New Zealand Marine Sciences Society

Conference 2011

Understanding, Managing, and Conserving our Marine Environment

Oban, Stewart Island 5th - 8th July

"Understanding, Managing and Conserving our Marine Environment"

5-8 July, 2011, Stewart Island

The 2011 NZMSS conference will be held in the township of Oban on Stewart Island. The focus of the conference will be to investigate the unique opportunities to advance our understanding of New Zealand's marine environment and the application of new knowledge to its management and conservation. The conference is open to researchers, educators, and students as well as participants from government, local community and industry. Stewart Island, itself, offers a unique opportunity to focus across the range of opportunities and challenges in New Zealand Marine Science – the latitudinal gradient of New Zealand's marine realm, the range of oceanographic conditions and marine habitats, and the challenges and opportunities around managing and conserving those unique habitats and environments.

Conference Themes

1. New Zealand's unique marine environment

Spanning from subantarctic to subtropical waters, New Zealand's marine realm encompasses a diversity of special environments, from around its various islands, along its coasts, and from shallow to deep water. The unique range of physical habitats and resulting biodiversity provide excellent opportunities to understand environmental controls on ecology.

2. Change in the marine environment

Marine ecosystems are subject to human and natural threats including loss of biodiversity, invasive species, alterations in ocean chemistry and material fluxes and climate change. Establishing baselines and monitoring change is imperative as is the application of multidisciplinary approaches for understanding the drivers and significance of change.

3. Management and use of marine resources

New Zealanders live on live on small islands set in vast oceans. Surrounded by so much sea, marine resources will always be important to us. Prudent management of those resources is crucial for maximizing value and minimizing impact. Clearly, science should have a central role in that process.

Thank you to our generous donors who have provided funding for this conference.

Gold Donors: NIWA The University of Otago The Ministry of Fisheries

Silver Donors: The Royal Society of New Zealand The Cawthron Institute Antarctica New Zealand The Sir Peter Blake Trust

Bronze Donors: The Department of Conservation Seafood Industry Council Met Ocean Solutions Ltd. Dive Otago

This year student prizes have been kindly supported by The Royal Society of New Zealand. Thank you to NIWA for sponsoring student travel awards.

We gratefully acknowledge donations from Cawthron and SeaFIC that are helping support the plenary speakers.

We would like to thank Real Journeys for providing discounted rates for ferry crossings for delegates of the conference.

Thank you also to Virginia Watson, Dunedin based print artist, for designing the conference logo.



General information

Welcome to Stewart Island/Rakiura

For the first time, the NZMSS conference is being held in the township of Oban on Stewart Island. For many, this will also be your first visit to these shores and we encourage you to get your walking shoes on and explore the incredible environment on offer. Winter is a sleepy time on the island, so the arrival of 150 scientists might prove a bit of a shock to the system! We are very grateful to the island community (all 360 of them) for making us welcome.

The focus of the conference is to investigate the unique opportunities to advance our understanding of New Zealand's marine environment and the application of new knowledge to its management and conservation. The marine environment surrounding Stewart Island is very special indeed with native forest to the water's edge, pristine waters, marine reserves and customary management areas and a productive marine environment that supports fascinating marine life. Thus Stewart Island offers a fantastic location to explore the opportunities and challenges faced by conducting marine science in New Zealand – the latitudinal gradient of New Zealand's marine realm, the range of oceanographic conditions and marine habitats, and how to manage and conserve those unique habitats and environments.

The conference is open to researchers, educators, and students as well as participants from government, local community and industry. The meeting provides a great opportunity for students to present their research and research ideas to a supportive scientific community. Perhaps most importantly is the chance to meet friends, both old and new, and we hope that the many opportunities for mingling will result in the fruitful exchanges of ideas.

Again, welcome to Oban! We hope you enjoy the conference.

Best wishes, The 2011 Conference Organising Committee

Registration desk

The registration desk will be open from 4pm Tuesday and from 8 am on Wednesday and Thursday. The desk can be found in the foyer of the Community Centre. If you require any information throughout the conference, the information desk is your first port of call. Student helpers and members of the conference organizing committee can be found wearing the conference T-shirts.

Conference venue

The conference will be held across three venues, all in close proximity to each other. Each morning will begin with a plenary session in the Community Centre. Following the plenary, there will be parallel sessions located in the Community Centre and the waterfront venue Pearlers. Posters will be on display in the RSA pavilion.

Other facilities

Definitely worth a look: The DoC Visitor Centre has a lot of relevant local information; Just up the road from the Visitor Centre is the Fernery gift shop and gallery, which has a great selection of art, craft and books; Glowing Sky has a huge range of cotton and merino clothing and jewellery; the South Seas Hotel for a beer and a game of pool with the locals; the Four Square for all your grocery needs and the daily newspaper. There is also a museum opposite the Community Centre.

Telephone and Email on the island

There are 3 Zenbu Wi-Fi hotspots on the island (Stewart Island Backpackers, Bay Motel and the South Sea Hotel). It costs 10 c per megabyte, and credit can be purchased online using a credit card. Please note that there is no Vodafone coverage on Stewart Island. Telecom has reasonable coverage.

Money

There are no ATMs on the island, however it is possible to withdraw small amounts of cash from the store and the hotel. It is advised to bring some cash with you, as you will need this for the conference bars and to purchase your t-shirt! There are eftpos facilities at most of the gift shops, the store and the pub.

Meals

Morning teas, lunches, afternoon teas and evening meals are included with registration. You will need to sort out your own breakfast. There is a very good general store (Four Square) on the island where breakfast supplies can be purchased.

On Tuesday night there is an Ice-breaker BBQ at the Community Centre from 6:30 for 7pm. Bring your drinks tickets. There will also be a cash bar.

On Wednesday, dinner will be served in the Community Centre from 6:30 for 7pm. There will be a cash bar. Professor Mark Orams will deliver an after-dinner talk entitled: Home is the sailor, home from the sea: Reflections on the role of marine science from a clapped out old yachtie

On Thursday, the Conference Dinner will be held in the Community Centre from 6:30 for 7pm. Student prizes will be presented and there will be live music from the 5-piece Queenstown band Mojo (www.mojobandqueenstown.com).

T-shirts

Conference T-shirts can be bought for \$25 from the registration desk on Tuesday evening and Wednesday morning (last orders at morning tea). Payment must be in cash. T-shirts will then be specially printed and delivered to the conference for collection from the Registration Desk on Friday.

Name badges

Delegates are requested to wear name badges throughout the conference. Please return your name badge and lanyard to the registration desk before departing the conference so that they can be used next year.

Cell phones

Please ensure that cell phones are turned off, or in silent mode, during all presentations.

NZMSS membership

Membership for the 2011-12 period is included with your registration fee.

Information for Oral Presentations

We would like to extend our thanks to the session chairs who are charged with introducing speakers, keeping them to time and fielding questions. A total of 15 minutes will be allocated for each talk. Please plan to complete your talk in 10-12 minutes to allow a few minutes for questions.

Please bring your talk on a data stick to your session venue in the break before your session for them to be loaded onto the computers. Note that Apple Mac computers with Mac PowerPoint 2011 will be available in each lecture theatre. The guidelines below will hopefully prevent Windows-Mac compatibility issues, and if at all possible you should check that your presentation works on a Mac before you get to Stewart Island. However, there will be a Mac computer available at the registration desk for presenters to check their presentation.

If you create your presentation on a PC: •Save your files in PowerPoint's XML file format. •Any valid file name you save on Windows is OK when bringing it to a Mac. •Links to external files will break. Embed all graphics, sounds and movies. •Use Windows Media (.wmv) or QuickTime for audio and movies. Windows Media requires the free Flip4Mac Quicktime codec on the Mac. •Some fonts may not transfer well between platforms – best to stick with a commonly-used font (times, arial etc.). •Don't squeeze your text too tightly into placeholders. Font substitution and slight differences in text rendering on Mac vs PC can cause your text to get truncated or spill out of too-tight text boxes. •Use a large enough font to enable slides to be read at 15m. Don't forget this also includes text on figures, tables and graphs.

The Poster Sessions

Presenters will be required to put up their posters at the start of the conference and leave them up for the duration. Two dedicated poster sessions will be held, and presenters will be required to be by their posters for their allotted session.

Student prizes

There will be prizes given for student talks and student posters (1st prize and 2 runners up). Our thanks to the judges of student talks for your time and effort. Prizes will be presented at the conference dinner on Thursday evening.

NZMSS Annual General Meeting

The AGM will be held during lunchtime on Thursday in the Community Centre (lunch will be available at the venue). Please support the Society by coming along to the AGM to debate the issues and elect the council members for 2011-12.

Conference organisation

The NZMSS 2011 Conference Committee included: Gary Wilson (Chair) Rebecca McLeod Steve Dawson Liz Slooten Candida Savage Keith Probert Lucy Jack

We would like to thank Kerry O'Connell for managing the conference website and registration, Jo Learmonth from Stewart Island Events for organizing catering and accommodation, and the community of Stewart Island for pitching in to feed and house us.

Tuesday	
1600	Registration opens in the Community Centre
1830	Ice Breaker BBQ, drinks (bring tickets) and cash bar
1630	ice Breaker BBQ, drinks (bring lickels) and cash bar

Wedr	lesday						
Comr	nunity Cen ⁻	tre			Pearler	'S	
830			Welcome				
		Plenary	Talks Chair: Gary Wilson				
			Theme: Change in the marine				
			environment Changes in nature and the				
850	Simon Thrus	h	nature of change in our coastal				
0.50			Theme: New Zealand's unique marine				
			environment New Zealand's				
			International Polar Year "Census of				
			Antarctic Marine Life" project in the Ross				
930	Mary Livings	ston	Sea region 2008-2011: An overview				
1000			Coffee RSA Pavillio	n &	Commur	nity Centre	
			Conservation			Estuarine	systems and processes
		Chairs: k	Kathy Walls & Tyler Eddy		(Chairs: Cand	lida Savage & Simon Thrush
							On wastewater discharges, blooming
							Seaweeds and earlinguakes: Changes in
			The commercialisation of marine science				changes in nutrient inputs to the
1030	Liz	Slooten	- what price independence?		Neill	Barr	Avon-Heathcote Estuary
							Contributions of shallow sedimentary
		- /	The spoils of dredging - engagement with				habitats to overall estuarine primary
1045	Jim	Fyfe	Port Otago consent applications	_	Andrew	Lohrer	production and nutrient dynamics
			What do New Zealanders think about				climate change on the distribution of
			marine reserves in New				estuarine mysids (<i>Tenagomysis</i> spp.) of
1100	Tyler	Eddy	Zealand and where should they go?		Sourav	Paul	South Island, New Zealand

1115	Andrew	Penney	Science requirements for identification and protection of vulnerable marine ecosystems		Phil	Ross	Population genetic structure of the New Zealand estuarine clam <i>Austrovenus</i> <i>stutchburyi</i> (Bivalvia: Veneridae) reveals population subdivision and partial congruence with biogeographic boundaries Estuarine trophic subsidies to coastal
			Patterns of genetic connectivity among benthic fauna on the Chatham Rise and				mollusc dominated communities: positive and negative effects on
1130	Eleanor	Bors	the Challenger Plateau		Candida	Savage	functional diversity
1145	Islay	Marsden	Management and restoration of cockle beds in New Zealand		Susanne	Schüller	The fate of algal remains in Doubtful Sound, Fiordland
1200			Lunch RS	SA	Pavillion		
		(Marine ecology Chair: Judi Hewitt			Physical a Chairs: And	n d geological processes drew Gorman & Alan Orpin
			Habitat compexity and biodiversity:				X-radiographs reveal stratigraphic
			bryozoan patch-reef size, and polychaete				variability over monthly timescales on
1300	Keith	Probert	biodiversity on the NZ continental shelf		Alan	Orpin	the muddy and energetic Poverty shelf
			The intensity, frequency and timing of				Lowstand glacial landforms and fluvial
1315	Shane	Geange	communities		Garv	Wilson	Zealand
		e e ege	Kelp bed habitat drives individual				
1330	Lucy	Jack	variability in trophic position and resource use of a marine omnivore		Hamish	Bowman	A storm surge prediction system for the New York Metropolitan area
1345	Darren	Parsons	The nursery effect for juvenile snapper		Andrew	Gorman	Seismic evidence of the gas hydrate system in the Pegasus Basin, Southern Hikurangi Margin
1400	Danilo	Pecorino	Growth of a newly arrived range-extender in New Zealand: a comparison with the case of Tasmania		Ross	Vennell	Scaling Up Power Output from Tidal Turbine Farms
1415	Ivan	Rodil	Interactive effects of two key species on soft-sediment ecosystem state and variability		Joanna	Cooper	Imaging the Subtropical Front using seismic oceanography

			Potential predatory impact of the invasive	1			
			paddle crab. Charvbdis iaponica. in				Monitoring organic enrichment of
			Waitemata Harbour: implications for				coastal sediment with sediment profile
1430	Michael	Townsend	functional change		Peter	Wilson	imagery
			Spatial and temporal variation in				
1445	Robyn	Dunmore	Fiordland intertidal communities				
1500			Coffee RSA Pavillior	า &	Commur	nity Centre	
		Marine Ecol	ogy Cont. Chair: Lucy Jack			Biodivers	ity Chair: Steve Dawson
			Ontogenetic change and the effects of				Dusky dolphin behaviour and movement
			aquaculture noise on hearing ability of				patterns: effects of tourism off Kaikoura,
1530	Paul	Caiger	juvenile snapper (<i>Pagrus auratus</i>)		Dave	Lundquist	New Zealand
							Photo-ID estimates of southern right
			Identifying nutritional content of potential				whale abundance in the Auckland
1545	Miao	Wang	prey of spiny lobster larvae		Will	Rayment	Islands calving grounds
			Photosynthetic response of monospecific				
1600	Derek	Richards	macroalgal stands to density		Judi	Hewitt	When rare species are not
			A Survey of yellow-eyed penguins on				
1615	Lala	Frazer	Stewart Island / Rakiura 1999 - 2009		Andrew	Stuart	Hagfishes – S'not what you'd expect
1630			Poster Sessior	า 1	RSA Pav	villion	
	Dinne	er at the Comm	nunity Centre with speaker Mark Ora	m	S Home is	the sailor, hom	e from the sea: Reflections on the role of
1830			marine science from a	cla	pped out ol	d yachtie	

Thurs	sday			
Comr	Community Centre			Pearlers
830		Announcements		
	Plenary T	alks Chair: Mary Livingston		
		Theme: New Zealand's unique marine		
		environment Great white sharks: wide		
840	Malcolm Francis	ranging ocean travellers, but is Stewart Island their home base?		
040		Theme: Management and the use of		
920	Chris Mace	marine resources		
1000		Coffee RSA Pavillion	&	Community Centre

		Oc	ean acidification			I	The Ross Sea
		Chairs: Ab	by Smith & Chris Cornwall		C	hairs: Mary	Livingston & Stuart Hanchet
			Estimating carbonate saturation and pH				The life cycle of Antarctic toothfish in
1030	Helen	Bostock	from hydrographic data		Stuart	Hanchet	the Ross Sea
			Evidence from the field and laboratory				Ecosystem modelling of the Ross Sea:
			show calcifying macroalgae may be more				validation and insight from the
			tolerant to the effects of ocean				International Polar Year Census of
40.45	Obsistants	0	acidification than previous research			D'ale ates	Antarctic Marine Life (IPY-CAML)
1045	Christopher	Cornwall	suggests	_	Matthew	Pinkerton	voyage
			Carbon limitation in macroalgal				Developed field distributions in the Devel
4400	Debesse	1	communities and their response to ocean		01	11	Demersal fish distribution in the Ross
1100	Rebecca	James		_	Stuart	Hanchet	Sea Distribution should be and a south
			Near-tuture CO ₂ -driven nypercaphia				Distribution, abundance and acoustic
4445	Milee	Lomoro	depresses echinoderm larval metabolism		Disbord		properties of Antarctic silvernish in the
1115	willes	Lamare	Dy approximately one-tillio	-	Richard	ODISCOI	RUSS Sea
			reproduction: Increased CO amplication				Ecocibility of using longling fishery
			the negative effect of lowered nH on				by catch data to man the distribution of
			spore dermination in diant keln				sessile benthic invertebrates on the
1130	197	Morris	Macrocystis pyrifera		Steven	Parker	slope and shelf of the Ross Sea
1100	002	Womb		-	Oleven	T differ	Ross Sea Antarctic toothfish
							(Dissostichus mawsoni) trophic studies
							the lipid extraction dilemma and how to
			Argonauta at risk: dissolution and				get the best out of stable isotope
1145	Abigail	Smith	carbonate mineralogy of egg cases		Sarah	Bury	analysis
1200			Lunch and AGM	Со	mmunity (Centre	
		mpacts of	fishing Chair: Liz Slooten			F	Ross Sea cont.
							Ocean colour, sea ice and in situ
							biogeochemical data during the IPY
			A pre-history of fishing in New Zealand	1			R.V. Tangaroa voyage to the western
1315	Chris	Paulin			Matthew	Pinkerton	Ross Sea, Feb-Mar 2008
]			From New Zealand to Antarctica and
			A bioeconomic model for Hooker's sea				back: a round-trip ticket for symbiotic
1330	Viktoria	Kahui	lion bycatch in New Zealand		Kareen	Schnabel	polychaetes

			Modelling the impacts of disturbance on functional diversity of marine benthic				Ice, time, and lost worlds: the distribution of benthic fauna in the Ross
1345	Carolyn	Lundquist	communities	_	David	Bowden	Sea
					series tr	cipliniary re	search along the Munida time-
			Ago and growth of babitat forming				Pragmatic investigation of seasonal
			Age and growin of habitat-forming Solenosmilia variabilis - an assessment				in the subantarctic section of the
1400	Helen	Neil	of recovery potential		Tovin	Adu	Munida Transect
		-	The Conservation Services Programme -		- J		
			Research into fishing interactions with				The activity of carbonic anhydrase (CA)
1415	Kris	Ramm	protected species		Afroza	Bulbul	enzyme in marine diatoms
			Common dolphin bycotch in Now				Spatial and temporal variation of the
1430	Finlay	Thompson	Zealand mackerel trawl fisheries		Sylvia	Sander	Otago continental shelf
1400	Timey	mompoon			- Oyivia	Canadi	Identification of iron-siderophore
			The feasibility of an electric bycatch				chelates in the offshore waters, east of
1445	Sunkita	Howard	reduction device for spiny dogfish		Imelda	Velasquez	New Zealand
1500	Edward	Abraham	Seabird bycatch in New Zealand fisheries				
1515			Coffee RSA Pavillio	<u>n &</u>	Commun	ity Centre	
					Public	Session: Ro	le of education and outreach in
						protecting N	Z's marine environment
			Fishing cont.			Chairs: Sal	ly Carson & Steve Cutler
			Risk of commercial fisheries to seabird		.		Ocean threats - public perceptions and
1545	Yvan	Richard	populations within the NZ EEZ		Sally	Carson	actions
			Spring Spawning Herring - is it caused by				
1600	Jan	Hesse	food availability for the larvae?		Steve	Cutler	Student participation in bioethics
			Rig nursery areas: what makes a good				
			one and what's wrong with the South				Ocean warming: an experimental
1615	Warrick	Lyon	Island?		Jennifer	Rock	articulation
1630					Alison	Ballanco	From kakapo to the Kermadecs -
1645	<u> </u>		Postor Session	2		illion	tening stories about science
1043			LO2161 2622101	1 4	NORFav		

Frida	у						
Comr	nunity Cent	tre			Pearlers	;	
840			Announcements				
	P	Plenary Tall	ks Chair: Rebecca Mcleod				
	Neville		Theme: Management and the use of				
850	Peat		marine resources Maui's Anchor				
			I neme: Change in the marine				
			space-based remote sensing				
			observations in the coastally oriented				
		Baer	Subtropical Frontal Zone (STFZ), Eastern				
930	Katherine	Jones	New Zealand				
1000			Coffee RSA Pavillion	۱ &	Commun	ity Centre	
	Customary management				Biosec	urity: coll	aboration in marine management
	C	Chairs: Chris	s Hepburn & Greig Funnell				Chair: Lou Hunt
							International effort to minimise ships
			Pathways to fisheries restoration through			.	biofouling - working toward greater
1030	Christopher	Hepburn	customary fisheries tools		Andrew	Bell	global biosecurity
			Strategies employed by communities to				Regional Marine Biosecurity
1045	Anne-Marie	Jackson	manage Taiäpure		Lou	Hunt	the spread of pests
			The Ngäi Tahu customary fisheries				Update on border management of the
			protection areas project: restoring				biofouling pathway for marine invasive
1100	Nigel	Scott	Rangatiratanga		Liz	Jones	species
							Investigations into the feasibility of
			The import of Ocumentation on the				managing a non-indigenous marine
1115	Katia	Schweikert	The impact of Cournaphos on the antiovidant metabolism in <i>Ulva</i> sp		Kathy	Walls.	species at sites with high community
930 1000 1030 1045 1100 1115	Katherine Christopher Anne-Marie Nigel Katja	Baer Jones Custo Chairs: Chris Hepburn Jackson Scott	environment Verification of satellite and space-based remote sensing observations in the coastally oriented Subtropical Frontal Zone (STFZ), Eastern New Zealand Coffee RSA Pavillion mary management s Hepburn & Greig Funnell Pathways to fisheries restoration through customary fisheries tools Strategies employed by communities to manage Taiäpure The Ngäi Tahu customary fisheries protection areas project: restoring Rangatiratanga The impact of Coumaphos on the antioxidant metabolism in <i>Ulva</i> sp.	<mark>1 &</mark>	Commun Biosec Andrew Lou Liz Kathy	ity Centre urity: coll Bell Hunt Jones Walls	aboration in marine manage Chair: Lou Hunt International effort to minimise sh biofouling - working toward great global biosecurity Regional Marine Biosecurity Partnerships - working together t the spread of pests Update on border management of biofouling pathway for marine inv species Investigations into the feasibility managing a non-indigenous mar species at sites with high commu values.

					phy	Surviving in siological ac	the marine environment - laptations Chair: Islay Marsden
1130	Tom	McCowan	Genetic approaches to reseeding in New Zealand's Blackfoot Päua (<i>Haliotis iris</i>)		Alvin	Setiawan	The effects of 11-ketotestosterone on migratory behaviour and sea water pre- adaptation in the shortfinned eels
1145					Mark	Lokman	Plastic brains and phenotypic sex - possible mechanisms of sex reversal in the kyusen wrasse, <i>Halichoeres</i> poecilopterus
1200	200 Lunch collect from RSA Pavilion						
1230	30 Field trips and ferry check in						

Poster	Session 1 (We	ednesday 1630 RSA Pavilion)							
Theme	Presenter	Title							
uarine tems	Birthe Kortner	Understanding the biogeochemical cycle of trace metals: Speciation in the Kaipara Estuary							
Estu sys	Nathan Singleton	Estuary benthic habitat mapping							
	Julie Brown	Stable isotope analysis in ecological studies: the NIWA analytical facility							
	Caitlin Chew	The effects of sedimentation on the growth and mortality of juvenile <i>Haliotis iris</i> and their living habitat (crustose coralline algae)							
~	Matthew Crane	Sharks, drugs, and chalarosomum!							
bc	Matthew								
	Desmond	The effects of sewage outfall on the marine environment							
ы Ш	Aysha Hohaia	Do pore water solutes mediate bacterial metabolism and juvenile bivalve behaviour?							
rine	Rory Kyle	Predation by the sea star Astrostole scabra on New Zealand rocky reef prey communities: Implications for the management exploited paua (Haliotis iris) populations							
Ла	Patricia Mockett	Population connectivity of New Zealand Sole (Peltorhamphus novaezeelandiae) from two, neighboring South Island regions							
~	Amandine Sabadel Tiffany	Free amino acids extraction from oligotrophic seawater and its impact on the oceanographic nitrogen fixation							
	Stephens	feeding communities							
ູ	Callum Bruce	High resolution seismic imaging of the active Akatore-Green Island fault system on the shallow otago continental shelf							
od esse	Chris Cornelisen	Deployment of a telemetered water quality monitoring system in Tasman Bay							
al ar proc	Carole Guggenheim	Relationship between particulate matter and optical side-scattering in the Hahei Marine Reserve							
ial sic	Kevin Mackay	Digitising the New Zealand Marine Sediment database							
hy gio	Zach Powell	Organic Complexation of Metals in Deep-Sea Hydrothermal Vent Systems							
L ŏ	Matthew Smillie	Seismic oceanography - Processing petroleum industry multi-channel seismic data for water column targets							
geo	RS Sruthi Thalayappi	The role of siderophores, oxalate and light in the iron dissolution kinetics of Australian dust							

Poster	Session 2 (T	nursday 1645 RSA Pavilion)						
Theme	Presenter	Title						
	Khalid Alqaisi	Steroidogenic activity in ovary and pyloric caeca during the annual reproductive cycle of common New Zealand starfish						
ity	Emma Beatson	Recent mass strandings of long-finned pilot whales on Stewart Island						
ers	Kevin Mackay	Habitat-forming coldwater corals show affinity for seamounts in the New Zealand region						
<u>li x</u>	Marc Riedi	Skeletal allometry of the southern New Zealand serpulid Galeolaria hystrix in Big Glory Bay, Stewart Island						
<u>io</u>	Jennifer Turek	Distribution and abundance of Hector's dolphins (Cephalorhynchus hectori) along the Otago coastline, New Zealand						
ш	Kay Vopel	Cues, not an endogenous rhythm, control the water-column entry by benthic copepods						
	Trudi Webster	Southern right whale vocalisations: a pilot study at the Auckland Islands						
ean dific- ion	Patila Amosa	pH-stat technique to investigate the kinetics of calcium carbonate dissolution						
Oc Acid ati	Miles Lamare	Sea star fertilisation and larval development under in vitro simulated ocean acidification						
oss ea	Md Zeenatul Basher Modelling Distribution of Natant Decapod Shrimps in the Ross Sea, Antarctica							
പ്പറ	Sarah Bury	Mesozooplankton communities in the Ross Sea and the Pacific sector of the Southern Ocean						
Munida Transect	Muhammed Nayeem Is there a green house around New Zealand from oceanic N ₂ O emissions Mullungal							
cation	Kevin Mackay	Accessing bathymetry around New Zealand						
Educ	Charles Waters	Reversing a functional extinction of giant clams in the South Pacific: Communicating with project advocates and adversaries						
tom- ry na-	Gaya Gnanalingam	Reproductive potential of Päua, Haliotis iris and models for sustainable customary harvesting using mätauranga						
Cus a Ma gen	Nigel Scott	Te Whaka a Te Wera Mataitai						
Bios- ecurity	Hernando The New Zealand Marine Pest Porthole							
gical	Matthew Baird	Physiological comparisons between the temperate brachiopod <i>Liothyrella neozelanica</i> and the Antarctic brachiopod <i>Liothyrella uva</i> .						
siolog	Rathishri Chandurvelan	Changes in the physiological biomarker responses of New Zealand green mussels, <i>Perna canaliculus</i> in response to acute cadmium exposure						
phy. ada	Ralf Rautenberger	Is ammonium assimilation able to reduce oxidative stress in Ulva?						

Plenary Speakers

Simon Thrush

Simon Thrush obtained a BSc (Hons) from the University of Otago, New Zealand and a PhD from the University of East Anglia, England. He is the Principal Scientist in Coastal Ecosystems at the National Institute of Water and Atmospheric Research. Simon has over 25 years of experience in the development and implementation of strategic ecological research to influence resource management and improve societal valuation of marine ecosystems. His research interests include coastal and estuarine marine ecology; the influence of disturbance events on populations and communities and their implications for recovery and resilience; ecological impact assessment, particularly of



diffuse source and/or broad-scale effects; the design and implementation of ecological monitoring programmes; the environmental effects of fishing; organism-sediment interactions; organism-hydrodynamic interactions; functional biodiversity and biocomplexity. He has contributed to over 180 publications in the peer reviewed scientific literature and 100 consultancy reports and enjoys extensive international collaboration with colleagues in USA, Canada, Britain, Norway, Finland, Spain, Netherlands and Italy. Simon was awarded the 2010 New Zealand Marine Sciences Society Award.

Title: Changes in nature and the nature of change in our coastal ecosystems

My talk will discuss how environmental science, and ecology in particular, can inform environmental management and policy making for coastal marine ecosystems. Research has progressed in the last couple of decades from a focus on individual events and local impacts to much broader scales. Shifts to more ecosystem-based approaches to management seek to reframe resource use conflicts by increasing the scope of ecosystem assessments and the depth of knowledge used to assess the consequences of change. The potential for ecology to contribute to these management processes are significant, through raising the profile of important ecosystem goods and services, the recognition of cumulative and multiple stressor effects and habitat fragmentation. Equally important, is the appreciation that ecosystem responses surprise us because feedback processes can result in threshold responses or regime shifts in coastal ecosystems. I will use some examples from our field research to illustrate how these ideas are ground in our understanding of ecosystem function. They have important implications for the resilience of coastal ecosystems and raise some important challenges for future research that will only be fully resolved through integrated research programmes. Progress in these challenges is essential if ecology is to effectively contribute to management and maintenance of biodiversity and ecosystem function in our multiuse coastal ecosystems.

Katherine Baer-Jones

Katherine first travelled to New Zealand in 2004 as part of a semester-long university exchange programme at the University of Otago. She graduated from the University of North Carolina at Chapel Hill in 2005 with a BSc (Hons) in Environmental Sciences and minors in Chemistry and Marine Sciences. Katherine worked and travelled around the world in the years following graduation, which included time spent as a Research Diver in Key Largo and as an Environmental Engineer for a hydrological and environmental consulting firm in Singapore. In 2008, she decided to return to the University of Otago and commence her PhD under the supervision of Professor Keith Hunter. Katherine is in her final year of study and is researching the biological inorganic fixation of carbon dioxide across



the Coastal Subtropical Frontal Zone and its role within the marine carbonate system. Katherine was awarded the 2010 New Zealand Marine Sciences Society Research Grant.

Title: Verification of satellite and space-based remote sensing observations in the coastally oriented Subtropical Frontal Zone (STFZ), Eastern New Zealand

Co-Authors: Nicholas Tfuilaro, Kim Currie, Christina McGraw, Keith Hunter

Data acquired from satellite remote sensing instruments allow scientists to monitor and evaluate oceanic processes encompassing a wide variety of spatial and temporal scales beyond the bounds of shipboard measurements. Optical data recorded from these space-borne sensors can be related to common oceanographic parameters such as sea surface temperature, chlorophyll-a pigments and photosynthetic active radiation.

In May 2011, I embarked on a trip to the United States to collaborate with researchers from Oregon State University, Clark University, and the Naval Research Lab (NRL) as part of the 2010 New Zealand Marine Society Student Research Award. At Oregon State University, new algal and coloured dissolved organic matter (CDOM) detection algorithms for the MODIS and MERIS satellite sensors were compared to shipboard data collected from the Munida Time Series transect. At NRL, the shipboard measurements were compared to data derived from the newly released Hyperspectral Imager for the Coastal Ocean (HICO), a space-borne spectrometer launched on the International Space Station. These validations with shipboard measurements in the optically complex coastal Subtropical Frontal Zone off the Eastern Coast of New Zealand provide a comprehensive historical dataset and monitoring system for regional scale processes.

Malcolm Francis

Malcolm Francis is a Principal Scientist for Inshore and Pelagic Fisheries at the National Institute of Water and Atmospheric Research (NIWA), Wellington, New Zealand. His research over the last 30 years has focussed on the population biology of coastal and pelagic fishes, and he has particular interests in cartilaginous fishes (sharks, skates and chimaeras), estuarine fishes, age and growth, reproduction, distribution, biodiversity, migrations, and human impacts. Since 2005, Malcolm has been collaborating with Clinton Duffy (Department of



Conservation) on a satellite-tagging programme to track the migratory patterns of great white sharks, and determine their habitat use in the south-west Pacific Ocean.

Title: Great white sharks: wide ranging ocean travellers, but is Stewart Island their home base? Co-Authors: Clinton Duffy, Warrick Lyon, Kina Scollay

Great white sharks (*Carcharodon carcharias*) are protected in New Zealand waters, but they are still caught in set nets and other fishing gear. The effect of this incidental mortality on their population size is unknown. The Titi (Muttonbird) Islands off northeastern Stewart Island are an important hotspot for white sharks. A tagging programme has been underway there since 2007 in order to determine their residency patterns, seasonality, migratory behaviour, and ultimately their temporal and spatial overlap with New Zealand coastal fisheries. Most white sharks migrate to tropical regions north of New Zealand from late winter to early summer, and then return to Stewart Island in late summer to early winter. Although long-distance migrations are now reasonably well documented, we know little about their small-scale movements. Our focus has now shifted to the use of acoustic tags, which will be detected by data loggers deployed around north-eastern Stewart Island and Foveaux Strait. This should provide detailed information on spatial and temporal habitat use patterns, and improve our understanding of the extent to which white sharks return to the same place every year.

Mary Livingston

Dr. Mary Livingston is currently a Principal Scientist in the Aquatic Environment Fisheries Management Team at the Ministry of Fisheries in Wellington, and is the Chair of the MFish Biodiversity Research Programme. Mary came to New Zealand from the UK in 1976 with a Commonwealth Scholarship to carry out a PhD in Zoology at Victoria University. After completing her doctorate, she remained in New Zealand and gained about 23 years of experience as a research scientist working primarily on hoki and other middle depth fish species with Fisheries Research Division and NIWA.



Mary became involved with Antarctic science as the Ministry of Fisheries representative on an 8 week voyage of R.V. *Tangaroa* to the Ross Sea in 2006. Subsequently she became extensively involved in the government programme Ocean Survey 20/20 and was selected to oversee New Zealand's International Polar Year Census of Antarctic Marine Life project in 2008. Mary is passionate about marine biodiversity and fisheries research and brings much energy to the interface of science and policy. She is active in the Government's marine network "Oceans Forum" and is currently Vice President of NZMSS. Mary also has represented or still represents the Ministry in a number of science working groups and ad hoc committees including Ocean Survey 20/20, climate change, ocean fertilisation, Antarctic science, marine environmental monitoring, Tier 1 environmental statistics review, Marine Stewardship Council certification.

Title: New Zealand's International Polar Year - "Census of Antarctic Marine Life" project in the Ross Sea region 2008-2011: An overview Co-Author: Stu Hatchett

In February 2008, New Zealand scientists embarked on a highly ambitious, epic voyage to the Southern Ocean, to survey marine biodiversity in the Ross Sea region as a major contribution to New Zealand's collective International Polar Year research effort. In spite of some of the worst summer ice conditions for 30 years, the IPY-CAML voyage successfully sampled 39 sites with 282 gear deployments from the sea surface down to 3500 m, and from the continental shelf and slope of the Ross Sea to unexplored seamounts and abyssal plains immediately to the north. Three years of post-voyage analysis has now been completed. Extensive sample processing and the characterisation of assemblages in these areas identified many new species and new records and a comprehensive assessment of the link between environment and biodiversity distribution in the region. The results from this project have already been used as inputs to CCAMLR and the management of the toothfish fishery. They have also contributed to bioregionalisation of the area and the development of a science based approach towards MPA proposals that are now under discussion in the political arena. With a strong outreach component, the project also generated a popular science documentary film, over 20 scientific papers and reports and over 50 presentations to scientists, managers, and the general public. Our presentation provides an overview of the project and the voyage, and is a prelude to other papers presented about IPY-CAML results in this session.

Alison Ballance

Alison Ballance is a broadcaster and natural history writer with a Masters Degree in ecology. She worked for many years as a producer and director of wildlife films for production company NHNZ, on subjects as varied as kakapo, tigers and the Galapagos Islands. She now co-produces and co-presents Radio New Zealand's weekly science and environment show, Our Changing World.

Title: From kakapo to the Kermadecs – telling stories about science

Broadcaster and author Alison Ballance will talk about her book 'Kakapo – rescued from the brink of extinction', which tells the story of how science and a



dedicated team of conservationists have turned around the fortunes of New Zealand's flightless night parrot. The book recently won the Royal Society of New Zealand's 2011 Science Book Prize, and Stewart Island and nearby Codfish Island have a starring role. Alison will also talk about her involvement in the recent Kermadecs Biodiscovery expedition, which combined science communication with exciting marine research and discoveries.

Chris Mace

Chris Mace is an Auckland based businessman. Following the restructuring of the Crown research sector in the early 1990s he chaired the Crown Research Institute ESR and later the New Zealand Antarctic Institute – Antarctica New Zealand. Chris takes a strong interest in education and scientific research. He was a founding Trustee of the Sir Peter Blake Trust and continues as a trustee of the Antarctic Heritage Trust. He also works closely with the tertiary sector with a particular focus on marine science and research. Chris was awarded a CNZM for services to Antarctica and the community and was appointed Chairman of NIWA in July 2009.



Title: Management and use of marine resources

New Zealand's marine environment is nationally important because of its immense economic, social and environmental value. Our oceans and coasts are rich with resources, and they make a significant contribution to our economy through fishing and aquaculture, oil and gas exploration and extraction, tourism and recreation, transport and telecommunications links. Our marine environment is globally important both in terms of its biodiversity and because of the unique role our oceans play in understanding how climate change might impact globally.

Managing our marine environment is not an easy task because of its size and diversity. The ocean is a large, interconnected ecosystem, yet we have no explicit over-arching strategy for how we manage it. Getting greater value from our marine resources has never been more important for New Zealand's long-term prosperity but increasing the use of our marine resources means we face increasing difficulty in how we manage them. We have already seen examples of how conflicting interests between building our economic prosperity and protecting our unique marine environment might play out in the future. These conflicts highlight, more than ever, the need for a strong, well-defined, and integrated National Oceans Strategy to inform policy development and guide how our marine environment is researched, managed, and used. And it is essential that organisations involved in marine sciences work closely with each other, and with those managing and using our marine resources, to build our knowledge and understanding of our marine environment and its various interactions.

Neville Peat

Neville Peat is a Dunedin-born New Zealand author and photographer, based at Broad Bay on the Otago Peninsula. He specialises in topics about natural history, notably that of southern New Zealand and New Zealand's sub-antarctic islands. He has written over 30 titles since the late 1970s. In 1994, Peat was named Dunedin Citizen of the Year for his series of photographic books on the city and his establishment of the Dunedin Environmental Business Network, and in 1996 won the Montana New Zealand Book Awards for his book *Wild Dunedin*. He has been a Councillor on the Otago Regional Council since 1998, and was its Deputy Chairperson from 2004 to 2007.



In 2004, Peat was behind moves to create an official flag for Otago. This culminated in a competition run

through the auspices of the *Otago Daily Times* newspaper and Otago Polytechnic School of Art towards the end of that year. In 2007, Peat was awarded the Creative New Zealand Michael King Writers' Fellowship, New Zealand's largest literary award. It allowed him to complete two major works, a comprehensive book on the Tasman Sea, and the third story in the "Lark" trilogy exploring the nature of southern New Zealand.

Title: Maui's anchor

Stewart Island/Rakiura has a place in New Zealand maritime history out of all proportion to its size and population, beginning with its status as the southernmost permanently settled corner of Polynesia. No part of the island's human history avoids contact with the sea, from centuries of muttonbirding to pioneer Pakeha shipbuilding, fishing, tourism, even farming. The island was the anchor of Maui's fabled fishing canoe and with Cook's *Endeavour* expedition of 1770, it blew away two thousand years of European mythology about the existence of a Great Southern Land. In the vicinity of Stewart Island, the ocean circulation has some interesting twists and turns to it. Neville Peat has written several books about the island, most recently *Rakiura Heritage* (Department of Conservation 2010).

Mark Orams (after dinner speaker)

Professor Mark Orams is a champion around the world yachtsman, a member of Team New Zealand's successful defence of the America's Cup in 2000, a three times world masters sailing champion, a marine conservation advocate and is the author of the book 'Blake:Leader. Leadership Lessons From a Great New Zealander'. Mark grew up "messing around" in boats, in native New Zealand, at Torbay on Auckland's North Shore before becoming a professional yachtsman and eventually a marine scientist and conservation advocate. He holds a bachelor's degree in environmental sciences, a master of science and a PhD and has published numerous books and papers on the management of human impacts on marine resources. He is currently



Professor and Associate Director of the New Zealand Tourism Research Institute at AUT University.

Title: Home is the sailor, home from the sea: Reflections on the role of marine science from a clapped out old yachtie



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 indicates accommodation outside the township map. You will find these places on the reverse map.

Hot 1 S

35 Stewart Island Lodge

38 Bunkers Backpackers

40 Stewart Island Backpackers

40 Stewart Island Backpackers

36 Te Tahi B&B

37 Tokoeka B&B

Backpackers

Deep Bay Cabin

39 Jo & Andy's B&B

41 The View

Campsites

Hotel	
1 South Sea Hotel	(03) 219 1059
Self Catering	
* Akamoana	(03) 219 1421
3 Anglem House & Apartment	(03) 219 1167
* Awatea	(03) 219 1167
4 Bay Motel	(03) 219 1119
5 Beach House	(03) 219 1348
6 Bellbird Cottage	(03) 219 1330
7 Cowleys Holiday Home	027 302 9099
 Deep Bay Apartment 	(03) 219 1271
 Deep Bay Cabin 	(03) 219 1219
 Evening Cove Holiday Home 	(03) 219 1552
8 Home with a View	(03) 219 1552
9 Jimmy's Cottages	(03) 219 1051
10 Jones Halfmoon Haven	(03) 216 7953
11 Kaka Cottages Island Paradise	(03) 219 1252
12 Kaka Ridge Lodge	(03) 219 1330
13 Kakapo Cottage	021 119 7226
15 Kitimoana	(03) 219 1014
16 Kowhai Lane Holiday Home & Apartme	ent (03) 219 1151
17 Latt 47 Cottage	(03) 219 1330
18 Letterbox House	(03) 219 1119
 Lonnekers Beach 	(03) 219 1188
19 Ngahere	(03) 219 1014
20 Uban Lodge	(03) 218 8/2/
Pania Lodge	UZ1 325 186
22 Polius Lodas	(03) 219 1144
* Pakiura Potrant Motol	(03) 219 1003
23 Pimu Cottano	(03) 219 1090
* Bimu View Apartmont	(03) 220 0000
24 Boom with a View	(03) 219 1330
25 Rose Cottage	(03) 230 4263
* Seabreeze Cottage	(03) 219 1167
* Seafarers	(03) 219 1167
26 Skins	(03) 219 1491
* Sue's Place	(03) 219 1421
* The Bach	(03) 219 1394
27 TOIL Cottage	(03) 213 0905
28 Tree House Crib	(03) 356 3324
29 Turner Cottage	(03) 219 1394
30 Whalers Rest	(03) 216 6142
Bed & Breakfast	
31 Glendaruel B&B	(03) 219 1092
32 Greenvale B&B	(03) 219 1357
* Island B&B	(03) 219 1047
33 Kiwi B&B	(03) 219 1595
* Port of Call B&B	(03) 219 1394
34 Sails Ashore B&B	(03) 219 1151

Ulva Ferry (03) 219 1151 (03) 219 1079 Services 0800 725 487 (03) 219 1143 (03) 219 1160 (03) 219 1219 (03) 219 1230

(03) 219 1114

(03) 219 1328

(03) 219 1114

Southern Limits Charter Boat (03) 219 1234 Stewart Island Experience Tours (03) 219 0056 Stewart Island Ferry Services (03) 219 0034 Stewart Island Rental Servcies (03) 219 0056 Stewart Island Water Taxi & Eco Tours (03) 219 1394 Stewart Island Flights Depot (03) 219 1090 Stewart Island Helicopters (03) 212 7700 (03) 219 1013 Ulva's Guided Walks (03) 219 1216 (03) 219 1144 (03) 219 1221 (03) 219 1477 (03) 219 1014 (03) 219 1266 (03) 219 1422 (03) 219 1059 Stewart Island Backpackers (03) 219 1114

Information

in on other off	
Department of Conservation	(03) 219 0002
Oban Visitor Centre	(03) 219 0056
Rakiura National Park Visitor Centre	(03) 219 0009
Ruggedy Range Wilderness Experience	Booking Office
	(03) 219 1066
Stewart Island Flights Depot	(03) 219 1090
Stewart Island Ferry Visitor Terminal	(03) 219 0034
Illva's Guided Walks Booking Office	(03) 210 1216
ore a conservanta booking office	100/215 1210
Activity Operators	
Aihe Eco Charters & Water Taxi	(03) 219 1066
Bravo Adventure Cruises	(03) 219 1144
Lo Loma Fishing Charters	(03) 219 1141
Rakiura Charters	0800 725 487
Rakiura Heliconters - Fern Gully Helinort	(03) 219 1155
Rakiura Kavaks	(03) 210 1160
Rawhiti Evoureinne	(03) 210 1023
Russedy Danas Wildersona Europianas Teuro	(03) 219 1023
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Sails Ashore Information	(03) 219 1151
Seaview Water Taxi	(03) 219 1014
Southern Isle Charter	(03) 219 1133
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Places to Eat & Drink

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Bean Around Mobile Expresso	027	554	2923
Church Hill Café and Bar	(03)	219	1323
Just Café	(03)	219	1422
4 Ship to Shore - Four Square Supermar	ket(03)	219	1069
South Sea Hotel Restaurant & Bar	(03)	219	1059
Wharfside Café & Bar	(03)	219	1019
A 1			

Shopping

G 11 G [J]J 111 54	
Craftee Cod	027 521 1895
Fishing Line Jewellery	(03) 219 1422
Glowing Skies Studio Shop	(03) 219 1518
Oban Visitor Centre	(03) 219 0056
Öcean View Art Studio	(03) 219 1313
Outdoor Adventure Shop	(03) 219 1066
Rakiura National Park Visitors C	entre(03) 219 0009
4 Ship to Shore - Four Square Super	market(03) 219 1069
The Fernery Art & Gift Gallery	(03) 219 1453
Real Estate	0.00 2000-2020-2020

Locations - WM Todd & Co Real Estate (D. Smith) MacPherson Realty (B Hamilton/K Kelly)(03) 219 1234

Public Telephone - Main Road opp, DOC Offices Rakiura Museum Stewart Island Community Centre Stewart Island Pavilion LPG/Petrol/Coal/Diesel Island Transport Internet Facilities Just Café South Sea Hotel