

National Marine and Freshwater Education Wananga – Conference 2012



Poihakena Marae, Raglan, Waikato

Sunday 15th – Tuesday 17th January 2012

Theme - ACTION for marine and freshwater conservation.

Purpose:

An inspirational professional development and networking opportunity for all those involved or interested in freshwater and marine conservation.

Objectives:

- Provide a forum for marine and freshwater educators to network about education for sustainability initiatives & projects. (School and/or community based).
- To provide professional development.
- To provide a forum to discuss ideas on how we can foster and take more action for marine and freshwater conservation.
- Ensure strong delivery of Experiencing Marine Reserves (EMR) and Whitebait Connection (WBC) concepts around New Zealand..

Sponsors and Supporters:

Mountains to Sea Conservation Trust (MTSCT) would like to acknowledge funding support from the Department of Conservation and the Tindall Foundation. MTSCT would also like to acknowledge the Poihakena marae committee, their warm welcome into their rohe and giving us the perfect setting for our wananga. Thank you to all of you as our participants. Thanks to Hilton for bringing the 'Blackdog Cat' all the way down from Northland to assist in the safety of our snorkel experience. We give sincere thanks to Fred Lichtwark & the Whaingaroa Harbour Care group for all their guidance in preparation for the wananga and throughout! Massive thank you to the Raglan Surf School and Sleeping Lady Lodgings for accommodating us at the Karioi Lodge for our pre-wananga training and the 'Wahinemoe' harbour cruise. Thanks to Lara and Elise for their minute taking. Also big thank you to Raglan Kayaks and last but by all means not least, on behalf of all the tummies that attended the wananga – thank you Colin's Kitchen – kapai ki te kai.

Powhiri followed by kai and then introductions

Name	What I want to get out of this wananga	Favorite species	Email address
Zoe Studd, EMR in Wellington	Meeting other coordinators, sharing ideas	Octopus	zeespud@yahoo.com.au
Greer Mawdsley, member of the public	Freshwater side. Promote to keep pools in schools	Eagle ray	mawdsley@slingshot.co.nz
Helen Rowlands, DOC Auckland	Meeting ppl	Freshwater eels	hrowlands@doc.govt.nz
Liz Ross, Auckland Council	Share info.	cockles	Liz.ross@aucklandcouncil.govt.nz
Ruth Marsh, Living Waters, Bay of Islands	Absorb info.	Bring in the environment	ruth@ourcommonfuture.co.nz
Bexie Towles, Whaingaroa Environment Centre		Jellyfish	wenvc@kol.co.nz
Natasha Petrove, DOC Taranaki	Raise awareness in Taranaki		npetrove@doc.govt.nz
Sara Lovitz, Project twin streams	Get new ideas for schools	Stick caddis	sara@communitywaitakere.org.nz
Cornellia Vervoom, DOC/WBC Franz Josef Waiau Area		Beach whale	cvervoorn@doc.govt.nz
Janna Kostus, DOC Masterton		Dolphins	jkostus@doc.govt.nz
Pam Crisp, DOC Wellington		Harakeke	pdcrisp@doc.govt.nz
Jane Leverington, EMR co-coordinator in Wellington	Learn		Rubylev2727@hotmail.com
Kauri Forno EMR snorkel teacher, Gisborne		Dolphins	Kauri_99@yahoo.co.uk
Megan Wilson, Nelson EMR coordinator	Take home knowledge	By the wind sailor	meganw@parklands.school.nz
Elise Eimer, marketing intern with EMR	Marae experience, meet new ppl	Whale	elise.eimer@gmail.com
Hilton Leith, Trustee MTSC	Enjoy the experience	Rock lobster	handm@xtra.co.nz
Kim Jones, WBC MTSC	Share what she can about engaging communities and	Seahorse	kim.jones@windowslive.com

	learning		
Samara Nicholas, Director EMR - MTSCT	Share info. do as much as she can to make the wananga experience the best it can be	Periwinkle	samara@emr.org.nz
Diane Papworth, Dargaville Intermediate		Dwarf Inanga	diane@dargavilleint.schoolzone.net.nz
Murray Palmer, Principal Nga Mahi Te Taiao	Meet like minded people	Octopus- wheke	Tairawhiti.info@clear.net
Nicki Wakefield, EMR &WBC Coordinator in Northland	See wananga as a step back into her passion and work, since being fulltime mum	Marine: Kina Fresh: Long finned eel	nicki@emr.org.nz
Roger Grace, Biological Consultant and MTSCT chairperson, Greenpeace marine photographer	Meet lots of equally passionate ppl	Spotted Black Grouper and Kermedec Islands	gracer@xtra.co.nz
Melanie McColgan, Waimaori - WBC Nelson and EMR	Love people	Seal	Titi711@gmail.com
Al Fleming, Forest and Bird		Godwit	a.fleming@forestandbird.org.nz
Nathan Hills , Gardener and environmental educator Nga Motu Marine Reserve Society, EMR Taranaki	Wants to talk about ethical funding	Fresh: Australia frogs Marine: Blue bottle	Natedog001@gmail.com
Dylan Clarke, Postgrade Environmental Science	Meet like minded ppl	Fresh: koura	dylansharky@gmail.com
Sophie Barclay, Auckland EMR and freelance writer	Networking	Fresh: Long finned eel Marine: Hectors dolphin	barclaysophie@gmail.com
John Elliot, Principal Mimi School, EMR		Humpback whale	admin@mimi.schoolzone.net.nz

Taranaki			
Greg Pilcher, EMR coordinator Coromandel		Fresh: Long finned eel Marine: Dolphin	ppcfamily@xtra.co.nz
Vince Kerr, Trustee MTSC.T. Biologist and marine advocacy DOC	Support the wananga	Fresh: Giant Bully	vincek@igrin.co.nz
Anton Bowker, EMR snorkel instructor	Learn about EMR meet the people, come away with new knowledge and friend	Marine: Seaweed Fresh: Duckweed	anton.bowker@gmail.com
Kylie McDowell, DOC Kaitaia	To become a WBC coordinator	Fresh: Red fin bully Marine: Paua	kmcdowell@doc.govt.nz
Camellia Neilson' EMR Coordinator Whangarei, Seaweek Co-ordinator		Marine: Squid eggs Fresh: Large galaxiis	cam_nlsn@yahoo.com
Soozee McIntyre, Far North Environment Centre/ WBC		Juvenile Homo sapiens	soozee@ecocentre.co.nz
Kelly Stratford, DOC Manuwatu		Fresh: Mudfish	kstratford@doc.govt.nz
Carolyn Smith, DOC Kaitaia	Find it inspiring to have like minded ppl	Oyster catchers	csmith@doc.govt.nz
Chris Annadale, DOC Waikato		Maui Dolphin	cannandale@doc.govt.nz
Lucy Roberts, DOC Waikato	Find out what everyone else is doing around the country	Bird: Whio	lmroberts@doc.govt.nz
Fred Lichtwark, Whaingaroa Harbour Care		Tree: Nikau	fred@harbourcare.co.nz
Norm Hill		All species	nhill@doc.govt.nz
Sandy Hounuku, Poihakena Marae Representative	Can't wait to let everyone know what is going on	Water! Long fin tuna	sanzhounuku@hotmail.com
Pete Clement, teacher Opunake, EMR Taranaki	Getting environmental awareness into schools	Long finned eel named Boris	pc@opunake.school.nz
Andrea Carr,		Marine:	anh@opunake.school.

teacher Opunake, EMR Taranaki		Penguin Fresh: Frog	nz
Karen Baird, Forest and Bird, Kermadec Focus		Blue Duck Whio Marine:NZ storm petrol	K.Baird@forestandbird.org.nz
Rebecca Eivers	Pass along ways of teaching children	Flounder and fresh water limpets.	Bex.eivers@gmail.com
Lara Taylor,Enviro Management graduate			larabtaylor@gmail.com
Bruno David, native fish expert, Environment Waikato			bruno.david@ew.govt.nz and bruno.david@waikatoregion.govt.nz

Day 1:

Samara MTSCT Presentation on EMR

Introduced aims and current projects, supporters, sponsors and trustees. Discussed teaching/advocacy resources and desire to increase these and also funding. High parental involvement 1:2 ratio, lots of volunteer hours. Media engagement to generate excitement/inspire public. Kaitiakitanga (guardianship), marine conservation focus/message, safeguarding the future. Community Guided Snorkel days – free guides provided in marine reserve areas or in places in conjunction with community groups wanting more public support fro marine protection.

http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/emr_promo_11.pdf

EMR 10 year anniversary movie
http://www.youtube.com/watch?feature=player_embedded&v=WMWsm95bR_Y

Kim Whitebait Connection Presentation

Son inspired her to get into environmental protection/restoration. Saw the major linkages between fresh and marine environments. Encouraging people to get engaged and active in the environment – get connected with environment and see the linkages. Foster understanding in the wider community. Whitebait is the mascot for the programme because most people have heard of whitebait (even if only in relation to a fritter) and this gives them a starting point for engagement

from which they can learn about the rest of the ecosystems. Example of interactive game for students to play at school before they get into the field. Once in field they carry out macro invertebrate studies for indication of stream health. Aim to inspire action; if the community wants to implement a particular project then WBC assist this. A wide range of actions emerge. Media coverage helps reinforce message. Collaborative partnerships important aspect e.g. DoC Stephanie Bowman's Velvet Tuna (eel) display is available for people to use as a tool (contact Kim for details). Facebook page established.

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/WBC%20WANANGA%202012.pdf>

Show & Tell:

Diane Papworth- (Dargaville Intermediate) Growing native trees for Riparian regeneration.

Teacher. EMR in 2006 on every 2 years since '06 for the whole school. First west coast school. Diverse environment don't have a marine reserve. Enviro. Studies Group. Kids learn about looking after the waterways, EMR ties into that. Students get into protecting Maui dolphins. Teacher of Enviro. Studies for four years started an extensive school nursery to sell seedlings and self-sufficient garden; students involved in all the work and will be out planting the seedlings for some major customers. Studied Riparian Management 2010 on fellowship year, also involved in Kaipara harbour restoration.

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/Raglan.pdf>

Alan Fleming (Forest and Bird) - Update on proposed Mimiwhangata Rahui Tapu.

Mimiwhangata wonderful place in Northland with accommodation now. 1984 marine park estab. and commercial fishing stopped but has been unsuccessful. More recently MR proposal, joint with DoC and local hapu but unsuccessful. Funding for MPA has been cut in Northland, no progress since 2006. Kaumatua placed a rahui (not legally recognised) wants a rahui tapu placed for 25 years. Forest and Bird have helped develop this concept. Great community consultation/input. Rahui tapu about protection of environment; ancestral guardianship; flow-on benefits e.g. employment op's and health benefits of people and environment. Rahui tapu is not crowned administered but by a management committee (which would include DoC and other organizations as well as tangata whenua). Generational review after 25 years of no take. Questions around customary take, concerns around kaimoana access by tangata whenua – decisions would be up to management committee. Rahui tapu is significantly different to MR and is not meant to replace but be an alternative for some communities. Favourable responses from ministers but a number of issues raised (e.g. worries this model might replace MRs). Focus on lobbying with politicians i.e. National and Greens. Number of upcoming meetings with various organizations. Very keen to advance, unsure if this government will be receptive. Response is either continue to lobby or put in an application now which might kick-start consultation etc

http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/mimiwhangata_M2S_15_1_12.pdf

Nathan Hills (Nga Motu Marine Reserve Society) - Survey conducted on Paua collection rules

www.60springs.co.nz - gives an idea of what Nathan has been involved with in the last few years. Works with classes on projects. Wetland Extreme Team/Penguin Camp. Intermediate students

studying people and paua. Taranaki- how do we survey the public to find out if ppl know that the size of paua has dramatically decreased in the area and the size limit for paua-take has decreased to 85mm. Various survey methods including standing outside an infamous bakery. Kids made up the questions. Wanted to know if public knew the minimum size. How many shells can you take? 10. Size of bag limits. Simple and quick survey. Findings from surveys: 60 ppl. 31% did not know minimum size for paua (all shell fishers) most ppl knew size and bag limit. Recommendations from students: More size, more measurers and increase awareness of rules and regulations for shellfish harvesting. SurveyMonkey.com- free to make surveys, easy to use.
<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/nathan.pdf>

Andrea Carr (Opunake High school) - River study project (5min)

Junior school. Teaching as inquiry. The question: How do we know rivers are healthy? Answers from wananga participants: clarity, lots of critters. Surrounding catchment use. Temp. smell. Can you drink it. Can you swim in it. Biodiversity. Can you catch fish in it. Went to Fonterra to get funding. 7.5 thousand to fund their saving the rivers. Had pH testing kits among other things. DoC involvement. So they surveyed the problem - Took five spots along river from mountains to sea in Taranaki. Local farmer let them riparian plant = solving the problem.

Pam Crisp (DOC- Head Office) - DoC Education Strategy (5min)

Doc's 20 year strategy if you don't bring young people on the journey nothing will ever happen for the future. Target: 1 mill conservation kids. Focus toward intermediate level. Nature deficit disorder- children who do not have any interact with nature. E.g. Kids in Christchurch that have never been to the beach. DoC cannot get kids involved with nature alone. Could they bring conservation educators into a more concentrated area with children to teach them about being involved in nature? Integrate Maori culture values. Now has an interactive online tool to be talked about further in the wananga.
<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/DOC-DM-865723%20-%20education%20ppt%20for%20TFS%20%20Conference,%20Nov%2026%201011.pdf>

Soozee McIntyre (Far North Environment Centre) - Catchment Nursery for Doubtless Bay

Established a restorative programme in the Far North. Did the tail of the fish on the Traveling tuna Tapestry. Worries about health of moana and particularly kaimoana. Started a catchment program in 2010 focus on a nursery for restorative planting. ASB community funding, lotteries assisted. Were able to employ to young people from the community 30hrs p/wk. 10,000 seedlings currently. Tied into WBC through deliveries to local schools. Kids involved in the project and keen on restoring wetlands. Wonderful thing of Far North is that they are very in touch with nature and know that their kai comes from it, major priority now is to teach them to protect and restore it. All organic planting so there are challenges of not using easy ways such as sprays etc.

Keynote Speakers:

Karen Baird- the Kermadecs Islands – Last Pristine Ocean

70 percent of the planet is covered in ocean. 90 percent of the living space is marine environment. No places that completely pristine. But some you can say are mostly. One is the Kermadecs marine reserve. Photos brought by Roger Grace. Kermadecs Tonga arch... longest in the world. Talked about tectonic action dragging the seabed down and creating the Kermadec trench. Raoul Island (aka Sunday Island) has earthquakes frequently. Was covered in rats and cats but have now been eradicated so the native birds are moving back in. Macauley island second largest island in the group continuing to grow. NZ was able to claim up to 200 nautical miles which included the Kermadecs. The Islands: Raoul only forested island. Hazard eyelet. Curtis island- very volcanically active. L'Esperance Rock (French Rock). 19th century Curusos of Sunday Island (book to read if you want to know what it was like when settled). Macauley island- use to be completely covered in goats which ate everything in sight. They were eradicated in 1970s. Kermadec parakeet- native bird, sub species. This island is a haven for seabirds. Largest breeding colony for black winged petrel. Kermadec storm petrel was found breeding. Raoul- unique forest association. Very strong links with the flora and fauna of NZ, find tui. Tropical and temperate species converging in these islands. Tasmic booby that only breeds in this region. Now that rats and cats have been eliminated you see many birds coming back to Raoul Island. Marine environment: lots of species of turtles that migrate to the area to feed, but cannot breed. Limpets on all the rocks. Spotted black grouper is very common in the area. Many types of corals. Tropical Lion fish are also in the area. Most of the islands are below 1000 metres in depth. You see whales, tuna, sharks. Striped marlin moves out from nz to the kermadec region. For some reason on the whales travels south they head off to Raoul island, which is strange. On a single days they could about 100 whale spottings. Her theory is that when whales travel with calves they want to find a nice safe place to stop and rest. Humans in the islands: Polynesians stopped off on their way to nz and from nz. Most amazing is hydrothermal vent activity. Massive sulfite deposits. Life has managed to evolve with the hot sulfite in the water. Becomes the basis of the food chain. Showed footage of underwater see life by the hydrothermal vents. What they are after: like to see the bubble to become the single largest marine reserve in the world. Nat. Geo. Calls the last pristine marine waters in the world. Generally low port value of fishing in the area. Iwi has made mention of the Kermadecs in their claim. NZ's "clean green " brand is likely to fain significant boost if the Kermadecs were add to its marine reserves.

Very little freshwater on the islands and next to no freshwater fauna.

Support from the Labour and Green parties for a kermadec ocean sanctuary – would definitely get a sanctuary if Labour was in. Pew org. are involved in setting up several other major sanctuaries around the world. Desire to get scientists up there as much as possible but issues, mostly logistical. Dreams for future management if there is a large sanctuary, to set up opportunities for researchers and students to go up there and spend time, to learn more about the diverse ecology etc. Potential reintroduction programmes in future e.g. the NZ pigeon. Focus on weeds removal

first though. Southern Heritage Tourists take a group up about once a year (stay on the ship). Very difficult/dangerous landing on the island.

www.thekermadecs.org

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/Experience%20Marine%20Reserves%20Power%20Point.pdf>

Dr. Roger Grace: NZ Marine reserves

Presentation given to the Hauraki Gulf forum at last year's seminar.

Spoke on ecosystems services e.g. Whangateau cockles. Disease outbreak killed 80% and this drastically decreased underwater visibility and productivity.

Abundance and size range of some species has decreased due to fishing practices/overfishing. e.g. Snapper and crayfish which play important roles in the marine environment. On West Coasts Kaipara Harbour sand dollars have increased as Snapper numbers have dropped to about 8% of pre-fished stocks. Also kina barrens are a common issue of overfishing snapper and crays (kina destroy kelp forests) = major ecological disturbance. These species usually feed on kina thereby providing an important eco-service. Illustrative photos at Goat Island and statistics/figures at Tawharanui.

Serious side effects related to Min. Sust. Yield.

Offered recommendations on how to resolve these issues e.g. increase MRs to 10% of NZ coastline, decrease fishing, keep key species at 40-50% of unfished biomass which should correct kina barrens. More fish = healthier seas.

Question on management scenarios, any thoughts? Reassessment of snapper stocks this year and survey on recreational fishing because recreational take was actually greater than commercial in some regions (i.e. east coast). Comment as per decades of research at Mimiwhangata: Recreational fishing can have severe consequences on the shallow marine environment, disproportionate to commercial fishing.

Possibility of an increase on the catch-size some species i.e. snapper.

Comment that in Raglan younger snapper are being caught full of roe, could be a (predictable) potential side-effect.

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/110809TheEcologicalValueofNaturalAbundance%20final.pdf> Read [Commentary](#)

Lucy Roberts- Arawai Kakariki Whangamarino Wetland Project/ Waikato River Project

National DOC wetlands restoration prog. 3 sites, one in north and 2 in south. Whangamarino wetland halfway btwn auckland and Hamilton. Why important? Sizable wetland and conservation area (about 500 hectares). Valuable from an ecosystems services POV, Biodiversity hotspot strong hold for the bittern (bird) 20% of population, focus of local iwi, site for recreation, and historical and cultural significance. Need to be doing the right thing on conservation land in order to go talk to local farmers. Need to have better conservation of the grazing lands by retiring them or flushing them out. Weeds in the wetlands become a problem, they are working with regional council to spot these weed seeds from coming in. they use whitebait nets to catch the seeds. Threatened plants: ongoing management by fire: they set fire to the wetlands. This increases the number of orchid's endemic: over 200 orchids counted this year. Need to involve the community by have focus groups and surveys sent out. Also had events such as guided snorkel tours and school talks/plantings. Media releases, local newsletter and local interpretation panels. Want to work close with stakeholders in order to create a better conserved area.

http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/AK_Raglan.pdf

Murray Palmer (Nga Mahi te Taiao) - description of use of EMR/WBC to help facilitate 'authentic learning' context in Tairāwhiti

They do a combination of Research, Education (EMR WBC LEOTC GLOBE). Transformative learning- all learning by definition is authentic the best learning is transformative opens out eyes to seeing the world in a way we haven't before. Situated learning: Learning that is directly connected to who we are and where we are. Recombining education and curriculum with local people and environment. Various valuable partners: Te Runanga o Ngati Porou and E Tipu E Rea, Te pūru Marae, OPUS NZ, GDC. Makarika and Te Penu marae – concerns about tuna (eel). Reestablished links between the students and their marae, everything done on the marae. Baseline survey produced 7 tuna in a very tiny pool. A lot more long-finned tuna closer to the sea than usual, may be habitat alteration or lack of food sources may be driving them to lower habitat. The secondary school project – concerns re contamination of Mangahauini River depletion of inshore coastal resources. Student driven research – awesome. Continual project. Learning as ecological surveying and assessment, lodge findings with council or other organizations, implement actions. Discussed their freshwater and marine methodologies. Lots of surveys have been done across Gisborne and north/south as indicated by the stars and circles on the map, some surveys were in very remote areas. Monitoring ongoing at many of these sites (some one-off), at minimum they can engage in conversation about these areas and their results.

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/Presentation1.pdf>

Liz Ross (Auckland Council)- Hauraki Gulf Forum's community shellfish monitoring programme

Programme started in 2003 bc of the report of depleted shellfish in the gulf. Notice huge value in having community involvement in shellfish monitoring. Iwi were interested in doing the monitoring but didn't have enough ppl and the schools were interested to involve it in their curriculum. Quite often communities had a problem getting ppl involved so it helped to have the schools involved.

Look at predominately cockles but all other shellfish and counted as well. Schools come out once a year and do this. Schools love it because it is at their local beach. Although the support that they provide they try to provide as much learning as possible by having a briefing and debriefing and then providing the teachers with learning kits to use in the classroom before and after. Its about monitoring these shellfish but also about educating the children. This program links in with other action base programs provided like WBC. Shellfish monitoring complements these programs. There are now 18 site in the programme. 13 schools involved, usually upper primary and intermediate children. Last time there was about 600 ppl involved and that has grown gradually each year. They offer the school the equipment in order to do the survey and GPS's, plus coordinator support in order to make sure everything goes smoothly. Also produced a teacher resource kit (one for upper primary and one with the secondary) Control sites- undeveloped catchments and marine reserves. Impact sites= popular harvesting sites, sites of environmental interest. Most of the sites in the program are supported by the Auckland Council and some are supposed by DoC. Offer and ID guide book. Have had good feedback from the school, they seem to like the engagement of the students out in the environment and the information is of quality and usefulness.

http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/Raglan%20Wananga%20Preso%20Jan2012_v2.pdf

Keynote Speakers

Bruno David- Importance of maintaining freshwater ecological integrity.

Healthy waterways represent healthy communities. When things are functioning properly they are much more resilient to problems. Organisms that live there tell you a lot about the waterways and the water quality. Pressures: impervious areas, pest species, abstraction passage, mining, forestry, industry discharges, predicted N inputs. Why are freshwater fish important? Indicators of river health. Native freshwater fish... about 43 species. Need to think of rivers as roads for fish as there are a lot of fish that use rivers to get from freshwater to the sea. Otoliths (ear stones) can help you tie back where the fish is from and where it has been, also how old it is. Regional council samples a whole lot of streams in the region to use as a reference benchmarking. Put all the info together and it can tell you how degraded a site is compared to the reference sites. Reference sites: Raglan, west, south coast. Special applied research projects. Development of solutions for addressing pressures/impacts- migration tools. Ropes- inspiration... observations of whitebait and other species climbing up a 3m waterfall using Pohutakawa roots. The fish, perched culvert, did climb straight up the ropes into the pipes. Use surface tension to climb up the ropes much like geckos. Fish climbing on glass when the faucet is running on vertical glass... have amazing structures on fins in order to climb up vertical smooth surfaces. Went to Coromandal with ropes and hung them from pipes... if you put knots in the ropes it gives the fish little swimming lanes in order to ease their trip. Use to address long, uniform pipes...e.g. urban streams for "swimming" species. Next step is to try it in urban areas. Eel and kokopu 'condos' urban stream project: Sample 'occupancy' with a pull through camera/sponge or population increase with standard fish methods. PhD is going to be testing these in the drainage canals. Banded kokopu love them. Introduce fish: 12 introduced species (Waikato region). All are non-migratory (e.g. koi carp, catfish). WRC pest fish research: co-supervision- PhD radio and acoustic tracking of carp in the basin. Push traps = series of jail bars, selectively isolating carp. Where to install in Waikato? Ravine lakes. Automated carp gate-carp counter bars spaced to let native species through but count carp 300mm+. Text message sent to arrange carp pickup from trap. What do you do with all these fish? Thermophilic bacterial digester comes out as Carp-N neutral (potting mix) which is

good for native trees. Building a philosophy around taking something bad from the environment and turning it into something good.

Fred Lichtwark – Whaingaroa Harbour Care

Started with 18 members, now six. Seventeen years ago did a study to check environment and agreed it was 'rank'. More dead cattle coming down the river than fish. Little fencing; cattle wade through river leading to utter destruction. Farmers losing cattle in unfenced areas therefore actually costing them (rather than paying a one-off to fence). To make change you have got to make money (to appeal to councilors). They started a nursery but it took 5 years before a farmer showed interest in having them do some planting, they were scared to put their hands up for change. But a trial project exemplified how productive restored land could be. Once they took on a project they converted from unproductive land into a beautifully restored area. Major fencing and planting in various areas. Fonterra states that anything over a stride wide should be fenced but Fred argues there needs to be more in particular areas i.e. wetland areas. Although they reduce the size of the productive land for farming, once restored, the land is much more productive. Have become very successful, \$300k in the bank and lots of work ahead of them – reason is that they run it like a business (not just tree-huggers). Indicators such as increase of sea grass (hectares of it now) and return of shellfish, fish and other fauna. Biodiversity from mountains to sea. Behavioural changes in the community e.g. stock excluded from (most of) the coastal marine environment. Also a tourism industry is increasing to actually view the (now) impressive environment and all of the wildlife such as orcas. Plenty to work on still e.g. urban Raglan, lots of heavy metals in runoff into harbour. Public often complain about mangrove issues and as Fred says if there's a mangrove 'problem' it's because there's too much sediment flowing out of the catchment; in places which they have restored, the mangroves have literally gone. Schools got involved with planting and raising awareness e.g. signage on drains that waste goes to sea. District council not very helpful, prefer to play ignorant. Regional council much better. Still question mark over what Fonterra is up to.

http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/W_H_C_%20presents%20Auckland%20Council%20Staff%20.pdf

Kylie McDowell (DOC) - Outlook for Someday 2011

A challenge to get young people (under 24) involved in making films about sustainability. Teaches them skills. TVNZ 7 supports this and they air all of the films. Last year DoC sponsored a new Big Picture Award as part of this programme. Encourage the community to see connections. E.g. Matihetihe school which focused on the connection between land river and sea, as well as kaitiakitanga (guardianship) of the taonga (treasures). Talk was completed with a showing of this film. Go to the "Outlook for Sunday" site to watch the films.

<http://www.whitebaitconnection.co.nz/uploads/file/MTSCT%20Wananga/presentations/Outlook%20for%20Someday%202011%20WBC.pdf>

John Elliott- Local penguin colony education & protection

Encourages experts to come into local schools and let them know about what they can conserve and why/how because they really are interested and keen to do it. John encouraged the kids to write to Fuji Xerox and ask them to print brochures, then write to the postie and see if he will deliver them for free – and they did – the power of kids!

Showing of a super cute promotional film made by the primary students on what they've been doing for the protection of their penguin colony which is possibly the largest. The council and other org.s are assisting them e.g. stoat traps and penguin boxes for the penguins to live in.

Bexie Towle (Whaingaroa Environment Centre) Maui Dolphin Day March 10th 2012

Provide lots of roles in the community e.g. funding and promotion of local groups. Maui Day has been running since 2004, non-profit, awareness raising, community day. Only about 111 Maui dolphins currently. Getting a sculpture commissioned at the moment to build a Maui sculpture to go in at the wharf to remind boaters to protect them. If anyone knows of a sculptor contact Bexie at the centre. Promoting water conservation too which is timely with water meters going in to Raglan next year.

Day 2: Facilitated workshops by Carolyn Smith, workshops and feedback listed below.

[Full notes from facilitated sessions](#)

Pam Crisp: 'My Planet' an upcoming online environmental school educational resource.

Rather than another website which would not work because there was too much of that out there and it would not crack the problem, they came up with a web-based interactive planning tool, 'MyPlanet'. Connects the natural world with the curriculum, big ideas & values, inquiry learning experiences and action. Part of a wider programme of work to support young people to connect with the natural world. Integrating Maori values.

Feedback on 'My Planet'

1. Interactive planning tool. Primary/Intermediate focus and Year 9/10.
2. Filter functions for regions. Many layers; stake actions, themes, curriculum materials links.
3. Everything is connected – strong message – how do we link to economics and social studies?
4. Holistic; include elders/kaumatua. Provide in te reo? Will be connected to Maori curriculum.
5. "Planet" seems impersonal. How about "My World"?
6. "Our active environment"?
7. "Te Ao Hurihuri" – everchanging world.
8. Resources needed and this will be valuable in collecting them together and filtering. Another year til "My Planet" is rolled out.
9. Recommendation – don't get too microscopic, relate environmental topics to wider context.
10. Feedback – in house suggestions as well as out of house.
11. Have a person designated to update content (essential).
12. Add challenges facing communities (current/local).
13. Add questions/issues affecting the community...Help raise discussions. Empower schools/groups to come up with solutions try and solve the challenges. Enquiry learning.
14. When selling it, advised to go out to a staff meeting (teachers union/board of trustees) rather than just e-mailing it.
15. Teachers are a great tool via word of mouth, including teachers sharing their case studies, how they have done it (the pathway they have followed).
16. The ultimate value will depend on getting the info. base.

Nicki Wakefield and Vince Kerr – the NZ Marine Reserve (MR) ‘How To’ kit

Original kit came out of the 90’s, aim was to achieve a network of MRs. Born out of Whangarei Harbour MR campaign. Also born out of the MR Act. One good thing out of this Act is that any hapu can apply for a MR in their area, therefore ability to empower communities. New project which Nicki is leading, readdresses the positive aspects of earlier work and considers what we can do today to achieve successful MRs. Aligns well with this wananga, it is about action, the creation of MRs. Two arms of projects; developing a useful resource for people to use when creating/applying for MRs, and a resource that can be used in schools. Ask for input from the audience as to how the kit could be designed successfully.

Key notes – many political issues. There are a whole lot of myths or obstacles and barriers around EMRs that may need to be addressed prior to or as part of the process of establishing MRs. e.g. needing expert knowledge on legal parts. Biggest myth that MRs are FOREVER when there are examples of some with 25 year, generational reviews.

Access to info., access to a network of people who have established MRs (or who want to do so), needs to be increased.

Elise Eimer – EMR Intern from Missouri. Geotourism minor, specialises in marketing and social media.

Insightful workshop on social media tools particularly Facebook (FB), and funding ideas. Helpful tips handout from Elise. [Social media for non-profits by Elise](#)

Differences between website and FB were discussed. Website like an oriental market full of goodies and FB is like your pie from the dairy – quick, sharp info. 80:20 Rule. 80% about community info and 20% about your own organisations info.

Discussions around using facebook

- Some concerns around security, cyberstalking & inappropriate comments
- Update every couple of dys not a chore
- Use as a reminder for events & open days
- Permission for photos’s? check school policy
- Most teachers not on it, but individuals are
- Local DOC office could post events, their audience ‘likes’ local info, gets hits
- Short snappy updates
- Focus efforts on one social media tool first
- EMR facebook pages in the different regions
- Use EMR pages for kids to upload their info
- Can use facebook to show user data
- Update frequently with 80% about other orgs and 20% about your org
- Advantage of facebook over email – set up a group on facebook – post on wall – more engaging with pics etc . Skype groups also great way to communicate
- Reaching new audiences via facebook

WE have **setup of a FB group for this wananga**
<http://www.facebook.com/#!/groups/254736611266505/>

Semi-private, can invite people. **Please put up your photos of the wananga and join discussions.**

Funding – need to be organised. Keep a folder of potential go-to people and your annual accounts and your charity information and key point is to continue to get Letters of Support from organizations, have a handy template for them to fill out and sign.

Funding Discussion

- Difficult to achieve for salary/wages funding. Lotteries environment heritage good for this and also ASB Community Trust support some salary/wages as part of programme costs
- Divide your project into different areas so that you can apply for multiple things at the same time
- Some discussion about ethical funding.

Video-media and links to Youtube clips can be very good for funding applications.

Samara - established the fantastic EMR initiative and built an amazing programme. Youngest person and first female to win the prestigious Sir Peter Blake Emerging Leaders award back in 2005.

Samara led a workshop on ideas for Sea Week 2012 (3rd – 11th March).

Theme is One Ocean Too Much Love (or too many users).

Great to have a forum to share ideas. A focus in Northland on involvement of corporate and to have a clear purpose. Past ideas included - a breakfast for business people a 'corporate brunch', sold tickets to business people who had a gourmet breakfast and presentations by people such as S. Tindell. Also a marine leadership competition for school students, could win lessons on scuba diving or sailing expedition in Bay of Islands. Must have lots of energy for selling tickets – a real mission. Although the charity dinner worked really well as a fundraiser for EMR (as another idea).

Feedback on Ideas for Sea Week 2012 – taking action through engagement!

1. Blow up dolphins and cocktails!!!!
2. Drive in movies/outdoor screenings (perhaps a combo of 1 and 2?!)
3. Screenings of marine movies at local cinema.
4. Combine Sea Week and Wetlands Day...combined camp where you combine students and parents to explore different ecosystems from wetlands down to the sea.
5. Lighthouse tours at Castle Point and Cape Palliser.
6. Maui dolphin day 10/01/2012.
7. EMR guided snorkel days across the country and korero in communities.
8. Show and tell events to follow Gareth Morgan's far south expedition see website 'ourfarsouthexpedition'.
9. Environmental monitors e.g. DoC doing presentations/show and tells to communities of findings e.g. a science evening. Kids can also present their findings from monitoring programmes.

10. 'Give it a go' day – paddleboarding, kayaking and snorkeling.
11. Engage businesses too e.g. send out e-mail cards or include Sea Week awareness in newsletters...Could include funny photos e.g. their CEO wearing snorkel gear in the office. Also ladies golf days and they have to wear snorkels.
12. Whangateau (estuary snorkel day) and guided walk...shellfish monitoring...link to seaweek.
13. Surf competition (Maui dolphin?)
14. Sea scouts, pavement art on storm drains, fishing rods down storm drains.
15. Blow-up whale/whale bones to increase awareness/interest. Kids can use tape measure to measure whale (life size).
16. bird awareness day for dog owners. Give-aways. Dog walking classes (get dog to walk beside you). Walking on the beach where birds are and increase awareness of where dogs shouldn't be.
17. Beach clean-ups. Quiz sent to households in area, hits all the issues – can see answers but prize if they send data back (contest).

Kim Jones – initially an EMR facilitator and then became the WBC leader. She has taken this initiative from strength to strength too. Kim led a workshop brainstorming ideas for the World Wetlands Day 2012.

This years' theme – Wetlands and Tourism

Opportunity to undertake actions aimed at raising public awareness of wetland values and benefits. Showing of an inspirational clip of a huge collaboration last year in the Far North of over 100 people whom celebrated the event by having an Dawn Ceremony led by traditional Maori tikanga and with lots of korero, stalls, a peace dragon made using sails of the Rainbow Warrior and sculptures made by Oscar kids (school holiday programme – a way to keep kids involved over holidays). Recommendation from Kim to just go for it and don't let hurdles get in your way!

Feedback for World Wetlands Day

1. Guided walks and community picnic/BBQ.
2. Sound walks – blindfold ppl and lead them around to sounds.
3. Discuss how wetlands were formed/their importance.
4. Guided tours e.g. wetlands on school grounds, arts and crafts stations, flax flower making or flax waka to put into lake and race.
5. Guided tours are great because often many areas are inaccessible so its great for public to see the environment/biodiversity. Kids from schools may be able to guide adults around wetlands.
6. Make creatures that they see at the event having materials that they can use there i.e. recycled materials.
7. Aquariums, live displays of species. Can make a diorama, make it dark to see the glowing live display.
8. Night fieldtrips.
9. Mudd fish display "Meet a Muddfish" or any other species and shots of habitats.
10. Ipod download/app. – making conservation 'funky'!!
11. Fashion show/famous personw rite song and perform – capture imagination.
12. Make a map of wetlands including lakes, streams and ppl can come in and put a pin on "their" wetland, maybe with a note.

13. Send stories to the Herald or local paper to inspire and share stories. Contact Sophie Barclay for information/advice.
14. Invite local artists to create relevant artwork possibly symposium. Ppl could watch artists make the artwork and follow this with an auction.
15. Photo competition where schools are involved and an exhibition could follow as a fundraiser.
16. Create artwork/sculptures e.g. of a traditional Maori legend and then place in wetland.
17. Auckland Zoo has a new wetland area. DoC (Helen) wants to do something there e.g. use the velvet display.
18. Present monitoring findings – not just from DoC also local students and communities.
19. Make a film, tell a story and get the community involved in all aspects.
20. Record your event on film to put on youtube.com and inspire future action plus this may assist with applications for funding (add to your portfolio), as funder expectations are increasing. You can download cheap programmes or a Windows movie maker. Also local tertiary institutions and students often keen to get involved in development and production, keeps costs down e.g. media students.

What's working & what's not in marine and freshwater education?

What's Working Well!

1. Holding pre-trip field planning sessions
2. Having time to discuss and letting questions evolve
3. Have planning sessions with teachers and try to get a lot of classroom time
4. Building foundations, building purpose
5. Be open to critique. And go and observe good teachers
6. Better integration with curriculum, school programmes/themes:
 - Find out the school's learning theme and build in with that
 - Layering of different environmental education in schools, eg. Otaika Valley School
 - Supporting teachers to incorporate these programmes into their curriculum
 - EFS Level 2 Credits – cumulative actions
 - Allows them to get a reward/achieve something
 - They have a clear ideas of what they're aiming for
 - Setting achievable goals and keeping records
7. Immediate evaluation – eg. Game of true or false after a session
8. Feedback – tell kids they are great if they are! Badges. Milestones/Ways of documenting work
9. Telling students they are scientists

10. Positive leaders in education
11. Getting children involved - Getting kids outside/connecting with nature/onsite education/outdoor activities/ experiential learning
12. Often the ones that are challenging in the classroom shine in the field! Massey University Recent Study – 10% of kids can't learn in the classroom. Applying meaningful learning Make it physical and exciting!
13. Intergenerational learning/Involving wider community in education and connecting young with elders:
 - Invite grandparents, parents to education sessions – they talk, want to learn
 - Grandparents see info through the eyes of the kids
 - Can't just wait for kids to grow up so involve all age groups and wider community
 - Young and elders – taking on the same hikoi
 - Opportunities to pass on knowledge around the awa is lost – polluted river
 - Asking locals along on field trips to tell stories about their experiences and connections to that environment
 - Community Snorkelling Day
 - Community night trips. Lots of parents come along with kids and learn alongside. Is a different atmosphere – fun and exciting!
14. Connecting in with people where they are at:
 - e.g. frogs in the same habitat as fish and bugs. Farmers may identify more with frogs than fish.
 - Using their terminology when providing information on native fish – eg. Whitebait instead of galaxiids
 - Ask for their stories, people like to share them
15. Providing information on history to give context. Makes what we're doing now more relevant
16. Having multiple tiers of target audience – collaboration!
17. Making activities fun and non-confrontational to encourage target audience, e.g. EMR Dads
18. Transfer from professional to professional – incorporating into the curriculum
19. Working smarter not harder, building networks of educators
20. Working with envirogroups within schools – supporting passionate kids!
21. Passionate people that have the knowledge to share – it's contagious

22. Before karakia – look at stream and connect with it
23. Provide a culture connection. Engage in real strategies, tap into funding
24. Strong leadership
25. Research data to schools for application
26. Having external support network, e.g. EMR, WBC
27. Face to face
28. New achievement standards cluster meetings – science, chemistry – government run, MoE
29. Sound Walk – powerful technique, maybe an introduction, kids could make one for their community, e.g. placed speakers with sound and people walk through wetland blindfolded.

What's Not Working Well

1. Time constraints!
2. Too much talking and not getting feedback, not being open to critique
3. Not being clear about roles and responsibilities, setting standards and discussing discipline with teacher prior to fieldtrips...
 - Leads to teachers treating field trips like a day off
 - Teacher relies on outside provider to be disciplinarian
4. Not getting in at a planning stage – then they can't merge it into the curriculum
5. Not ingraining it into the curriculum in the school so when one teacher leaves, start over
6. Not linking primary schools to ongoing programmes in high schools
7. Not doing follow up
8. Kids seeing what can be done but see it not being done
9. Teachers under so much pressure – nervous to try something new
10. Teachers not following through with actions. Could be due to time constraints or not having incentives and too busy with too many responsibilities
11. Not getting buy-in from the top, e.g. school principals
12. Logistical constraints, eg. Remote locations and access
13. Need ideas for getting the kids into the wetland all at once
14. Trying to do everything yourself!
15. Too much info on the web

16. Adjusting the content for different levels in different schools

Field Trips

Raglan Freshwater and Catchment experience:

Seeing is believing ! Fred & Kim led the freshwater field trip view sustainable farming practices and riparian planting examples around Raglan. They viewed both good and bad examples. They checked out the Whaingaroa Harbour Care nurse, practised some instream sampling and monitoring methods and went to the Meridian wind farm and their wetlands/headwaters restoration project, including a visit to an amazing waterfall and see why protecting the headwaters is vital to catchment restoration.



Experiencing Marine Reserves snorkel field trip

Unfortunately the Raglan region had received 8 x the usual rainfall for over the holiday period, so even with the best riparian management, we had residual 20cm visibility, as the sun had only just managed to arrive, just in time for the beginning of the wananga. It was a real shame, as the harbour can be extremely clear at times as a result of the hard work over the years by Whaingaroa Harbour Care, however we discovered that the topside limestone formations on the other side of the harbour were so stunning that snorkeling in 20cm was still an educational and fun snorkeling experience. On Saturday the 14th Jan, with the assistance of Fred Lichtwark and Hilton in his 'Blackdog Cat', the EMR snorkel instructors conducted a 'recce' snorkel at the site and as a team came up with the snorkel plan for the 16th Jan field trip. We first geared & buddied up and discussed the safety considerations and briefing requirements for guiding snorkel tours. We had a practice snorkel at the Raglan jetty. We then kayaked across to our 2nd snorkel site on the other side of the Whaingaroa Harbour among the Limestone formations and caves.





Conference Dinner – Whaingaroa Harbour Cruise on Wahine Moe



Exquisite dining (and socializing) aboard thanks to Colins Kitchen

Special announcement - Young Blake Expedition to the Kermadecs

Lying about 1000km northeast of New Zealand and stretching 250km along the western ridge of the Kermadec Trench, the 15 islands and rocks of the Kermadecs are part of the world's longest chain of undersea volcanoes and have been identified as one of the very few pristine marine areas left on the planet. A third of all known New Zealand fish, 11% of the planet's seabird species, whales, dolphins, turtles and other deep sea marine life call the Kermadecs home, and the area is already New Zealand's largest marine reserve.

With the aim of inspiring New Zealanders to understand the global significance of the Kermadec Islands and to encourage stewardship of the Kermadec Marine Reserve and the planet's oceans generally, The Sir Peter Blake Trust, together with the Ministry for the Environment, the Royal New Zealand Navy, Department of Conservation, Pew Environment Group, Experiencing Marine Reserves and LEARNZ, is planning an expedition to the Kermadecs for young New Zealanders in 2012.

The Young Blake Expedition to the Kermadec Islands will see 30 secondary school students from around New Zealand travel on board HMNZS Canterbury to the Kermadecs from 8 - 19 August, with a crew of subject experts, scientists, artists, educators, communicators and leaders. The

application form can be found here <http://www.sirpeterblaketrust.org/get-involved/young-blake-expedition-to-the-kermadecs>



Group shot - National Marine & Freshwater Wananga 2012

Day 3:

Show and tell

Zoe Studd: Wellington Coordinator of EMR in Wellington. Idea share. Island Bay school involved. Wealth of resources in the community. Made the link between riparian planting and water flowing to the ocean. For their EMR action project came up with 'seed envelopes', filled with seeds and sent to important people in the city e.g. captains of All Blacks and Silver Ferns and the Mayor of Wellington. This helped lead to funding which was used to help support other schools to get involved so they really saw the importance of interconnections and sustainability. Zoe handed out the seed envelopes, 'show' and tell 😊

Discussion of the feedback from the previous days' workshops (most of this has been included under Day 2)

Interactive Evaluation with Carolyn Smith :

Effectiveness of wananga for networking

Greg- greater concept of the trust and already have focused actions.

Janna- learned a lot about freshwater marine. Funding with project to get positive outcomes.

Nathan- cruise was cool to socialize and network, suggestion= come up with new games.

Murray- great place to have wananga.

No one said it was not effective.

How to Improve the Wananga

Culture connection- history and context was lacking.

Evolving timetable. Whiteboard= rub things off and change times.

Having a few more activities and break things up btwn presentations. Have an Energizer to wake ppl up. Make wananga a little long in order to fit both field trip for everyone. Faster show and tell presentations.

Ah-hah! Moments

Bruno's innovative science. Elegant ideas for difficult issues.

Fred. Affected everyone in different ways. Brilliant ideas. Special man.

Passion- spotlighting trip. Passion for ppl fighting to see what was in the steam during the spotlighting trip. Very inspiring for ppl who have even been doing this their whole life.

How effective was this wananga in order to create community engagement.

Leave wananga with a "can-do" attitude.

Seeing the power of kids taking the message through the community. Document this more.

Looking at how can we sustain this?

Hui can be measured in the doing.

Actions! [Full set of actions](#)

Power of collaboration.

Film projects came through. Inside and outside the marine reserves.

Norm- taking the tapestry concept to all the different marae

Our Utopia – everyone was invited to write down their envisioned utopia on the white paper in the whare kai, these were the results:

-20% of all NZ waters in no-take marine reserves or equivalent.

- All commercial fish species maintained at least 4-% of pre-fished biomass.
- Threatened species are not commercially fished.
- Percent of coastal development fees (council, Resource Consent) must go toward marine reserve education to mitigate adverse effects of the development.
- For new aquaculture ventures, an equivalent area to be made into marine reserves, in a similar way to land developers having to make a reserve contribution.
- Ban the sale of whitebait.
- When farmers are rewarded for sustainable farming (fencing waterways/riparian vegetation et.) and they are offered RATES relief for their efforts.
- The value of the environment is considered. Economic value e.g. flood protection and habitat for species etc.
- Whitebait rahui.
- Everybody in NZ recognizes their connection to and the value of mountains to the sea.
- Eels are not commercially fished.

[Full evaluation document](#)

CLOSING:

Poroporoake closed the wananga and a special (yet brief) talk from our friend Sandy (from the local hapu) about some of the local history, culture and surroundings.