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**ORDINARY MEETING**

**OF**

**ENVIRONMENT COMMITTEE**

**MINUTE ITEM ATTACHMENTS**

**Time:** 9:15am  
**Date:** Thursday, 19 March 2015  
**Venue:** Committee Room 1  
Ground Floor, Council Offices  
101 Wakefield Street  
Wellington

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**Business**

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<b>3.1 Reports from Council Controlled Organisations for the Quarter Ending 31 December 2014</b>	
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## Study reveals value of zoos and aquariums in boosting biodiversity understanding

March 16th, 2015 in Biology / Ecology

**Zoos and aquariums around the world have a crucial role to play in helping people understand how they can protect animals and their natural habitats, new research from the University of Warwick, the World Association of Zoos and Aquariums (WAZA) and Chester Zoo has found.**

Dr Eric Jensen, from Warwick's Department of Sociology, says it is the most compelling evidence to date of the influence of such attractions, which attract more than 700 million visits across the globe every year.

The findings of the study, which is the biggest of its kind ever conducted, involving 5,661 respondents at 26 zoos and aquariums, in 19 different countries, have been published in the journal *Conservation Biology*.

Dr Jensen, who is an internationally recognised expert on public engagement with wildlife, explained: "Zoos and aquariums are in a unique position to contribute to the goal of raising understanding of biodiversity conservation. Indeed the majority have an institutional and, in some cases, legal commitment to public education.

"But because these establishments tend to be viewed as providers of entertainment by the public, it has been unclear to what extent zoos' educational messages are effective and, as there has been no previous global evaluation of their impact, it has been impossible to assess their importance on this scale - until now."

The study found there was an increase in respondents demonstrating some positive evidence of biodiversity understanding from pre-visit (69.8%) to post-visit (75.1%). Researchers also found an increase in respondents who could identify something they could do to help protect biodiversity from pre-visit (50.5%) to post-visit (58.8%).

"For the first time, there is strong evidence that many people leave these attractions not just with greater awareness but also a better understanding of biodiversity and conservation," added Dr Jensen.

"But the challenge for zoos and aquariums now is how to use these findings to directly improve the conservation of biodiversity, because it's important to remember that an increase in knowledge does not necessarily lead to a change in behaviour.

"The next equally important step should be to build on this knowledge to promote pro-conservation behaviour and social change."

Dr Markus Gusset, WAZA's Chief Conservation Officer, concluded: "The United Nations has a target that everyone should be aware of the values of biodiversity and the steps they can take to conserve and use it sustainably by 2020 at the latest."

"Our findings highlight that zoos and aquariums have an extremely important role to play if this goal is to be reached and if we are to eventually reverse the loss of biodiversity on the planet."

'Evaluating the Contribution of Zoos and Aquariums to Aichi Biodiversity Target 1' was published on Saturday 14 March 2015 in the journal Conservation Biology.

**More information:** [onlinelibrary.wiley.com/doi/10.1111/cobi.12383](http://onlinelibrary.wiley.com/doi/10.1111/cobi.12383) abstract

Provided by University of Warwick

"Study reveals value of zoos and aquariums in boosting biodiversity understanding." March 16th, 2015.  
<http://phys.org/news/2015-03-reveals-zoos-aquariums-boosting-biodiversity.html>

## Wellington Community Science Learning Hub (WCSLH)

A space to facilitate community involvement in biodiversity research

Oral submission from Karin Hahfeld and Tatasha Evans with regard to  
Wellington's Draft Biodiversity Strategy and Action Plan 2014

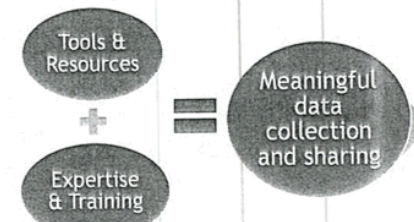
### Our Mission

- ▶ The Wellington Community Science Learning Hub will forge strong links between citizens, scientists and conservationists to grow and enhance conservation capacity, to provide quality advice and to nurture an understanding of the important role biodiversity (especially invertebrate biodiversity) plays in ecosystem integrity and people's health and wellbeing.
- ▶ We are still at the planning stage and working on our own draft proposal for the WCSLH, a public science lab, which has had positive support from those who have seen a previous draft. As a result the idea was added in the WCC draft biodiversity strategy and action plan.
- ▶ A preliminary survey to gauge interest from community restoration groups was sent out to most of them, again with encouraging results.
- ▶ This submission aims to highlight the potential benefits of the public lab and suggests the biodiversity plan recognises the usefulness of it to the success of the strategy by choosing it as a priority.

### Our Vision

- ▶ To enable and enhance community involvement in biodiversity research and to raise awareness of local fauna and flora.
  - ▶ The space/hub will serve to encompass the four action points set out in the WCC Biodiversity Plan namely: "...to protect, restore and research our indigenous biodiversity and to connect people to it." (p. 21)
  - ▶ Ref \* 3.2.2e (p. 28) "Create a physical public research hub where the community can access research and reference collections."
- Let's add ... participate in and conduct research ... and let's make it a priority.

Our Objective: to produce publishable data  
and to provide science-based evidence for  
the conservation needs of the city

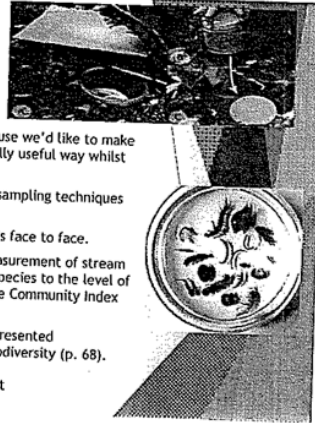


Global change and local solutions: Tapping the unrealized potential of citizen science for biodiversity research by Theobald et al. (2015).  
<http://www.sciencedirect.com/science/article/pii/S0006320714004029>

### Benefits and Outcome

- ▶ While we support NatureSpace and would encourage its use we'd like to make it easier for the community to contribute in a scientifically useful way whilst increasing the pool of useable data for decision makers.
- ▶ Our focus would be on providing access to best practice sampling techniques and the tools to evaluate samples.
- ▶ "Paradise saved" stipulates that the best way to do this is face to face.
- ▶ A potential pilot project to test the lab's usefulness: Measurement of stream water quality - will use scientific equipment to identify species to the level of order and family and to determine the Macroinvertebrate Community Index (MCI) of streams.
- ▶ Identification of species, particularly previously underrepresented invertebrates to give a more complete picture of local biodiversity (p. 68).

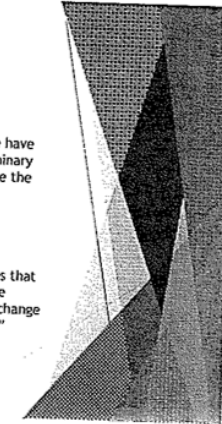
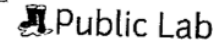
*Paradise Saved* by Dave Butler, Tony Lindsay and Janet Hunt (2014), Random House, 320 p.



### Successful elsewhere - YES

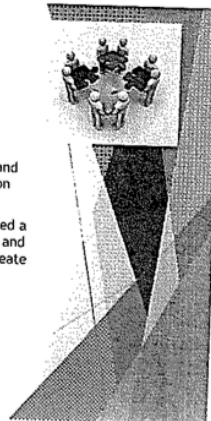
- ▶ Community labs are popping up worldwide with success, although none have been designed with biodiversity at the core. It is clear from the preliminary research we have done and from our own involvement in citizen science the demand for a public research/learning hub is vital to the success of a sustainable biodiversity approach by and for the city.
- ▶ A flagship example of a similar project is being successfully operated in Cambridge Massachusetts, United States. This community project states that their "Public Lab" is a community where you can learn how to investigate environmental concerns. Using inexpensive DIY techniques, we seek to change how people see the world in environmental, social, and political terms."

[www.publiclab.org](http://www.publiclab.org)



### Working together for a more end-user friendly approach to biodiversity

- ▶ We seek to initiate a pilot programme that serves the needs of the WCC and provides an end product of publishable data for scientists and conservation planners/managers to inform decision making processes.
- ▶ We envision the hub as a place that will evolve over time. Initially we need a home, and funds to purchase specialised equipment such as microscopes, and to fund a coordinator. The community will work alongside scientists to create reference collections and to stimulate a network of experts.
- ▶ Community volunteers will become effective contributors to biodiversity research through access to training and resources.
- ▶ Empowering the community to become guardians of local biodiversity.

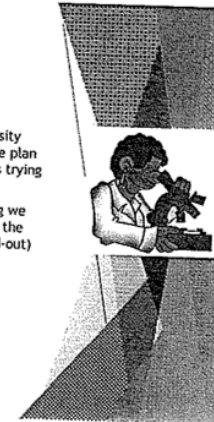


### Summary

- ▶ We believe setting up a public lab is vital to the success of the biodiversity plan. It streamlines a significant number of the goals and objects of the plan and could serve as a springboard to achieve much of what the council is trying to address.
- ▶ To further support and provide evidence of this perceived understanding we have gone through the proposal and highlighted areas that overlap with the aims we believe the lab could serve to make achievable. (refer to hand-out)



- ▶ Let's establish a Wellington Science Learning Hub to achieve this.
- ▶ Let's make it a priority.



Labels in

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### Quotes from Wellington's Draft Biodiversity Strategy and Action Plan 2014

*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. (p. 17)

We actively seek and share knowledge about Wellington's biodiversity (p. 18)

Create and install interpretive signage within key reserve areas to educate people about the biodiversity values of that area (p. 28).

Create a physical public research hub where the community can access research advice and reference collections (p. 28)

Engage the wider community in Citizen Science projects (p. 29)

Support and build the capacity of existing and new community groups engaging in biodiversity projects (p. 30)

Identify and monitor locally important sites and species (p. 31)

Monitor biodiversity indicators and outcomes in collaboration with partners (p. 31) Carry out a monitoring programme for Wellington's streams using the Macroinvertebrate Community Index (MCI)

Work with other organisations to establish monitoring techniques suitable for community groups and individual landowners (p. 31)

Establish a biodiversity network for information sharing (p. 32)

Have one source of information for everyone (p. 32)

Ensure that the community can get involved in research, including monitoring (p. 32)

*Five key taxonomic groups have been selected as "core indicators" - birds, vascular plants, butterflies, lizards and freshwater fish. The indicators will measure the change in number of species over time rather than the absolute number of the species. Conducting more surveys on the target groups will result in the finding of and reintroducing 'extinct' native species would help to increase the number of extant native species. (p. 35)*

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One training programme provided for across-Council biodiversity awareness per year (p. 36)

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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. (p. 38) threatened species freshwater (p. 41) invertebrates?

aquatic ecosystem degradation (p. 49) - no mentioning of seepages or springs anywhere; threatened crustaceans, tipulids and molluscs?

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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. (p. 61)

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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. (p. 63)  
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. (p. 66)  
Key question for restoration: Where are vulnerable or significant populations of our lesser known fauna, such as bats and invertebrates, and plant species, such as fungi? (p. 68)

Key question for connections: • How do we use effective community-based social marketing techniques? How do we engage people in citizen science projects? (p. 68)

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). (p. 69)

#### *Research*

We will initiate and promote crowdsourcing and citizen science approaches to collect large amounts of geographically based information.

We will engage our community groups in monitoring specific sites and species, and will give them the support and training required.

We will enable our volunteers to get involved in monitoring by providing tools and training for selected methods. (p.70)

#### *Monitoring*

We will include Macroinvertebrate Community Indices (MCI) as part of regular monitoring to better establish the effectiveness of our programmes to improve water quality. (p. 70)



[www.taputeranga.org.nz](http://www.taputeranga.org.nz)

### Friends of Taputeranga Marine Reserve Trust

#### WCC Draft Biodiversity Action Plan – Oral Presentation

- The Friends Trust was established in 2009 to help DOC to realise the benefits of the new marine reserve for the people of Wellington. We have established a Snorkel Trail at Island Bay, assisted marine education programmes, supported scientific study, worked with many others to clean up the coastal fringe of rubbish, advocated for the reserve and most recently, established the Taputeranga Coast Watch to assist DOC with compliance work.
- As the marine reserve has recovered from the years of marine exploitation we have been able to see and promote the changes to an increasingly interested and involved public. The Esplanade and other roads and footpaths bordering the reserve are used by thousands of people daily. Many are there to enjoy and recreate on the coastal fringe, the shoreline and the sea. We find that we enjoy tremendous support from people we encounter in our work.
- We have appreciated this summer, more than any other so far, just how accessible the marine reserve is to the public, living up to its billing as the only truly accessible marine reserve on the doorstep and bus routes of a Capital city - in the world.
- The reserve and the South Coast are visited by hundreds of thousands of Wellingtonians and visitors from the region and further afield every year. The Island Bay Snorkel Trail alone is used by at least 1000 visitors in the first three months of each year. Thousands come for the Marine Education Center and schools visit for the Experiencing Marine Reserves programme.
- As the reserve recovers further there will be increasing tourism based on the reserve and its activities – it is already one of Air New Zealand sponsored Coastal Gems – with considerable economic benefit to Wellington.
- In this plan the list of biodiversity factors important to Wellington should acknowledge the economic value of biodiversity, including the business arising from recreation and the use of green space and waters. These include including the business associated with visitors to Wellington's Zealandia, Wilton Bush, Taputeranga Marine Reserve, Matiu Somes, etc.
- The Island Bay fishing fleet already benefits from spillover from the marine reserve, as do recreational fishers. The dive shops in particular benefit not only from fishing beyond the margins but also the diving and snorkelling to enjoy and appreciate the biodiversity in the Taputeranga Marine Reserve.
- Wellington has rightly earned recognition as a city of biodiversity and conservation success.



- The WCC reserves, parks, pathways and roading staff are heavily involved in South Coast work. There are very strong interface issues between sea and land for stormwater and waste water disposal every year. We enjoy support and good relationships with many Council officers.
- But, there is no mention up front in the draft Biodiversity Plan of the Taputeranga Marine Reserve. WCC is heavily involved with parks, reserves (to the MHWS line), roading etc. The marine reserve is a core biodiversity asset for the city. Surely the city should embrace this unique marine reserve and recognise its ecology and wide diversity as part of the biodiversity protection tasks of the city.
- Just think for a moment about the biodiversity of the reserve. The land/sea interface is not a barrier to biodiversity. Tangata whenua see it as a continuum. Seabirds in particular commonly feed at sea and nest/forage on the land, becoming both a natural feature and a problem to be managed in some cases. The shags that nest at Zealandia feed at sea.
- The esplanades and marine parades feature signs exhorting motorists to look out for blue penguins crossing at dusk back to nests on 'impossible' hillsides. Work done at Matiu Somes to enhance habitats for sea birds including petrels and penguins has implications far afield as these birds travel long distances daily to feed and return to nests – to the eastern side of the Harbour, to the west and to the coast off Bering Head and the South Coast.
- The washed up detritus of seaweeds and kelps form habitats for small invertebrates and insects important in the food chains. Birds use these materials to build nests
- There is also the important link between fresh water species such as eels and whitebait which also spend part of their lifecycle in the sea. Wellingtonians frequently enjoy dolphins and larger whales transiting the South Coast and Harbour.
- Yes, the marine reserve is DOC's area to manage with the assistance of the conservation community, but the reserve and the South Coast is a place of recreation, enjoyment, study, inspiration, reflection and well-being to hundreds of thousands of Wellingtonians and visitors from the region and further afield every year. It deserves greater recognition by the City and better appreciation and provision in this action plan.

**Some specific points about the plan:**

- The Vision statement in the draft plan includes a broad leadership role for WCC, but the actions appear to be too narrowly focused on either WCC land or dealing with private land through the District Plan. There is huge potential for making non-WCC public lands (e.g. transport corridors run by other agencies) and private lands that the landowner has little use for, into quality open space or habitat.
- In the plan's summary there is a one liner that recognises that biodiversity is not a respecter of Council boundaries. In the document throughout there is a strong emphasis on terrestrial biodiversity and only patchy 'added in' acknowledgement of sea coast and sea. The Blue Belt concept comes quite literally out of the 'blue' as a significant add on later in the document and is welcome. But, there should be some greater lead in to recognising that the marine nearshore environment and associated biodiversity is every bit as important as a component

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of the wider environment of Wellington. It all goes to people's well-being, health and economic advantage. There needs to be more action planning for this and other marine environment priorities.

- As well, climate change strategies must recognise the land/sea interface and the changing seascapes and weather patterns, as well as the cloaking and smothering value in energy absorption of healthy kelp and seaweed beds around the reefs
- We have some strong questions about how the non-biodiversity oriented functions of Council will be cognisant of this document and how will Council's actions be aligned with this document? It needs to be integrated with the other Council documents and actively implemented throughout Council.
- One option would be to add to all projects a checklist requiring acknowledgement that the biodiversity plan has been considered and implemented (and how it has been implemented). It should also be interconnected with the district plan.
- The WCC biodiversity plan should place more emphasis on continued and sustained support for citizen action. On-going pest control is important. Indeed, direct support to community groups that are improving habitats in freshwater, marine, and land based environments would be usefully spelled out in the plan.
- In most of the action plan there is nothing that specifically addresses the Blue Belt, but could include underwater ecological gardening for educational purposes, continuing the work at the wharves to restore inner harbour ecosystems and better supporting harbour clean ups.
- There is nothing that directly supports the marine reserve.
- Research should be carried out on locally endemic tree, shrub and grass species, including coastal species, for suitability as specimen plantings and a program be implemented to produce mature specimens for future projects, as well as a development of native species "planting guides" for volunteer groups.
- Section 12 and onwards should either be an appendix, or better sit in front of the Vision statement. It is a good description of much upon which the action plans will operate. It is well written but appears as a disconnected add on. There seems to be little connection between this and the draft policy up front. The summaries in upfront sections seem to have been written without anyone reading section 12.

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**In summary, from our perspective only brief passing lip service has been paid to the marine environments of Wellington, probably because of the sheer artificiality of city boundaries. We urge that integrated planning happens to ensure the sustainability of biodiversity consistent with the Resource Management Act and embedded across the work of all of the branches of the Council.**

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**I ask you to embrace the marine reserve. Come down and see for yourselves, underwater – as I know some of you do. How good it will be to see a Wellington City Council sign on The Esplanade that says: "Taputeranga – Our Capital Marine Reserve"**

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