



Biology Educators' Association of New Zealand Te Rōpū Whakaako Koiora o Aotearoa

Term 4 2017 Newsletter

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Animal Behaviour Study B3.1 QAAM Task and Resource Pack – is now ready for you in the secure members area of our website!

BEANZ has produced another QAAM assessment task along with an accompanying teaching and learning resource pack. This year the task is AS91601 Bio3.1 “Carry out a practical investigation in a biological context, with guidance” using animal behaviour study as a context.

There is scope for use at wildlife parks, zoos, bird sanctuaries, local beaches and waterways or potentially at a farm or lifestyle block. The task has been successfully trialled in a New Zealand school and uses minimal resources.

The resource pack includes guidance for teachers not familiar with animal behaviour observation including use of ethograms and observation methods as well as student exemplars at the different grade levels.

For those new to this, QAAM stands for Quality Assured Assessment Materials which means that NZQA have already checked the assessment materials and guaranteed they are at standard. This means you can use them with confidence. This process costs in excess of \$1000 and is a lengthy process, outside the financial capabilities of most schools so BEANZ provides this as a service to our members free of charge as a way of supporting you.

The value of this resource depends on the continued security of both the task and schedule so it will only be accessible through BEANZ via the members only area of our website www.beanz.org.nz

***You can also access the QAAM Bio2.1
“Variation in a Forest Canopy” in the same way.***

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QAAM tasks for your use

L3 Examination feedback

BEANZ regional workshops: Teaching Biology through Microbes

Biogeography of Bull Kelp

Website updates

What is BEANZ?

Biology Educators' Association of New Zealand (BEANZ) is a Standing Committee of the New Zealand Association of Science Educators whose purpose is to support and promote Biology education throughout New Zealand.

BEANZ is run by volunteers – by teachers, for teachers. This is our way of giving back to the profession we all love and work in. Our focus is on building pedagogy and content knowledge of members through the provision of regular newsletters, regional workshops, resources, website, and scholarships for members to attend relevant conferences, specific projects such as provision of support materials, and the biennial conference, BioLive.

BEANZ also through its BEANZ Assessment Project produces and publishes NCEA level 3 practice examination papers each year as well as other materials to support teachers in assessment practices.

Biology Educators' Association of New Zealand

Te Rōpū Whakaako Koiora o Aotearoa

A Standing Committee of the New Zealand Association of Science Educators 2017

Region	Name	Email Contact
Northland	Julie Harrison	JHarrison@kerikeri.ac.nz
Auckland	Mike Stone Penny Daddy	m.stone@auckland.ac.nz pennyD@stcuthberts.school.nz
Waikato	Dean Suter	SuterD@faircol.school.nz
Bay of Plenty	Jean Grattan	jgrattan@otc.school.nz
Central North Island	Kieran Tibble	kierant@haurakiplains.school.nz
Gisborne	(your name here?!)	
Hawkes Bay	Sarah Gunn	sgunn@karamu.school.nz
Taranaki	(your name here?!)	
Manawatu-Wanganui	Chris Corser	c.corser@pnghs.school.nz
Wellington Region	(your name here?!)	
Nelson Marlborough	Sarah Johns	sarah.johns@ncg.school.nz
West Coast	Erica Jar	erica.jar@buller.ac.nz
Canterbury	Ian Reeves	rvi@papanui.school.nz
Otago	Pru Casey	pru.casey@gmail.com
Southland	Lee Pirini	lee.pirini@southlandgirls.school.nz

Are you interested in giving back to our Biology community? Consider becoming a BEANZ regional representative for Gisborne, Taranaki or Wellington. Contact us for more info.

I.T Tip:

Past Exams

Did you know.... You can access past NCEA exams showing the copy write pictures.

Go to the log in page in NZQA website
<http://www.nzqa.govt.nz/login/>

click [Schools & Tertiary Education Organisations \(TEOs\) Login](#) and enter your personal log in.

Check with your schools administration for your log on details.

BEANZ level 3 practice examinations

BEANZ is conducting a review of our level 3 biology practice examinations we offer each year.

Our writing group are educators, just like you, and we are always trying to improve each year to ensure we best meet the needs of level 3 biology teachers.

Regardless of whether you purchased the 2017 examination or not, we would be appreciative if you could take the time to complete a short survey - <https://goo.gl/forms/p2MMLnGk96tDVMQg2>

BEANZ thanks you for your contribution and feedback.

2017 BEANZ Workshop:

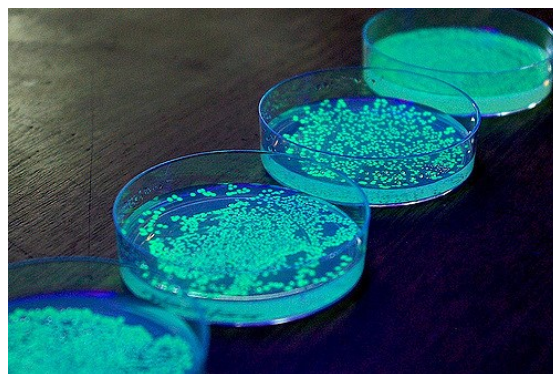
Teaching Biology Through Microbes

In response to member requests, the 2017 workshop will explore how we can make use of microbes to teach biological concepts and skills, explore socio-scientific issues and work collaboratively across the curriculum.

Participants will have the opportunity to trial practical “glow in the dark” bacteria kits, make use of different pedagogical strategies for student involvement and engagement and share best practice. There will also be time to have a look at our latest QAAM task - Bio3.1 “Animal Behaviour Study” as well as ensure all members can access the secure area of our website.

This workshop is part of BEANZ service to professional learning for all biological educators so there is no cost to attend. However, please be aware that the QAAM task and secure website access is only available to our members.

For further details about when the workshop will run in your region and to register, please contact your local regional representative.



Region	Regional representative contact	Workshop details
Northland	Julie Harrison JHarrison@kerikerihigh.ac.nz	29th November 10-2pm
Auckland	Mike Stone / Penny Daddy m.stone@auckland.ac.nz penny.daddy@stcutberts.school.nz	20 November 12.30-3.30pm St Cuthbert's
Central North	Kieran Tibble	Tba
Waikato	Dean Suter	Tba
Bay of Plenty	Jean Grattan jgrattan@otc.school.nz	Late Feb/Early March 2018, Otumoetai College
Hawkes Bay	Sarah Gunn	Tba
Manawatu	Chris Corser c.corser@pnghs.school.nz	22 November, 12.30 – 3.30pm, venue tba
Wellington	Sue Weich sweich@chilton.school.nz	24 November, 9am – 3pm Will be part of Biology Teacher Day at Zealandia
Nelson	Sarah Johns sarah.johns@ncg.school.nz	Term 4 (Tba) 9-11.30am at Nelson College for Girls.
West Coast	Erica Jar erica.jar@buller.ac.nz	Week 7 or 8 Term 4, Buller High School
Canterbury	Ian Reeves rvi@papanui.school.nz	28 November, 12.30 – 3.30pm, Pa- panui High
Otago	Pru Casey pru.casey@gmail.com	10 November, Otago Boys High School, Lab 114
Southland	Lee Pirini lee.pirini@southlandgirls.school.nz	16 November, 9.30am-12.30pm, Southland Girls' High School

I have just returned from a scientific conference in Punta Arenas in southern Chile, where I spoke at a symposium on biodiversity and biogeography in the Southern Ocean. The speakers in this symposium discussed the distributional patterns of different groups of marine organisms, and the relationships of the species and populations within these groups. From these patterns, scientists can discern the evolutionary history of these organisms and, more often than not, discover that very similar processes have taken place in widely disparate groups.

My own talk focused on the bull-kelp genus, *Durvillaea*, which has a number of different species found around the coasts of the Southern Ocean. If you live in the South Island, or the windier parts of the North Island (e.g., Wellington or the



Wairarapa), you will know *Durvillaea* as the giant brown seaweed that dominates the lower intertidal and upper subtidal zone of exposed rocky coasts. The genus has an extensive range, however, including southern Australia, New Zealand and their subantarctic islands, southern Chile and Argentina, and most of the islands in the southern Atlantic and Indian Oceans, but not Antarctica itself. Ironically, for a cold-water loving organism, *Durvillaea* cannot survive where there is sea ice, which efficiently scours any young algae off the rocks.

The best known and most widespread species, *D. antarctica*, is found around the Southern Ocean, from subantarctic New Zealand to Patagonia and east to the Falkland/Malvinas, South Georgia, Gough, Marion, Crozet, Kerguelen and Macquarie Islands. This species is incredibly tough (it is impossible to tear it with your bare hands) and buoyant

(the blades are honeycombed with air-filled chambers). It can form large, long-lived rafts when torn from the rocks by storms. My colleagues, Ceridwen Fraser and Jon Waters, and I analysed the genetic variation within this species and found that single mitochondrial and chloroplast variants dominated the vast majority of its distribution, with significant variation confined to the subantarctic islands of New Zealand (Campbell, Auckland and Snares Islands). We inferred that this pattern is the signature of the reach of the Last Glacial Maximum (~15,000 to 25,000 years ago), which exterminated the species from most of these islands, but not New Zealand's subantarctic islands, which were not glaciated. The non-New Zealand islands were then recolonized by the descendants of algae that had floated far from their original shores, the refugia in the New Zealand subantarctic. For more information see http://lens.auckland.ac.nz/index.php/Climate_Change_and_Evolution.

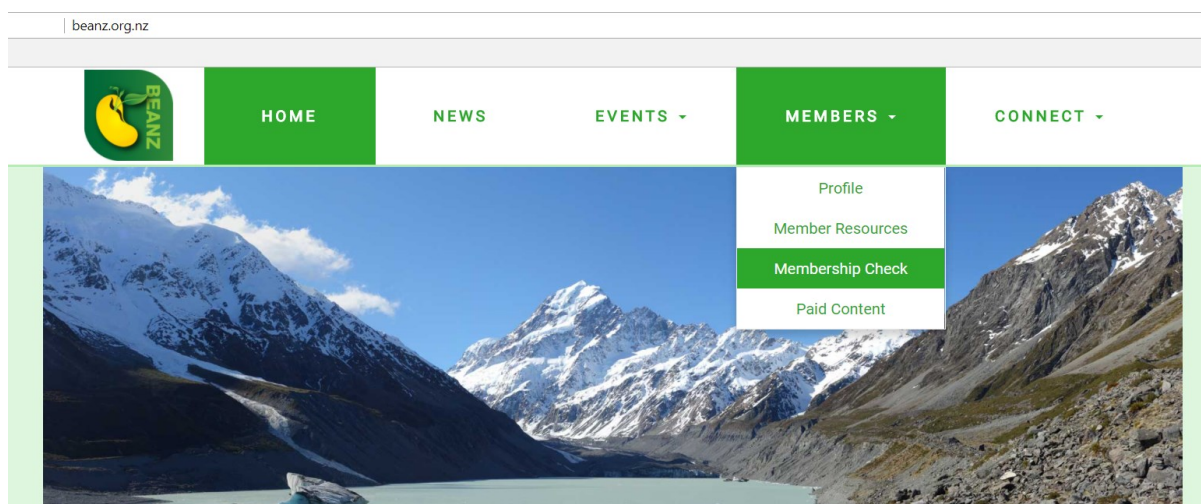
The genetic patterns in a number of *Durvillaea*-associated animals also reveal long-distance rafting. Many invertebrates – especially crustaceans, molluscs and polychaetes – make their home in tunnels bored by some of these animals in the holdfasts of *Durvillaea*. Often when the alga is torn from the shore, the entire holdfast and some of the underlying rock also comes away, thus bringing the whole community of organisms to the new-born raft. Again using genetic tools, Raisa Nikula, Jon Waters and I showed the importance of long-distance *Durvillaea* rafting around the Southern Ocean in minimizing among-population differentiation in the isopod *Limnoria stephenseni* and the amphipod *Parawaldeckia kidderi*, both of which are abundant in bull-kelp holdfasts. For more examples, see <http://www.otago.ac.nz/zoology/research/otago012283.html>.

In short, bull kelp is a critical organism both in the ecology and evolution of the biota of the Southern Ocean. Ecologically, it is the dominant organism on exposed rocky shores and it provides a home for many invertebrates. Evolutionarily, it provides an important dispersal mechanism capable of transporting entire communities of organisms across thousands of kilometres of inhospitable open water.

BEANZ Website Access

We thank members for their patience with any issues accessing the members area of our new BEANZ website (www.beanz.org.nz). All members should now be able to access the members only resources, including QAAM tasks and workshop resources. If you don't have an account or you're not sure what your login is head over the *Membership Check* page

<http://beanz.org.nz/membership-check/>



If you think that you might already have an account just enter your email and we'll check for you. You'll get message in your inbox if you are a member. If need be, you can reset your password from the Login area on our home page.

If you don't have an account simply find your school under the *School Membership Check* section. Click *submit* and then enter your credentials to create an account. Please note, you will need to register using your school issued email address (it must end with your school's domain e.g. name@your.school.nz). If your school is not on the list, then please contact us.

A screenshot of the BEANZ website's Membership Check page. The page has a green header with the BEANZ logo and navigation links. The main content area is white with a green border. It starts with a breadcrumb trail 'Home / Membership Check' and a title 'Membership Check'. Below the title is a paragraph explaining the purpose of the page. There are two main sections: 'Individual User Membership Check' and 'School Membership Check'. The first section has an email input field and a green 'SUBMIT' button. The second section has a dropdown menu for selecting a school and a green 'SUBMIT' button.

Any issues please contact me: bhimme@nghs.school.nz

Benjamin Himme

Website Coordinator, BEANZ

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*Warmest wishes for a
happy holiday season and
a wonderful new year
from all of us at BEANZ.
We look forward to hear-
ing from you all in 2018.*

Executive Position	Name
President (NZASE Rep)	Sharyn Varcoe
Senior Vice President	Kate Rice
Junior Vice President	Nicky Wallace
Treasurer	Peter Sutton
Secretary	Helen Mora
Publications	Holly Wilson
Website	Ben Himme
	Arti Kumar
Curriculum Support Team	Terry Burrell
	Penny Daddy
	Jo Hurst
Primary Biology Education	Hazel McIntosh
Tertiary Biology Education	Hamish Spencer
Assessment Project	Kenneth Loh
	Bill van den Ende
Science Facilitators	Mikhal Stone
Regional Rep. Coordinator	Nicky Wallace



BEANZ executive hard at work at our last meeting in Wellington