure and state

Wellington's urban growth poses a threat to remaining indigenous ecosystems. Although large-scale habitat loss is not the threat it once was, there is a continued loss of indigenous habitat by development, land-use intensification and changes in land-use affecting bush remnants, streams and wetlands. Coastal development, including existing infrastructure and buildings, also pose a threat to coastal habitats. The cumulative impact of incremental changes needs to be considered. Wellington's remaining indigenous forest is particularly fragmented and its streams modified. Some remaining bush remnants on private land currently have limited protection under the District Plan, making them vulnerable.

Habitat loss at a small scale may not appear to be significant but can lead to a degradation of wider ecosystem function at a landscape scale. This can lead to remaining areas being too small to sustain the necessary processes and remove the areas used by mobile species to travel across the landscape. In urban areas, increased development puts more pressure on ecosystems' ability to cope and potentially reduces the effectiveness of the ecosystem services provided by Wellington's natural capital.

Response

We must promote and invest in actions to reduce the negative impacts of the city's growth and development on the environment, and use a range of regulatory and non-regulatory tools to do this.

The Council's main mechanism for protecting indigenous biodiversity is through the provisions of the RMA 1991. In particular, the preparation of a District Plan that sets objectives, rules and policies that guide land use and the resource consent process. We will seek to strengthen the protection of our biodiversity through the District Plan, focussing on the primary forest remnants, and ensure alignment between the Council's strategies and policies to ensure biodiversity outcomes are achieved alongside economic development and other wellbeing outcomes.

In addition to statutory policy and planning mechanisms and the delivery of services, the Council can also achieve its policy objectives to promote the protection of areas of ecological significance on private land through a number of voluntary measures as outlined in the Action Plan.

13.1.3 (c) Aquatic ecosystem degradation

Pressure and state

Aquatic habitats are vulnerable to degradation through heavy metal and microbial pollution, and sediment linked to urban development and increased intensification. Increased areas of impervious surfaces – roads, roofs and car parks – leads to increased peak flow and volume of run-off and increased load on stormwater drains. Stormwater runoff is heavily influenced by surrounding land use and activities. Human and urban activities generate a wide range of contaminants that are often transported in stormwater. When it rains, contaminants are washed off hard surfaces and into stormwater networks. Research shows fairly conclusively that the sources of contamination are from buildings (especially unpainted galvanised iron roofs) and neighbouring land uses. Roads are contributors, recipients and conveyors of contaminants from adjacent and often extensive contributing areas.

This contamination of stormwater can result in public health risks, close beaches and affect recreation, shellfish gathering, and cultural and tourism values as well as impacting on marine and freshwater ecosystems. Wellington and Porirua harbours, like other coastal environments surrounded by populated areas, receive significant volumes of stormwater with the potential to pollute their ecosystems.

Land development, especially on hill sites, can cause further erosion, resulting in greater sediment loading on aquatic ecosystems. Hydrodynamic modelling of Porirua Harbour indicates sedimentation rates average about 6mm per annum in the Onepoto arm and 9mm a year in the Pauatahanui Inlet. Work has shown that the biggest sediment contribution is from bare land under construction (37 percent), followed by pasture (33 percent) and with urban runoff contributing the rest (10 percent). Silt is smothering the seabed, affecting seagrass and shellfish beds, and may be depleting the harbour's ability to attract and retain fish. Localised reduction in harbour depths is affecting navigability even for small vessels. These findings reinforce the importance of construction sediment and erosion control, and the need to manage sites in accordance with consent conditions.

Increased sediment affects aquatic ecosystem functioning and sedimentation can affect many miles of stream. Land-based effects from pollution and sediment can have a significant impact on the coastal marine area affecting values associated with the marine environment including recreation, kai moana gathering and cultural values.

Pollution from heavy metals and other chemicals can also affect biodiversity in the freshwater and marine environment. Monitoring conducted by GWRC in 2013/14 shows that water quality in the four streams monitored in the city – Porirua Stream, Makara Stream, Karori Stream and Kaiwharawhara Stream – are degraded having excessively high levels of dissolved phosphorus and (for all but Makara) nitrogen. Raised nitrogen and phosphorus levels cause algal blooms, impacting on ecosystem health. Common sources of excess nitrogen and phosphorus include fertilizer, herbicides and pesticides, sewers and septic systems entering the stormwater system, domestic soaps and detergents being disposed of from private properties. These streams also have excessive levels of *E. Coli,* making them unsafe to swim in. Despite this, the macroinvertebrate index (MCI) in these streams is still excellent to fair – showing that it is not too late to restore the health of these streams.

Response

The Council is planning to manage land use and growth impacts on soil, water and biodiversity within catchments as Wellington grows. This includes impacts on the harbour and coast as well as the streams that run through the city. We will seek to reduce the environmental impacts of urban development and transport, while enhancing our existing natural environmental assets – growing our natural capital.

There are many opportunities for education to increase the number of people that are aware of their impacts on our aquatic ecosystems. A recent survey in Porirua Harbour showed that 40 percent of people were not aware that the stormwater network drained untreated to our streams and sea. Existing education programmes can be strengthened, working closely with Wellington Water Limited where joint objectives can be met.

13.1.3 (d) Climate change

Pressure and state

The effects of climate change on Wellington's indigenous ecosystems are difficult to predict exactly. Ministry for the Environment climate change predictions[20] for the Wellington Region suggest that Wellington City will experience increased temperatures, rainfall and wind, and sea level rise of at least 0.5m over the next 100 years.

This is leading to increased coastal erosion. Increased storm surges and inundation is damaging remaining dunes and other already fragmented coastal ecosystems (coastal turf communities, coastal scrub), as roads and landward development prevent them from adapting to change by "retreating" landward. The capacity of stormwater systems will be exceeded more frequently due to heavy rainfall events leading to surface flooding and increased number of sewer overflows. More frequent and intense rainfall events will lead to more erosion and landslides, threatening property, infrastructure and the "green ribbon" provided by road reserves and streamside areas. Climate change may lead to an increase in the proliferation of pest species, and subtropical pests may become established – requiring new approaches to pest management.

Response

Our response to the pressures presented by climate change is described in the Council's Climate Change Action Plan (2013). The main linkages with this plan relate to the implementation of Water-Sensitive Urban Design into future urban development, increasing the city's ability to sequester carbon by increasing vegetated areas and the importance of pest control in maintaining existing forest cover. Dune restoration can also be used to protect our coastal ecosystems from further damage.

13.1.4 Guidelines

Environmental pests

1. Preventing new species of pest plants and animals from establishing is more effective than eradicating or controlling them.
2. If total exclusion or eradication is not practical or economic, eradication in discrete areas, combined with containment in specific areas and preventing future spread is the next priority.
3. Where pests are established and widespread, and eradication is impractical or uneconomic, the focus will be on controlling them to minimise their adverse impacts on areas with the highest biodiversity values.
4. We will adopt a precautionary principle when we believe a pest species poses a serious threat to priority ecosystems or species. A lack of detailed knowledge or understanding of a pest plant or animal's full potential for damage is not a reason to do nothing.
5. All pest management must be environmentally, socially, culturally sustainable and financially prudent.

[20] Ministry for the Environment (2008). *Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand*. 2nd Edition. Mullan B; Wratt D; Dean S; Hollis M; Allan S; Williams T, Kenny G and MfE. Ministry for the Environment, Wellington.

6. We will employ qualified hunters to carry out any hunting operations and will ensure that adequate notification of hunting operations is given to ensure health and safety requirements are met.
7. We will ensure that all agrichemicals and vertebrate toxic agents are used safely within guidelines by suitably qualified staff and contractors.
8. We will seek to ensure that native vegetation is not accidently damaged during the use of agrichemicals, and where possible we will explore ways to reduce our reliance on these chemicals by exploring new techniques.
9. Biological control will be used where practicable for species that are widespread and in high densities, such as Darwin's barberry, tradescantia and gorse.
10. Fencing effort will be prioritised along the Outer Green Belt where grazing areas are adjacent to ecologically significant areas such as Otari-Wilton's Bush, Khandallah Park and Redwood Bush.
11. Any traps used by the Council, agents of the Council or groups supported by the Council must meet the requirements of approved best practice. If traps are used in urban reserves or near to residential properties they must be safe for non-target species.
12. We will actively trial and evaluate new technologies, including self-setting traps, as part of the animal predator control network.
13. We will carry out regular, ongoing baiting as that ensures that pest populations remain at low levels and less toxin is required.
14. While recognising the necessity of toxin use, we will look at alternatives such as biocontrol, new technologies, and bait station placement to gradually reduce the amount of toxins entering the environment.

Habitat loss and fragmentation

15. Soil disturbance within ecologically significant sites should be minimised. Any further ground disturbance, including track development, within these sites will undergo very careful evaluation as to whether it should proceed.
16. The Council Parks, Sport & Recreation team will advocate for the protection of natural areas across the Council's business groups, and provide information and advice on the ecological impacts of proposed activities and advice and examples of good practice to reduce or mitigate any impacts.

13.2 RESTORE

13.2.1 Outcome

All known original ecosystems within Wellington are represented and are self-sustaining, within which a range of indigenous biodiversity thrives. These areas provide source populations that are able to disperse to surrounding areas, assisting in the ecological restoration of the city's wider habitats.

13.2.2 Introduction

In addition to protecting indigenous biodiversity, its restoration is also essential for Wellington to become a truly Natural Capital. Much of the Council's restoration work is based around the restoration planting programme to increase the area of indigenous vegetation cover in the city, based on the assumption that if the habitat needs of species are met, species diversity will increase and ecological functions will be enhanced.

Aside from active planting, Wellington is fortunate in its level of natural adventive recolonisation by native species. It may not be perfect or in the places that are really under threat but often forms the backbone of our green spaces and is a crucial feature in the restoration of our city.

Restoration planting programme

The Council's Berhampore Nursery grows around 100,000 native plants every year, of which 45,000 are planted and maintained by the Council for habitat and species restoration. An additional 35,000 are distributed among community groups and residents for the same purpose. The nursery grows up to 100 species, from hardy pioneer species to emergent tree species. The plants are all grown from eco-sourced seeds, collected by Council staff.

We use plants that would have originally occurred in the ecosystem as they are adapted for that area. This keeps the distinctiveness of Wellington's local flora, avoids the risk of planting species that could become invasive and, as local plants are better suited to Wellington's conditions, they are quicker to establish and more likely to survive. We also want to recreate habitat for Wellington's indigenous fauna and the best way of doing this is to look at what grew here originally. Ecosourcing means a much higher commitment in terms of seed collection but is the best way to protect and restore our indigenous biodiversity. Ecosourcing guidelines can be found in Appendix 5.

13.2.3 Priority areas for restoration planting

Restoring the integrity of areas

To restore the ecological integrity of core areas of indigenous forests and shrubland, we need to ensure that there are no gaps in the vegetation cover, thereby reducing potential for weed invasion and establishment. Where areas of habitat can be increased and made more dense, the adverse impacts facing forest remnants will be somewhat reduced. Large intact areas are also much easier to efficiently manage than small fragmented areas, and more likely to be resilient and self-sustaining.

Increasing the size and complexity of habitat increases available resources and creates more ecosystem niches, supporting a greater diversity of species and larger populations – making them more sustainable. Larger, intact forest areas have higher quality interior habitat. Planting buffer zones around the outside of these areas not only increases the size but reduces the edge effects.

Weed control, construction work and track building create canopy gaps, disturb the soil and release buried weed seeds. For this reason the restoration planting programme is tied in very tightly with our

environmental weed control and track programme. Canopy gaps can also be caused by natural processes such as tree fall.

Ensuring the integrity of our few remaining sand dunes is also very important. Not only are dunes a threatened ecosystem within Wellington, healthy functioning dunes provide a defence for the city in the event of large storms. Our native sand-binders (spinifex and pingao) produce dunes with a low regular profile, which are more stable. Vegetation won't stop the erosion of the dune, but native sand-binding species are critical for its recovery after a storm event. This was proven in the storm of June 2013 where the dune at Island Bay protected the infrastructure behind it, and is already on its way to recovery. The seawall, however, had no dune in front of it due to the restricted size of the beach and was severely damaged by the force of the waves.

Restoring missing species

Despite historical clearance of native forest, some areas of Wellington have experienced natural regeneration comprising a mixture of exotic and native species. In most of these sites the usual successional sequence has been altered owing to the presence of exotic species such as gorse and Darwin's barberry. Areas where natives are regenerating through gorse tend to lack the species richness of natural succession as would occur through kanuka, leading to a different final forest composition[21]. Within many areas of regenerating forest as well as restored planting areas, there is now single tier forest with little structural complexity, and there is little evidence of missing species returning to these areas naturally.

Owing to the lack of seed sources and natural dispersal mechanisms for the more common canopy and emergent species, areas where natives have naturally regenerated through gorse tend to be mahoe-dominant. To restore Wellington's native forest to anything like its original state will require enrichment planting in certain areas to increase species diversity and restore functioning ecosystems.

Even in many of Wellington's more mature forest remnants there is a lack of some of the species that are considered to be indicators of primary forest, including large podocarps. As well as the podocarps and missing tree species, a range of plant types are required to increase the complexity of a functioning ecosystem. In many areas the forest floor, understorey, subcanopy and emergent layer are missing. Plant types within these layers need to include not just trees and shrubs but grasses, ferns, fungi, climbers and epiphytes to ensure that each tier of the ecosystem holds a full range of representative species.

Another challenge faced in Wellington is the gradual transition of the conifer forest (pines and macrocarpas) across the city (primarily within the Wellington Town Belt) back into native forest. By 2065 we are aiming to have 65 percent of the Wellington Town Belt in indigenous forest. This needs to be a gradual transition from one vegetation type to the other.

Restoring connectivity

At present, many areas of remnant habitat are not large enough to ensure long-term survival of populations of different species in isolation. In the urban area, it is often difficult if not impossible to extend the size of these core areas through buffer planting. To allow populations to expand and survive localised extinctions or reductions in populations, strategically located clusters of vegetation that provide core habitat for indigenous invertebrates, birds and lizards need to be connected. There is the potential to create a greater area of habitat by linking together these remnants. Creating connectivity across the landscape for fauna also enables them to cross-pollinate plants and disperse seeds.

Creating connectivity between our fragmented areas of habitat facilitates wildlife movement and connects significant areas of vegetation. Ensuring connectivity across the reserve network increases the

[21] Sullivan, J. J., Williams, P. A., & Timmins, S. M. (2007). Secondary forest succession differs through naturalised gorse and native kanuka near Wellington and Nelson. New Zealand Journal of Ecology, 31(1), 22-38.

resilience of populations, as they can be mobile in the face of events such as fluctuating food supply, increasing population and human-induced habitat changes. Without linkages between natural areas, individuals and populations can become isolated, which reduces their food supply and restricts their breeding ability.

The aim for restoring our ecological connectivity is not to create continuous vegetated corridors but rather focus on existing natural areas and restoration projects that can contribute to a patchwork of habitats and refuges across the landscape. Such existing areas include parks, road reserves, horticultural and amenity areas, streambanks, coastal fringes, open space and backyards. Animals often rely upon these vegetated areas for movement because they cannot move through more inhospitable urban environments.

In the urban environment we tend to plant forest patches as "stepping stones" as opposed to a continuous forest tract (corridor). This is a practical solution where city infrastructure is also a priority. Stepping stones through the city facilitate movement of mobile species, for example allowing them to rest and feed while moving between core areas. Tall stature vegetation in the right location can be used to fill this function. Appropriate use of species within urban design is a key part of creating this connectivity through the urban and suburban landscape.

To understand the functional connectivity of habitats, we need to consider the behaviour of the species, the distance it can move and its ability to be supported by the habitats through which it must move. Some target species may use corridors only a few trees wide, utilise stepping stones or may fly over open ground to reach quality remnants/patches. And others require corridors tens of metres wide. There will always be species that have trouble passing barriers. For some lizards, ground-dwelling invertebrates and even sedentary, understorey-inhabiting birds, we need to ensure that the areas these species are currently living in are of a quality that can sustain the population.

Wellington City also has several significant regional ecological linkages that need to be considered. The two main cross-boundary terrestrial linkages within Wellington are links into Belmont Regional Park and into Porirua Scenic Reserve. The principal cross-boundary freshwater link is within the Porirua catchment.

13.2.4 Beyond planting

Habitat restoration

As well as planting, there are other requirements for restoring habitat for key species that can't be met in the short term by planting.

Within vegetated ecosystems, the role of logs and leaf litter cannot be underestimated. Leaf litter provides food and shelter for invertebrates. As well as playing an important role as decomposers, invertebrates are essential components of the food web for lizards and insectivorous birds. Rotting logs are good habitat for wētā, lizards and food for other invertebrates. In many areas that are naturally regenerating or being planted, there isn't much natural material to be found on the forest floor.

In an urbanised environment, we have changed things so much that "unnatural" aspects (such as built structures) and introduced species might be forming an important part of the habitat. Within many of the reserves, exotic species are currently filling the role that natives would have originally played. This is particularly the case when it comes to emergent tree species such as solitary macrocarpas and pines within established native forest canopy. While the intention within ecologically significant areas is gradual replacement to indigenous species, this is a lengthy process and in the meantime these large trees fill an important function in terms of creating habitat. They can also provide a food source, as is the case with kaka feeding on the sap of pine trees.

Another role that these large older trees play is providing the right niche for cavity nesting species, which includes kaka, kakariki, saddleback and falcon.

Habitat can also be created through good urban design, aside from planting. If rock walls are designed with gaps and spaces, not only can plants find a home, but they can also provide a great place for lizards. In addition, habitat restoration does not have to be limited to a terrestrial environment. In Wellington advances have been made in the restoration of marine plant communities and further experimentation in this area is required.

Restoring our waterways

Wetlands and streams are a priority for restoration as we have lost 99 percent of the wetlands in Wellington and most of our original streams are piped. Planting streamside (riparian) zones around streams is also important for water quality as it slows runoff and filters sediment before it reaches the stream. Sites for riparian restoration are prioritised around sediment source significance and the impact on the stream and harbour depositional environments.

Actions that can minimise excessive stream sedimentation include the establishment of a sufficient riparian zone and bank stabilisation (ideally using soft engineering solutions). A sufficient riparian zone is commonly considered to be at least 10 metres wide (with a width of 15–20 metres being preferable) and consist of native woody vegetation. Both overstorey and understorey vegetation are needed for a fully functioning riparian zone. A healthy riparian zone is important for reducing sedimentation, as well as restoring safe habitat for instream fauna. Vegetation shades the stream (native fish prefer cool temperatures) and overhanging vegetation allows detritus and insects to fall into the stream, providing a food source.

Another key to creating functioning freshwater ecosystems is to allow fish to travel throughout our catchments. Fish passage within Wellington catchments is limited by large drops, high water velocities, perched structures, low water depths and the presence of physical barriers, including weirs, culverts and fords, which block waterways. A priority will be to restore fish passage throughout the catchments that are still largely in a natural state. These will be assessed by monitoring the species above and below the barrier, identifying how much additional habitat will be opened up by the removal of the barrier, ensuring the barrier removal will not allow access to undesirable species (such as trout) and the feasibility and cost of barrier removal. Options are complete removal of barrier, creation of structures that allow fish passage, retrofitting existing structures such as culverts, and identifying areas of concern that could be addressed as upgrades occur.

13.2.5 Guidelines

Restoring integrity

1. We will focus on restoring the integrity and habitat complexity of our ecologically significant core areas.
2. We will plant around our ecologically significant core areas where possible to buffer them and increase their integrity.
3. We will connect our ecologically significant core areas together through corridors and stepping stones to allow species to move between them.
4. We will restore threatened plant species to areas they are known to have existed.
5. We will use eco-sourced species for all restoration planting, and all other planting within the city where practicable.
6. Riparian planting will form no less than 20 percent of total Council planting per annum and focus on areas requiring shading or stream bank stabilisation.
7. Canopy gaps created as a result of weed control or construction work (including track building) will be a high priority for restoration planting. Sites will be replanted as soon as possible, to reduce opportunities for new pest plants to become established.

8. Canopy gaps created through tree fall will be monitored and will be planted if there is insufficient native seed source, a weed seed bank in the soil, or if it offers an opportunity to enrich species diversity through the planting of emergent tree species.
9. Weedy sites around the edge of forest remnants will be planted as part of restoring the buffer zones.
10. Weed control on sand dunes will be immediately followed by planting to ensure that sand is not mobilised. Fertiliser will be used where we need to encourage existing sand-binders to cover bare sand.

Missing species

11. Large-scale targeted "enrichment" plantings will occur across the city to reintroduce missing species and create a seed source for the city.
12. Within the few forest remnants where the canopy is intact and there are indigenous plants in every tier, no further planting is required. This only applies in a handful of sites in Wellington, including the core area of Otari-Wilton's Bush and Huntleigh Park. Within these sites, enhancement planting will only occur if monitoring shows little evidence of natural recovery.

Connectivity

13. When planting street trees, we will consider their role in connectivity and whether they can be a visual attractant to move birds along a desired route.
14. When planting for connectivity through the landscape, we will work towards the following recommendations[22]:
    - >5-hectare patches at about 5-kilometre spacings
    - >1-hectare patches at about 1-kilometre spacings
    - 0.02-hectare groves at about 200-metre spacings
15. When we aim to re-establish connectivity for any species we will consider the following movements: daily foraging, dispersal to find new territory, seasonal movements following food sources, and long distance migration.
16. For larger highly mobile bird species (such as tui, kereru and kaka), connectivity will be focussed on ensuring large trees and groups of trees are available in strategic locations.
17. For shy and forest-dependent birds that are unable to move across large expanses of highly modified landscape, we will look at opportunities to create continuous canopy and/or a dense understorey.
18. We will take a strategic approach with private gardens and vegetated road reserve with regards to restoring these areas for connectivity, focussing on the needs of target species and linking together core areas.

Habitat restoration

19. Where branches or trees are removed, these will be left on site if they don't pose a weed risk, don't threaten the existing vegetation and don't compromise amenity values. Leaves and other debris will be kept on site when carrying out tasks such as track clearance, rather than removing them.
20. In areas where there are cavity nesting species and no natural cavities to be found, nest boxes should be installed to meet this need in the interim. The use of nest boxes for other bird species such as little blue penguins will also be supported. Nest boxes will only be installed in areas where predator numbers are actively managed, or predator-proof nest boxes will be used.

[22] Maria Ignatieva, M., Meurk,C., van Roon, M., Simcock, R., Stewart, G. *Urban Greening Manual: How to put Nature Into our Neighbourhoods.* Manaaki Whenua Press, 2008.

13.3 CONNECT

13.3.1 Outcome

Wellingtonians are connected to nature. They are knowledgeable and passionate about Wellington's biodiversity and want to live in a city of abundant nature that is in close proximity to them. They have become kaitiaki of the natural environment and take action to support its protection and restoration.

13.3.2 Introduction

> ***"After spending decades struggling to fence off nature from people, conservation is emerging on the global stage with a new vision that emphasizes the importance of connecting nature and people."*** [23]

We are seeking to make biodiversity a mainstream topic by raising awareness of its value to people's wellbeing, and the steps they can take to conserve it and use it sustainably. By connecting more people to nature we want to increase the role of the community as kaitiaki of the natural environment.

As more people live in cities, the greening of urban areas is increasingly important in providing a nature experience. If people are connected to nature, value it and understand its importance in underpinning their lives this should lead to a better quality of life. Wellington already has very active community involvement in the environment, but this can always be increased, for the sake of the environment and the people themselves.

The Council acts as a steward of urban green space, and needs to balance conservation and recreational objectives. Getting this balance right can engage park users in recreational experiences that also help them appreciate the need for nature conservation.

People can take action in a number of ways, all of which are needed. Actions include everything from submitting on Council policies and plan changes and making personal "pro-nature" choices to engaging with others to take action directly to protect and restore natural areas.

13.3.3 Raising awareness and understanding of our indigenous biodiversity

Our vision for Wellington is that indigenous biodiversity is a part of people's everyday lives – they will encounter native plants in urban landscaping and streetscapes, they will experience the thrill of being "buzzed" by kaka on their way to work, they will see eagle rays and New Zealand fur seals on Wellington's waterfront. Encountering native species is important in raising awareness of what is native and telling stories about what has been lost and what can be restored. If people experience indigenous biodiversity first-hand they will value it more and be prepared to take action to protect and restore it. Indigenous biodiversity also contributes towards strengthening local and national identity by celebrating what is special and unique about Aotearoa New Zealand.

The Council understands the value of nature to our city and one of our goals is to ensure this understanding is shared by all Wellingtonians so that they understand the importance of nature on their lives, their impact on it, and what they can do to reduce the impact. Wellington has joined a network of cities – the Biophilic Cities Project – that is seeking to increase the connection between people and nature.

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[23] Daily, Gretchen C., Karieva, Peter M., Polasky, Stephen., Ricketts, Taylor H., Tallis, Heather. *Natural Capital: Theory and Practice of Mapping Ecosystem Services*. Oxford University Press, 2011.

Biophilic cities are cities of abundant nature in close proximity to city dwellers. They are biodiverse cities that value, protect and actively restore this biodiversity. Biophilic cities are green and growing cities where residents feel a deep affinity with the unique flora and fauna found there as well as with the climate, topography and other qualities of place that serve to define their urban home. In biophilic cities, citizens can easily recognise common native species (and in turn care deeply about them). Biophilic cities provide abundant opportunities to be outside and to enjoy nature through active recreation. Biophilic cities encourage us to spend more time amongst nature – increasing our personal wellbeing and resilience.

Biophilic cities place importance on education about nature and biodiversity and on providing many and varied opportunities to learn about and directly experience nature. In biophilic cities there are many opportunities to join with others in learning about, enjoying, deeply connecting with, and helping to steward nature – whether though a nature club, organised walks or volunteering for nature restoration projects. Biophilic cities invest in the social and physical infrastructure that helps to bring residents in closer connection and understanding of nature, whether through natural history museums, wildlife centres, school-based nature initiatives, or parks and recreation programmes and projects. Biophilic cities are globally responsible cities that recognise the importance of actions to limit the impact of resource use on nature and biodiversity beyond their urban borders; biophilic cities take steps to actively support the conservation global nature[1].

Making biodiversity an everyday experience

The work we are doing means that more people will experience indigenous biodiversity as part of their everyday lives. They will see increasing numbers of native birds as witnessed by the proliferation of tui as a result of Council predator control, and kaka as a result of reintroductions by Zealandia and subsequent dispersal across the city. People already experience marine biodiversity during their interaction with the waterfront through chance encounters with New Zealand fur seals, common sightings of short-tailed and eagle rays in Frank Kitts lagoon during summer, sharing Oriental Beach with variable oyster catchers, and the occasional sighting of orca, dolphins or little blue penguins in the harbour or on the south coast. Other encounters may be more common but less appreciated – such as encounters with red-billed and black-backed gulls.

People can also experience native species through amenity planting. Road reserves and street trees provide an important visual link to nature in an otherwise urban landscape. At present, many of these comprise exotic species as well as natives.

Introducing indigenous biodiversity into urban planning

References to native species and cultural forms (eg pou whenua, waharoa) in urban design and landscape architecture are an important tool in "place making" and making a city more "biophilic" – celebrating the unique natural character of a city, placing it bio-geographically whilst making it a more attractive and exciting place to live and work.

Through existing and future plans there are a number of exciting opportunities to include indigenous biodiversity in the city's urban public spaces – making our streets green and creating an eco-inner-city. These will also shape the city in response to its local setting and create inner-city neighbourhoods that tell our stories[24].

As a city set in nature, we have many opportunities to do this[25]. We have emphasised the importance of better green infrastructure such as open spaces, trees and waterways. These plans also identify the importance of the coastal environment, including ensuring that coastal development and activities respect and enhance the landscape, ecological and character values of the harbour and rugged coastal

[24] WCC Central City Framework
[25] Wellington Urban Growth Plan

areas. This offers further opportunities to reconnect people with our coastal fringe and ensure they have easy access to a healthy coastal environment.

13.3.4 Ensuring people understand the importance and value of biodiversity to their wellbeing

In order to create support for the Council to protect and restore biodiversity or take action themselves, people need to understand the importance of biodiversity and natural processes through the life-supporting "ecosystem services" that underpin their lives. The World Health Organization now recognises the interdependence of human health and ecosystem health[26]. The positive, innate bond between human wellbeing and nature is supported by environmental health science[27].

People also need to understand what is "indigenous" and why New Zealand's biodiversity is unique and special, as well as how healthy biodiversity can influence their own health and wellbeing. The Council has a role in informing its citizens about biodiversity. To do this effectively, we also need to work in partnership with other agencies, including DOC, GWRC, NGOs and partners such as Wellington Zoo and Zealandia.

In addition to educating people about the values of our native biodiversity we need to raise awareness around threats to it and the actions we can take to help protect it.

Children and young people

Children must spend more time outdoors – for their good health and the health of our planet. A growing body of research is showing that it is important for children to connect with nature and the outdoors for their health, ability to learn, self-esteem and character development. Childhood engagement with nature is the key to building on this relationship for generations to come. This can include everything from natural unstructured play and edible gardening to involvement in local restoration projects.

The Council understands the importance of connecting future generations with nature, and continues to support a number of education programmes to increase environmental literacy amongst school children and young people. This includes making them aware of where food, fibre, medicine and construction materials come from. We are also developing a number of new initiatives that will help bring young people into closer contact with nature, linked to learning outcomes. We currently support a number of initiatives working with schools to increase children's environmental awareness, including the proposed Children's Garden at Wellington Botanic Garden.

13.3.5 Increasing the number of people who actively protect and restore biodiversity

Conserving our indigenous biodiversity is not the Council's job alone and it requires all sections of society to become involved at some level, taking "pro-nature" action in their daily lives. One role of the Council is to motivate and inspire communities to get more involved – to change behaviour and enable people to take action themselves. If we do this well people will understand why it's important to protect New Zealand flora and fauna, how their actions and choices impact biodiversity, and what they can do to help protect the natural environment.

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[26] Zinsstag J, Schelling E, Waltner-Toews D, Tanner M (2011) From "One Medicine to One Health" and systemic approaches to health and well-being. Prev Vet Med 101: 148–156

[27] Keniger LE, Gaston KJ, Irvine KN, Fuller RA (2013) What are the Benefits of Interacting with Nature? Int J Environ Res Public Health 10: 913–935.

Becoming engaged citizens

Once people care for and value nature, including indigenous biodiversity, they are more likely to become engaged citizens taking action to protect what they value by participating in democratic processes. This includes taking the time to submit on notified resource consents, District Plan changes, submitting on the Council's Long-term and Annual Plans. The Council involves the community in environmental decision-making through its Environmental Reference Group (ERG) – an advisory group made up of non-elected members selected for their expertise or ability to represent a specific interest group.

Making "pro-nature" choices

Initiatives to support behaviour change should lead to people making "pro-nature" choices that impact positively on local and global ecosystems. This might include exercising responsible pet ownership, desisting from dumping green waste in reserves, and preventing pollution from entering drains. Edible planting in people's backyards and public areas also plays an important role in connecting people to the natural environment. We can also promote broader behaviour change to help reduce impacts on global ecosystems and biodiversity – for example, by influencing consumer choices towards buying Forest Stewardship Council (FSC) approved sustainable timber, and climate change related actions, such as reducing emissions from transport, and energy conservation.

Taking action – backyard biodiversity

We can also encourage and enable people to take action in their own backyard to protect biodiversity. The community needs to understand the impact of their actions (both positive and negative) on indigenous ecosystems and the measures needed to protect and restore them. Private backyards play a key role in achieving positive biodiversity outcomes. This can range from removing weeds and planting native plants to providing food and habitat for birds, lizards and invertebrates to trapping or baiting to reduce predator numbers. It can involve actions such as composting, growing their own food and not using pesticides in the garden. All these actions are useful as participation can reconnect people to nature and can lead to increases in other environmentally responsible behaviours[28]. We cannot overstate the importance of private backyards in the bigger picture of Wellington's biodiversity.

13.3.6 Working with partners towards a shared vision for Wellington's biodiversity

Communities and iwi feel a deep sense of stewardship/kaitiakitanga towards their green spaces and natural places, and agencies such as DOC and GWRC have their own mandate-driven reasons. We believe that our goals will only be achieved by working towards a shared vision and in partnership with these allies. We will use our influence and local leadership to agree this common vision and coordinate the effort in our area. Our main partners fall into three categories and these require slightly different partnership strategies.

- Statutory agencies and national Non-Governmental Organisations (NGOs) with an interest in biodiversity. These include the DOC, GWRC, neighbouring local authorities, Porirua and Hutt City Councils, Queen Elizabeth II National Trust (QEII), The National Office of the Royal Forest & Bird Preservation Society (F&B), WWF-New Zealand;
- Council Controlled Organisations – Zealandia and Wellington Zoo;
- Iwi and mana whenua. The Council has a partnership with these groups under the Treaty of Waitangi. In Wellington the bodies that represent mana whenua interests are the Port Nicholson Block Settlement Trust, Te Runanga o Toa Rangatira and the wider Māori community;

[28] Foddy, M., Smithson, M., Schneider, S., Hogg, M. A. Resolving Social Dilemmas: Dynamic, Structural and Intergroup Aspects. Psychology Press. 2014.

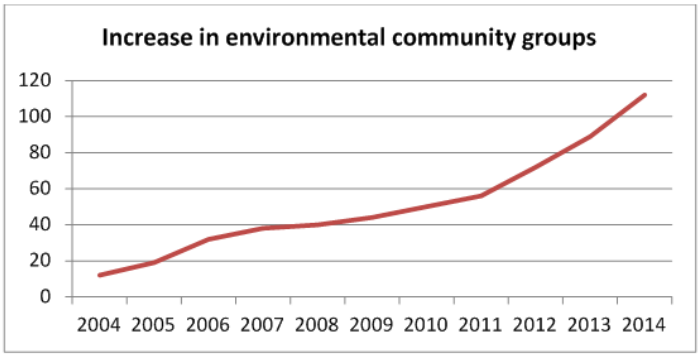
- Local community-based conservation and restoration groups. This includes the Wellington Branch of Forest &Bird and many others ranging in size and formality.

Developing a shared vision for biodiversity

We will work with the primary biodiversity management agencies (DOC and GWRC), mana whenua, NGOs and communities to develop a shared direction. This agreed direction will allow all organisations and groups to work to their strengths in a complementary way, creating the best outcome for biodiversity.

Community restoration groups

The community has an important role to play in the protection and restoration of Wellington's biodiversity and open spaces. Community support has grown considerably over the last 10 years. This is very positive and demonstrates the high levels of passion and interest Wellingtonians have for their open spaces.



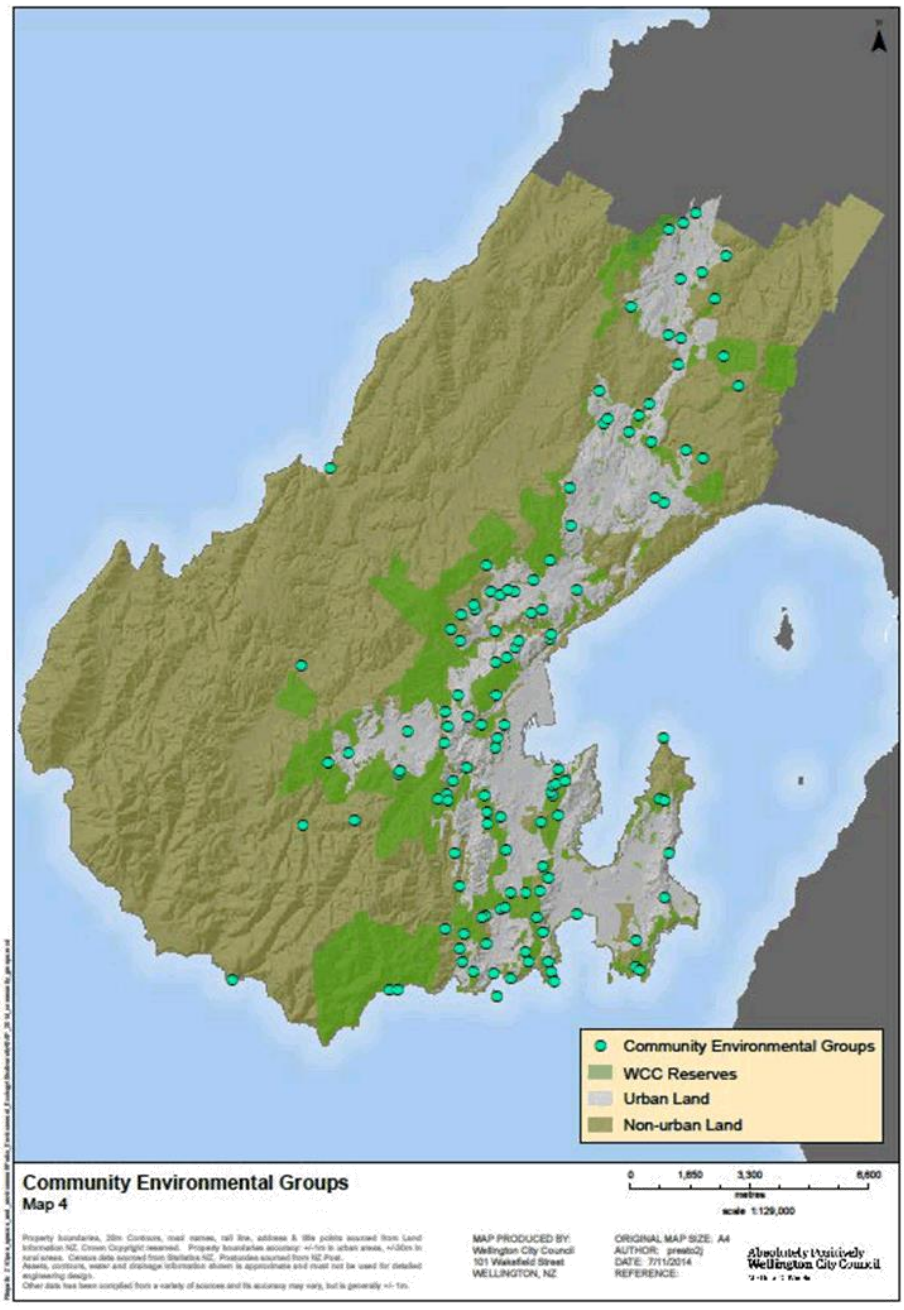
These groups are all involved in environmental protection, restoration, education and/or advocacy ranging from occasional restoration planting (with the support of native eco-sourced plants from the Council's Berhampore Nursery) to active biodiversity management. We also support groups which have a primary focus on edible gardening but play a part in furthering biodiversity. Groups range from two or three individuals working in a neighbourhood reserve to incorporated societies and trusts carrying out restoration and activities including pest animal and plant control and restoration planting over a number of years.

In recognition of the important role played by community groups, the Council supports these groups through a number of programmes. This includes the Council supplying groups with an annual allocation of native plants grown at the Council's Berhampore Nursery, advice from Council technical staff, and support from Park Rangers.

Community involvement in open space areas is an integral and valuable part of managing of the land. However, the establishment of community groups does not always reflect the priority of the area in terms of ecological values and biodiversity. The Council is committed to supporting such groups and their projects regardless of site significance, as it is important that everyone has the ability to connect with a restoration project in their own way. We work with groups to integrate them within the overall management of open space areas, and ensure that the projects are sustainable. This may result in resources being applied to open space in recognition of the community interest ahead of biodiversity values, recognising the future potential of a site and the importance of engaging a large number of the community. The criteria by which community group support is assessed is outlined in Appendix 2.

The Council's Our Living City grant pool supports environmental projects, including ecological restoration, smart energy, community gardens and sustainable transport. The fund runs three rounds a

year with an annual cap of $80,000, and applications are assessed by a panel comprising Council officers and elected members. Advice on applications is sought from relevant Council business units.



Working in catchments

Given the nature of the issues around aquatic ecosystems, the Council needs to facilitate coordination between community groups working within the city's water catchments. This approach has been successfully piloted in the Kaiwharawhara Stream catchment – with a forum being supported by the Council to improve coordination and communication between groups working there. The Council will promote greater sharing of resources, expertise and cooperation in catchments and may identify individuals or groups to take a lead role in a specific activity based on proven competence and approach. Groups working within a catchment will be supported to work together more closely and develop specific areas of expertise or combine their efforts by merging. This will promote a more efficient use of Council resources and lead to better ecological outcomes.

Ecological leadership

The Council will take a greater leadership role in determining ecological outcomes and restoration priorities for the city and will develop plant lists for specific zones or sites based on these priorities. The plants we provide for restoration purposes in those zones will be based on those lists. The Council will also take a greater leadership role in working with and supporting community groups in terms of technical support and the provision of advice.

Multiple groups

In some areas there are a number of community groups working towards similar goals but not in a coordinated way. Resources can be allocated and ecological outcomes achieved more effectively if groups working within a limited geographic locality coordinate their activities.

Animal pest control

There is a growing interest from community groups in carrying out animal pest control. This brings benefits both in terms of increasing community engagement and creating opportunities to increase the area of land under active integrated pest control. Groups need intensive support and training when they start (including capital investment in traps and equipment), and there are ongoing monitoring and compliance costs to ensure groups are maintaining necessary levels of control to achieve desired biodiversity outcomes. There are also numerous health and safety issues that need to be identified and managed. There may be opportunities to strengthen networks of community groups allowing them to support each other and share experience and best practice.

13.3.7 Guidelines

1. We will make native biodiversity a common experience by reintegrating it into the city's open space network, including the Wellington Town Belt, Botanic Gardens, Outer Green Belt and a network of parks and reserves.
2. There is no single action that will motivate a mainstream audience to take action for biodiversity. It requires multiple, integrated interventions.
3. We need to be clear what the Council's role in behaviour change is, as well as what others are doing. Then we need to work across sectors in designing and implementing programmes.
4. We recognise that securing behaviour change is a long-term process not a single event.
5. To achieve positive behaviour change we will:
    a. address both internal and external motivations and barriers
    b. optimise common motivations and barriers, using non-environmental motivations
    c. recognise the role of social norms, identity, and status for moving towards greater adoption of pro-environmental behaviours
    d. recognise the value in joining up environmental issues for people, as well as joining up organisations' work and messages
    e. give feedback on progress made.
6. We will recognise the need to preserve open spaces to meet values other than biodiversity including sports, recreation and landscape values.

7. The Environmental Reference Group will be consulted early in the policy development process to help Council officers develop policies based on good practice.
8. Where there are multiple groups in a single geographic area, the Council will encourage groups to work together and coordinate their efforts in order to deliver better outcomes, and allocation of resources will be dependent on this collaboration.
9. We will work with a number of partners, including biodiversity management agencies and NGOs, to identify projects we have in common and share resources.
10. Any programme of pest control on open space must be supported by a longer-term strategy of community education and awareness raising and be in partnership with other organisations.
11. We will ensure mana whenua have the opportunity to be involved as partners in biodiversity initiatives.
12. We will work with other Māori groups not connected to mana whenua interests in exercising kaitiakitanga.
13. We will highlight native plant species in amenity planting in public spaces.
14. Urban designers will use representations of native species in street furniture and civic architecture where this fits with the design aesthetic.
15. We will support edible planting as a way to engage people with the natural environment.

13.4 RESEARCH

13.4.1 Outcome

We are leaders in managing indigenous biodiversity in an urban context. We actively seek and share knowledge, support research and use the information we gain to continually improve our management of our natural resources.

13.4.2 Introduction

Today, 85 percent of New Zealanders live in cities and, accordingly, ecological knowledge and consciousness is most relevant to urban populations. The knowledge of how urbanisation impacts upon our natural environment (and, most importantly, how we can reduce those effects) is essential to ensuring our environment remains healthy for future generations. Research and sharing information is crucial when it comes to increasing our ability to manage Wellington's indigenous biodiversity.

One of the challenges that we face is that we do not fully understand the complex interactions between the urban environment and the species that live around us. Much of the research on our indigenous biodiversity has occurred in large-scale natural environments and we are aware that species can behave differently within the complex mix of land uses and habitats that occur within our city.

There are many unknowns about the most efficient and effective ways of restoring Wellington's natural areas, including what may or may not be achievable. Focussed research, in parallel with the Council's monitoring programme, could help us to understand some of the ecological dynamics happening in and around our city, and where best to concentrate restoration efforts.

Because of the size and type of the land under its control, the Council has a valuable resource that can be made available for study by others or used by its own staff for research and investigation. As hands-on managers of open space, and an organisation that is connected to the wider community in numerous ways, the Council has the potential to research issues that are particularly significant locally, in the context of an urban environment.

However, research should not just be limited to Council managed open space. To understand the dynamics across an urban environment, research must be conducted across all land, regardless of use and ownership. The interactions of people – including recreational users, neighbouring property owners and restoration groups – with plants, animals, land and water are also an important and evolving part of the Wellington's ecology.

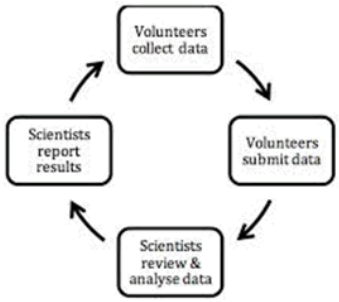
We need to develop new ways to make indigenous nature and biodiversity a part of Wellingtonians' daily lives. We can do this by increasing their knowledge and appreciation of urban nature. We must be able to fully understand our natural environment through research, and be able to explain it and present it in a way that makes sense to people. This will be strengthened if we can include people in the research through their personal observations and experience.

Innovative and specific research can be expensive and generally beyond the Council's resources. The Council can partner with research organisations to identify areas of study that have direct and practical application to open space management. Other agencies, such as Greater Wellington Regional Council (GWRC), the Department of Conservation (DOC), Landcare Research, and universities, also carry out or commission research that is relevant to the ecological management of the Council's open space.

13.4.3 Levels of research

When it comes to research and monitoring, our focus will be at three main levels. These three levels allow us to engage across the community and build the most complete picture of Wellington's ecological health. A consistent approach is needed so the data can be combined and compared across projects, and used to build understanding of Wellington's ecological integrity. Data analysis is essential, particularly when involving the community in data collection, to ensure that the research is meaningful.

Broadscale research
Using a crowdsourcing/citizen science method of data collection, you can source large amounts of data over a wide geographic area for little cost. This approach would be used to find broadscale information (widespread and simple) on things such as lizard distribution in Wellington, and anyone could get involved. Future areas involving citizen scientists includes monitoring biodiversity in backyards, identifying predators from sensor camera images, and establishing the presence or absence of species across the city. With crowdsourcing, volunteers collect and submit the data. Scientists then review and analyse the data and report the results.



Effective use of citizen science data

Research of managed places and species
This research focusses on delivering the detailed information needed to manage places and species effectively at an appropriate scale, so is more focussed and intensive than what can be achieved through broadscale projects. While the Council can undertake some research at this level, we can get a much clearer understanding by engaging our community in monitoring. This level of research includes looking at stream, forest and coastal health and recovery. This can help show what management works best, and can be used to improve the effectiveness of future management. It will also provide locally relevant information to share with the wider community.

Intensive and targeted research
On occasion, we need to answer some very specific questions that require a far more detailed level of research and analysis. We may conduct this research ourselves as a Council, or for this form of specific research, we may work in partnership with local research institutions and/or relevant organisations. This research includes questions around the effect of aspects of the urban environment on specific species, questions around preferred microclimates for threatened species, and questions around the impact of pest species.

13.4.4 Priority research areas

Protection

Environmental pest management

Managing plant and animal pests across a wide range of land types, such as large forested reserves, small suburban parks, thin corridors of vegetation and private backyards, creates a unique set of challenges and most ecological pest control research has been conducted in large forest tracts or an agricultural landscape.

In addition, because the mix of environments and pests is specific to Wellington, there is constant learning by those involved, leading to continual improvement of management strategies and control techniques. Encouragement of an open learning style leads to sharing of useful information in the field. There are new technologies for pest management that need to be scientifically trialled, as well as ongoing trials of biocontrol agents.

Key questions

- How do pest species behave in urban environments?
- Which urban landscape is more likely to contain high levels of pest species?
- Does the urban landscape influence the population dynamics of pest species?
- Is pest abundance influenced by socio-economic variables?
- What is the impact of mammalian predators on our native species (including the impact of cats on lizards and which species of bird are particularly prone to predation by cats)?

Urban development

Stormwater management remains a significant issue within built environments, especially as our city grows and the climate changes. As houses grow larger and sections grow relatively smaller, and with urban intensification, the resulting increase in impervious areas means increased volume and speed of stormwater runoff. Increased runoff and other activities (including stream realignment, piping, damming or creating new urban stormwater discharges) can significantly modify stream habitats. We need to monitor these effects on our freshwater ecosystems and find solutions for minimising the impacts of stormwater runoff.

We need to better understand the utility and potential of small pockets of urban vegetation, such as road reserve, so we can better assess their value to the ecological network of Wellington. We also need to understand the effects of urban intensification on the importance of these remaining small vegetated areas.

Key questions

- How can urban design help minimise pest problems?
- Do we understand the effects of edge effect, habitat corridors, and fragmentation in urban environments?
- What effect does the modification of land and waterways have on aquatic ecosystems?
- How can we increase the uptake of Water Sensitive Urban Design and increase knowledge of the connection between stormwater and streams?
- What native plants will work best as green infrastructure in urban design? This includes green roofs, water-sensitive urban design, and street trees.
- What is the threshold of impervious surfaces against stream health?

Restoration

Restoration has a number of effects on the environment that need to be further understood.

With the fragmentation of our forests and its gradual transition into a variety of states, we need to understand the processes that are occurring and where we need to intervene. It is important to have accurate knowledge of the requirements around enrichment planting and specific species' microhabitat needs, as well as propagation techniques – particularly of threatened species (national, regional and local).

Bird monitoring shows that kaka are spreading throughout the city and breeding throughout reserves. Other species known to have bred within the reserves network through monitoring programmes include kakariki, whitehead, saddleback and bellbird. Each of these species has a different set of characteristics that affects their vulnerability to urban predators. We don't yet know enough about the reasons why some species are managing to increase their numbers and some are failing. There are a number of cavity nesting species in Wellington, such as kaka, kakariki, saddleback, north island robin, bellbird, morepork and kingfisher. We don't know if the significant reduction of old growth forest is limiting these species, or if there are enough natural cavities within the reserve network.

We also know very little about the ecology of other significant groups of animals within Wellington City (namely lizards, bats and invertebrates) which makes the restoration of species within these groups challenging.

Key questions

- What are the microhabitat requirements for the missing plant species we aim to reintroduce?
- What are the habitat requirements (including for nesting) for fauna already present in the city?
- What is the relationship between soil ecology and plant establishment?
- What species are required to provide critical food resources for bird species?
- What natural succession is happening in urban forests?
- How does bird dispersal in Wellington affect the distribution of podocarp seeds?
- What are the limiting factors for a population's expansion, eg food or nesting sites, and what are their powers of dispersal?
- When is each species vulnerable, eg is it while they are nesting or feeding?
- Where are vulnerable or significant populations of our lesser known fauna, such as bats and invertebrates, and plant species, such as fungi?
- Are browsing animals limiting natural regeneration in Wellington reserves?

Connections

There is huge potential for social research, particularly the part that people play in urban ecology. Opportunities for researching these topics may be realised as a result of the research partnership established between the Council and Victoria University of Wellington in 2013. We need to carry out social research to better understand why the community engages with environmental projects, or the barriers to getting involved.

Key questions

- What are the motivators and barriers to people using the reserve network and people engaging in various environmental restoration projects?
- How do we combat "nature deficit disorder" in Wellington?
- What are the health and wellbeing benefits of urban nature?
- How do we use effective community-based social marketing techniques?
- How do we engage people in citizen science projects?
- What are the impacts (social and ecological) of supplementary feeding on urban bird populations?
- What are the economic impacts of urban biodiversity?
- What are economic impacts of volunteer environmental restoration projects?
- What ecosystem services do Wellington's green spaces provide and what are the values of these?

13.4.5 Sharing information

With research on urban ecology (including pest control and species interactions) being given increasing priority by institutions, new information is regularly available. Some of the information is directly relevant to Wellington City and some of indirect relevance, establishing context, principles and theory. Keeping up to date on research will assist in ensuring planning and implementation is in accordance with the latest information available. This information, as well as all information gathered by the Council, needs to be made widely available.

13.4.6 Monitoring and reporting

Without good information, it is difficult to evaluate the success and cost-effectiveness of the work being undertaken. Record keeping and monitoring has not always been undertaken consistently or systematically in the past, especially in relation to restoration plantings. Consequently, consistent information about plant survival rates, maintenance and the rate of canopy closure has not been available to inform future efforts.

By regularly sharing and reporting monitoring data and assessing its usefulness, the Council, researchers and community groups will be able to review and learn from successes and failures, adapt future on-the-ground work as required, and target future monitoring to ensure useful information is being gathered in relation to:

- the health of Wellington's ecosystems
- the results of pest control
- the results of specific restoration projects.

However, the cost implications of monitoring means that the choice of what is monitored and how needs to be carefully considered.

Until recently, monitoring has tended to focus on measuring aspects of operational performance (*output* monitoring), such as the amount of bait taken from bait stations. This remains an important part of monitoring; checking performance through regular audits of weed control and planting sites ensures targets are met, ensures sound financial management and use of resources.

What such figures do not tell us is how well our desired *outcomes* are being achieved. For example, a possum eradication programme may remove all possums, but if it allows rats to increase substantially, then the overall improvement in the environment may be far less than expected. So we need to ensure that our monitoring programmes are comprehensive, answer the essential questions and assist us in meeting our agreed outcomes.

We also need to ensure that monitoring aspects of Council business that impact on biodiversity is considered, such as the outcomes of resource consent decisions and evaluations of projects funded through Council grants.

Baseline monitoring was started in 2002 for the following indicators:

- the distribution and relative abundance of native forest bird species
- the structure and composition of forest and coastal plant communities
- the extent of vegetation types in natural areas managed by the Council
- the condition of forest vegetation sensitive to possum browse
- the condition of stream habitat in urban areas (using Stream Habitat Assessment Protocols).

13.4.7 Guidelines

Research

14. We will initiate and promote crowdsourcing and citizen science approaches to collect large amounts of geographically based information.
15. We will engage our community groups in monitoring specific sites and species, and will give them the support and training required.
16. We will enable our volunteers to get involved in monitoring by providing tools and training for selected methods.
17. We will conduct intensive and targeted research in partnership with relevant organisations.
18. Where possible, we will engage with university students to conduct research on our behalf to support a new generation of scientists.

Monitoring

19. We will include Macroinvertebrate Community Indices (MCI) as part of regular monitoring to better establish the effectiveness of our programmes to improve water quality.
20. We will establish or maintain monitoring programmes to measure changes in the condition of priority sites and to determine the effectiveness of animal and plant management being undertaken.
21. We will monitor the abundance and distribution of Regional Pest Management Strategy pest plants in open spaces.
22. We will carry out audits of pest control operations to ensure that the work is being performed to the required standard and in accordance with all relevant policies and procedures.
23. We will use monitoring to establish the effects of our urban environment on our aquatic ecosystems.
24. All monitoring will be consistent with a local, regional and national picture
25. We will analyse trends from monitoring data and make recommendations for adaptive management

Sharing information

26. We will keep up to date with current best practice and ensure that this information is available to staff and contractors.
27. All information gathered by the Council as part of research and monitoring programmes, particularly programmes that have included the community gathering the data, will be shared with interest groups and the general public.
28. Relevant information gathered by the Council as part of research and monitoring programmes will inform Council plans and policies such as reserve management plans and the District Plan.

14. GLOSSARY

Benthic: living on or under the substrate at the bottom of the ocean.

Biological Diversity (biodiversity): the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (Convention on Biological Diversity).

Biosecurity: the protection of people and natural resources, including biodiversity, from unwanted organisms capable of causing harm.

Buffer zones: the zone around a core protected area that shields that area from possible disruptive external influences.

Community: the collection of organisms found at a specific place and time.

Competitor release: the expansion of a species in the absence of a competitor.

Convention on Biological Diversity: an international agreement on biological diversity that came into force in December 1993 . The objectives of the Convention are: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

Core areas: interior areas of a patch that retain similar abiotic and biotic conditions to pre-fragmented conditions and do not experience strong influences from neighbouring patches.

Corridor: narrow strips of land that differ from the matrix on either side. Corridors may be isolated strips, but are usually attached to a patch of somewhat similar vegetation.

Diadromous: diadromous fish migrate between freshwater and seawater.

Eco-domain: a domain representing a cluster of repeating biogeoclimatic patterns where within each domain there are a consistent, predictable response of ecosystems to impacts and changes.

Ecology: the study of the distribution and abundance of species and the relationship and interactions between the species and their environment.

Ecological integrity: an ecosystem is considered to be healthy and have "integrity" when it hosts all the native plants and animals typical of the area, and when ecological processes are functioning well.

Ecological region: an aggregate of adjacent ecological districts with very closely related characteristics.

Ecological significance: defined for an area by one or more of the following ecological features: representativeness of Wellington's indigenous biodiversity, high diversity of ecological and physical features, degree of natural character, relative size and shape, relative rarity and special features, buffering, connectivity and viability. These ecological features contribute to Wellington's indigenous biodiversity and include consideration of current and potential biodiversity values.

Ecological succession: a fundamental concept in ecology that refers to more-or-less predictable and orderly changes in the composition or structure of an ecological community. Succession may be initiated either by formation of new, unoccupied habitat (eg a severe landslide) or by some form of disturbance (eg fire, severe windthrow, logging) of an existing community.

Eco-sourced species: plants that have genetic provenance in the location.

Ecosystem: a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Edge effects: the changes in population or community structures that occur at the boundary of two habitats.

Emergent trees: trees that are over 30 metres tall and tower above the forest canopy.

Endemic: an indigenous species that is restricted to a particular geographical region, ie it is found nowhere else in the world.

Exotic species: *see Introduced species.*

Ex-situ conservation: the conservation of species outside their natural habitat.

Feral species: a domesticated species that has become wild.

Habitat: the place or type of an area in which a living thing naturally occurs.

Inanga: the adult lifestage of the most abundant whitebait species, *Galaxias maculates.*

Indigenous species: a plant or animal species that occurs naturally in New Zealand.

In-situ conservation: the conservation of species (and the ecosystems and habitats that support them) within their natural surroundings.

Introduced species: a plant or animal species that has been brought to the locality by humans.

Kaitiakitanga: implies guardianship, stewardship, protection, care and vigilance. It introduces the idea of an inter-generational responsibility and an obligation to protect the natural environment.

Key Native Ecosystem: a GWRC programme describing a natural feature/s that is considered regionally important in terms of its ecological value and/or biodiversity.

Land environment: an area whose boundaries encompass similar environmental characteristics caused by environmental variables such as climate, landform and soil.

Meso-predator release: a situation in which populations of small and medium-sized predators rapidly increase after the removal of larger predators.

Native species: *see Indigenous species.*

Originally rare ecosystems: an ecosystem type that was present, and rare, when Māori arrived – and still exists today.

Outcome monitoring: monitoring the desired outcome of biodiversity activities, eg an increase in native birds.

Output monitoring: monitoring the outputs from activities required to reaching your desired outcome, eg a reduction in pest animal numbers.

Podocarps: trees or shrubs that have linear-like leaves and are usually dioecious. Examples are totara, rimu, kahikatea, miro and matai.
Representativeness: the extent to which areas are capable of reflecting known biological diversity and ecological patterns and processes.

Regeneration: the natural process by which plants replace or re-establish themselves

Restoration: intentional activity that initiates or accelerates the recovery of an ecosystem

Revegetation: the process of replanting and gaining vegetated cover on disturbed land

Stepping stones: patches of discontinuous vegetation that can be used to link larger areas together.

Sustainable: conducting activities or using the components of biodiversity in a way and at a rate that does not lead to the long-term decline of biodiversity.

Threatened species: a species that is vulnerable, endangered or presumed extinct. Acutely and chronically threatened indigenous species are species that meet the specific criteria to be listed in one of these categories in the "New Zealand Threat Classification System Lists" (refer to doc.govt.nz for up-to-date lists).

Translocation: a deliberate and mediated movement of wild individuals or populations from one area to another.

Veteranisation: destructive pruning methods, which accelerates the ageing process of trees.

APPENDIX 1 - Ecological Significance Criteria

Sites of ecological significance are assessed in accordance with the following criteria.

These criteria were developed by Wellington City Council, with significant input from Greater Wellington Regional Council and reviewed by Willie Shaw, Principal Ecologist, Wildland Consultants. Criteria were informed by other documents defining ecological significance[29].

Representativeness

Representativeness is an assessment of the characteristic (natural) vegetation and habitats of an area. Assessment is based on either a comparison of present vegetation cover versus past extent (at national and eco-domain level), or spatial analysis of the extent and proportion of indigenous vegetation currently remaining within particular eco-domains. Both include consideration of size, naturalness, diversity and pattern.

Rank	Criteria
High	○ Indigenous vegetation associated with land environments that have 20% or less remaining in indigenous cover nationally ○ Relatively good quality and relatively large examples of indigenous vegetation associated with sand dunes and wetlands ○ Only or one of the best examples of an ecosystem that was formerly more extensive in the ecodomain ○ Supports a large or exceptionally intact example of an ecosystem that was formerly more extensive in the ecological domain
Medium	○ Indigenous vegetation associated with land environments that have 20-30% remaining in indigenous cover nationally ○ Similar to other areas that are reasonably well-represented elsewhere in the ecological domain
Low	○ Degraded, small; better examples present elsewhere in ecological domain

Rarity

Species that are unusual or rare in a local, regional or national context. Threat classifications are from the current version of the NZ Threat Classification System (Hitchmough et al. 2007; de Lange et al. 2004).

Rank	Criteria
High	○ Contains a nationally/regionally acutely threatened species ○ Contains a species endemic to Wellington City ○ Contains a species at or near its national distributional limit
Medium	○ Contains a species nationally/regionally chronically threatened or at risk species ○ Contains a species uncommon in Wellington City
Low	○ No unusual or rare species

Diversity/Special features

Diversity of ecological units, ecosystems and physical features within a natural area as well as biological or physical features unusual or rare in a local, regional, or national context.

[29] Ministry for the Environment, Department of Conservation (2007). *Protecting our Places: Information about the Statement of National Priorities for Protecting Rare and Threatened Biodiversity on Private Land.*
Walker, Susan et al. (2007) *Significance Assessment to Halt the Decline in New Zealand's indigenous biodiversity.* In review.
Norton, David & Roper-Lindsay, J (2004). *Assessing significance for biodiversity conservation on private land in New Zealand.* New Zealand Journal of Ecology 28(2): 295-305

Rank	Criteria
High	○ High diversity of ecological and physical features ○ Supports an originally rare terrestrial ecosystem ○ Contains a nationally uncommon biological community and/or physical feature
Medium	○ Moderate diversity of ecological and physical features ○ Contains a regionally or locally uncommon biological community and/or physical feature
Low	○ Low diversity of ecological and physical features ○ No unusual or rare biological communities or physical features

Connectivity and buffering

An area provides connectivity between fragmented indigenous habitats, buffers or enhances ecological values of a specific site of value, or provides seasonal or core habitat for specific indigenous species. Note that this can include habitats important for acutely and chronically threatened indigenous species (National Priority for protection of biodiversity on private land).

Rank	Criteria
High	○ Important area for connectivity of now fragmented indigenous habitats (movement of fauna, pollen or plant propagules) ○ Provides buffering to a known site of ecological value ○ Critical seasonal or core habitat for a particular indigenous species
Medium	○ Contributes to the connectivity of now fragmented indigenous habitats ○ Partial buffering to a known site of ecological value ○ Similar to other areas that provide seasonal or core habitat for a particular indigenous species
Low	○ No connectivity or buffering function ○ Not known to provide seasonal or core habitat for any particular indigenous species ○ Very isolated from other natural areas

Protection and restoration priorities will be determined using these categories of ecological significance. For each site we need to question whether the site is important for the maintenance of indigenous biodiversity into the future. A site may be significant if it triggers any or all of the criteria. Assessment of threat/viability and sustainability/resilience is important to inform management decisions and options for protection, but not to inform whether or not a site is significant. We also evaluate the diversity within a site and whether there are any special features within that site we need to consider. The site may be considered significant if it triggers any or all of these criteria.

Priority sites in accordance with these criteria include riparian, coastal and original bush remnants as well as areas that have the potential to create linkages between them. Sites for planting are also prioritised around following weed control, planting for enriching the species diversity, reintroducing threatened plant species and planting for improving the habitat of indigenous fauna.

APPENDIX 2 – Tiered support for community groups working on Council land

Practical and technical support from the Council will be tiered to allow for appropriate distribution of resources. Higher levels of service will be provided to "Gold", then "Silver" groups in relation to logistical support (eg loan of equipment, transporting supplies etc) and also in the attendance at and support and supervision of group working bees.

Groups will be prioritised based on a number of transparent criteria and then ranked into different groups based on their score. The scores will be based on a number of criteria:

- the cumulative size of the sites across which a group operates
- the ecological significance of the site(s)
- whether the group is working with a coastal or riparian ecosystem
- the size of the group and the number of people engaged
- if the group carries out a numbers of activities (eg pest control, track maintenance and planting)

The level and type of support offered to groups will be as follows.

Gold

- Up to 1000 eco-sourced native plants per annum
- Specialist assistance with the creation of an ecological restoration plan
- Increased advice around pest control methodologies and monitoring tools
- Provision of animal pest control infrastructure if deemed suitable
- Regular Council attendance at meetings and working bees

Silver

- Up to 500 eco-sourced native plants per annum
- Advice to assist with the creation of an ecological restoration plan
- Occasional Council attendance at meetings and working bees

Bronze

- Up to 200 eco-sourced native plants per annum
- General guidelines to assist with the ecological restoration of their site, including on pest control

People across all groups will be invited to regular workshops, training days and networking functions to increase the connection between the groups and their upskilling.

APPENDIX 3 – Native birds and lizards found in Wellington City reserves

Birds

Common name	Latin name	National threat status
Endemic		
Bellbird	*Anthornis melanura melanura*	Not Threatened
Bush falcon	*Falco novaeseelandiae "bush"*	Threatened - Nationally Vulnei
Grey warbler	*Gerygone igata*	Not Threatened
Kakariki (Red-crowned parakeet)	*Cyanoramphus novaezelandiae novaezelandiae*	At Risk - Relict
Kereru (Woodpigeon)	*Hemiphaga novaeseelandiae*	Not Threatened
Long-tailed cuckoo	*Eudynamys taitensis*	At Risk - Naturally Uncommon
Morepork	*Ninox novaeseelandiae novaeseelandiae*	Not Threatened
New Zealand pipit	*Anthus novaeseelandiae novaeseelandiae*	At Risk - Declining
North Island Fantail	*Rhipidura fuliginosa placabilis*	Not Threatened
North Island Kaka	*Nestor meridionalis septentrionalis*	Threatened - Nationally Vulnei
North Island Robin	*Petroica longipes*	Not Threatened
North Island Saddleback	*Philesturnus rufusater*	At Risk - Recovering
Paradise shelduck	*Tadorna variegata*	Not Threatened
Stitchbird/Hihi	*Notiomystis cincta*	Threatened - Nationally Endar
Tui	*Prosthemadera novaeseelandiae novaeseelandiae*	Not Threatened
Variable oystercatcher	*Haematopus unicolor*	At Risk - Recovering
Whitehead	*Mohoua albicilla*	Not Threatened
Self-introduced		
Black shag	*Phalacrocorax carbo novaehollandiae*	At Risk - Naturally Uncommon
Black swan	*Cygnus atratus*	Not Threatened
Caspian tern	*Hydroprogne caspia*	Threatened - Nationally Vulnei
Grey teal	*Anas gracilis*	Not Threatened
Little black shag	*Phalacrocorax sulcirostris*	At Risk - Naturally Uncommon
Little penguin	*Eudyptula minor iredalei*	At Risk - Declining
Little shag	*Phalacrocorax melanoleucos brevirostris*	At Risk - Naturally Uncommon
New Zealand shoveler	*Anas rhynchotis variegata*	Not Threatened
Pied shag	*Phalacrocorax varius varius*	Threatened - Nationally Vulnei
Pied stilt	*Himantopus himantopus leucocephalus*	At Risk - Declining
Pukeko	*Porphyrio melanotus*	Not Threatened
Red-billed gull	*Larus novaehollandiae scopulinus*	Threatened - Nationally Vulnei
Royal spoonbill	*Platalea regia*	At Risk - Naturally Uncommon
Sacred kingfisher	*Todiramphus sanctus vagans*	Not Threatened
Shining cuckoo	*Chrysococcyx lucidus lucidus*	Not Threatened
Silvereye	*Zosterops lateralis lateralis*	Not Threatened

Southern black-backed gull	*Larus dominicanus dominicanus*	Not Threatened
Spur-winged plover	*Vanellus miles novaehollandiae*	Not Threatened
Swamp harrier	*Circus approximans*	Not Threatened
Welcome swallow	*Hirundo tahitica neoxena*	Not Threatened
White-faced heron	*Ardea novaehollandiae*	Not Threatened
White-fronted tern	*Sterna striata striata*	At Risk - Declining

Lizards

Common name	Latin name	National threat status
Barking gecko	*Naultinus punctatus*	At Risk - Declining
Copper skink	*Oligosoma aeneum*	Not Threatened
Glossy brown skink	*Oligosoma zealandicum*	Not Threatened
Minimac gecko	*Woodworthia 'Marlborough mini'*	Not Threatened
Ngahere gecko	*Mokopirirakau aff. Granulatus 'Southern North Island'*	Not Threatened
Northern grass skink	*Oligosoma polychroma*	Not Threatened
Ornate skink	*Oligosoma ornatum*	At Risk - Declining
Raukawa gecko	*Woodworthia maculata*	Not Threatened
Spotted skink	*Oligosoma lineoocellatum*	At Risk - Relict

APPENDIX 4 – Environmental pests

Pest Animals

Common name	Latin name
Argentine ant	*Linepithema humile*
Australian magpie	*Gymnorhina tibicen*
Brown bullhead catfish	*Ameiurensis nebulosis*
Cat	*Felis catus*
Eastern rosella	*Platycercus eximius*
European hedgehog	*Erinaceus europaeus occidentalis*
Feral deer	*Cervus elaphus, C nippon*
Feral goat	*Capra hircus*
Feral pig	*Sus scrofa*
Ferret	*Mustela furo*
Hare	*Lepus europaeus occidentalis*
House mouse	*Mus musculus*
Koi carp	*Cyprinus carpio*
Mosquito fish	*Gambusia affinis*
Norway rat	*Rattus norvegicus*
Possum	*Trichosurus vulpecula*
Rudd	*Scardinius erythropthalmus*
Ship rat	*Rattus rattus*
Stoat	*Mustela erminea*
Sulphur crested cockatoo	*Cacatua galerita*
Tench	*Tinca tinca*
Wasp	*Vespula germanica; Vespula vulgaris*
Weasel	*Mustela nivalis*

Pest Plants

African club moss	*Selaginella kraussiana*
Agapanthus	*Agapanthus praecox*
Aluminium plant	*Galeobdolon luteum*
Artemesia	*Artemesia spp*
Artillery plant	*Galeobdolon luteum*
Arum lily	*Zantedeschia aethiopica*
Asiatic knotweed	*Reynoutria japonica*
Banana passionfruit	*Passiflora mixta,*
Barberry	*Berberis glaucocarpa*
Blackberry	*Rubus fruiticosus*
Blue morning glory	*Ipomoea indica*
Bomarea	*Bomarea caldasii and Bomarea multiflora*
Boneseed	*Chrysanthemoides monilifera*
Boxthorn	*Lycium ferocissimum*
Broom	*Cytisus scoparius*
Brush wattle	*Paraserianthes lophantha*

Buddleia	*Buddleja davidii*
Cape honey flower	*Melianthus major*
Cape ivy	*Senecio angulatus*
Cathedral bells	*Cobaea scandens*
Cherry	*Prunus spp*
Chilean flame creeper	*Tropaeolum speciosum*
Chinese and tree privet	*Ligustrum sinense; L. lucidum*
Climbing asparagus	*Asparagus scandens*
Climbing asparagus	*Asparagus scandens*
Climbing dock	*Rumex sagittatus*
Cotoneaster	*Cotoneaster franchetii, C. horizontalis*
Crack and pussy willow	*Salix fragili, S. cinerea*
Darwin's barberry	*Berberis darwinii*
Egeria	*Egeria densa*
Elaeagnus	*Elaeagnus x reflexa*
Evergreen buckthorn	*Rhamnus alaternus*
Gazania	*Gazania spp.*
German ivy	*Senecio mikanioides*
Ginger	*Hedychium flavescens, H. gardnerianum*
Great bindweed	*Calystegia silvatica*
Gunnera	*Gunnera tinctoria*
Hawthorn	*Crataegus monogyna*
Himalayan honeysuckle	*Leycesteria formosa*
Holly	*Ilex aquifolium*
Japanese honeysuckle	*Lonicera japonica*
Japanese spindletree	*Eunoymus japonicus*
Lagarosiphon	*Lagarosiphon major*
Marram grass	*Ammophila arenaria*
Mexican daisy	*Erigeron karvinskianus*
Mile-a-minute	*Dipogon lignosus*
Mistflower	*Ageratina riparia*
Monkey apple	*Acmena smithii*
Montbretia	*Crocosmia x crocosmifolia*
Old man's beard	*Clematis vitalba*
Pampas grass	*Cortaderia jubata; C. selloana*
Parrot's feather	*Myriophyllum aquaticum*
Periwinkle	*Vinca major*
Plectranthus	*Plectranthus ciliatus*
Purple ragwort	*Senecio glastifolius*
Sea couch	*Elytrigia pycnantha*
Silver poplar	*Populus alba*
Smilax	*Asparagus asparagoides*
Spanish heath	*Erica lusitanica*
Stinking iris	*Iris foetidissima*
Sycamore	*Acer pseudoplatanus*
Tradescantia	*Tradescantia fluminensis*

Tuber ladder fern	*Nephrolepis cordifolia*
Velvet groundsel	*Senecio petasitis*
Wandering jew	*Tradescantia fluminensis*
Wild onion	*Allium triquetrum*
Wilding conifers	*Larix decidua; Cupressus macrocarpa*
Wilding pines	*Pinus spp*

APPENDIX 5 - Eco-sourcing guidelines

What?
Eco-sourcing is the propagation of native plants for revegetation or restoration from seed or cuttings taken from populations of locally occurring native plants. Ecosourced plants should be used in all restoration projects. The region has been divided into different ecological districts according to the topographical, geological and climatic conditions and biological features and processes. These districts should determine where to collect seed from for your project.

Why?

- Planting species known to naturally occur in the Wellington region preserves the ecological integrity of the region and your project – once you plant a plant it is there for a very long time.
- It maintains the unique local characteristics of native plants as many species can vary considerably throughout their range in New Zealand.
- Local plants are also better suited to local conditions and typically grow better than those sourced from elsewhere.

How?
The easiest approach is to only use plants naturally growing in your Ecological District. You can identify these species through plant checklists for the area. Greater Wellington Regional Council (GWRC) has a Wellington Regional Native Plant Guide or more comprehensive lists can be obtained from the Department of Conservation (DOC). The New Zealand Plant Conservation Network (NZPCN) also has plant checklists available to members (nzpcn.org.nz).

Seed should be collected from as many local native plants as close as possible to the restoration site. This could be from within the same population, within the same catchment or, where species are sparse or locally extinct, from a broader area. If in doubt, seek professional advice from the Council, DOC or GWRC.

Choosing propagation material
Eco-sourcing usually involves seed in preference to cuttings. This ensures that the genetic diversity within each species is maintained as much as possible. Cuttings, being clones of a parent plant, limit the genetic diversity of species and should only be used where it is not possible to obtain seed of a species.

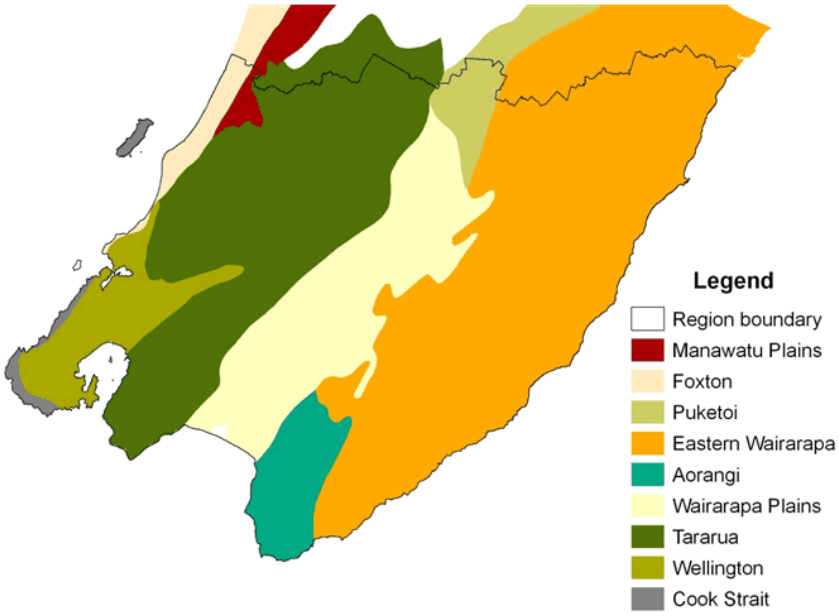
Seed should come from plants that are naturally occurring in a similar habitat as your restoration project, preferably from wild populations. Avoid collecting from urbanised areas, including native trees in a garden setting, particularly those that have been planted. If nearby plants of the same species are known to be non-local, check they are not close enough to allow for cross-pollination. Ideally, sites where ecological processes (ie pollination, dispersal and succession) are functioning naturally should be used.

Seed should be selected from multiple plants at a range of locations within the source site. Collect from different individuals each year. Only collect as much seed as you need and take only a small amount of seed from each parent plant, leaving plenty behind for natural regeneration. If the plant you are propagating is uncommon, try to maintain genetic diversity by sourcing your seed from a number of sites in your Ecological District. When collecting, the higher the diversity (in individuals, communities, habitats, locations) the stronger the population will be in your restoration project.

You will need the landowner's permission to collect seed and other plant material. Always obtain this prior to collection.

Remember that good record-keeping is essential. Label the seed when you collect it and continue labelling when you sow the seed and pot the plants up. Records should be kept of the species, location, date collected and habitat characteristics of the source. You may want to divide your restoration site up into areas to facilitate record-keeping of what you have planted where.

Fig 1. This map shows the extent of the nine Ecological Districts that fall in the Wellington region. The black line marks the regional boundary.



3. Monitoring

WATER CONSERVATION AND EFFICIENCY PLAN ANNUAL REPORT 2013-14

Purpose

1. Report back to Council on water consumption trending and the progress of the Water Conservation and Efficiency Plan (WCEP) activities for 2013-14.

Summary

2. Wellington City's gross water consumption continued for the 8th year in a row to trend downwards over the previous year (-1.0%), down from 26,593 million litres in 2012-13 to 26,340 million litres in 2013-14. Based on regional consumption which is at the lowest level in approximately 40 years, despite a 25% increase in population, gross consumption is unlikely to drop any further without significant investment in all areas of conservation, efficiencies and leakage management.

3. Overall the gross per capita consumption for 2013-14 has been reduced by -1.9% from 366 litres per person per day in 2012-13 to 359 litres per person per day in 2013-14, based on pre-2013 census population data. Domestic consumption is about 220 litres per person per day, the same as in 2012-13.

4. This reduction is summarised as follows:
    - No measurable reduction in overall residential consumption. This level of residential consumption is likely to be the lowest we can expect to get for the resources that we currently devote to water conservation.
    - Slight decrease (-0.1%) in metered commercial consumption.
    - Network improvements continue to generate significant reductions of approximately 6.1% unaccounted-for water losses (3,178 million litres to 2,983 million litres) in the network through the leak detection programme and renewals. The leakage levels appear to be down to an economic leakage level, which means it is unlikely that unaccounted-for water losses (UFW) will decrease further without significant increased resourcing.

5. The current advice from Greater Wellington Regional Council indicates that the region's "savings" in deferred interest costs from funding the next major stage of bulk supply capacity would be between roughly $2M and $7M per annum, depending on the option chosen. Wellington City's portion of these savings would be approximately $1M to $3.8M per annum.

6. We have continued to collaborate with councils to share knowledge and maintain consistency in approach, and in activities such as demonstrating the Aquarius education tool, providing water conservation messages in rates bills and visiting the largest commercial water users to encourage water efficiency.

Recommendation

That the Environment Committee:

1. Receive the information.

Discussion

7. Wellington City's gross water consumption continues to trend downwards over the previous year (-1.9%). Consumption reduced from 26,593 million litres in 2012-13 to 26,340 million litres in 2013-14. Based on regional consumption which is at the lowest level in approximately 40 years, despite a 25% increase in population, gross consumption is unlikely to drop any further without significant investment in all areas of conservation, efficiencies and leakage management.

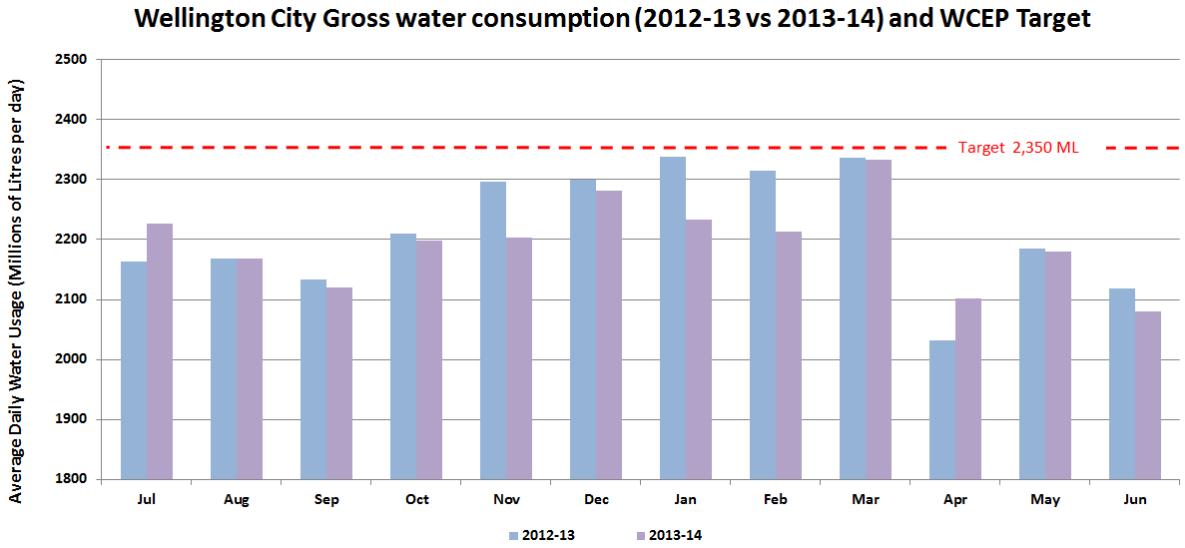
8. The gross per capita consumption for 2013-14 has been reduced by -1.9% from 366 litres per person per day in 2012-13 to 359 litres per person per day in 2013-14. Domestic consumption is about 220 litres per person per day, the same as in 2012-13.

9. This reduction is made up as follows:
   - No measurable reduction in overall residential consumption. This level of residential consumption is likely to be the lowest we can expect to get for the resources that we devote to water conservation.
   - Slight decrease (-0.1%) in metered commercial consumption.
   - A reduction of 6.1% in unaccounted-for water losses (UFW) in 2013-14 compared to UFW losses in 2012-13. This was due to network improvements through the leak detection programme and renewals. UFW reduced from 3,178 million litres in 2012-13 to 2,983 million litres in 2013-14. These leakage levels appear to be down to an economic leakage level, which means it is unlikely that UFW will decrease further without significant increased resourcing.

10. The current advice from Greater Wellington Regional Council indicates that the region's "savings" in deferred interest costs from funding the next major stage of bulk supply capacity would be between roughly $2M and $7M per annum, depending on the option chosen. Wellington City's portion of these savings would be approximately $1M to $3.8M per annum.

Monthly gross consumption figures (2012-13 and 2013-14)

11. The following graph shows Wellington city's gross water consumption by month for the 2012-13 and 2013-14 compared to the WCEP target. It shows overall lower consumption with a distinct decrease in April 2014. The low figure for April 2013 was due to the imposition of water restrictions. Gross consumption is well below the initial target. The WCEP target has been reviewed this year and adjusted to be in line with the long-term plan residential water usage target of 290 l/p/d residential unmetered usage for 2013-14 (which was averaged out to a 2350 m^3 per month target for the following graph). Future reports will use the 2013 census population data, which became available in September 2014.



Unaccounted for Water (UFW)

12. Table 1 demonstrates the reduction in UFW for Wellington City over the past five years.

Table 1: Unaccounted-for water for the last 5 years

	Gross Consumption (ML)	Unaccounted-for Water (ML)	Unaccounted-for Water (%)
2009-10	28,511	4,392	15.4%
2010-11	28,441	4,066	14.3%
2011-12	27,212	3,313	12.2%
2012-13	26,593	3,178	12.0%
2013-14	26,340	2,983	11.3%

13. The percentage of physical losses can be influenced by the age, condition and material types found in the network, the total amount of water used, the system pressure, and the degree of supply continuity. Wellington Water's on-going leak detection programmes and network improvement have mitigated the impacts of these factors and brought leakage levels down to an economic leakage level. It is unlikely that UFW will decrease further without significant increased resourcing.

14. The percentage of administrative losses depends on the degree of effort exerted in identifying illegal connections, repairing meters and managing unauthorised consumption.

Consumption figures for the "top 25" commercial users for 2012-13

15. The percentage of administrative losses depends on the degree of effort exerted in identifying illegal connections, repairing meters and managing unauthorised consumption.

16. Identification and trending of the "Top 25" commercial customers is Activity 6 of the WCEP. This approach can be used to identify leaks on commercial premises (where analysis has been undertaken) or where there may be a need to repair or replace a water meter.

17. The overall metered commercial consumption has reduced nearly 6% over three years. The top 25 users reduced their consumption by about 5%. We work with and monitor major users' consumption to help identify problems to be fixed.

18. Table 2 shows the role of the top 25 commercial customers' water consumption in relation to the overall commercial consumption.

Table 2: "Top 25" Commercial customers as a percentage of overall commercial consumption

	Commercial Consumption (ML)	"Top 25" Commercial Consumption (ML)	"Top 25" Commercial Consumption (%)1
2011-12	7,406	2,972	40.13%
2012-13	6,947	2,892	41.63%
2013-14	6,940	2,837	40.88%

Water Conservation and Efficiency Plan activity status

19. Table 3 indicates the current status of the seven activities in the WCEP.

Table 3: Water Conservation and Efficiency Plan activity status and work planned for 2014-15

Activity	Status	Work in 2013-14 & 2014-15 work streams	Priority	
1.	Community engagement, education & information programme	Underway	A joint approach with other councils has created a consistent approach. The "Aquarius" education tool was upgraded this year and new supporting material added. Aquarius was demonstrated at four Wellington schools and one regional event during the year. Te Aho Tū Roa, the sister programme to Enviroschools is currently organising the use of Aquarius for kohanga reo, Puna reo, Kura Kaupapa and Māori community groups. A new web page about Aquarius was put up on Wellington Water's web site. A flyer about water restrictions and the need to conserve water was included in the January/February 2014 rates demand. Summer outdoor watering restrictions were advertised. In 2014-15 we intend to encourage greater use of the Aquarius tool, review	High

[1] As a percentage of gross commercial consumption

Activity	Status	Work in 2013-14 & 2014-15 work streams	Priority	
			teacher resources and commission new materials about water conservation message to complement Aquarius – linked in with the Enviroschools coordinator.	
2.	Establish a water supply bylaw	Completed	The Water Bylaw came into effect in June 2012. An amendment to the bylaw to enable restrictions to be enacted by the Chief Executive was agreed by Council on 1 August 2013.	Medium
3.	Analysis and publication of Wellington's water consumption figures	Underway	Analysis of 2013-14 consumption has been done at a high level. Monthly consumption figures are put on Wellington Water's website and linked to WCC's website. Initial investigations carried out with Statistics NZ mesh block data to determine more accurate domestic household consumption data were unsuccessful.	Medium
4.	Engage retailers and service providers in order to advance water efficiency and conservation goods and services.	Underway	We have participated in a joint project with HCC engaging with retailers across 3 sectors (whiteware retailers, trade suppliers & bathroom suppliers) to find out the level of staff and customer awareness of water efficiency. Methods to enhance awareness will be explored in 2014-15.	Medium
5.	Investigating the scope and options for supporting the implementation of water conservation initiatives.	Underway	Shower stickers and shower timers have been produced and are distributed in association with Aquarius. We will continue to collaborate with councils to share knowledge and maintain consistency in	Low

Activity	Status	Work in 2013-14 & 2014-15 work streams	Priority	
			approach.	
6.	Targeting "top 25" commercial users to establish opportunities to make their operation more water efficient.	Underway	In 2013-14 the top three consumers were visited to discuss possibilities for increasing water efficiency. Equipment which monitors daily use of the highest users has been installed, providing alerts when unusual patterns occur. A plan will be developed to engage with the current high users and regionally highest users in 2014-15.	High
7.	On-going analysis of active leak detection and cost / benefit for pressure management within the public network.	Underway	Leak detection surveys were completed in 56 out of 69 zones in Wellington city which were acoustically surveyed for leaks. The CBD area is surveyed once a year. The recently issued benchmark survey from NZWWA rated the WCC leakage index as second best out of 28 councils that took part (most recent data from National Performance Review of Water Utilities 2012-13). Wellington Water's leak detection processes were audited by Aecom and came out with an outstandingly good rating. We have now reduced leakage to the economic leakage level where the rate of leakage is unlikely to drop any further without uneconomic further expenditure.	Medium

Financial considerations

20. The work planned over the following year is contained within existing budgets.

Conclusion

21. Although Wellington's water consumption continues to trend downward it is clear that there are more gains that can be made in both the communication of the water conservation and efficiency message and the levels of consumption in the commercial sector.

22. Overall the consumption continues to fall - however it is important that work continues so that a wider base of water conservation and efficiency efforts is created to enable a sustainable level of consumption across the city.

Attachments

Nil

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Authoriser	Anthony Wilson, Chief Asset Officer

Item 3.1

SUPPORTING INFORMATION

Consultation and Engagement

Council's Water Conservation and Efficiency Plan was adopted in 2011. Community and stakeholder engagement is an ongoing component of activities in the plan.

Treaty of Waitangi considerations

Wellington Water Ltd meets with The Tenths Trust and Ngati Toa annually. Simple but effective ideas such as the shower timers have been welcomed, as well as activities promoting the intrinsic value of water, taonga.

Financial implications

The activities in this report are contained within existing budgets.

Policy and legislative implications

The activities in this report implement Council's Water Conservation and Efficiency Plan 2011.

Risks / legal

Not required.

Climate Change impact and considerations

Water conservation and efficiency actions increase the city's and community's resilience to the potential effects of climate change.

Communications Plan

Not required.

Item 4.1

4. Operational

PROPOSED SOUTH COAST BACH LICENCES: RED ROCKS AND MESTANES BAY

Purpose

1. To recommend the Environment Committee approves new licences for the nine baches located at Red Rocks and Mestanes Bay, South Coast.

Summary

2. There are nine baches on Council reserve land along the South Coast that are privately owned. No formal documentation is in place. The bach owners occupy the area at the Council's discretion.
3. Four of the baches are located at Red Rocks (Sinclair Head -Te Rimurapa Reserve). These are located partly on land that is classified as Historic Reserve and partly legal road. See Attachment 1 for aerials of the proposed license areas.
4. Five of the baches are located at Mestanes Bay on land that is (soon to be) classified as Historic Reserve. See Attachment 2 for aerials of the proposed license areas.
5. The South Coast Management Plan acknowledges the privately held baches and "…the general policy is that baches will be transferred into public ownership when the lease is relinquished (either voluntarily or at the death of the lessee)."
6. Because one of the baches partly occupies legal road Council is unable to issue leases to all the baches and therefore officers recommend that, for consistency, licences should be offered to all the bach owners.
7. The aim of the proposed licences would be to provide clarity around the parties' rights and responsibilities. It also serves as notice to the proposed licensees that they are located in a vulnerable area – prone to rising sea levels, erosion, rock falls, tsunami and other adverse events.
8. The licence also seeks to ensure the unique South Coast natural heritage is managed and protected for future generations.

Recommendations

That the Environment Committee:

1. Receives the information.
2. Agrees to grant licences under the Reserves Act 1977 over Lot 1 DP28821 as comprised and described in Computer Freehold Register WN41A/291 and Lot 1, DP 26786 as comprised and described in Computer Freehold Register WN39D/222.
3. Notes that any approval to grant licences is conditional on:
   a. appropriate iwi consultation;
   b. public notification under s119 and s120 Reserve Act 1977;
   c. no sustained objections resulting from the above notification.

Background

9. The bach structures are all privately owned but occupy public land administered by the Council. The baches were built by agreement with the previous landowners. When Council took ownership of the land areas, the baches were allowed to remain on a goodwill arrangement.

10. The four Red Rocks baches were all built in the early 1900s. The first was constructed around 1900-1907 while the other three followed the end of WWI.

11. There were originally eight baches at Mestanes Bay but only five remain today. The oldest dates back to 1910.

12. The site that the baches occupy is registered as a Historic Area under Section 31 of the Historic Places Act 1993.

13. The proposed licensed areas (and access) are located in a vulnerable natural environment that is prone to a number of hazards (including erosion, tsunamis, earthquakes, storm surges and other storm events).

Discussion

14. The South Coast Management Plan (2002) set out Council's intention to develop lease agreements with all owners of baches that address the following: requirements for maintenance of structures and surroundings and compliance with all relevant construction standards; setting of appropriate rentals for the use of public land; definition of tenancy length and future transfer of ownership; other contributions to the management of the coast; restrictions on re-building and expansion of, or significant alternation to, structures.

15. The licence still covers the intent of the South Coast Management Plan, and enables us to be consistent across all baches, given that one is located on legal road.

16. Despite a moratorium on change of ownership, a number of the baches have been sold since the land transferring into Council ownership.

17. In recent years some of the bach owners have constructed ancillary buildings and increased the bach footprints. None of this construction appears to have been carried out with building or resource consent, or in compliance with the Reserves Act 1977.

18. Although officers have requested removal of recent building work, a licence would help provide clarification and clearly define the bach owners' rights and obligations.

19. Having people in this area provides some benefits. In the past, bach owners have provided assistance to other users of the South Coast (for example calling emergency services on behalf of an injured person).

20. The proposed licences would acknowledge that the baches provide a guardianship role for the area via reduced licence fees.

21. On the expiry (or earlier termination) of the licence each bach owner would be required to remove their bach, all improvements, and reinstate the site. However, this will be assessed on a case by case basis, at Council's discretion, and in compliance with all local authority policies and legislation which may apply.

22. Officers met with bach owners at a drop in session on 7 May 2014 at the Owhiro Bay Visitor's Centre to discuss Council's plan to put licences in place. The drop in session was an opportunity for bach owners to ask any questions and raise matters for consideration.

23. Since this time officers have had had meetings, phone and email contact with 8 out of the 9 bach owners.

24. These meetings and discussions have resulted in the proposed licence which seeks to balance the parties' needs.

25. The proposed licence is included as Attachment 3. Key terms are proposed as follows:
    a. Term: 11 + 11 + 11 years
    (i.e. initial 11 year term with 2 rights of renewal for 11 years each)
    b. Final expiry date: 30 June 2048
    (or sooner if cancelled, surrendered or on the death of the last surviving licensee)
    c. Licence Fee: $500 + GST per annum
    d. Licensed use: short term bach occupation

Conclusion

26. Officers recommend that the Environment Committee give approval for licences to be granted to the nine baches at Red Rocks and Mestanes Bay, South Coast.

Attachments

Author	Grace Clapperton-Rees, Property Advisor
Authoriser	Greg Orchard, Chief Operating Officer

Item 4.1

SUPPORTING INFORMATION

Consultation and Engagement

Public consultation will be undertaken as required under the Reserves Act 1977.

Treaty of Waitangi considerations

There are no Treaty of Waitangi considerations.

Financial implications

There are no substantial financial implications

Policy and legislative implications

The proposed licences will be subject to the provisions of the Reserves Act 1977.

Risks / legal

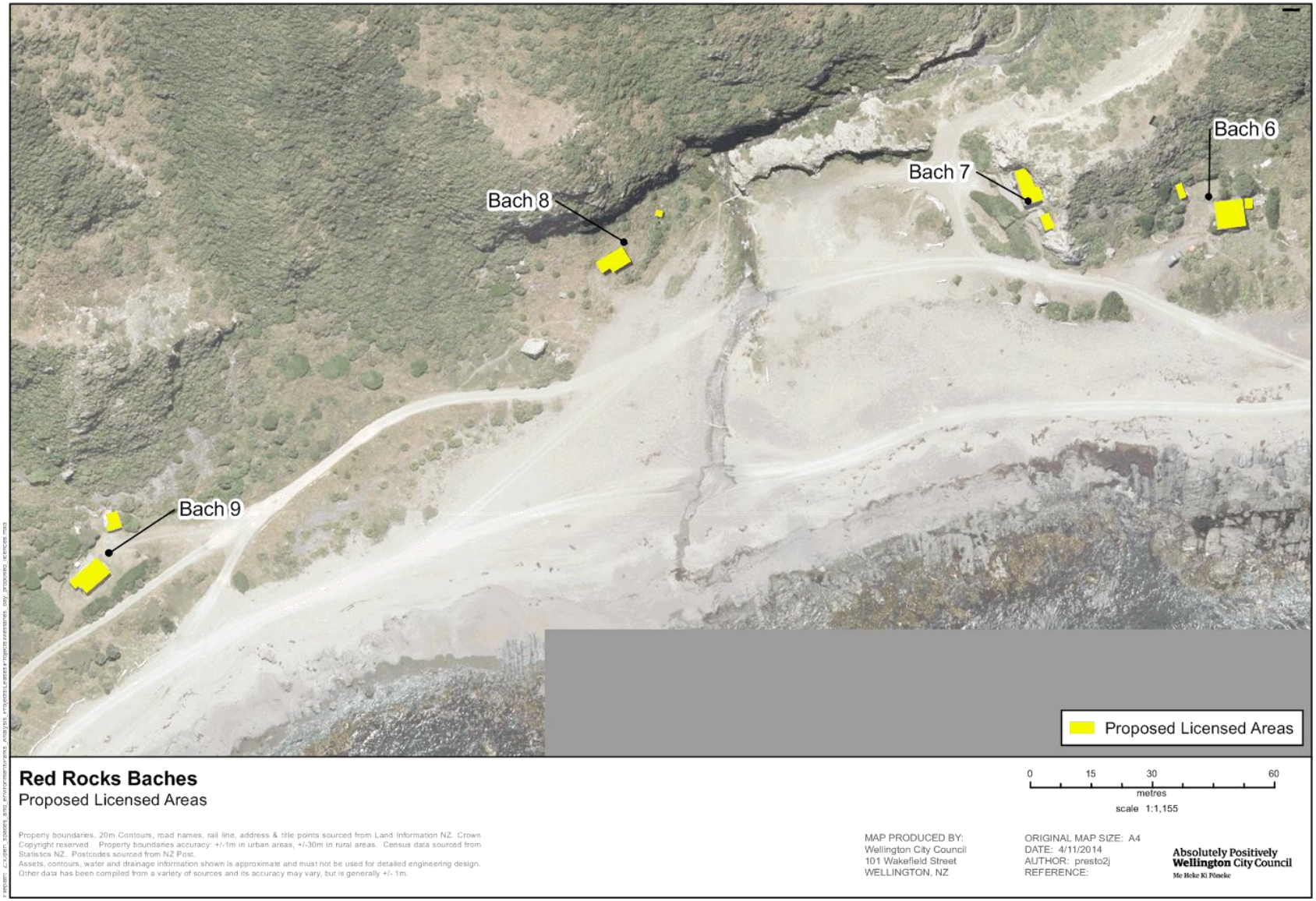
The proposed licences will be subject to the provisions of the Reserves Act 1977.

Climate Change impact and considerations

The proposed licences will have no substantial climate change impact

Communications Plan

Not required


Bach 6
Bach 7
Bach 8
Bach 9
Proposed Licensed Areas
Red Rocks Baches
Proposed Licensed Areas
Property boundaries, 20m Contours, road names, rail line, address & title points sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/-1m in urban areas, +/-30m in rural areas. Census data sourced from Statistics NZ. Postcodes sourced from NZ Post.
Assets, contours, water and drainage information shown is approximate and must not be used for detailed engineering design.
Other data has been compiled from a variety of sources and its accuracy may vary, but is generally +/- 1m.
0 15 30 60
metres
scale 1:1,155
MAP PRODUCED BY:
Wellington City Council
101 Wakefield Street
WELLINGTON, NZ
ORIGINAL MAP SIZE: A4
DATE: 4/11/2014
AUTHOR: presto2j
REFERENCE:
Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Item 4.1 Attachment 2

OCCUPATION LICENCE
SOUTH COAST BACH [SITE NO. OR CODE#]

Between

WELLINGTON CITY COUNCIL **(Council)**

and

[NAME OF LICENSEE/ TENANT] **(Licensee)**

Simpson Grierson

Barristers & Solicitors
Auckland & Wellington, New Zealand
www.simpsongrierson.com

AGREEMENT DATED **2014**

PARTIES

1. **WELLINGTON CITY COUNCIL** (**Council**)

2. **[Name of Licensee / Tenant]** (**Licensee**)

BACKGROUND

A. The Council is the owner of the Licensed Area which is located on part of the Reserve comprised and described in Computer Freehold Register WN41A/291 and classified as historic reserve, subject to the Reserves Act 1977.

B. The Bach is one of a number of baches on a site that is registered as a Historic Area by Heritage New Zealand under section 31 of the Historic Places Act 1993.

C. The Bach was erected on the Licensed Area and is owned by the Licensee. Prior to the execution of this Licence, no formal documentation is in place which authorises the Licensee's occupation of the Licensed Area, and the Licensee occupies the Licensed Area at the Council's discretion.

D. The Council has agreed to formalise the terms of the Licensee's occupation of the Licensed Area by granting a licence of the Licensed Area to the Licensee under section 58A of the Reserves Act 1977.

SIGNED on behalf of **WELLINGTON CITY COUNCIL** as Licensor by:

Full name	Signature
Full name	Signature

SIGNED by **[*Licensee's name*]** as Licensee in the presence of:

[Licensee's name]

Witness:

Signature of witness

Full name of witness

Occupation of witness

Address of witness

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REFERENCE SCHEDULE

LICENSED AREA:	The area comprising approximately **[#]** square metres more or less being the land on which the building known as the **[#Name#]** Bach **[# and anything else eg outhouse and/or septic tank#]** is located, as marked in **[#colour#]** on the attached plan.
RESERVE:	Historic Reserve (known as "Red Rocks/Pariwhero Reserve") being Lot 1 Deposited Plan 28821 as comprised and described in Computer Freehold Register WN41A/291
COMMENCEMENT DATE:	1 July 2015
INITIAL TERM:	11 years from the Commencement Date, subject to the expiry provisions below.
RENEWAL TERMS:	The Licensee is entitled to two rights of renewal: (i) The renewal dates are: • 1 July 2026; and • 1 July 2037; (ii) Each Renewal Term is for 11 years.
EXPIRY DATE:	The term of this Licence will expire upon the earliest of the following occurring: (i) 30 June 2026; or (if this Licence is renewed) 30 June 2037; or (if this Licence is further renewed) 30 June 2048; (ii) This Licence being surrendered by the Licensee; or (iii) The death of the Licensee (or where there is more than one Licensee, the death of the last surviving Licensee); or (iv) This Licence being cancelled pursuant to clause 14; or (v) The Bach being partially or totally destroyed or becoming uninhabitable for any reason whatsoever (this will be assessed on a case by case basis, with advice from the Heritage New Zealand).

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FINAL EXPIRY DATE:	The final expiry date of this Licence will be 30 June 2048;
LICENCE FEE:	$500.00 plus GST payable annually in advance commencing on the Commencement Date.
LICENCE FEE REVIEW DATES:	Three years from the Commencement Date and every third anniversary of the Commencement Date thereafter
INTEREST ON OVERDUE LICENCE FEE:	20% per annum
LICENSED USE:	Short term Bach occupation
COUNCIL'S CONTACT DETAILS:	Property Advisor Property Wellington City Council PO Box 2199, 101 Wakefield Street WELLINGTON Fax: 04 801 3002
LICENSEE'S CONTACT DETAILS:	**[#]**

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THIS AGREEMENT RECORDS THAT:

1. GRANT OF LICENCE

1.1 The Council grants the Licence Rights to the Licensee for the Term beginning on the Commencement Date and ending on the Expiry Date, at the Licence Fee and subject to the terms of this Licence. The Licensee accepts those rights.

2. RENEWAL

2.1 **Preconditions**: The Licensee must give the Council three (3) months' notice in writing that the Licensee wishes to renew this Licence for a further Term. If:

(a) the Licensee has not breached any of its obligations under this Licence; and

(b) the Council approves the renewal of this Licence;

then the Council will at the Licensee's cost offer a new licence of the Licensed Area to the Licensee on the same terms and conditions as this Licence.

2.2 The Council will use its best endeavours to contact the Licensee prior to the date that the three (3) months' notice referred to in clause 2.1 above is required, to advise the Licensee that the Licence is due to expire if the Licensee does not elect to renew it.

2.3 **Documentation:** If so requested by the Council the Licensee will execute a Deed of Renewal or new licence under clause 2.1 in the form prepared by the Council's solicitor.

3. LICENCE FEE REVIEW

3.1 **Guardianship:** The Council acknowledges that the Licensee provides a guardianship role in the immediate and surrounding area of the Reserve and that this is reflected in the initial Licence Fee, which is lower than a current market licence fee. From time to time the Licensee may provide assistance and help to other users of the South Coast when appropriate (for example calling emergency services on behalf of an injured person).

3.2 **Licence Fee Review:** The annual Licence Fee will be reviewed every three(3) years on the Licence Fee Review Date in accordance with the cumulative upwards movement of the applicable December to December Consumer Price Index (**CPI**) (or any similar or equivalent Index in the event that the CPI ceases to be published) for each of the three previous years. To avoid doubt, the appropriate adjustment in the Licence Fee on each Licence Fee Review Date will be calculated cumulatively by adding each of the previous three annual CPI increases together.

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4. PAYMENT OF LICENCE FEE

4.1 **Licence Fee:** The Licensee must pay the Licence Fee in full (with no deduction or set-off) to the Council annually in advance.

4.2 **Method:** All payments of the Licence Fee may be made to the Council either by direct bank payment, cash, cheque, or as the Council may otherwise direct.

5. OUTGOINGS

5.1 **No Utilities:** The Licensee acknowledges that permanent reticulated services are not permitted to be installed to service the Bach.

6. LICENSEE'S ACKNOWLEDGEMENT

6.1 The Licensee acknowledges and agrees that:

(a) **Vulnerable Natural Environment:** The Licensed Area is in a vulnerable natural environment that is prone to a number of hazards (including erosions, tsunamis, earthquakes, storm surges and other storm events) and that the Council is not responsible for any damage to the Bach or any injury or damage from such events; and

(b) **Access:** Access to and from the Bach along the South Coast is vulnerable to natural hazards and that the access route to the Bach is shared with the public and other users. The Licensee acknowledges that access may be closed off by the Council for operational reasons (for example, on Sundays to enable the public to walk along the area) or inaccessible as a result of hazards. The parties agree that the Council has no obligation to provide access to and from the Bach to the Licensee.

(c) **Reserve Gate:** The parties acknowledge and agree that the entrance gate to the Reserve will be locked during daylight hours on Sundays and at any other times stated in any prevailing Wellington City Council policy which may apply.

7. GST

7.1 **Payment:** The Licensee must pay to the Council all GST payable on the Licence Fee and other money payable by the Licensee under this Licence. The Licensee must pay GST on the Licence Fee on each occasion when any part of that fee falls due for payment and on any other money payable by the Licensee on demand.

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8. DEFAULT INTEREST

8.1 If the Licensee fails to pay any instalment of the Licence Fee or any other money payable under this Licence for ten (10) Working Days after:

(a) **Due Date:** the due date for payment; or

(b) **Demand:** the date of the Council's demand, if there is no due date;

then the Licensee must on demand pay interest at the Default Interest Rate on the money unpaid from the due date or the date of the Council's demand (as the case may be) down to the date of payment.

9. LIMITATION ON LICENCE RIGHTS

9.1 **Payment and Performance:** The Licence Rights are subject to the Licensee:

(a) **Payment:** paying all amounts due under this Licence on the due date; and

(b) **Performance:** performing all of the Licensee's obligations under this Licence.

9.2 **Assignment, etc:** The Licence Rights are personal to the Licensee. Subject to clause 9.3, the Licensee must not:

(a) **Assign:** assign or agree to assign this Licence or any of the Licence Rights;

(b) **Sub-license:** sub-license or agree to sub-license any of the Licence Rights; or

(c) **Security Interest:** grant or agree to grant any security interest (as defined in the Personal Property Securities Act 1999) in or over this Licence or the Licence Rights.

9.3 **Renting of Bach to third parties:** To avoid doubt, the Council acknowledges and agrees that the Licensee may not rent the Bach to third parties for accommodation purposes but the Bach may be used by invitees of the Licensee. The Licensee will be responsible for the acts or omissions of any invitee of the Licensee and if any invitee of the Licensee commits a breach of this Licence, then the Licensee will also be deemed to be in breach of this Licence.

10. USE OF LICENSED AREA

10.1 **Limitation on Usage:** The Licensee may use the Licensed Area only for the Licensed Use and for no other purpose. The Licensee acknowledges that a change in the Licensed Use is expressly prohibited under this License and constitutes a breach of the Licensee's obligations, in which case clause 14 of this Licence shall apply.

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10.2 **Use of Licensed Area Not to Create Hazard:** The Licensee shall take all reasonable care to ensure that the Bach is not and does not become a fire hazard and shall take the same care to ensure that the Licensee's activities do not become a hazard to public health or safety or otherwise cause a nuisance to the Council or to other Licensees or to the public.

10.3 **Rubbish:** The Licensee shall not allow any rubbish to accumulate or remain on or adjacent to the Licensed Area. The Licensee shall not dispose of any rubbish on any other part of the Reserve. If the Licensee fails to observe and perform this condition, the Council may remove and dispose of the rubbish at the cost of the Licensee.

10.4 **Human Waste:** The Licensee must install and maintain toilet facilities for use by the Licensee, which have been approved by the Council, in a location and of a type appropriate to the area. These toilet facilities shall be kept in a sanitary condition at all time.

10.5 **Water Supply:** The Licensee has the right to use water from any streams that run through the Reserve so long as it complies with Greater Wellington Regional Council policy. The Council will also comply with Greater Wellington Regional Council policy but has no responsibility to:

(a) ensure that water from the streams is available for use by the Licensee; or

(b) ensure the quality of the water from the streams is suitable for use by the Licensee.

10.6 **Pollution:** The Licensee shall not do or allow to be done anything which would pollute the Reserve or any stream or watercourse running through the Reserve.

10.7 **Risk:** The Licensee acknowledges that the Licensee and all persons authorised by the Licensee to have access to the Licensed Area and to enter the Bach do so at their own risk.

11. CONDUCT ON THE LICENSED AREA

11.1 **Noise:** The Lessee must limit noise levels to a moderate level and in particular must keep the noise level at the boundaries of the Licensed Area to within the requirements of the District Plan and any resource consent issued in respect of any activity on the Licensed Area.

11.2 **Nuisance:** The Licensee must not use or permit the Licensed Area or Bach or any part of the Reserve to be used for any activity which is or may become dangerous, offensive, noxious, noisy, illegal or immoral or which is or may become a nuisance or annoyance to the Council or to other Licensees.

11.3 **Evacuation Plan:** The Licensee is required to have an evacuation procedure in place for natural disasters (including but not limited to an earthquake, tsunami, landslide and storm events).

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12. STANDARD OF BUILDINGS

12.1 No New Buildings or Alternations: The Licensee shall ensure that:

(a) no new buildings or other structures or improvements are erected on the Licensed Area;

(b) no structural alterations of any type or any other alterations increasing the external dimensions or load carrying capacity of the Bach are carried out.

12.2 No Advertising, Painting or Changes to the External Appearance without Consent: The Licensee must not:

(a) advertise on the Bach; or

(b) paint the Bach (with the exception of minor touch ups or repainting of the Bach on a like for like basis);

(c) make changes to the external appearance of the Bach;

without first giving details and specifications (if appropriate) of the proposed work to the Council and obtaining the Council's prior written consent as landowner, in addition to any separate approval required from the Council as a regulatory authority.

12.3 Maintain in Good Order: The Licensee must keep and maintain to the satisfaction of the Council the exterior of the Bach in good, clean and substantial order, repair and condition. The Licensee is responsible for any repairs, replacement or maintenance which are associated with and may be required to the Bach from time to time.

12.4 Licensee May Undertake Repairs: The Licensee may, to comply with its obligations pursuant to clause 12.3 above, undertake repairs to the Bach provided that that any such repairs do not constitute a breach of clause 12.2(a) or 12.2(b).

12.5 Notice to Remedy: If the Council determines at any time that the Bach is not, in its opinion, in good, clean and substantial order, repair and condition then the Council shall give notice to the Licensee specifying the defect(s) and requiring the Licensee within a reasonable time of such notice to remedy the defect(s).

12.6 Failure to Comply: Failure to comply with any notice served under clause 12.5 will constitute a breach and clause 14 of this Licence shall apply.

13. INSPECTION

13.1 Right to Inspect: The Licensee shall, at the Licensee's discretion (acting reasonably) permit the Council's staff to enter the Licensed Area and inspect the Bach at all reasonable times during daylight hours. Notice of the Council's intention to inspect the Licensed Area shall, where practicable, be given to the Licensee at least **seven (7) days** in advance.

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14. DEFAULT AND CANCELLATION

14.1 **Cancellation for Breach:** The Council may (in addition to the Council's right to apply to the Court for an order for possession) cancel this Licence by re-entering the Licensed Area at the time or any time afterwards if:

(a) **Payment of Licence Fee:** any instalment of the Licence Fee is in arrears for ten (10) Working Days after the due date for payment, or the date of the Council's demand (if there is no due date), and the Licensee has failed to remedy that breach within ten (10) Working Days after service on the Licensee of a notice in accordance with section 245 of the Property Law Act 2007;

(b) **Performance:** the Licensee fails to perform or observe any of the Licensee's obligations under this Licence (other than the covenant to pay the Licence Fee) and the Licensee has failed to remedy that breach within the period specified in a notice served on the Licensee in accordance with section 246 of the Property Law Act 2007;

14.2 **Cancellation for Abandonment:** If, at any time after making any such enquiries as the Council thinks fit and having given the Licensee an opportunity to explain its use of the Licensed Area and the Bach, the Council is of the opinion that the Licensed Area and the Bach has been abandoned by the Licensee, , then the Council may cancel this Licence by giving the Licensee not less than six (6) months' written notice.

15. REMEDY BY COUNCIL

15.1 **Option for Council:** If the Licensee fails to pay any money payable under this Licence (other than the Licence Fee), or fails to perform or observe any of the Licensee's obligations under this Licence, the Council may remedy that breach. The Council is under no obligation to do so and will not limit or affect any of the Council's other rights, remedies or powers in doing so.

15.2 **Council's Costs:** If the Council spends money in remedying the Licensee's default under this Licence, the Licensee must pay to the Council on demand:

(a) **Amount Spent:** the amount spent by the Council in remedying any default; and

(b) **Default Interest:** interest at the Default Interest Rate on any amount spent calculated on a daily basis from the date of the Council's expenditure to the date that the Licensee reimburses the Council for that expenditure.

16. REMOVAL ON EXPIRY OF TERM

16.1 **Removal on Expiry of Term:** The Licensee must remove the Bach and all other improvements installed by the Licensee on the Licensed Area (**Licensee's Property**), and repair any damage caused by that removal, prior to or on the expiry of the Term unless prior arrangements have been made between the

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parties. To avoid doubt, the parties acknowledge that removal of the Bach will be assessed on a case by case basis, at Council's discretion, and in compliance with all local authority policies and legislation which may apply.

16.2 **Removal on Cancellation:** If the Council cancels this Licence under clause 14, the Licensee must remove the Licensee's Property, and repair any damage caused by that removal, within five (5) Working Days of the cancellation unless prior arrangements have been made between the parties.

16.3 **Failure to Comply:** If the Licensee fails to comply with either clause 16.1 or 16.2, the Council may remove the Licensee's Property and repair any damage caused by that removal. In that case, the Licensee must pay to the Council on demand all costs incurred by the Council in doing so. To avoid doubt, the parties acknowledge that removal of the Bach will be assessed on a case by case basis, at Council's discretion, and in compliance with all local authority policies and legislation which may apply.

16.4 **Sale of Licensee's Property:** If the Licensee fails to comply with a demand under clause 16.3, then the Council may sell those items of the Licensee's Property removed by the Council in any manner the Council sees fit to meet the Council's costs of removal and apply the balance (if any) towards meeting the Council's claims against the Licensee. The Council will not have to pay compensation for the Licensee's Property to the Licensee.

17. NO LEASE OR RESIDENTIAL TENANCY

17.1 **Licence Not Lease:** The Licensee acknowledges that:

(a) **In Personam Rights Only:** the Licensee's rights under this Licence are in personam rights only; and

(b) **No Lease Created:** the granting of this Licence does not create a lease or an interest in the Licensed Area or otherwise confer on the Licensee any rights of exclusive possession of the Licensed Area.

17.2 **Residential Tenancies Act 1986:** The parties acknowledge that pursuant to section 5(1)(t) of the Residential Tenancies Act 1986 this Licence is not subject to and does not fall with the provisions of the Residential Tenancies Act 1986.

17.3 **No Caveat:** The Licensee must not register a caveat over the computer freehold register to the Reserve relating to the Licensee's interest under this Licence.

18. COSTS

18.1 The Licensee must pay to the Council on demand all reasonable costs (including legal costs), charges and other expenses which the Council may incur or for which the Council may become liable relating to:

(a) **Remedying Breach:** the Council remedying the Licensee's breach of any term of this Licence;

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(b) **Exercise of Powers:** the Council's exercise or attempted exercise or enforcement of any power, right or remedy conferred on the Council by this Licence; and

(c) **Proposals:** the consideration and approval (if given) of any proposals made by the Licensee to the Council in respect of this Licence.

19. RESOLUTION OF DISPUTES

19.1 **Disputes:** If any dispute, difference or question arises between the parties about:

(a) **Interpretation:** the interpretation of this Licence;

(b) **Licence:** anything contained in or arising out of this Licence;

(c) **Rights, Liabilities or Duties:** the rights, liabilities or duties of the Council or the Licensee; or

(d) **Other Matters:** anything else relating to the relationship of the Council and the Licensee under this Licence (including claims in tort as well as in contract);

the parties may refer that matter to informal mediation, if both parties agree, having regard to the nature of the dispute or difference between them and the potential delays and costs which might arise if that matter is referred to arbitration.

19.2 **Appointment of Mediator:** The parties must try to agree on the mediator, who must be a senior solicitor or barrister practising in the district in which the Reserve is situated. If they cannot agree, the president or any vice-president for the time being of the New Zealand Law Society (or his or her nominee) will nominate the mediator on either party's application. The mediator's decision will be final and binding on both parties.

19.3 **Arbitration:** If the parties do not agree to refer the dispute, difference or question to mediation under clause 19.1 within (5) five Working Days of that dispute, difference or question arising, then it will be referred to the arbitration of a single arbitrator under the Arbitration Act 1996.

19.4 **Arbitrator:** The parties must try to agree on the arbitrator. If they cannot agree, the president or any vice-president for the time being of the New Zealand Law Society (or his or her nominee) will nominate the arbitrator on either party's application.

19.5 **Action at Law:** The parties must go to arbitration under this section before they can begin any action at law (other than an application for injunctive relief or debt collection).

20. NOTICES

20.1 **Service of Notices:** Any notice or document required or authorised to be given or served under this Licence must be given or served:

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(a) **Sections 245 or 246 Property Law Act:** in the case of a notice under sections 245 or 246 of the Property Law Act 2007, in the manner prescribed by section 353 of that Act; and

(b) **Other Cases:** in all other cases, unless otherwise required by sections 352 to 361 of the Property Law Act 2007:

(i) in the manner authorised by sections 354 to 361 of the Property Law Act 2007; or

(ii) by personal delivery, or by posting by registered mail or ordinary mail, or by facsimile, or by email.

20.2 **Time of Service:** In respect of the means of service specified in clause 21.1(b)(ii) any notice or other document will be treated as given or served and received by the other party:

(a) **Personal Delivery:** when received by the addressee;

(b) **Post:** ten (10) Working Days after being posted to the addressee's last known address in New Zealand;

(c) **Email:** when acknowledged by the addressee by return email or otherwise in writing.

20.3 **Signature of Notices:** Any notice or document to be given or served under this Licence must be in writing and may be signed by:

(a) **Party:** the party giving or serving the notice;

(b) **Attorney etc:** any attorney for the party serving or giving the notice; or

(c) **Authorised Person:** the solicitor or any director, officer, employee or other agent who has authority to give or serve the notice.

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21. COUNCIL AS REGULATORY AUTHORITY

21.1 The Council has signed this Licence in its non-regulatory capacity, as landowner and administering body of the Reserve. This Licence does not bind the Council in its capacity as a regulatory authority in any way, and any consent or agreement the Council gives under this Licence is not an agreement or consent in its regulatory capacity and vice versa. When acting in its regulatory capacity, the Council is entitled to consider all applications to it without regard to this Licence. The Council will not be liable to the Licensee or any other party if, in its regulatory capacity, the Council declines or imposes conditions on any consent or permission that the Licensee or any other party seeks for any purpose associated with this Licence.

22. DEFINITIONS AND INTERPRETATION

22.1 Definitions:

Act means the Reserves Act 1977;

Bach means all structures, buildings and improvements erected on the Licensed Area either at the commencement of the Licence or during the Term;

Council means the Wellington City Council acting in its capacity as landowner and administering body under the Act;

Expiry Date means the expiry date of this Licence as determined by the provisions in the Reference Schedule;

GST means tax levied under the Goods and Services Tax Act 1985 and includes any tax levied in substitution for that tax;

Initial Term means the term from the Commencement Date until the Expiry Date of this Licence;

Licence means this Licence Agreement;

Licence Fee means the annual licence fee payable by the Licensee under this Licence, subject to review under clause 3;

Licence Fee Review Dates means the first anniversary of the Commencement Date and every year after that date;

Licence Rights means:

(a) **Licensed Use:** the non-exclusive right to carry on the Licensed Use on and from the Licensed Area; and

(b) **Access:** the non-exclusive right to have access to the Licensed Area through those parts of the Reserve that are necessary to give access to the Licensed Area in order to carry out the Licensed Use;

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Licensed Area means that part of the Reserve more particularly outlined on the plan attached to this Licence;

Licensed Use means Short term Bach occupation;

Licensee means [*licensee's name, licensee's address (add the word "at" or "of" before address)*];

Renewal Term means the renewal terms defined in the Schedule;

Reserve means the reserve named in the Reference Schedule;

Term means the term of this Licence as defined in the Schedule, and includes the Initial Term and (if this Licence is renewed) the Renewal Term and (if this Licence is further renewed) any further Renewal Term; and

Working Day has the meaning given to it in the Property Law Act 2007;

22.2 **Defined Expressions:** expressions defined in the main body of this Licence have the defined meaning in the whole of this Licence including the background;

22.3 **Headings:** section, clause and other headings are for ease of reference only and do not form any part of the context or affect this Licence's interpretation;

22.4 **Negative Obligations:** any obligation not to do anything includes an obligation not to suffer, permit or cause that thing to be done;

22.5 **No Limitation:** references to anything of a particular nature either before or after a general statement do not limit the general statement unless the context requires;

22.6 **Parties:** references to parties are references to parties to this Licence and include each party's executors, administrators and successors;

22.7 **Persons:** references to persons include references to individuals, companies, corporations, partnerships, firms, joint ventures, associations, trusts, organisations, governmental or other regulatory bodies or authorities or other entities in each case whether or not having separate legal personality;

22.8 **Plural and Singular:** singular words include the plural and vice versa;

22.9 **Sections and Clauses:** references to sections and clauses are references to this Licence's sections and clauses; and

22.10 **Statutes and Regulations:** references to a statute include references to regulations, orders, rules or notices made under that statute and references to a statute or regulation include references to all amendments to that statute or regulation whether by subsequent statute or otherwise.

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FORWARD PROGRAMME 2015

Purpose

1. To present the Environment Committee with the forward programme, outlining the papers that will be considered by the Committee in 2015.

Recommendation

That the Environment Committee:

1. Receive the information.

Discussion

2. The forward programme reflects organisational and political priorities and emerging issues that requires decisions from the Environment Committee. The forward programme attached outlines the work programme of the Committee for next year.

Attachments

Attachment 1. 2015 Forward Programme - Environment Committee Page 134

Author	Cara des Landes, Governance Advisor
Authoriser	Lynlee Baily, Governance Team Leader

Item 4.2 Attachment 1

Environment Committee - Forward Programme

Thursday, 12 February 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member
	Draft Suburban Reserves Management Plan oral submissions	Oral Submissions		Bec Ramsay	Greg Orchard	
	Environmental Reference Group Annual Report 2014/15	Reports progress against work programme, and achievements and issues.	Natural Environment	Simon Wright	Brian Hannah	
	Proposed New Encroachment Licence Under the Reserves Act 1977: Land at 146-152 Glenmore Street, Northland			Grace Clapperton-Rees	Greg Orchard	

Thursday, 19 March 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member
	PSR Surplus House Disposals	Disposal 3x surplus houses - Te Ahumairangi (ex Telecom house) - Orange Kaupapa Road, Makara Cemetery House - 329 Makara Road, and Outer Green Belt Airstrip Land - 944 Ohariu Valley Road. Houses only, no land disposal.		Joel de Boer	Greg Orchard	Andy Matthews

Thursday, 23 April 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member
	Our Living Fund	This will be the third funding round of our financial year and will also include contract funding for Arts and Culture and Social and Recreation, which will be part of the same reports NB closing date for the Our Living City is 24 March 2015		Mark Farrar	Greg Orchard	
	Approval of the Suburban Reserves Management Plan	Approval of the final plan		Bec Ramsay	Greg Orchard	
	Draft Our Natural Capital – Biodiversity Strategy and Action Plan	Oral hearings		Myfanwy Emeny	Greg Orchard	

Thursday, 4 June 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member
	Approval of Our Natural Capital – Biodiversity Strategy and Action Plan	Approval of final plan		Myfanwy Emeny	Greg Orchard	

Thursday, 6 August 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member

Thursday, 17 September 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member

Thursday, 15 October 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member

Thursday, 26 November 2015

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member

To be scheduled

Page	Report Title	Description	Portfolio	Officer	ELT Member Responsible	Interested ELT Member
Implementation work/Monitoring	2014/2015 2nd Quarter Report	This report outlines progress towards the delivery of the 2014/15 Annual Plan as at 31 Decemberr 2014. Recommend that the Committee note the information		Richard Hardie/Warwick Hayes	Derek Fry	
	Preliminary work on possible options to remediate the Houghton Valley leachate	Oral Report				
Strategy/Policy	Drinking Water Fountains	Oral Report		Paul Andrews	Greg Orchard	
	Review of the Trade Waste bylaw	Legislative requirement to review by 2016. No significant problems with current bylaw. Trade Waste bylaw likely to be updated in 2015/16 to reflect the regional integration of trade waste regulation and Capacity's roles in this.		Wellington Water Ltd	Anthony Wilson	Brian Hannah
Strategy/Policy	Feasibility of building a pipeline under the harbour and a reservoir at the Prince of Wales Park	Oral Report to inform decision-making as part of LTP		Greater Wellington	Anthony Wilson	
Strategy/Policy	City Growth Agenda	Evaluate natural environmental impacts (water, waste, climate change and the general environment)		Danny McComb	Derek Fry	
Strategy/Policy	Strategic Transport documents	Environmental impacts: Regional Land Transport Strategy, Government Transport Policy Statement, Public Transport Spine Study. Specific Transport Projects: Petone to Granada, Mt Vic Duplicated Tunnel, Cycling Infrastructure		Geoff Swainson	Anthony Wilson	
Strategy/Policy	District Plan Review	Appropriate chapters relating to the Natural Environment - briefing for councillors and chance for input. Decisions will be made by the Transport and Urban Development Committee		Alison Newbald	Anthony Wilson	
	South Coast Management Plan review			Mike Oates	Greg Orchard	
	Porirua Harbour and Catchment Strategy			Malcolm Sparrow		
	Spicer's Recreation Park			Mike Oates	Greg Orchard	
	Wellington Plan	Updates on progress of Spatial Plan Natural environment impacts		Warren Ulusele	Anthony Wilson	
	Our Living City update			Zach Rissel	Brian Hannah	
	Miramar Peninsula			Warren Ulusele	Anthony Wilson	
	International Peace Symbol in the Botanic Gardens.	Resolution from June Committee: Request Officers work with Mr Tingey to look at an alternative site and design options for a peace symbol and report back to the Environment Committee.		David Sole		

RESERVE NAMING - LEONIE GILL PATHWAY

Purpose

1. To seek the Committee's agreement to recommend to Council the proposed name for open space located between Tirangi Road and Queens Drive in Rongotai and Kilbirnie.

Summary

2. The Mayor of Wellington Celia Wade-Brown has proposed naming a series of small reserve areas in Kilbirnie in memory of former councillor Leonie Gill.
3. A new shared pathway is being constructed through some of these reserve areas (refer to Attachment 1).
4. It is proposed to name the various land parcels collectively as the Leonie Gill Reserves with the pathway to be named and sign posted 'Leonie Gill Pathway'.
5. The proposed name aligns with the Open Spaces Naming Policy Kaupapa Whakainga Whenua Mahorahora (naming policy).

Recommendations

That the Environment Committee:

1. Receive the information.
2. Recommend that the Council agree that the 3.463ha of open space comprising the land legally described as Part Section 4-5, 8 Evans Bay District, Section 173 Evans Bay District, Part Lot 61 DP21360 and Lot 2 DP83928; be named 'Leonie Gill Reserves'.
3. Note that signage at the newly developed shared path will refer to 'Leonie Gill Pathway' with way finding as appropriate to other paths.

Background

6. Council's Open Space Naming Policy (adopted in 2001) guides the way Council determines names for open spaces.
7. Under the policy, when a new or unnamed open space needs to be officially named, the Council will, in the first instance, discuss with iwi whether the site is of significance to them. If it is, an appropriate name will be determined in conjunction with iwi.
8. If the open space holds little or no significance for iwi, or if iwi wish to consider the possibility of joint Maori-European naming, then the policy provides a process for recommending an appropraite name for consideration.
9. The Open Space Naming Policy's decision making framework requires officers to:
    a. Determine if there are names in common useage.
    b. Determine if any names have already been suggested.
    c. Seek additonal suggestions through targeted consultation, having regard to Council's Consultation Policy, with:
        i. Local historians
        ii. Local community groups
        iii. Community boards in their respective areas
        iv. Developers where appropriate

10. The suggested names are then considered against the policy's Style Guide (Attachment 2) and ranked against the weighted slection criteria (Attachment 3).

11. All names require formal approval by resolution of Council. Once Council has approved a name, appropriate signage will be implemented to identify the open space.

12. The Kilbirnie Town Centre Revitalisation Plan (2010) identified the Council-owned drainage easement to the south of the bus barns (stretching from Queens Drive in the west to Tirangi Road in the east) as a key opportunity to connect multiple destinations and improve pedestrian and cycle access to the town centre. The link is already used by locals as a walkway – primarily for leisure and fitness, but also as a route to school and to work.

13. The town centre plan identified the opportunity to better use the easement in a way that will not impact on its primary infrastructure function - the city's main sewerage interceptor pipe lies beneath - to create a community walkway/cycleway/linear park.

14. Plans have since been developed that include a shared pathway for cycle and pedestrian users, new signage and formalised entry points. There is also proposed native shrub planting and Ngaio trees along the route with a number of fruit trees at the eastern edge. Development of the reserves is scheduled to begin at the beginning of December with completion in early March 2015.

15. Councillor at that time Leonie Gill had a strong view that the "drainage easement" land had potential to be developed as now proposed and was instrumental in the project from its inception.

16. Before Leonie Gill passed away Mayor Wade-Brown made a commitment to her about continuing work on the project. Since then, Mayor Wade-Brown has discussed the naming of the pathway in memory of Councillor Gill with Councillor Gill's family members, who are very supportive of the proposal.

Discussion

17. The Port Nicholson Block Settlement Trust support the proposal to name the reserves in memory of Councillor Gill. Ngati Toa have been asked for comment but officers have yet to receive a reply.

18. To date, the land has been commonly known as the Kilbirnie or Rongotai Drainage Reserves. It has never been officially named with the common name simply a reference to the drainage infrastructure beneath the ground and the original purpose of the land.

19. No wider consultation about the proposed name has been done, although there has been recent media coverage about the proposal (in the November 10, 2014 issue of the Cook Strait news).

20. The proposed name passes all of the "rules" listed in the naming policy style guide. There are no alternative names proposed that require use of the selection criteria. The proposal fits with Criteria 4, in that it is being proposed in recognition of former councillor Gills years of service to the Eastern Ward.

21. On assessment against Council's naming policy this report recommends officially naming the land 'Leonie Gill Reserves'. The land parcels will be connected through the development of a shared path therefore it is considered sensible to install signage as appropriate directing the public to 'Leonie Gill Pathway'.

Next Actions

22. The proposed naming of the reserves will be referred to Council for approval. This will be followed by design and installation of signage at the site prior to completion of the shared pathway development project in mid March 2015.

Attachments

Author	Rebecca Ramsay, Reserves Planner
Authoriser	Greg Orchard, Chief Operating Officer

Item 4.4

SUPPORTING INFORMATION

Consultation and Engagement

The family of Leonie Gill support the proposed name.

Treaty of Waitangi considerations

Port Nicholson Block Settlement Trust approve of the proposed name. Ngati Toa have been asked for comment but to date no response have been received.

Financial implications

None.

Policy and legislative implications

The proposed name aligns with Council's Open Space Naming Policy Kaupapa Whakaingoa Whenua Mahorahora (2001).

Risks / legal

None.

Climate Change impact and considerations

None.

Communications Plan

Not required.


Duncan Tce
Rodrigo Rise
Rodrigo Rd
Imperial Tce
Cruickshank St
Cockburn St
Buckingham St
Endeavour St
Queens Dr
Freyberg St
Palm Ave
Lerwick Tce
Ross St
Yule St
Te Whiti St
Sefton St
Coutts St
Marnan St
Gaudin St
Lonsdale Cres
Bridge St
Tirangi Rd
Coutts St
Kingsford Smith St
Resolution St
Onepu Rd
Endeavour Ave
Bella Vista
Tavistock Rd
Wha St
Puru Cres
Apu Cres
Sutherland Rd
Carlton St
Toru St
Lyall Pde
Pde Lyall
Cochrane St
George Bolt St
Mcgregor St
Attachment 1
Land to be named under Open Space Naming Policy
Shared Path Route
0 70 140 280
metres
scale 1:5,500
Property boundaries, 20m Contours, road names, rail line, address & title points sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/-1m in urban areas, +/-30m in rural areas. Census data sourced from Statistics NZ. Postcodes sourced from NZ Post.
Assets, contours, water and drainage information shown is approximate and must not be used for detailed engineering design.
Other data has been compiled from a variety of sources and its accuracy may vary, but is generally +/- 1m
MAP PRODUCED BY:
Wellington City Council
101 Wakefield Street
WELLINGTON, NZ
ORIGINAL MAP SIZE: A4
DATE: 9/12/2014
AUTHOR: presto2j
REFERENCE:
Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Open Space Naming Policy Kaupapa Whakaingoa Whenua Mähorahora

PART B: STYLE GUIDE

The style guide is a list of "rules" that any open space name needs to abide by. Use of the style guide will ensure consistency of naming. Any name suggested under either Step 2 or Step 3 of the framework needs to be assessed against the style guide.

1. Duplication of names should be avoided.

2. Possessive form (for example John Smith's reserve) should be avoided except if it destroys the sound of the name or changes its descriptive application. If used the apostrophe should be dropped.

3. In general hyphens should be avoided. Preferably, the name should be written either as one word or as separate words.

4. Words should be spelt correctly, including the use of diacritical marks such as macrons as appropriate.

5. Names which would be considered in poor taste or likely to cause offence should be not be used.

6. Established geographical names should not be altered unless for reasons such as to avoid confusion, ambiguity or to standardise spelling.

7. Where an incorrect name has become established by local usage the Council may in its discretion retain such incorrect form.

Open Space Naming Policy Kaupapa Whakaingoa Whenua Mähorahora

PART C: SELECTION CRITERIA

These criteria will be used to establish the relative merits of any suggested names. All names that are suggested through Step 3 of the framework will be compared using the criteria which has been weighted to reflect relative importance (see Table 1). The names will then be ranked in order of merit with the highest scored name highest ranked.

1. Local Usage

Proof of establishment and the extent of common usage need to be determined at Step 3 of the framework.

2. Historical Person or Event

This can be for example settlers, early notable people or events with local association. Naming after persons living or recently deceased should generally be avoided where the issue is potentially sensitive.

3. Significant geographical feature, landscape, flora or fauna

Naming after minor features should be avoided.

4. Personal name (surname) for special service

This can be for conservation, sport, community service or other sphere of activity with local association which can be duly recognised. Naming after persons living or recently deceased should generally be avoided where the issue is potentially sensitive.

5. Descriptive name

For example Hill Park (as in on a hill). Naming after minor features should be avoided.

6. Associated name

That is a part of an association or grouping of names in a suburb.

7. Published name in any work

The work needs to be authoritative in the opinion of Council. However publishing will not confer establishment.

8. Cultural Significance other than Maori

Significance to be determined through written evidence.

9. Adjacent street or name of suburb

NOTE: Naming of an open space will not preclude naming significant features within it for example a fountain, artwork or memorial.

NEW LICENCE UNDER RESERVES ACT 1977: BASIN RESERVE

Purpose

1. This report seeks Committee approval for a new occupation licence to Spark NZ Trading Ltd (Spark) for telecommunications equipment on the RA Vance Stand at the Basin Reserve. Refer to the photos in attachment 1 showing the proposed locations for the equipment.

Summary

2. The Basin Reserve is managed by the Basin Reserve Trust and they have agreed in principle to the proposed occupation by Spark in the RA Vance Stand.

3. Resource Consent has been granted for the telecommunications antenna and equipment.

4. The telecommunications equipment will provide better service into the cricket ground and also maintain communication through the Mt Victoria tunnel and new Arras tunnel.

Recommendations

That the Environment Committee:

1. Receives the information.

2. Agrees to grant a new licence to Spark NZ Trading Ltd under the Reserves Act 1977 (subject to the usual conditions noted below).

3. Notes that any approval to grant the licence is conditional on:
   a. Appropriate Iwi consultation
   b. Public notification under s119 and s120 Reserves Act 1977
   c. No sustained objections resulting from the above consultation and notification; and
   d. Legal and advertising costs being met by the licensee (where applicable).

4. Notes resource consent has been issued for the telecommunication proposal and the Basin Reserve Trust has approved the proposal.

Background

5. The Basin Reserve Trust (Trust) currently has a management agreement with the Council in relation to the Basin Reserve. Wellington Cricket and NZ Cricket also have certain rights to use the Basin Reserve.

6. The Trust has agreed in principle to Spark occupying parts of the RA Vance Stand for telecommunications equipment and resource consent has been issued.

7. The Trust will be a party to the proposed occupation licence.

Discussion

8. The Spark telecommunication antenna is currently located beside Buckle Street (and corner Sussex Street) on land which will become part of the new National War Memorial Park.

9. Relocating the antenna to either side of the RA Vance Stand will provide phone coverage through the new Arras tunnel and Mt Victoria tunnel which is particularly useful for emergency services and will improve resilience.

10. The Trust will receive the licence income and cricket patrons will also benefit from improved phone network service.

11. The proposed terms of the licence area as follows:

Activity:	Telecommunication purposes
Legal Instrument:	Occupation Licence
Legal Description:	Lot 1 DP 90475 on CFR WN58A/615
Term:	30 years
Final Expiry:	31 January 2045
Rent:	Market rental

Conclusion

12. Officers recommend that the Environment Committee approves the proposed licence.

Attachments

Author	John Vriens, Senior Property Advisor
Authoriser	Greg Orchard, Chief Operating Officer

SUPPORTING INFORMATION

Consultation and Engagement

Public consultation will be undertaken as required under the Reserves Act 1977 and Iwi will be consulted. The Basin Reserve Trust, Wellington and NZ Cricket all support his proposal.

Treaty of Waitangi considerations

There are no Treaty of Waitangi considerations

Financial implications

The proposal outlined in this paper will have no substantial long term financial impact although the Trust will benefit from rental income.

Policy and legislative implications

The proposed licence will be consistent with the Reserves Act 1977.

Risks / legal

The licence will be reviewed by Council's solicitor. The proposal provides the best location for the telecommunication equipment in order to provide coverage through the Arras and Mt Victoria tunnels.

Climate Change impact and considerations

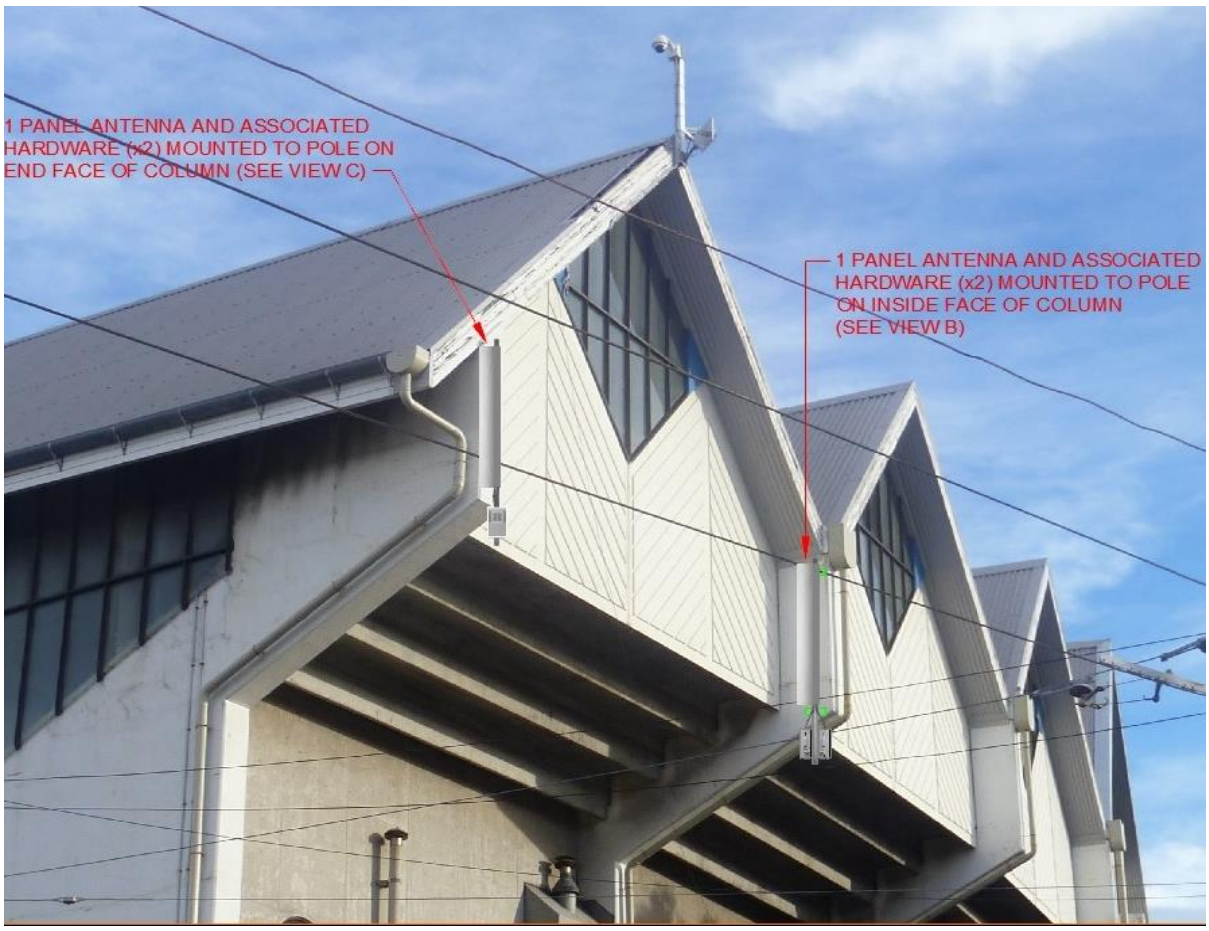
There are no climate change considerations.

Communications Plan

None required.

Attachment 1 –Proposed locations for Telecom Equipment

South end of RA Vance Stand



North end of RA Vance Stand

Inside gantry and northern gable of RA Vance Stand (non-structural wall)

Item 4.5 Attachment 1