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cooperation, international understanding.

**THE SASAKAWA PEACE FOUNDATION**

# Setting Up a Coastal Ocean Acidification Observing Network in New Zealand

Kim Currie

Judith Murdoch

Andrew Marriner

and many others

Climate, Freshwater & Ocean Science



**NIWA**

Taihoru Nukurangi

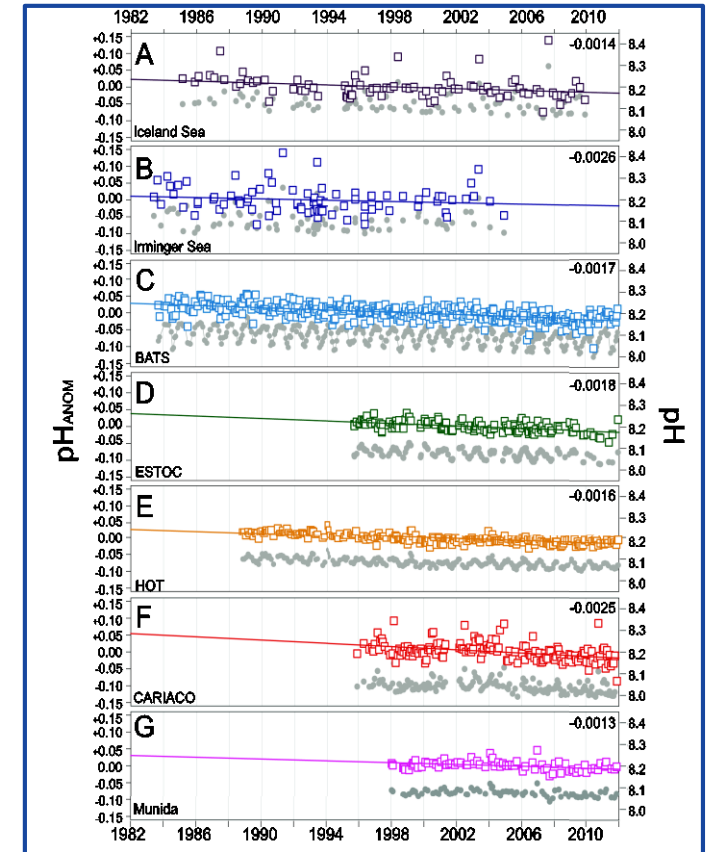
# Vision

- Measure present-day carbonate chemistry at a variety of New Zealand locations / ecosystems
  - Gain an understanding of the variability and identify drivers
- Provide base-line conditions against which to measure future change
  - Identify areas of vulnerability and potential resilience
- Provide *in situ* data to inform OA experiments
- Inform stakeholders
  - Aquaculture, government (local and national), society including iwi, scientists
- Contribute to national and international programmes
  - GOA-ON, Climate Indicators, UN SDG 14.3



# Assets

- Good community relationships
  - OA science community, national and local government, aquaculture industry
- Munida Time Series
  - Uptake of atmospheric carbon dioxide by SW Pacific waters
  - Carbon chemistry → ocean acidification parameters
- Experience in carbonate chemistry analysis, calculations and interpretation
- Funding for a part-time technician for 2 years



# New Zealand Ocean Acidification Observing Network NZOA-ON

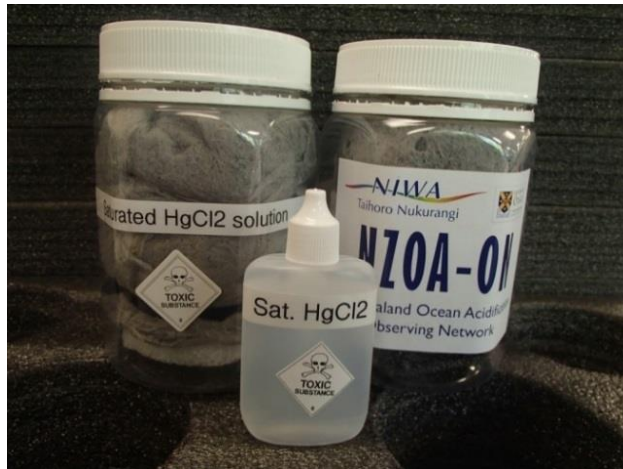
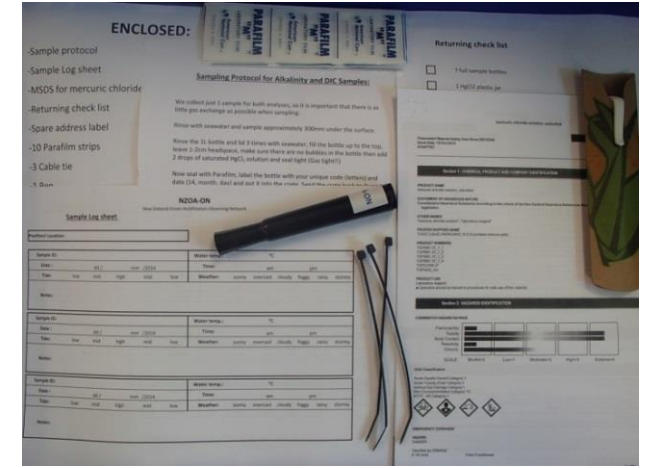
## • Sampling Sites

- 14 sites throughout the country
- Fortnightly bottle sampling + moored pH sensors (some sites)
  - Work with Sampling Partners to collect bottle samples
- Alkalinity and DIC measurements → pH,  $\Omega$ ,  $[\text{CO}_3^{2-}]$ .....
- Central analytical facility – sample analysis and QC, data management, network logistics, buffer/ dye preparation
- Started early 2015
- Ensure compatibility with other programmes
- Health and Safety issues - Mercuric chloride, Boating, Diving

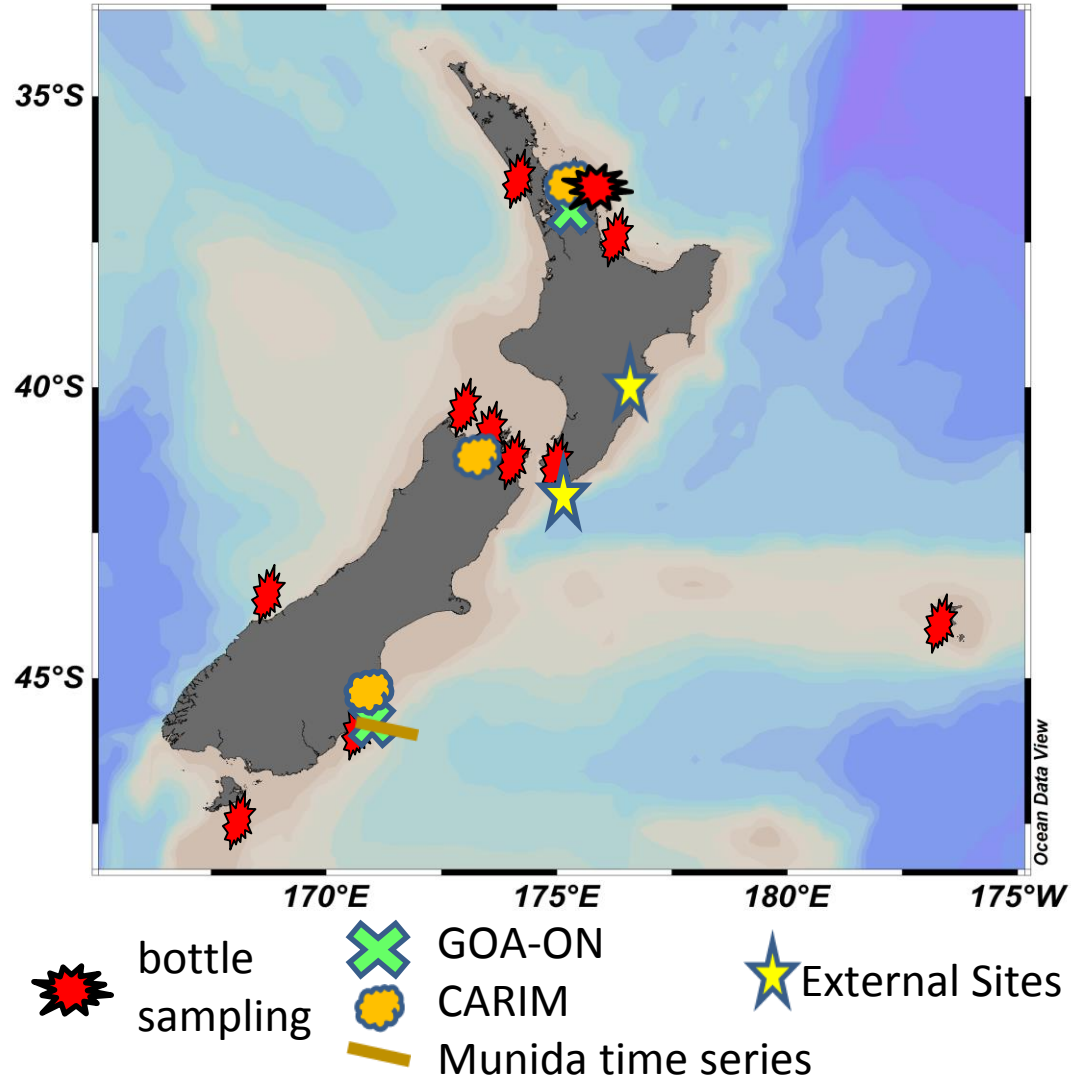




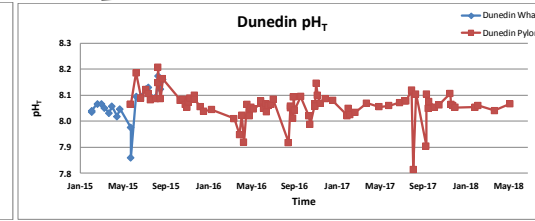
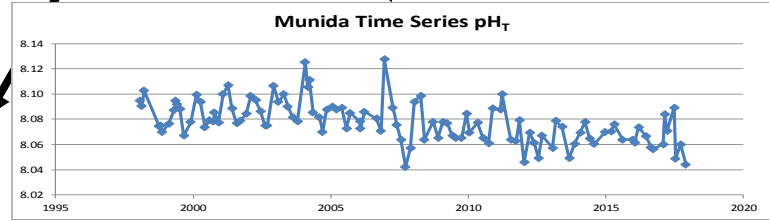
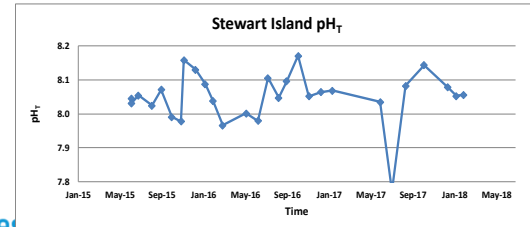
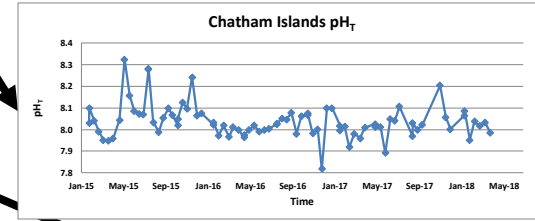
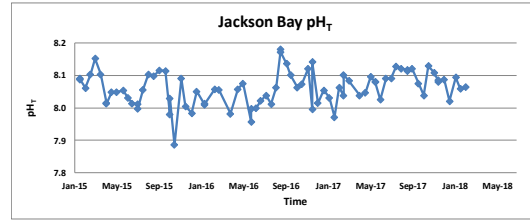
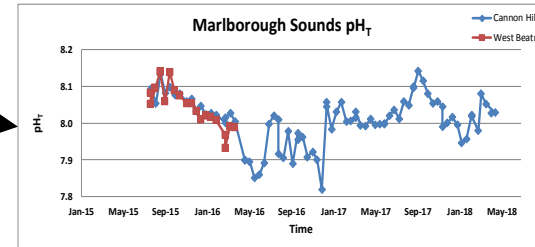
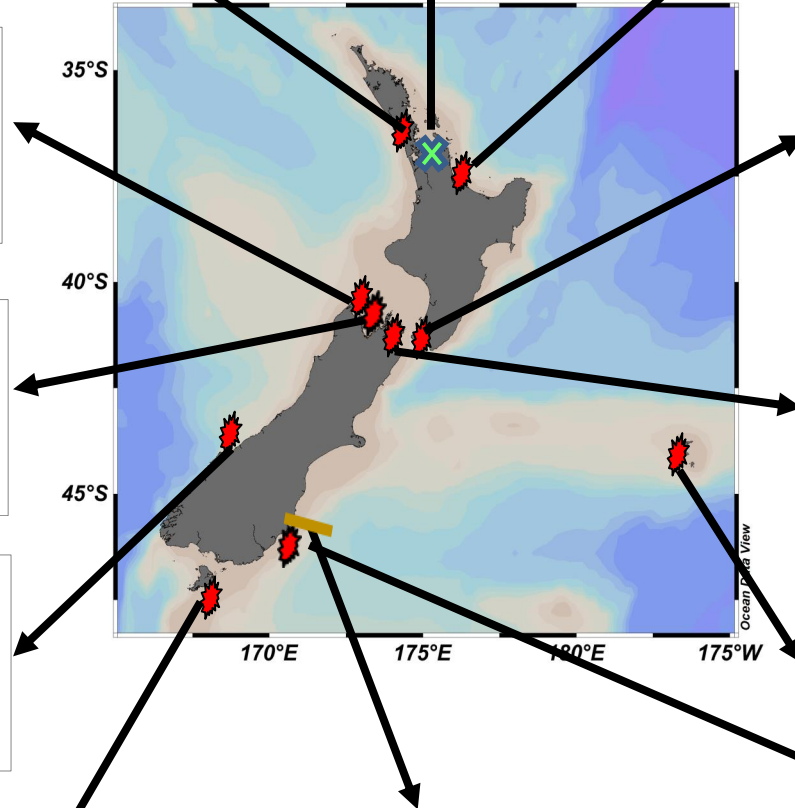
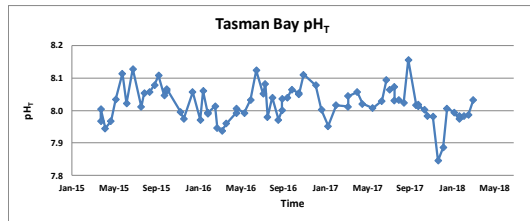
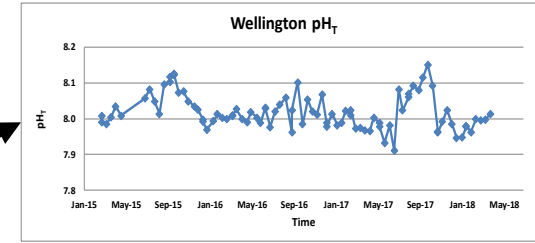
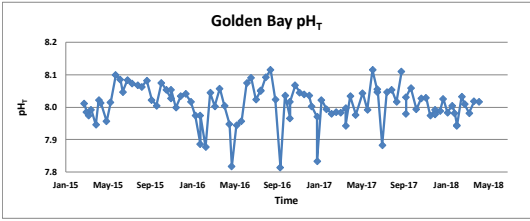
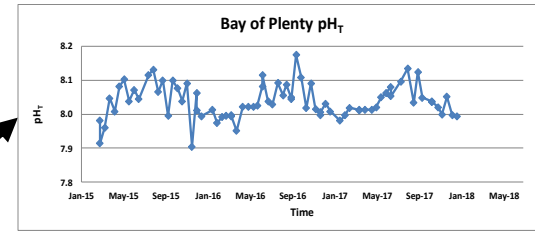
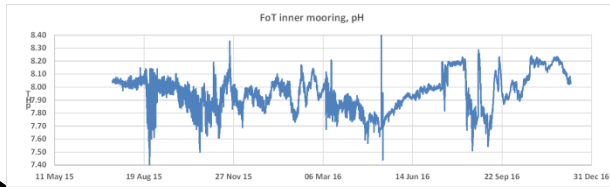
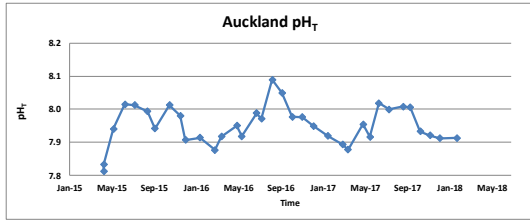
# Logistics



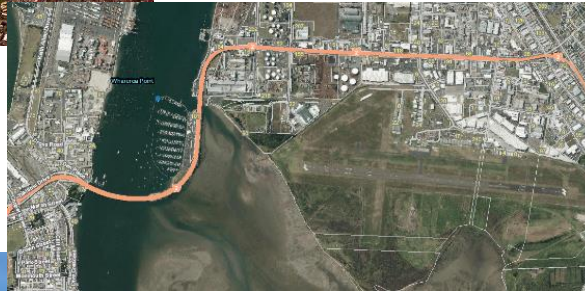
# The Sites



Site	Sampling Partner
Auckland	Auckland Council
Firth of Thames	NIWA
	University of Auckland
	Aquaculture Industry Ngāti Paoa
Bay of Plenty	BoP Regional Council
Napier	Hawke's Bay Regional Council
Wellington	NIWA
Wellington Harbour	Greater Wellington Regional Council
Marlborough Sounds	Aquaculture New Zealand
Tasman Bay	Cawthron Institute
Golden Bay	Aquaculture New Zealand
Jacksons Bay	Fishing Industry
Taiaroa Head	NIWA
	University of Otago Port Otago
Karitane	NIWA
	University of Otago East Otago Taiāpure
Stewart Island	DoC
Chatham Islands	Paua Industry Council







Climate, Freshwater & Ocean Science

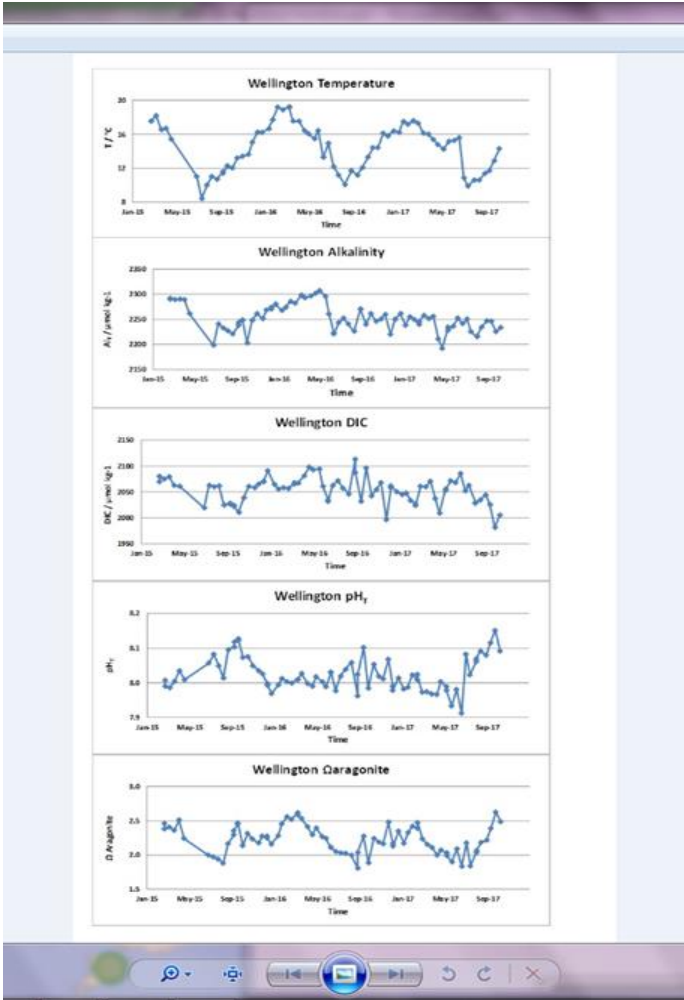
NIWA  
Taihoro Nukurangi  
UNIVERSITY OF OTAGO  
**NZOA-ON**  
New Zealand Ocean Acidification  
Observing Network

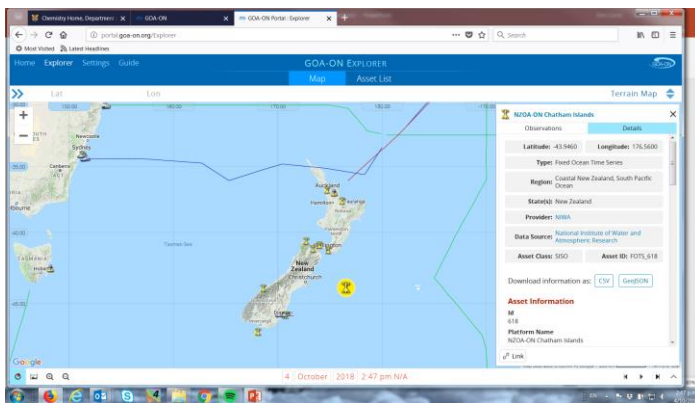
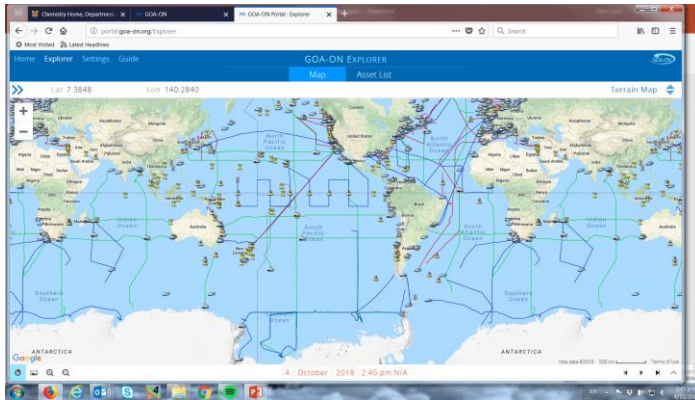




# Data Portal

[marinedata.niwa.co.nz/nzoa-on](http://marinedata.niwa.co.nz/nzoa-on)





## UN SDG 14.3

Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

### Indicator 14.3.1

Average marine acidity (pH) measured at agreed suite of representative sampling stations

## Our Marine Environment NZ State of the Environment Report





- NZ Prime Ministers Science Prize
- NIWA – Capex for infra-structure
- Ministry for Primary Industries
- Ministry for Business, Innovation and Employment
- Ministry for the Environment
- Dept of Statistics
  
- Anna Crosbie
- Mary Livingston
- Debbie Freeman
- Hilke Giles
- Pierre Tellier
  
- Brent Wood

- Ebrahim Hussain
- Melanie Vaughan
- Robert Win
- Rochelle Carter
- Stephen Park
- Norman Ragg
- Carol Peychers
- Colin Johnston
- Mike Williams
- Kevin Primmer
- Steve Urlich
- Barry Horne
- Sean Heseltine
- Dave Wilson
- Rebecca McGrouther
- Kate Richardson
- James Ware
- Kevin Carter
- Jeremy Cooper
- Ces

- Malcolm Reid
- Keith Hunter
- Cliff Law
- John Zeldis
- John Wells
- Workshop guys
- Store guys
  
- Chris Hepburn
- Daniel Pritchard
- Michelle Liddy
- Marine Sciences Students
- East Otago Taiapure Management Committee
- Brendan Flack
- Puketeraki Nga Waka Club
- Mary Sewell
- Emily Frost
- Chris Cornelisen



# Thank you

**Kim Currie**

NIWA, Dunedin, New Zealand

[kim.currie@niwa.co.nz](mailto:kim.currie@niwa.co.nz)

