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Fostering Curious Minds

The Participatory Science Platform in New Zealand

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MINISTRY OF EDUCATION

Office of the Prime Minister's Chief Science Advisor

New Zealand Government

A childhood exploring

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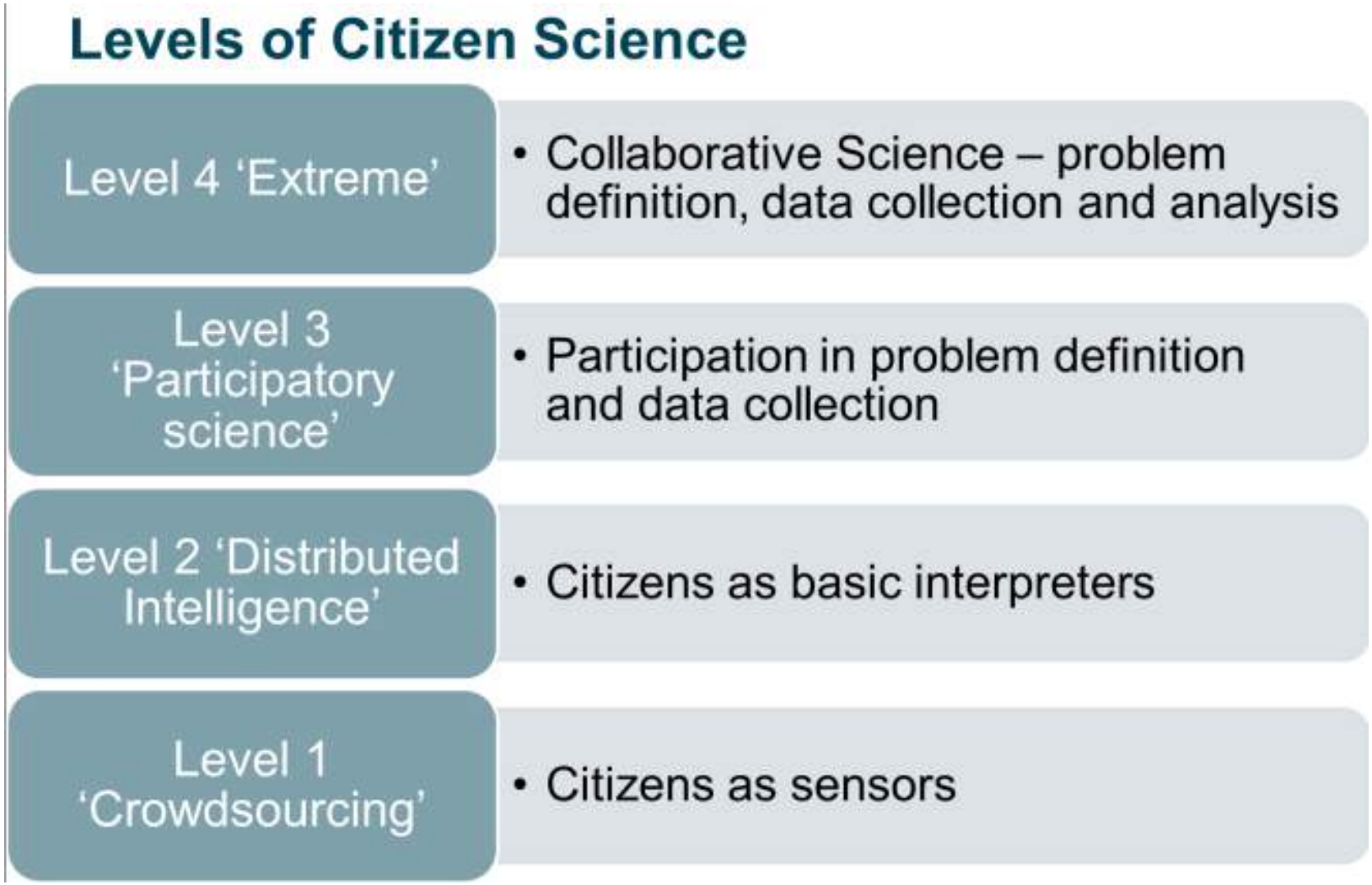
http://sciblogs.co.nz/blogs/curious-and-curiouser/

What do you think are the critical components of a successful research project?

Ideas to action

http://blog.education.nationalgeographic.com/2012/10/26/tell_us_about_your_citizen_science_work/



https://povesham.wordpress.com/2011/11/27/citizen-science-as-participatory-science/

Citizen Science

Levels of Citizen Science

Level 4 'Extreme'	• Collaborative Science – problem definition, data collection and analysis
Level 3 'Participatory science'	• Participation in problem definition and data collection
Level 2 'Distributed Intelligence'	• Citizens as basic interpreters
Level 1 'Crowdsourcing'	• Citizens as sensors

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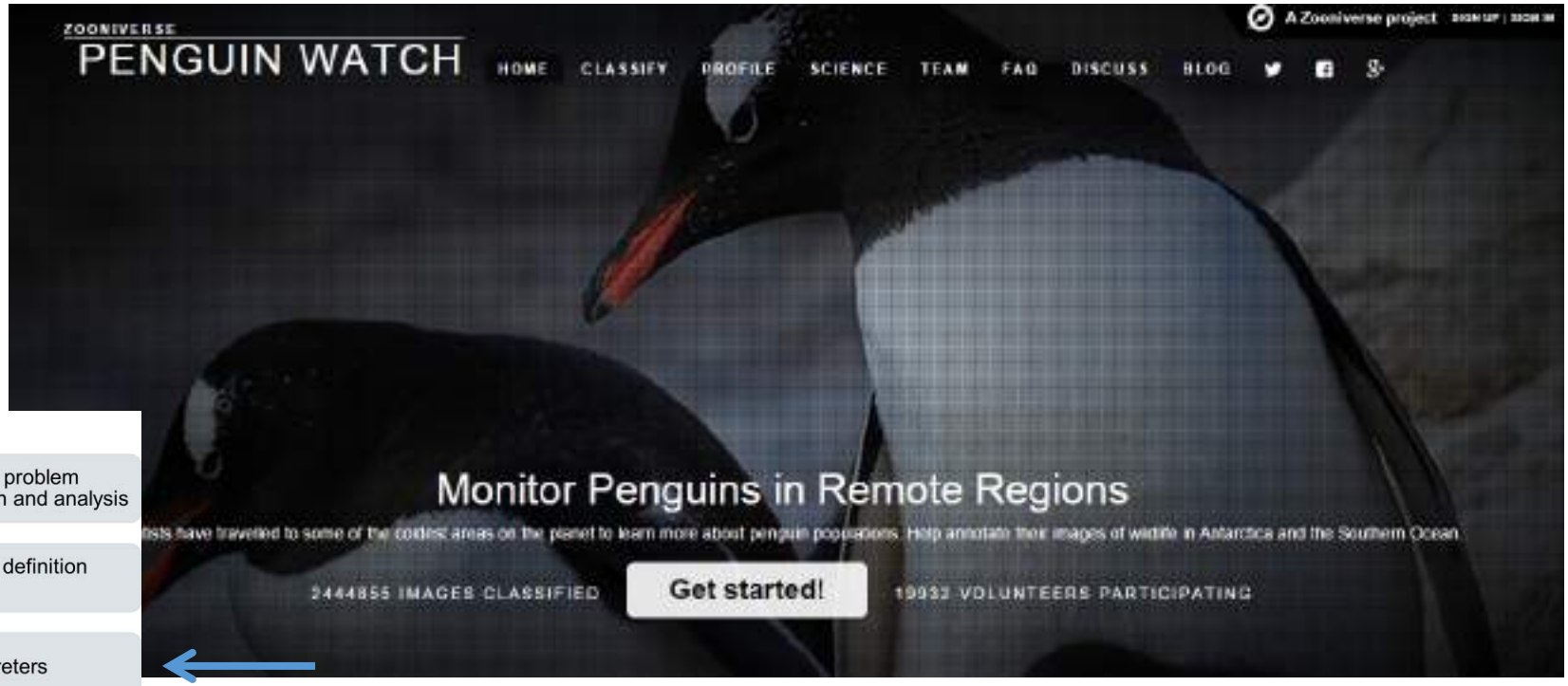
Citizen Science



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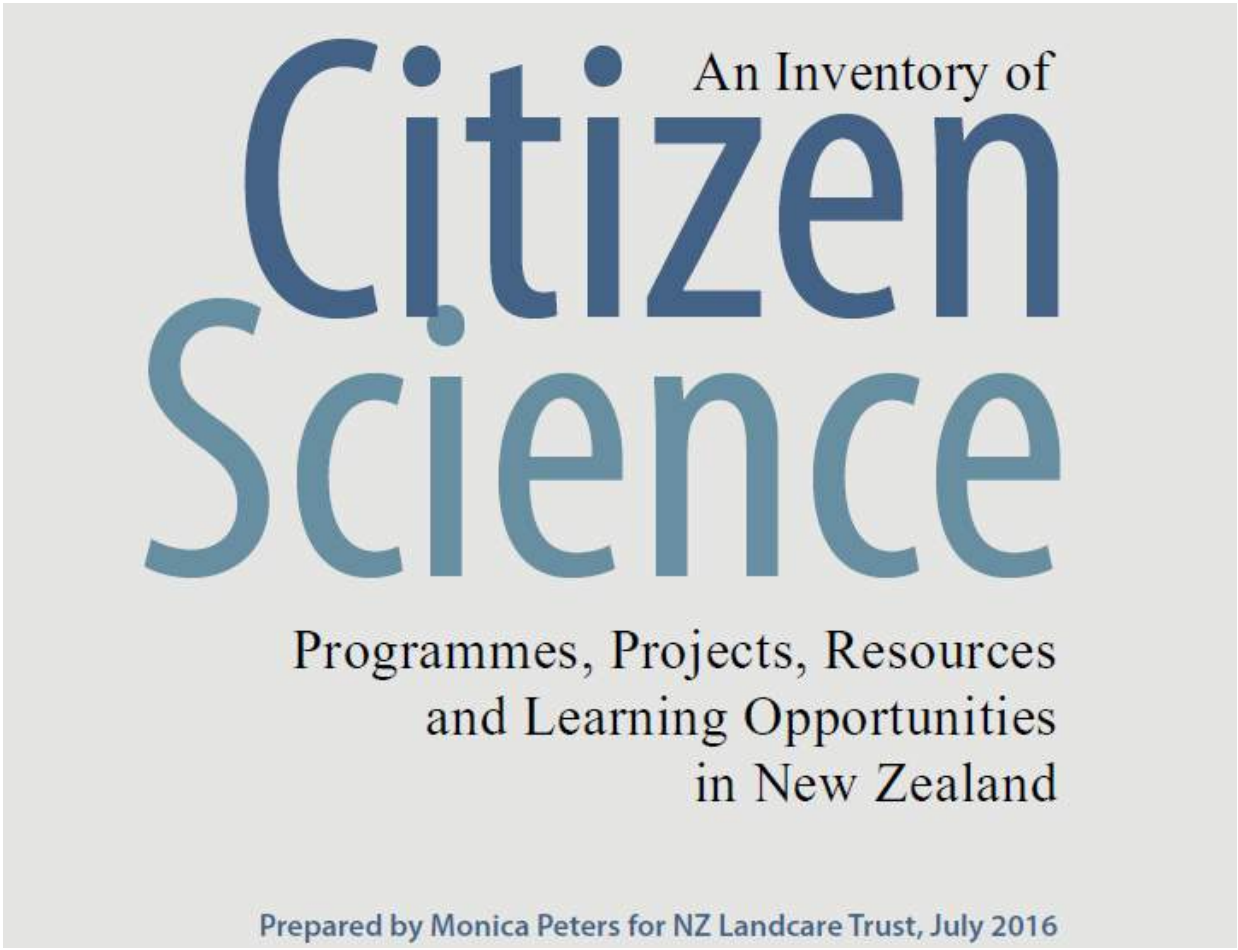

http://www.landcare.org.nz/files/file/2023/Inventory%20of%20Citizen%20Science.pdf

Science is central to many global problems we face


Science literacy is fundamentally important to the future of young New Zealanders


A scientifically engaged society building a better New Zealand

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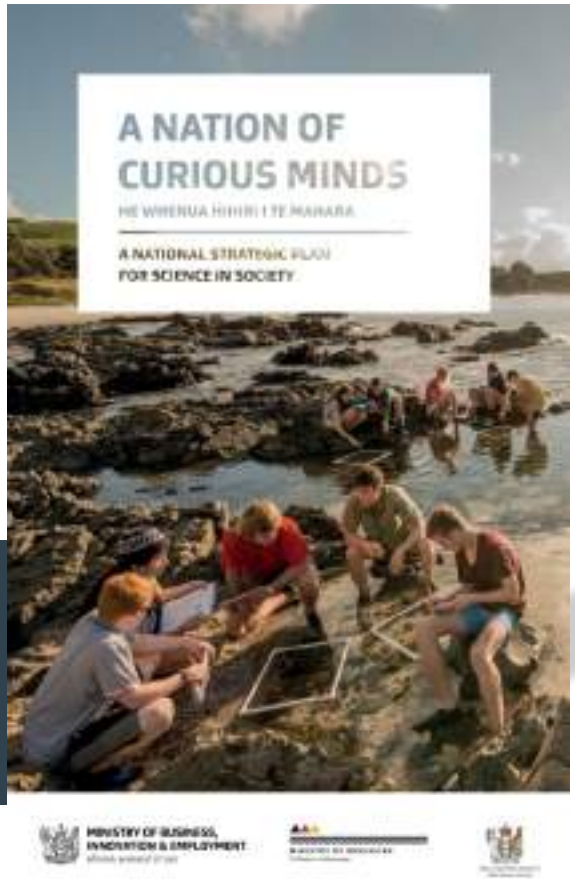

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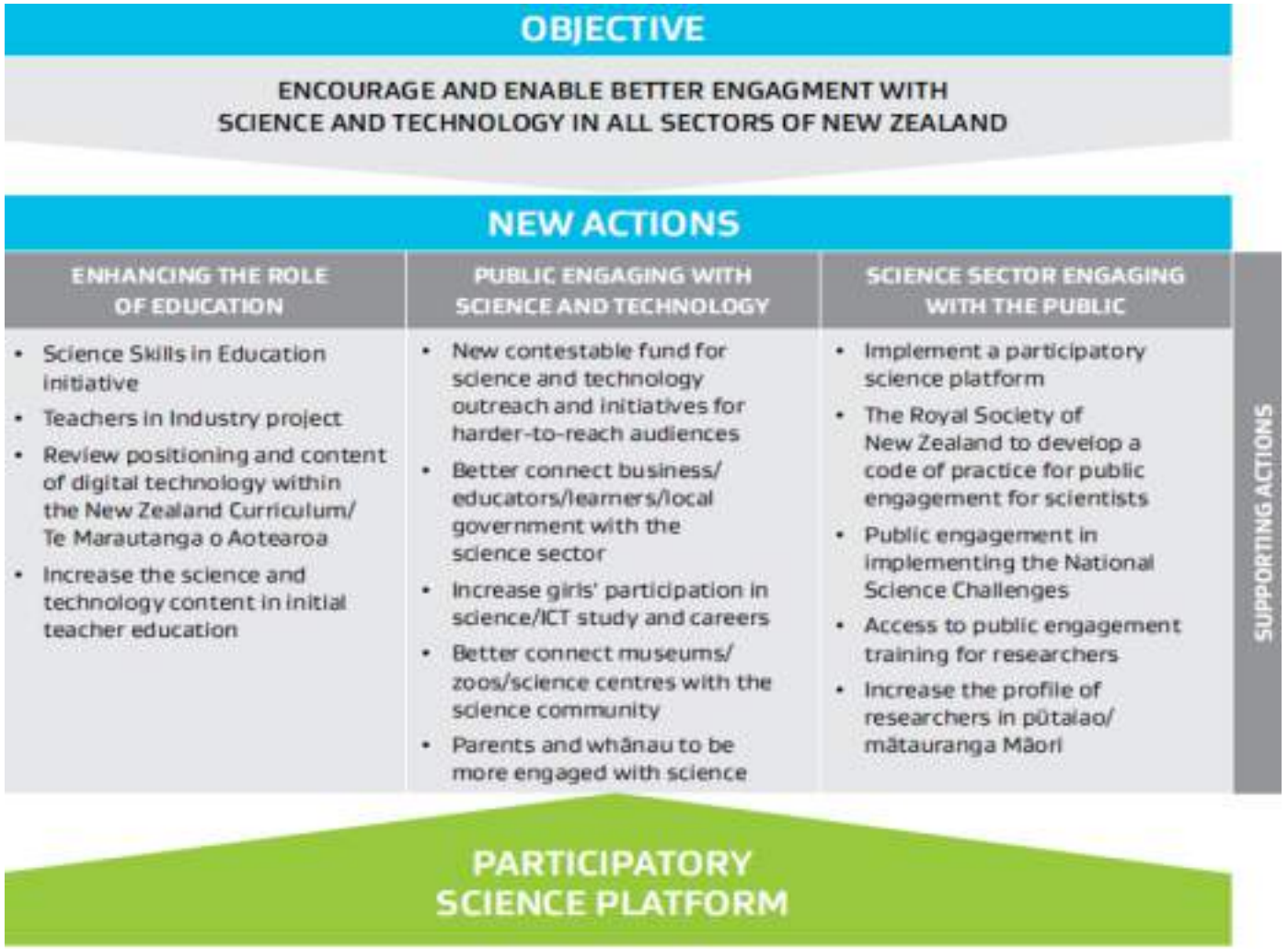

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OBJECTIVE

BETTER ENGAGEMENT WITH SCIENCE AND TECHNOLOGY ACROSS ALL SECTORS OF NEW ZEALAND

OUTCOMES (MEDIUM TERM)

More science and technology-competent learners and more choosing STEM careers

More scientifically and technologically engaged public and more publicly engaged science sector

OBJECTIVE OUTCOMES (LONGER TERM)

MORE SKILLED WORKFORCE

Skilled workforce with a greater number of New Zealanders with the skills needed to support creativity, innovation and knowledge uptake and use

MORE RESPONSIVE SCIENCE AND TECHNOLOGY

Publicly funded science and technology are more responsive to the needs of New Zealanders

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Pilot PSP

South Auckland

Taranaki

Otago

Mentors and matchmakers

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Locally relevant
Collaborative research

Participatory science platform

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Engagement

Pedagogical rigour

Robust science

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Value for money (20K)

Project plan for delivery

PSP-specific criteria (x 3)

Engage
Work together

Innovate
Enhance

Participatory science platform

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Spectrum of projects

Community led

Scientist led

Project Hotspot

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Types of projects

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Who is a scientist?

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South Auckland

- Kava impacts
- Water quality
- Food additives
- Diabetes risk
- Waste→Building material
- Beehive health
- Biochar
- Weta in schools

Mould in homes to fitness

Rongomai School

(Nick Pattison)

Manurewa High School

Landcare Research

Rongomai School

Liggins Institute

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Composting to beach litter

Papatuanuku Kokiri Marae

Koru Primary

Sustainable Coastlines

Also Te Punaha Matatini

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Pollution

Air pollution

NIWA

ECE cluster

Oruarangi Stream

Aorere College & Makaurau Marae in collaboration with Wai Care

Otara- SEHC

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Dung beetles and water

Duwwel

Kura & Otara Creek

Te Wharekura o Manurewa Awa

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Taranaki

Kiwi and bats

Heirloom vegetables

Composting

Electric vehicles

Sustainable energy

Motunui epa

Habitat restoration

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Led by:
Community group
Science background

Supported by
Scientists

Run through:
Schools

Project Hotspot

Community

- Capture local knowledge
- Critically assess data
- Ask questions and formulate hypotheses
- Design & conduct investigations
- Communicate & educate

End users

Decision makers
Community grps
Industry

CITIZEN SCIENCE

MAKE A DIFFERENCE!

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Project Hotspot

Through schools:

- Identify hotspots
- Why do hotspots occur?
- What are the main threats?
- What can be done to better protect?

Recommendations to end users:

- Workshop
- Blog
- Social media

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Waitara Kaimoana Survey

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Community building

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Building relationships

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South Taranaki Subtidal Reefs

Maru Wai Matara

Te Whenua Tōmuri Trust **pilot project stage 2**

-health of local waterways

-CHI & SHMAK

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Otago

- Healthy homes
- Naseby dark skies
- Codling moths
- Cat tracking
- MothNet
- VIPs
- Electric vehicles
- Wakatipu Snow Study
- Biodiversity monitoring & trapping
- Sugar in diets

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Otago water projects

Grebes

Wanaka swimmers

Shining a light on our environment: Developing a low cost spectrometry tool for water quality monitoring and biodiversity conservation- Lower Waitaki River Management Society

St Gerards Manuherika Water Quality


The News
Lakes District & Central Otago
THURSDAY, SEPTEMBER 1, 2016
LOCAL ELECTIONS 2016
What are the biggest issues in your area?
Rower looking beyond U21s
Council to review its water policy
New river regime looms
Uncertainty over setting minimum flow for Manuherikia River
Contact:
Dunedin
Central Otago
Queenstown

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Sediment & seashores

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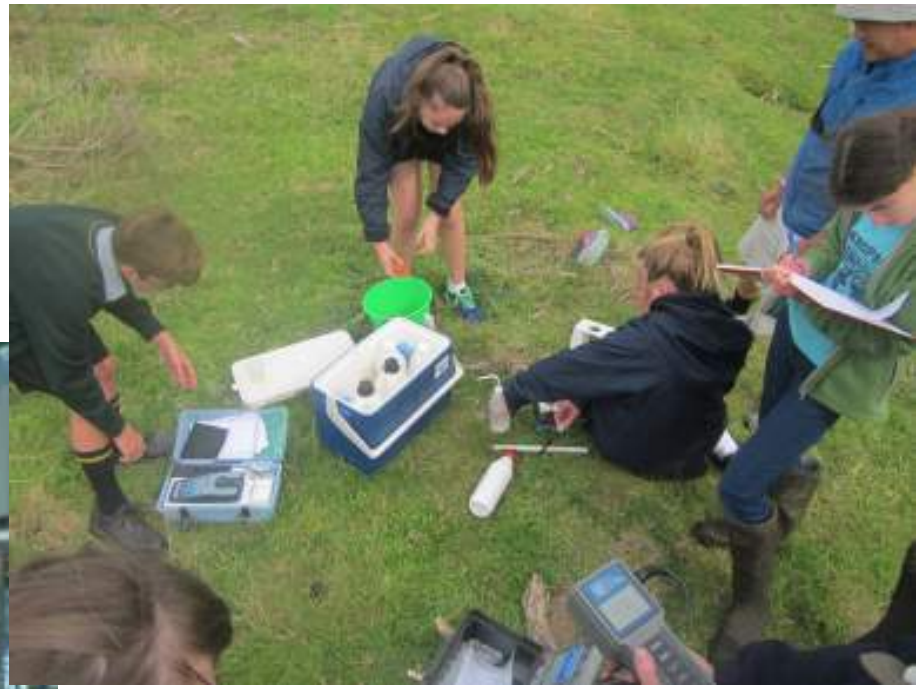
Tomahawk Lagoon (ECOTAGO)



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Tracking penguins

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Mike Thorsen on the PSP

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Themes- benefits- young people

Project-based learning

Empowerment

Local learning

Acting as scientists

Cross curricula integration

Interdisciplinarity - innovation

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Themes – benefits - communities

Community building/teamwork

Many sources of knowledge

Sharing, avoiding duplication

Novel solutions

Mātauranga Māori

Whānau

Local solutions – action orientation

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Themes – benefits - science

Democratising science

Open & better science

Communication

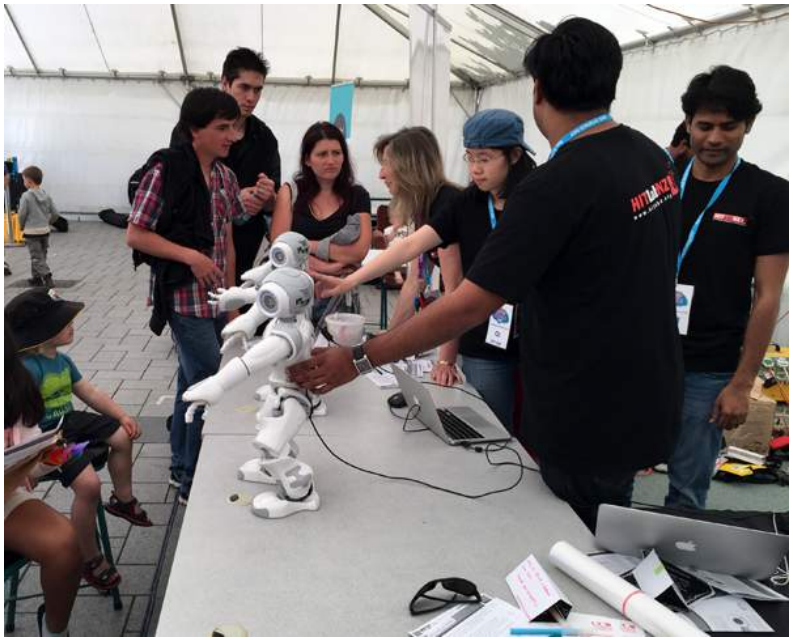
Mentoring

Start-up philosophy

The ‘other’ fund- UCM

UCM

‘Event based’/ outreach
Science related
Hard to reach = target audience



PSP

Long term relationships
Scientific research
Young people = central to PSP
Strong pedagogy
Community engagement
Mentoring role of project managers and NC

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The future of PSP?

Changing the paradigm

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Sci21 Curious Citizens

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Scope

Either the community or science sector based partner in the research project collaboration may apply for funding so long as the eligibility criteria are met. Any type of community group is able to apply - these may include students, schools, kura, community-based organisations, businesses or Maori organisations and collectives.

Note:

1. It is anticipated that an educator(s), education expert(s), class or school will be a participant in projects, with a strong focus on capturing and imparting the learning and enthusiasm generated.
2. There must be a legal entity (e.g., a Trust, school, charity, research provider, etc) with which the PAL can contract with on behalf of the PSP project, and to whom the funding will be paid if successful (i.e., either the community group or the research partner).
3. It is expected projects will be progressed within the pilot timeframe.

Outside of the funding and eligibility criteria listed in Appendix 1, there are no restrictions as to the scope or topics of projects that can be applied for, with funding available of up to $20,000 excl. GST per project.

PSP Objectives

The objective of the platform is to build lasting science engagement, relationships and networks between the community, education sector and the science sector through:

- engaging students, kura, schools, businesses, Maori collectives/organisations and/or community based organisations with science professionals in collaborative research projects that have scientific value and pedagogical/educational rigour, and resonate with the community;
- offering inspiring and relevant learning opportunities for students and teachers;
- engaging learners and participants beyond the school/kura community to reach parents, whānau and wider communities;
- giving researchers opportunities to become involved in locally relevant lines of enquiry, where high quality scientific outputs can be created through harnessing the local knowledge and contribution of citizens.

The objective of the pilot is to test the platform concept in three different local environments and to provide information about the administrative and operational resource requirements to inform post-pilot actions.