

# NZ white-chinned petrels in context

DRAFT

Kalinka Rexer-Huber

Final presentation to CSP TWG

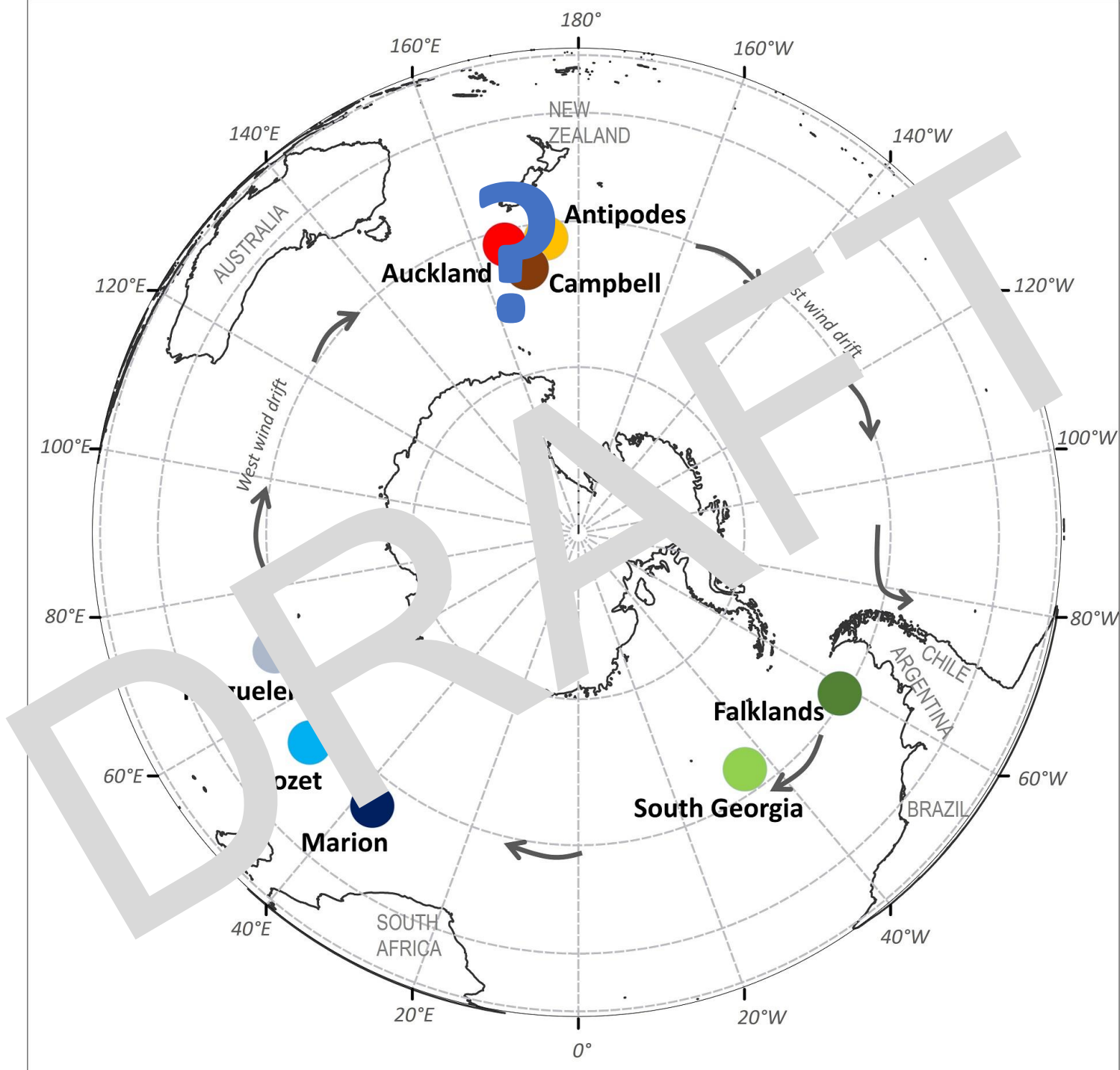


Te Whare Wānanga o Ōtago



PARKER CONSERVATION  
CONSERVATION, TRANSLOCATIONS, RESTORATION, RESEARCH, MANAGEMENT







*Thesis objectives*

	Pop size <sup>a</sup>	Pop trend <sup>b</sup>	Distribution <sup>c</sup>	Productivity <sup>d</sup>	Survival juv <sup>e</sup>	Survival ad <sup>e</sup>	Pop genetics <sup>f</sup>
Kerguelen	Y	Y	Y				
Crozet	Y	Y	Y	Y	Y	Y	Y
Marion	Y		~	Y			Y
South Georgia	Y	Y	Y	Y			Y
Falklands	~						
Antipodes	~		~	~			Y
Campbell							
Auckland							~

*CSP objectives*





# Population size estimates



## Terrain drives study design

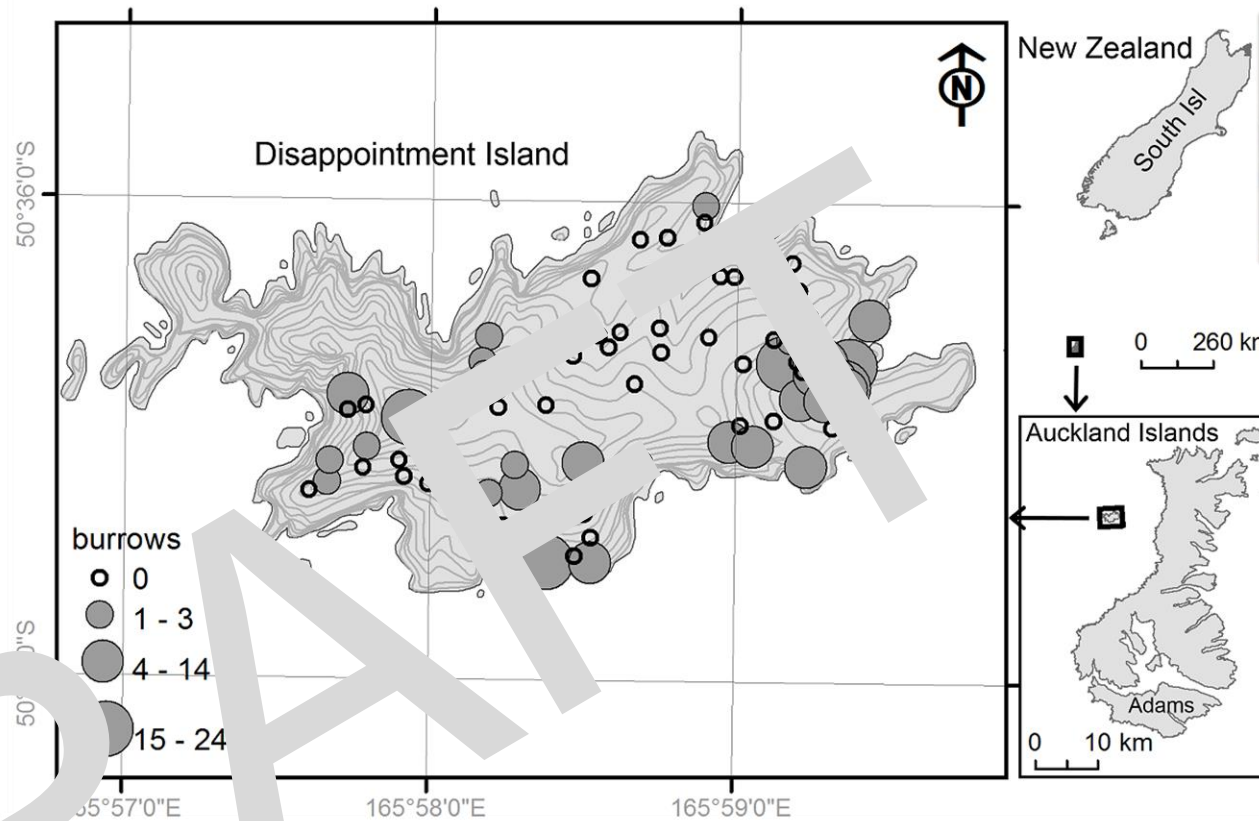
- distance sampling transects
- stratified random density sampling plots

## Burrow occupancy

## Area – planar vs surface

## Proportion accessible/available habitat



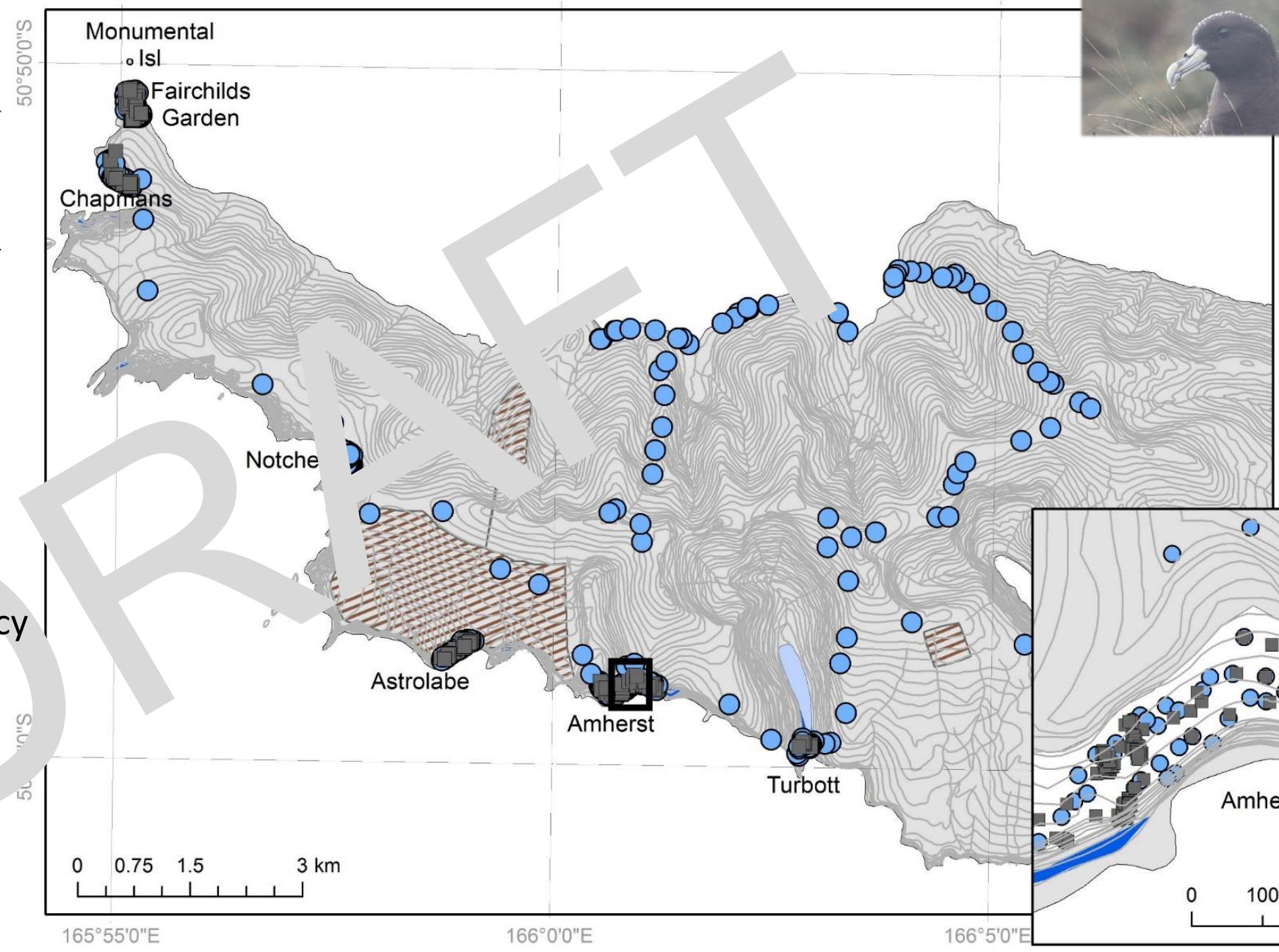
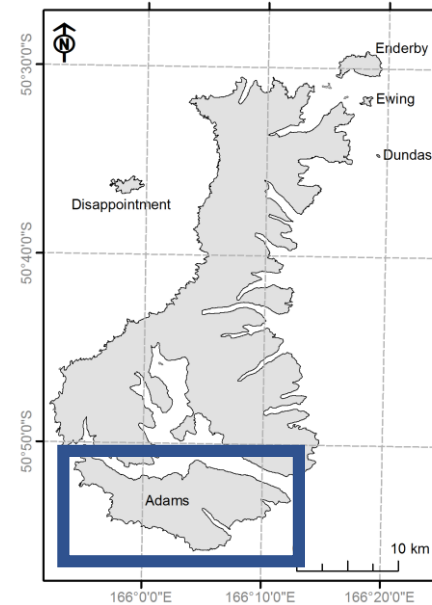


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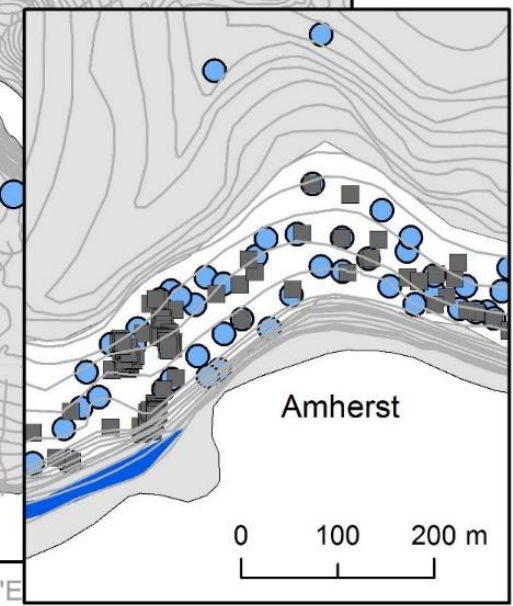
**155,500**  
(125,600–192,500)  
breeding pairs



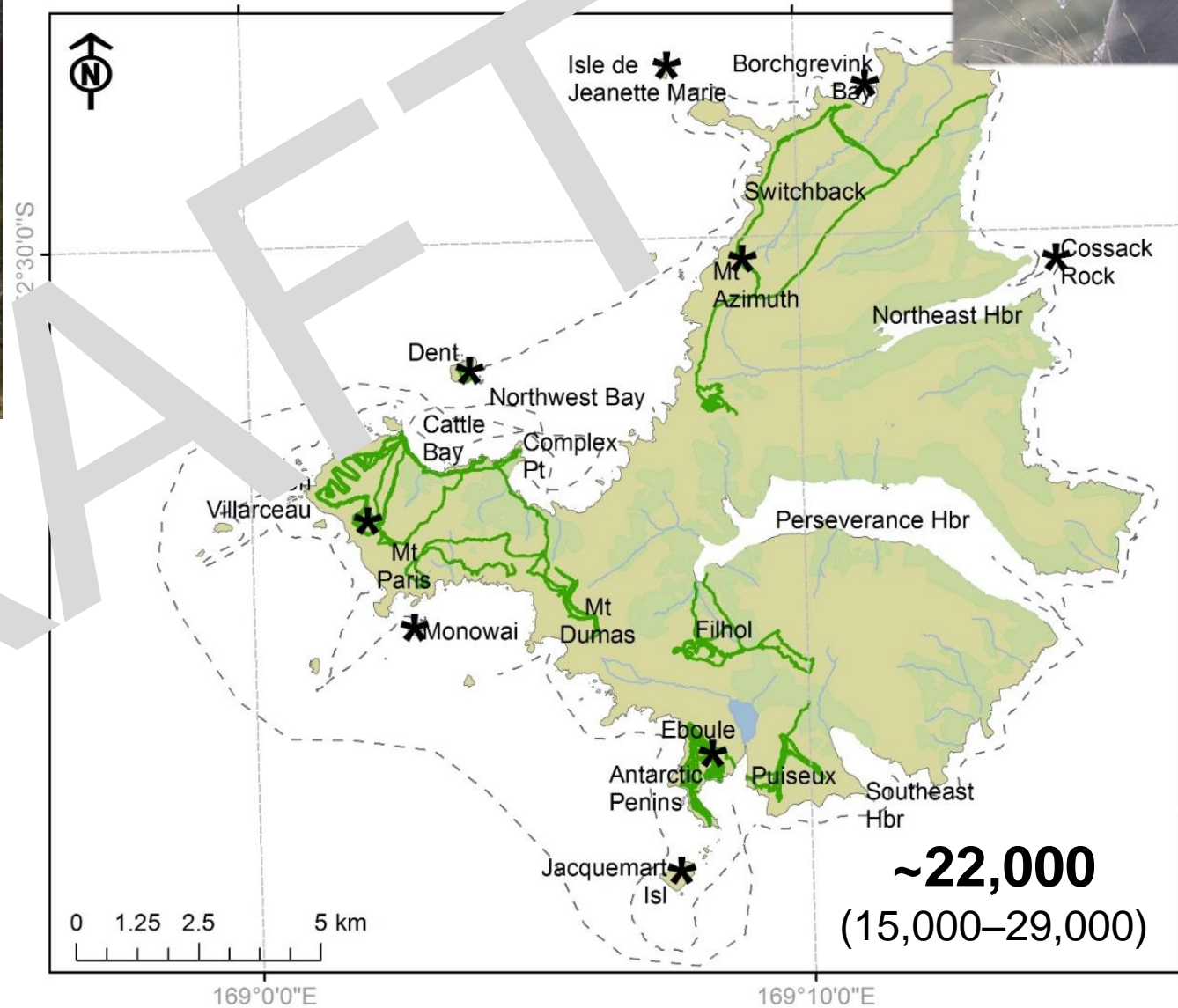




10 strata  
 327 sampling plots  
 Slope, detection, occupancy  
 Area unsampled  
 32% coverage  
**28,300** (10,400–44,800)











### **Auckland**

Disappointment (155,500)

Adams (28,300)

Monumental (60)

Ewing (30)

184,000

(136,000–237,000)

### **Campbell**

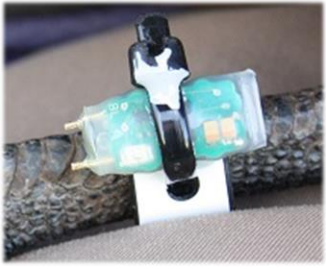
~ 22,000 (15,000–29,000) pairs

### **Antipodes**

Between 59,000 and 91,000

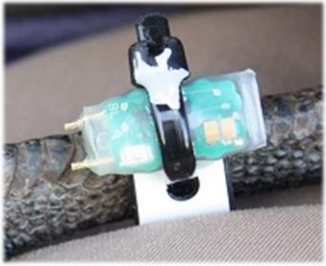
*(Sommer et al. 2010, 2011)*



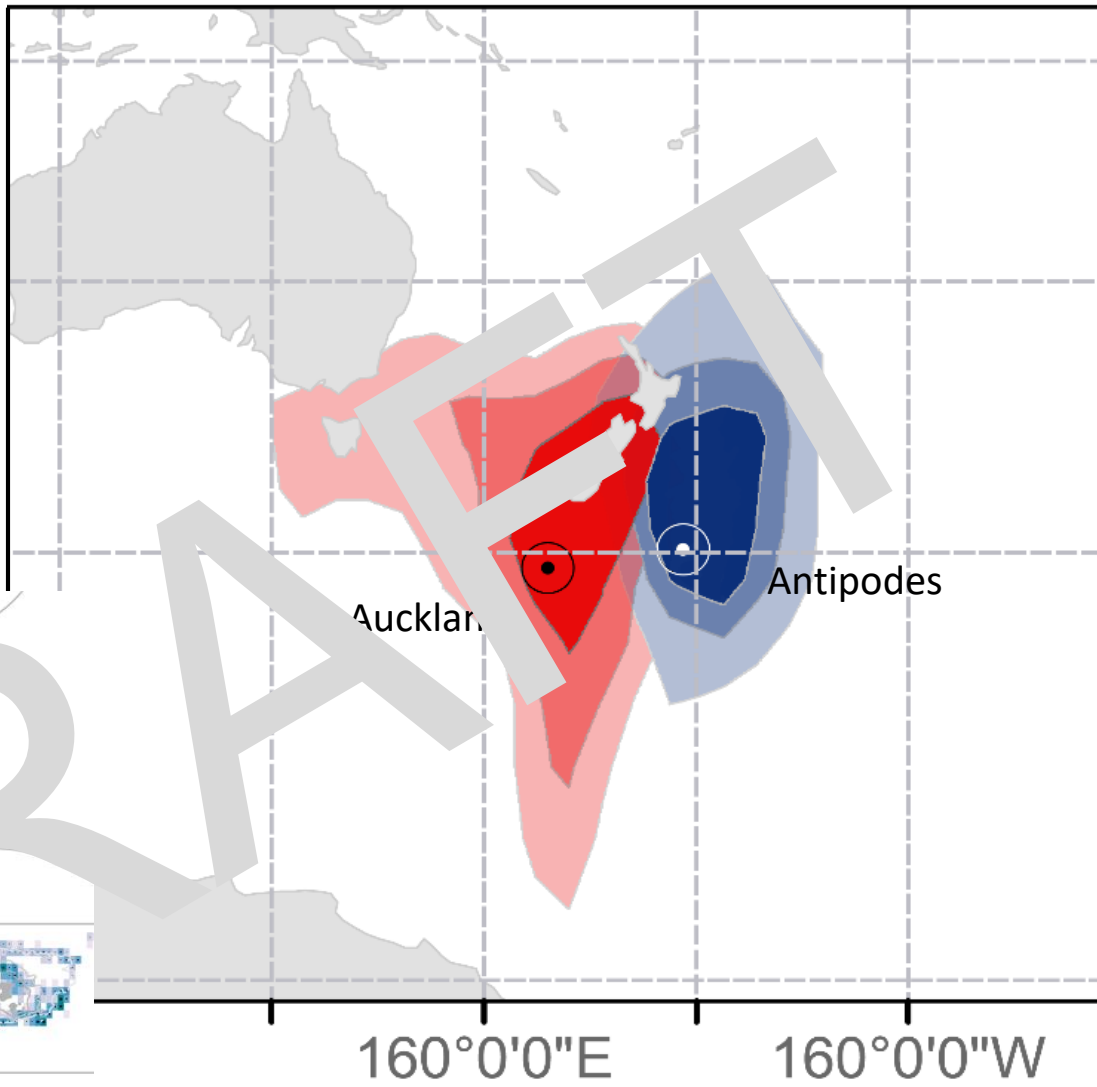
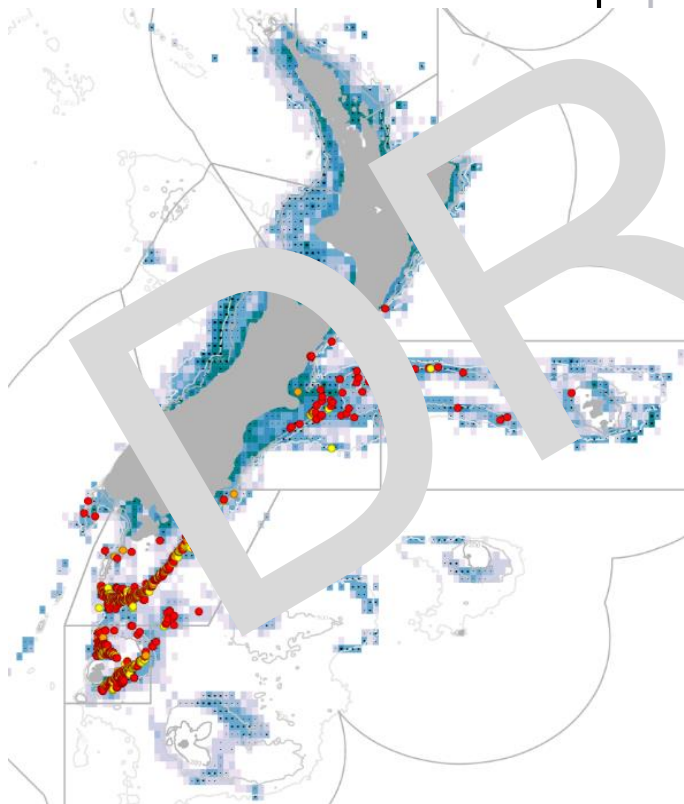


island	retrieved (deployed)	n final <sup>a</sup>	tracking period	mean d tracked	validated locations
MAR	12 (21)	12	2009-13	876	1,127
CRZ	14 (20)	10	2007-08	355	3,723
KER	27 (30)	13	2007-08	37	4,707
AKL	40 (62)	33	2013-15	39	11,401
ANT	30 (37)	27	2008-10	329	8,126
FI	15 (17)	14	2014-15	340	6,075
SG	10 (11)	9	2013	250	2,282
Overall	150 (200)	111		369	50,443

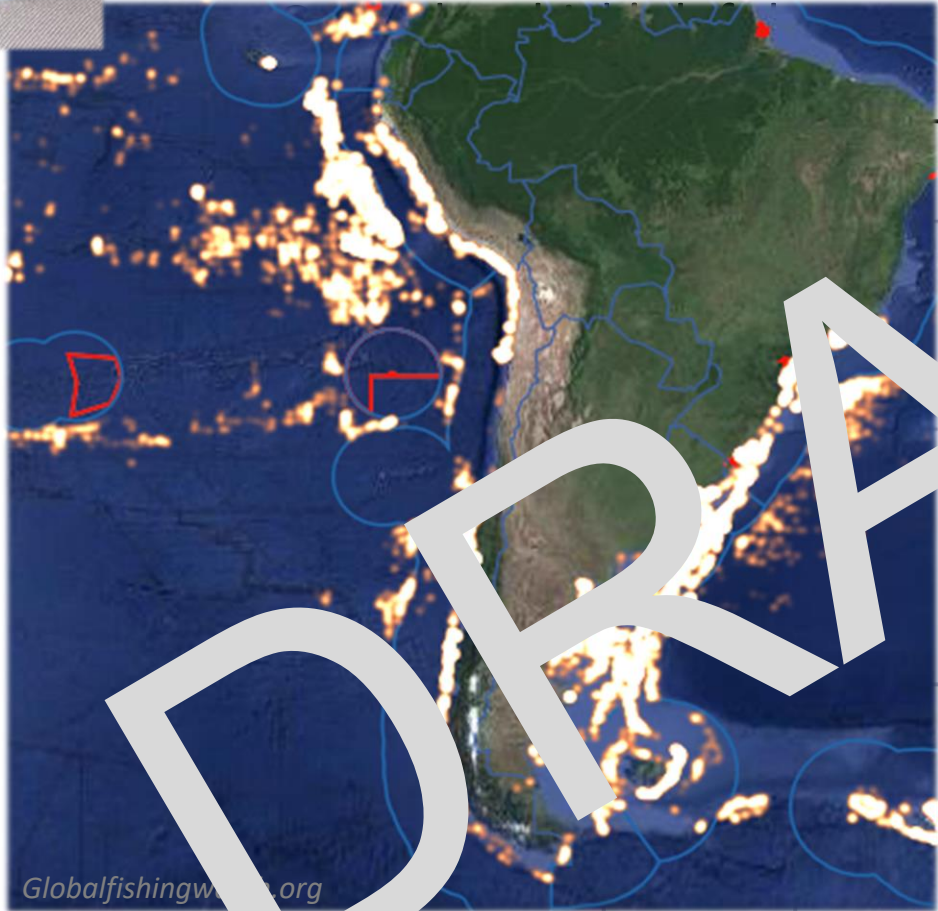
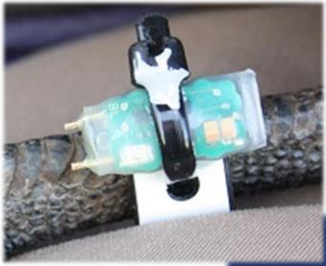




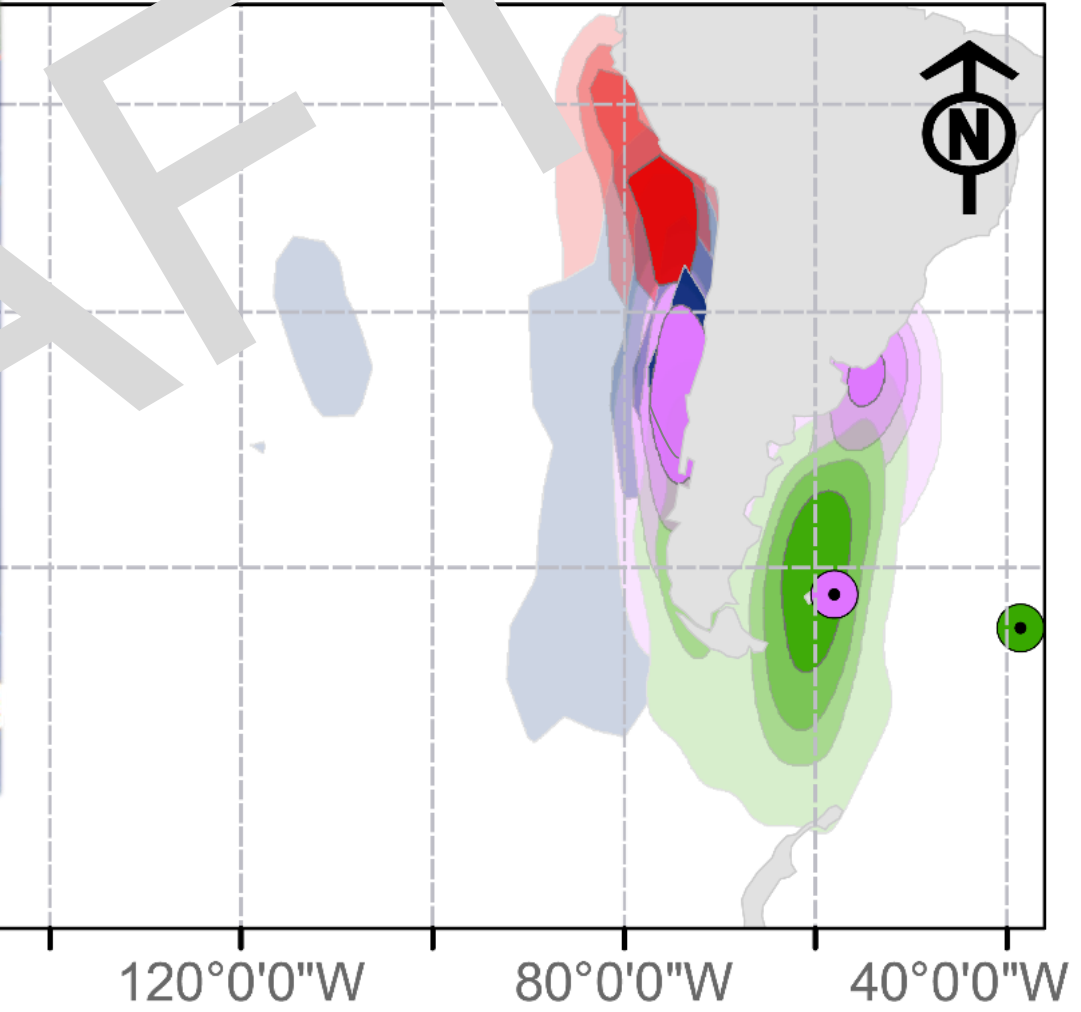
Protected Species Captures © MPI

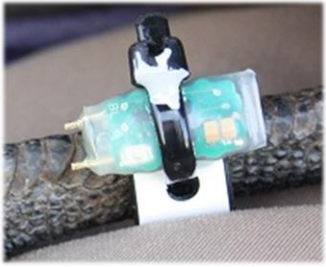






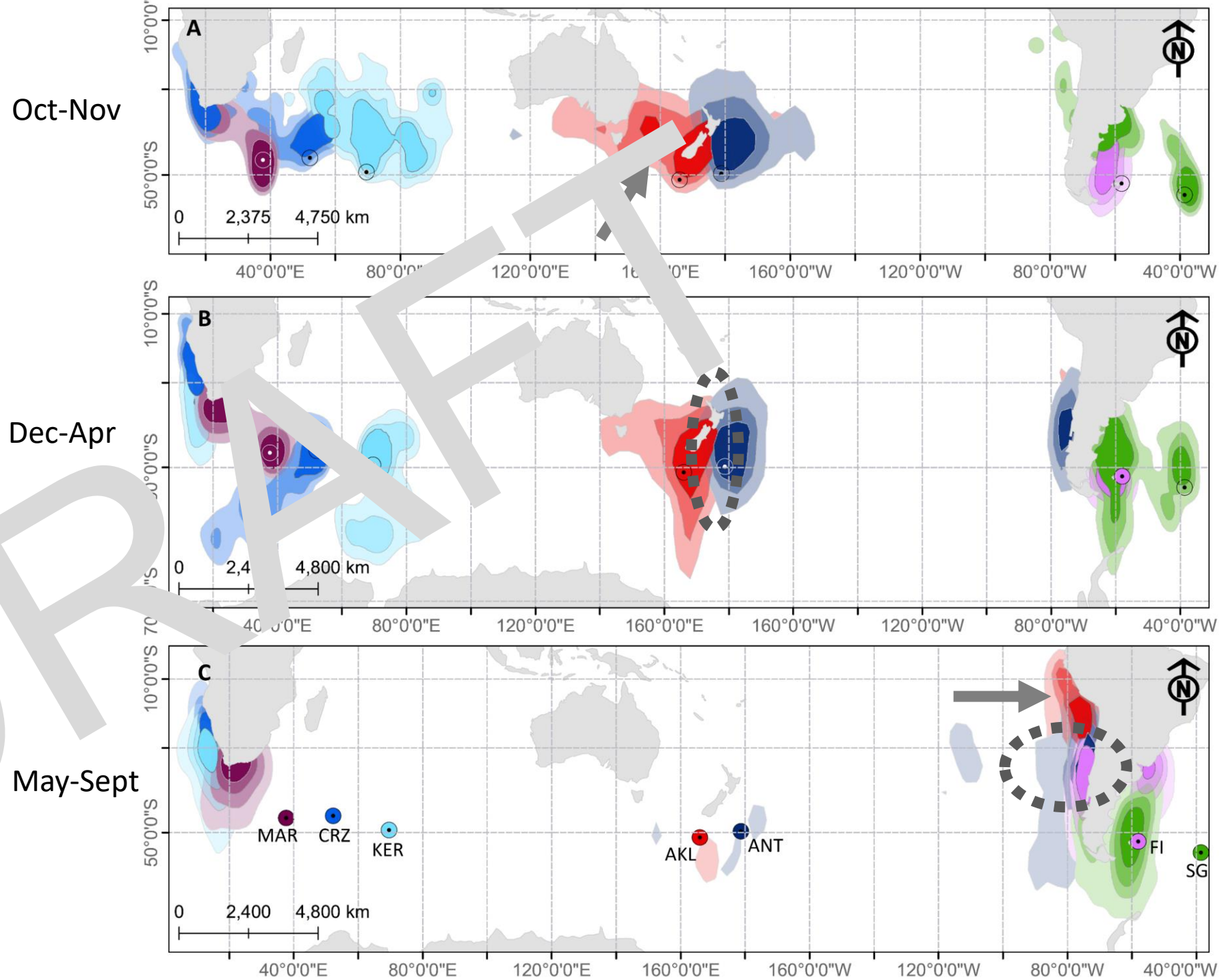
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Overlap areas:  
actions wide effect

Single-pop areas:  
provenance

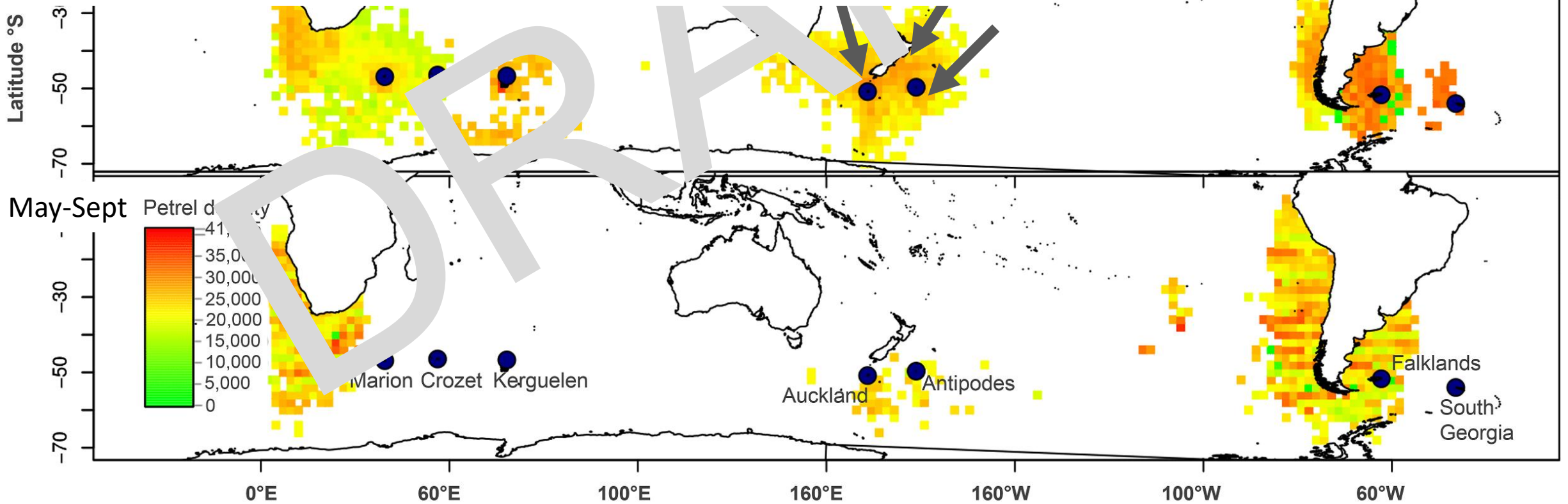


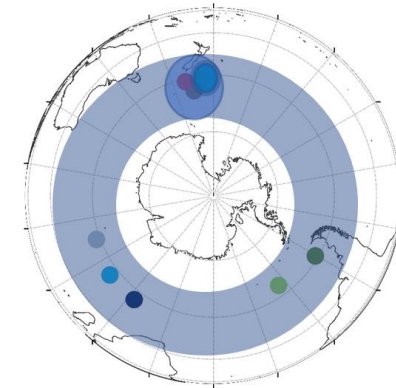


Overlap with fishing effort – scale facilitates comparison

Campbell

Adults only – where do juveniles go?

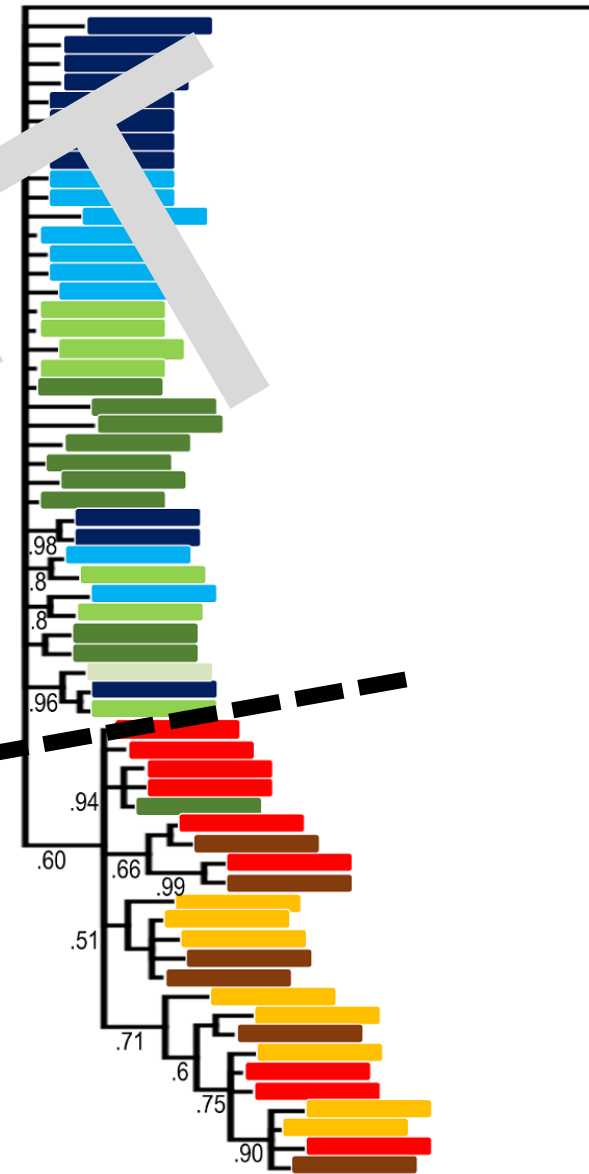
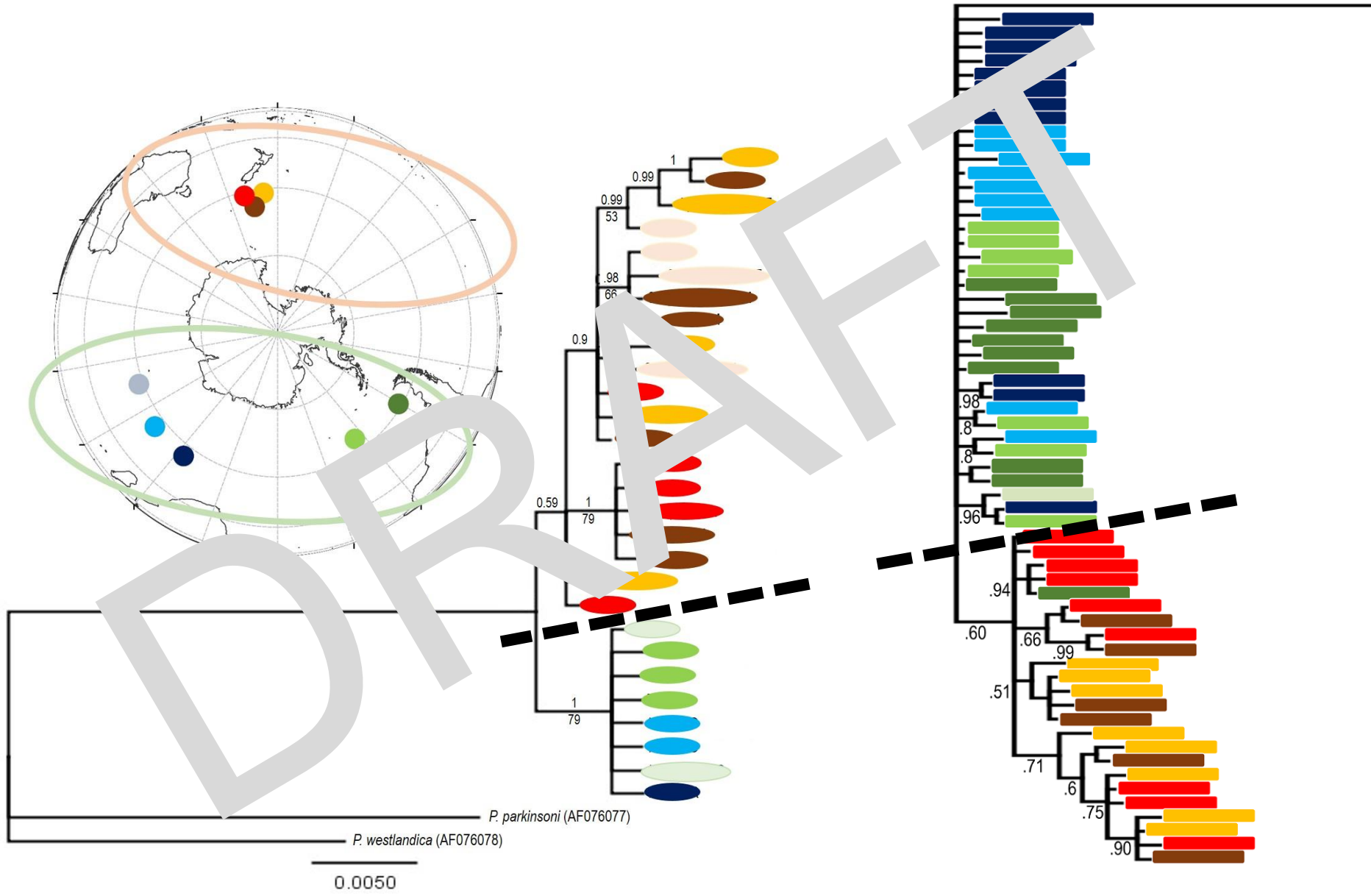
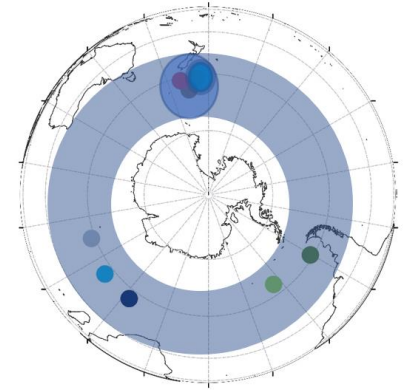
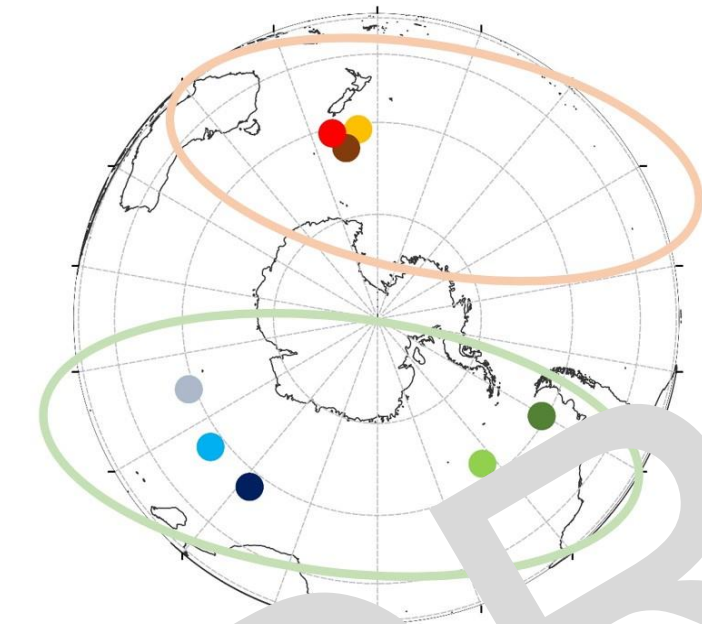




Techow 2007  
Techow et al. 2009

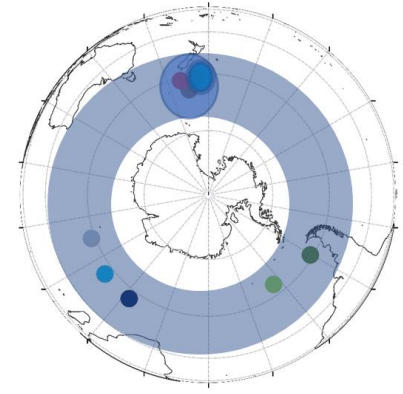
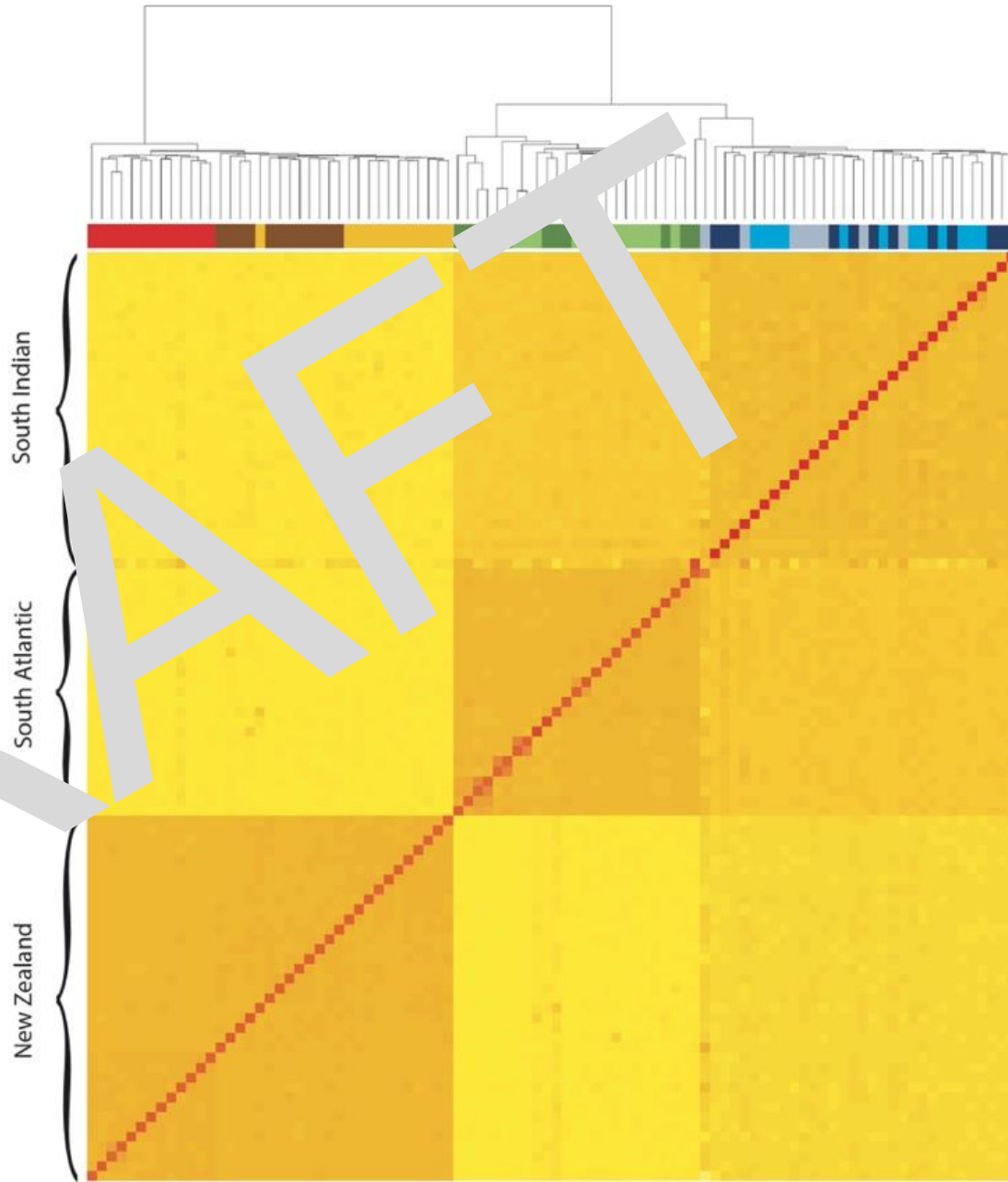
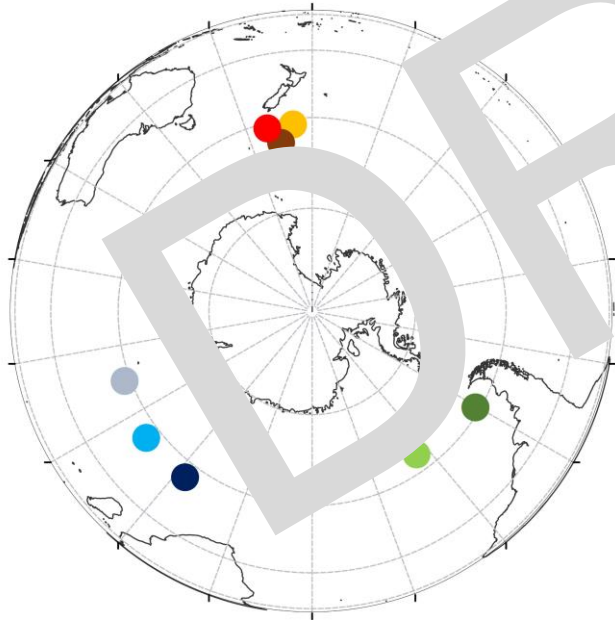
Fraser 2005





0.1

GBS SNPs:  
a uniquely global  
dataset





Antipodes



Campbell

South Georgia

Falkland

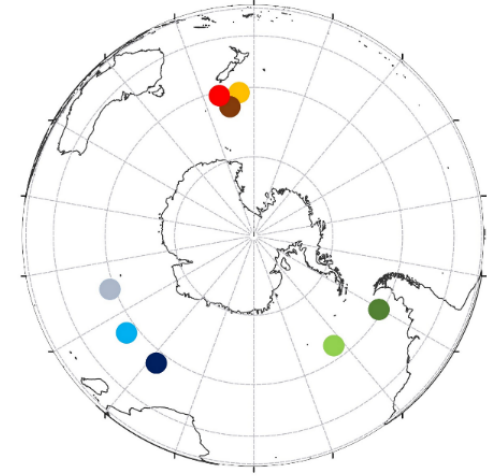
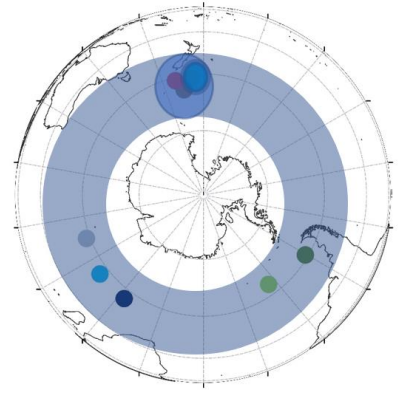
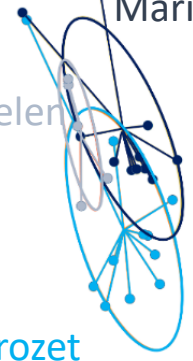


Auckland



Marion  
Kerguelen

Crozet



# Mark-recapture

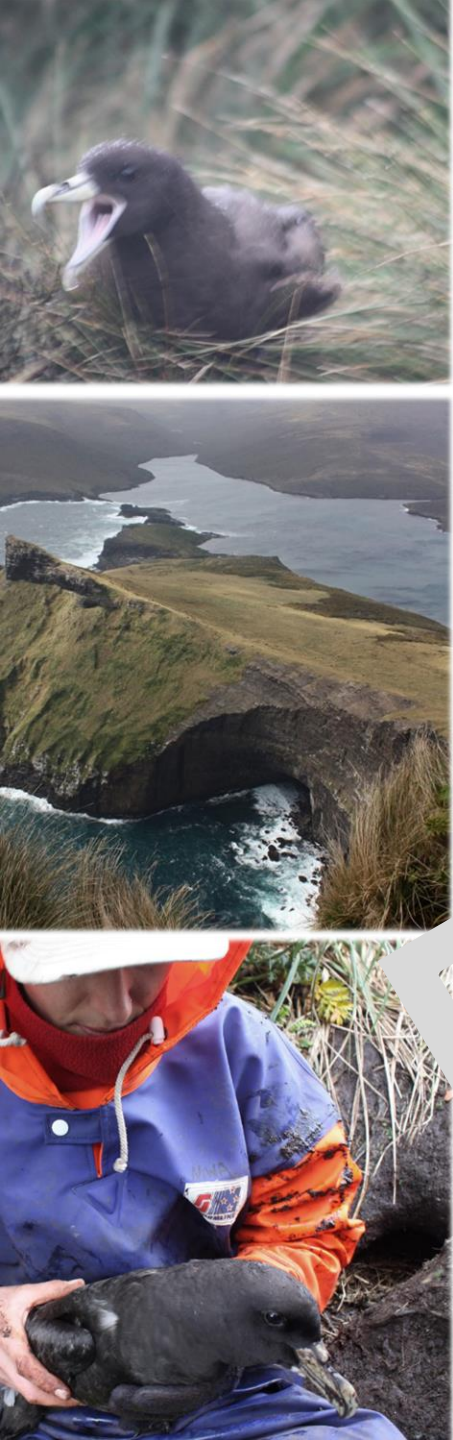
Collecting resight data to estimate key parameters

Developing study colony: 175 banded birds in 109 marked burrows

	banded	resight	resight %	period
2014-15	44	21	48%	6 d
2015-16	110	54	49%	9 d
2016-17	133	47	35%	4 d
2017-18	175	-	-	-
2018-19	175			







	Population size <sup>a</sup>	Population trend <sup>b</sup>	Breeding range <sup>c</sup>	Productivity <sup>d</sup>	Survival <sup>e</sup>	Genetic affinity
Kerguelen	Y	Y	Y			Y
Crozet	Y	Y	Y	Y	Y	Y
Phoenix	Y	Y	Y	Y		Y
South Georgia	Y	Y	Y	Y		Y
Falklands	~		Y			Y
Antipodes	~		Y	~		Y
Campbell	Y					Y
Auckland	Y		Y	Y	Y	Y

*Thesis objectives*

*CSP objectives*

# Outputs

5 reports

2 papers

8 talks interest groups

8 presentations conferences

Included in latest IUCN and NZ threat status revisions

Rexer-Huber K (2017) White-chinned petrel distribution, abundance and connectivity have circumpolar conservation implications. <http://hdl.handle.net/10523/7778>. PhD thesis, University of Otago



# Moving forward

## Population size

ANT - great data, need analysing  
- redo now for trend

CBL - Jacquemart, main isl

AKL - repeat for trend in 2020-22

## Tracking

Campbell  
Juveniles

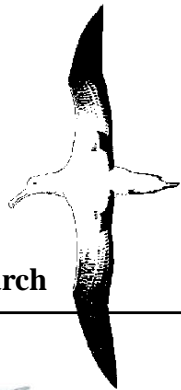
## Bycatch assignment

Genomic tools for detecting  
island origins?

## Mark-recapture

Continue resights for estimating  
adult survival





Albatross Research

UNIVERSITY of OTAGO



Te Whare Wānanga o Ōtāgo

NIWA  
Taihoro Nukurangi



PARKER CONSERVATION  
CONSERVATION, TRANSLOCATIONS, RESTORATION, RESEARCH, MANAGEMENT



Latitude42  
Environmental Consultants Pty Ltd  
ABN 37 108 390 012



British Antarctic Survey  
NATURAL ENVIRONMENT RESEAR



Agreement on the Conservation of Albatrosses and Petrels

