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New Zealand Marine Studies Centre

Annual Report



The New Zealand Marine Studies Centre (NZMSC) provides a window into marine research at the University of Otago. The Centre offers marine education programmes for all ages. Our mission is to foster understanding and appreciation of New Zealand's unique marine environment and responsibility towards its conservation.

Stats for 2018

In **2018** the
NZMSC programme engaged
more than **17012** people.

The participants included:

8,167

school students and teachers
from the lower South Island
attended curriculum-linked
programmes through the centre;

3160

schools, teachers
and communities
participated in the
Aquavan programme;

2633

interest groups and
families participated
in marine experiences;

3052

school students and
teachers attended outreach
programmes in the Nelson/
Marlborough/Tasman region.

Aquavan... discovering our Coastal Connections...



Over the past year, the Aquavan has been busy travelling up river catchments in Otago and Southland. Through encounters with live marine species and education programmes, inland schools and communities have been learning about connectivity between river health and the coastal marine environment, in a dynamic and hands-on way.

MBIE Curious Minds Funding

Aquavan connecting with community



As well as visiting schools in Southland and Otago the Aquavan featured at a community event with Environment Southland at Matura in August. And it was a hit at the West Otago A&P show winning the Supreme Outdoor Exhibit award along with the Pomahaka Catchment Group, the Landcare Trust, DOC and Catchments Otago.

Enviroscape in Action



Use of a new enviroscape model has helped demonstrate the connections between land and sea in a dynamic and colourful fashion.



Webcam Project

The NZMSC won a GigCity grant to install cameras on our fish tanks and monitoring equipment at Portobello for streaming to the web. We will be going live in 2019.



The Collins Guide to the NZ Seashore

Written by Director, Sally Carson, and photographer Rod Morris, makes the notable book list:

otago.ac.nz/marine-studies/news/news/otago683634



Seaweed Workshops

During Seaweed 2018 the NZMSC ran workshops for teachers and students in Wellington, Porirua and Kapiti on our Marine Metre Squared citizen science project.



Sediment and Seashores

The project to monitor sedimentation in the harbour continued into a third year in 2018 with an emphasis on comparing data collected by the public with that collected by scientists. Pupils from St Brigid's School, Broad Bay School, Otago Girls High School all gained Royal Society Crest Award for their work!



Seashore resources

During the year, the Centre has updated the Te Reo versions of the seashore guides and printed them on waterproof paper as well as card. The English version have also been reprinted and thousands of copies of these seashore guides and activity books have been distributed to schools and community groups throughout NZ.



Manager of the NZMSC,

Tessa Mills, retires after 13 years - Fishy Role ends with retirement:

otago.ac.nz/marine-studies/news/news/otago697645



Wild Dunedin

the NZMSC supported the 2018 festival with displays and “Wild Food Webs and Fishy Feasts” public workshops at the NZMSC.



Marine Mammal Identification

One of a series of summer seminars, this public workshop culminated in a boat trip to spot sea birds, seals, sea lions and dolphins.



Shark Dissection

During the October school holiday the NZMSC ran a series of shark programmes culminating in the scientific dissection of a 2.5 metre 7-gill shark.



Science Festival

In July the NZMSC organised displays and workshops at the University Science Expo and at the South Dunedin Community Hub.

This was made possible by a \$1,500 grant from the DCC Community Fund to run the Aquavan Programme in South Dunedin and funding for the Aquavan itself from the University of Otago Alumni Appeal (\$8,000)



A Citizen Science Data Management Workshop

Over 30 people from a range of organisations attended a workshop lead by Peter Brenton (Atlas of Living Australia) and Colin Meurk (iNaturalistNZ) to learn more about tools for capturing field data and data management.



Public Art Project

Using 1,000 discarded plastic bottle tops, Marine Science staff and students ran a community artwork project to increase awareness of problems of plastics in our oceans. The artwork is on permanent display in South Dunedin.

Ocean Acidification Workshop



There is increasing interest from teachers on climate change and need for practical activities linked to the marine context of global climate change.

A presentation for Earth and Space Science Teachers in September, the Otago Science Teachers' Association in November and a workshop with guest lecturer, Sam Dupont, at the NZMSC for science teachers in December all focused on the topic of ocean acidification and the NZMSC's new teaching resource "Oceans of Tomorrow" which was well received by teachers.

Kuratau School Visit



A visit to Dunedin for 30 students from this Taupo school to study Marine Science at the NZMSC was awarded by the Air New Zealand "airpoints for schools" scheme.

Mm2 conference presentations



- **2018 Australian Citizen Science Association Conference** – Can citizen science drive more than student learning: Diving Deeper with Marine Metre Squared (Talk), Adelaide, Australia.
 - **2018 Public Communication of Science and Technology Conference** - How can citizen science support communities to expand their narrative: Seashore Stories from New Zealand (Talk). Dunedin, NZ.
 - **2018 NZ Citizen Science Symposium** – Evaluating the Success of a Nation-wide Citizen Science Programme (Talk) Marine Metre Squared – Methods in Community Engaged Science (Workshop), Wellington, NZ.
 - **2018 NZ Environmental Educators Association Conference** – Marine Metre Squared (Workshop), Wellington, NZ.
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Nelson



A wide range of marine education programmes are run in the Nelson/Marlborough/Tasman region by NZMSC outreach educator, Richard de Hamel. In 2018 Port Marlborough supported the Nelson Programme to the tune of \$3,000.

Feedback – What teachers say about our classes

Nelson

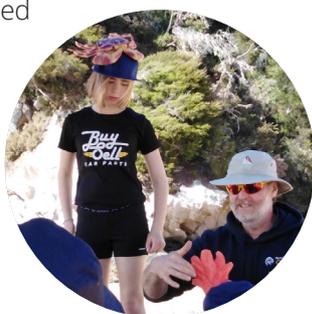
When asked how valuable the programme was, over 98% of respondents thought it was valuable with over 90% considering it to be very valuable. And 99% said the programme enabled them to extend student learning and understanding beyond what is possible in the classroom.

The programme supported student progress in the following ways:

- “Our goals of extending students confidence, leadership and experience in our local environment through authentic contexts were exceeded.”
- “This was a wonderful authentic learning context to learn more about ...”
- “Collaborative tasks + looking at innovation + how technology has changed ...”
- “Fantastic science skills, vessel skills and a great way for the children to see their community.”
- “Actual, authentic real-life experience can't be beaten! Brings classroom learning to life.”

Strengths of the programme were identified by teachers as:

- Staff passion, knowledge and skills (99%)
- hands-on opportunities (85%)
- use of resources (84%)
- content/curriculum (78%)
- learning environment (68%)



84% of teachers commented on the value of the programme to their own learning. Comments included:

- “It was lovely to see the students so engrossed in their new learning – we will definitely follow this up next term as our inquiry into ‘Learning for life’.”
- “Having models of the sea-life as hat ‘models’ so those students were the ‘experts’ on that particular sea creature.”
- “A reminder about the importance of animal studies particularly marine life and interesting adaptive features of animals.”
- “... lots of new understandings – Richard tells stories to make connections with prior learning for audience and feeds off their replies for feed forward! Thanks ...”
- “The ability to take this learning back into the classroom and extend upon it through Maths.”

Primary

100% of primary teachers identified the hands-on nature of the programme as a strength.

100% of teachers said the programme increased students understanding of NOS.

- 90% of primary teachers said that students with specific learning needs benefitted from the programme. “Students with intellectual disabilities were able to fully participate and gain benefit from the programme – there was a good balance of activities to ensure that the students with specific needs were met”.
- Programme was “great – suited the class level perfectly”, “good pace to keep the students on task”, “really focused at each station”.



- Staff were “super, knowledgeable, related well to students”, “awesome, very welcoming, informed and well prepared”, “wonderful speaker pitched at our level well”.
- Facilities were “very well set up for observation and touch”, “kids loved the feeling of being in a lab”.
- “For our students this was a wonderful follow-up from the Aquavan earlier in the year. The kids asked lot of questions which showed they were making connections between the two visits. Kids were really interested in this topic”.
- “The parents that came could only say positive things about the visit. It was so well planned and adapted to the children interests and near the end – tiredness”.



- 79% found a strength was the student engagement in science.

Some specific comments from teachers highlighted the value to students.. “getting them (students) to think and problem solve.”

Teachers indicated that the students had increased their understanding of the Nature of Science. When asked how, comments received included:

- “Hands-On, learning the skills they could need if they were to do tertiary science, questions, problem solving, thinking, investigating.”
- “Depth of knowledge and links to the curriculum have been extended and students show more appreciation for the work involved in science.”
- “Communication (oral/written). Data collection/ processing/interpretation. Experimental design.”
- “Hands on and close-up with specimens not able to access in lab easily.”
- Scientific method is explored.”
- “Data analysis, confounding variables, how long real science actually takes, ethics.”



Secondary

Of the responding secondary teachers, 100% said the programme was of valuable with 79% describing it as very valuable.

100% of responding secondary teachers found that the programme extended student learning and understanding beyond that possible in the classroom.

When asked “What were the strengths of the programme”

- 100% identified live marine animals and plants.
- 97% identified science expertise of staff
- 93% identified hands on nature of the programmes.
- 83% identified the use of scientific equipment and resources



Full details of the school programmes we offer, public events and projects we organise, and the free resources available to teachers and educators, can be found on our website.

Email marine-studies@otago.ac.nz

Phone 03 479 5826

New Zealand Marine Studies Centre

PO Box 8, Portobello, Dunedin 9048



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MARINE STUDIES CENTRE
University of Otago

www.marine.ac.nz