

POP2018-04: flesh-footed shearwater research 2019/20 season



Patrick Crowe



Introduction

- Second year of three-year project
- Long-term population monitoring studies on Lady Alice and Ohinau Islands since 2015/16
- Update population estimates from four breeding sites
- Simultaneously tracking of breeding adults from both islands

Project Objectives

- 1. To estimate the current population size of flesh-footed shearwaters at Motumahanga Island, Taranaki.
- 2. To obtain updated estimates of the population size of flesh-footed shearwaters nesting at the Chicken Islands (Lady Alice, Whatupuke and Coppermine Islands)
- 3. To estimate key demographic parameters of flesh-footed shearwater at Lady Alice Island/Mauimua and Ohinau Island.
- 4. To carry out simultaneous tracking of flesh-footed shearwaters at Lady Alice (Hauraki Gulf) and Ohinau Islands (Bay of Plenty) in one breeding season during the incubation and early chick rearing period.
- 5. To describe the breeding phenology, particularly egg-laying dates at two breeding sites (Lady Alice and Ohinau Islands) to assess if inter-annual and site variation exists.

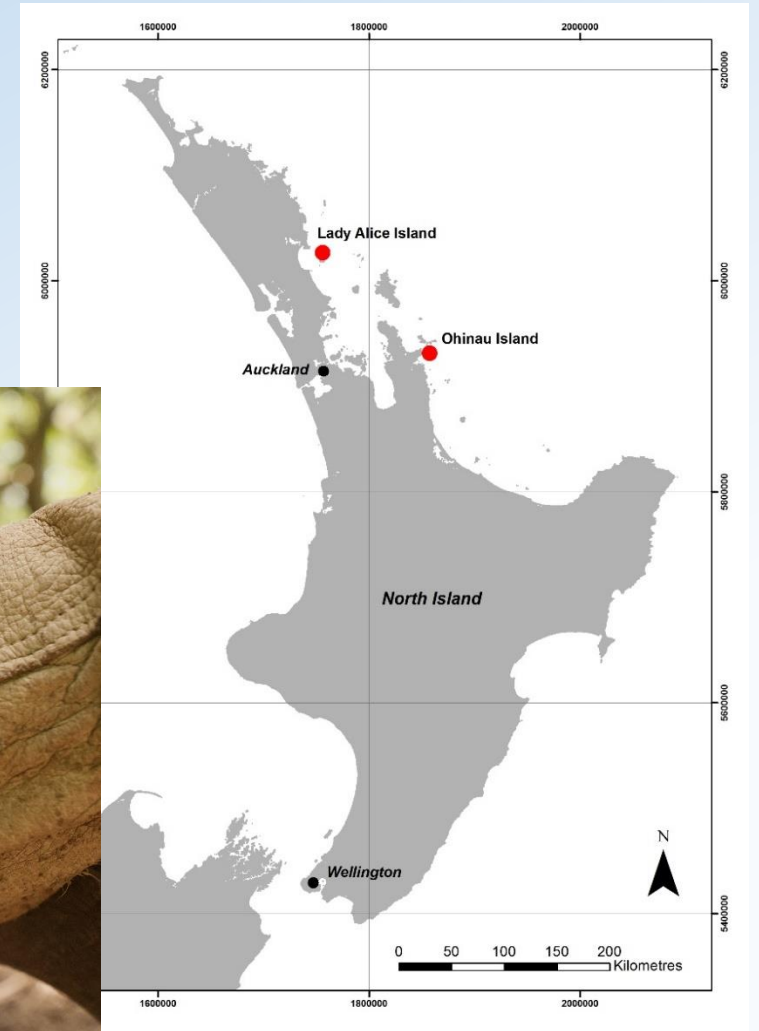


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Demographic Study – Ohinau and Lady Alice



Burrows Monitored

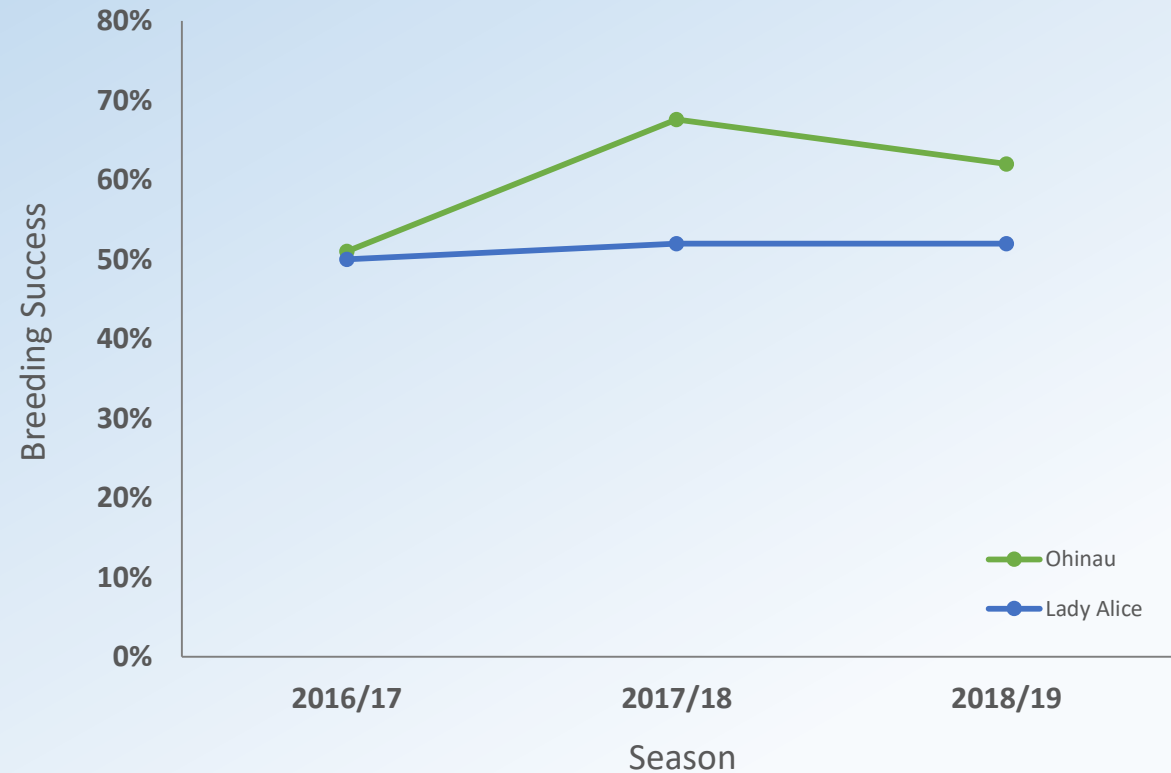
Ohinau Island					
	2015/16	2016/17	2017/18	2018/19	2019/20
Study	186	229	228	247	274
Control	32	36	44	44	34
Total	218	265	272	291	308

Lady Alice Island					
	2015/16	2016/17	2017/18	2018/19	2019/20
Study	0	198	230	264	288
Control	0	30	36	38	34
Total	0	228	266	302	322

- Breeding Burrows
 - Ohinau 216
 - Lady Alice 202
- Breeding birds ID'd
 - Ohinau 94%
 - Lady Alice 89%

Breeding Success

- 2019/20 ?
- Failure rate during incubation similar to previous seasons



Banded birds

Ohinau	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Adult	90	528	182	210	470	1480
Chick	267	133	131	453	0	984
Total	357	661	313	663	470	2464
Lady Alice	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Adult	0	285	163	102	118	668
Chick	0	94	83	103	0	280
Total	0	379	246	205	118	948
					Total banded during this study	3412



Recaptured Birds

- 75–80% annual breeders
- 24 individuals breeding on Lady Alice
25+ years old
- 5 individuals banded as chicks in
2015/16 recaptured on Ohinau
 - Age at first return = 4 y/o



Summary



- Solid base established for continuing long-term monitoring
- Further monitoring to determine long-term breeding success and target recaptures for adult survival, recruitment, age at first return/breeding



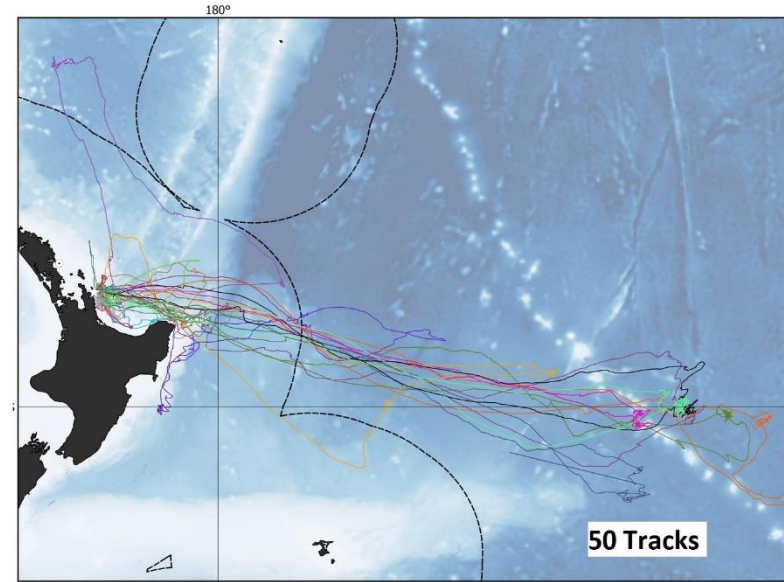
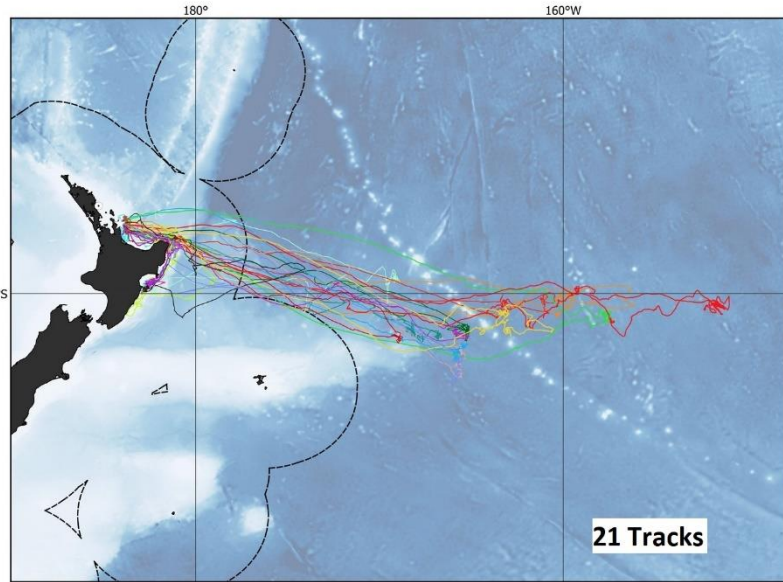
GPS Tracking



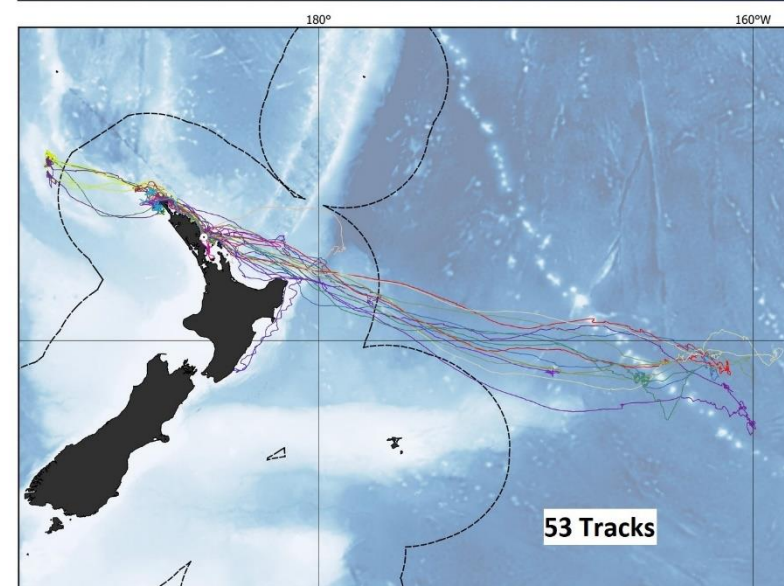
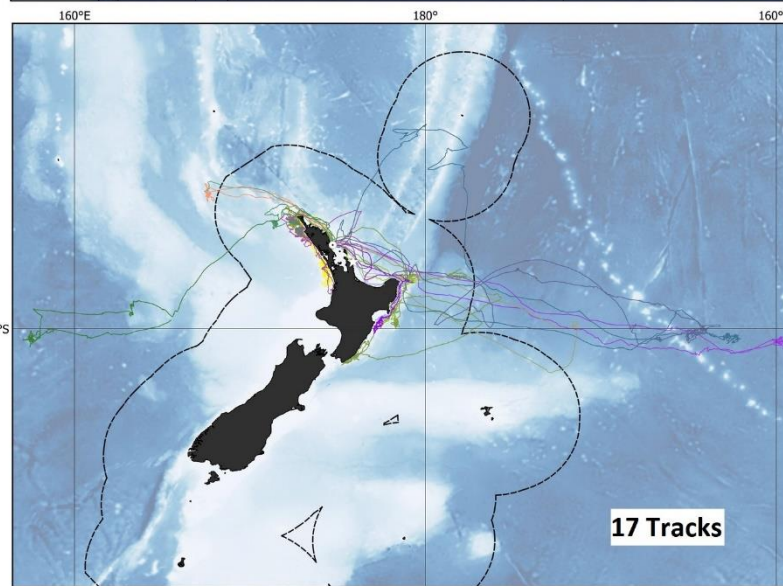
Incubation

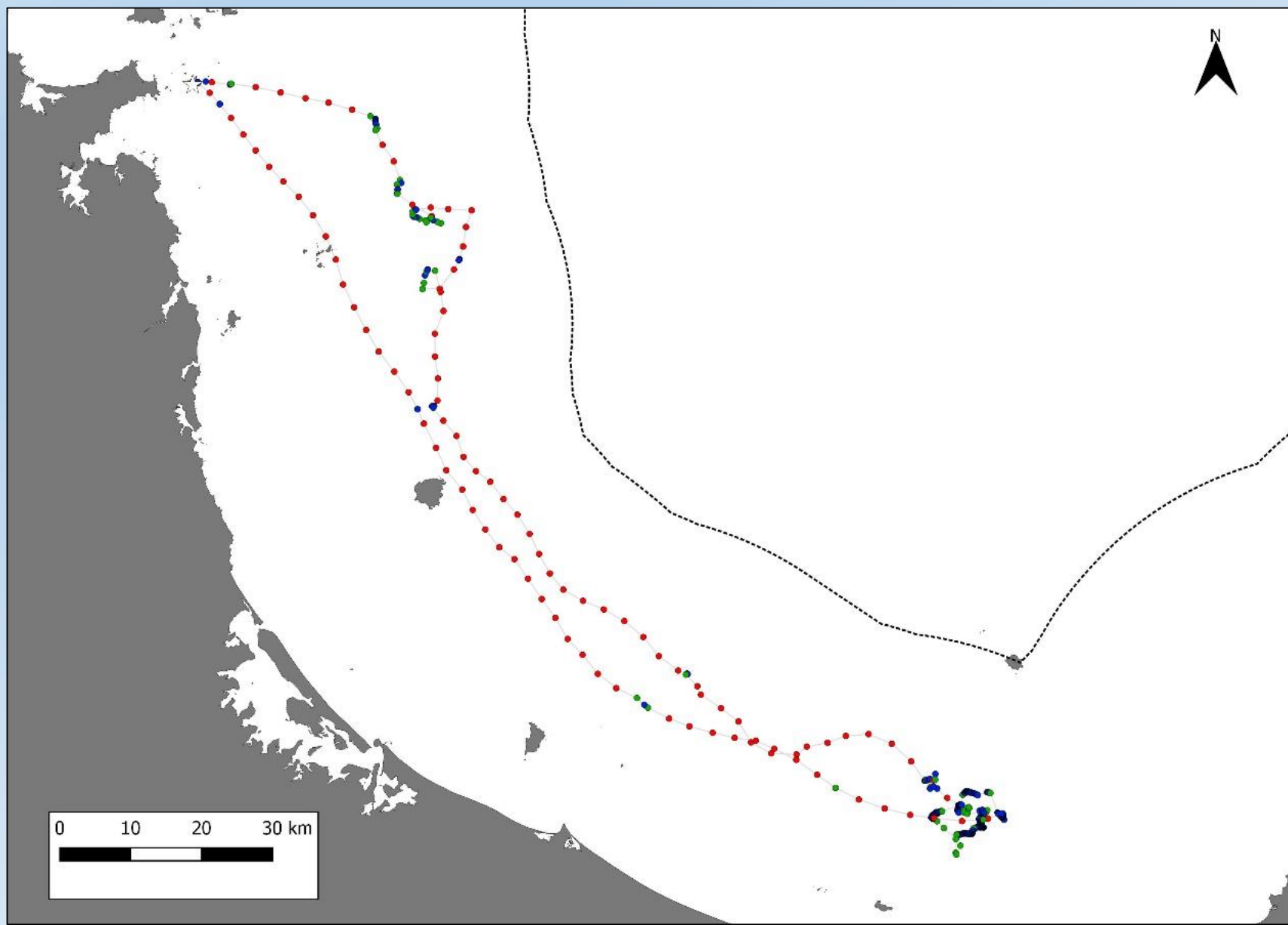
Chick-rearing

Ohinau Island



Lady Alice Island

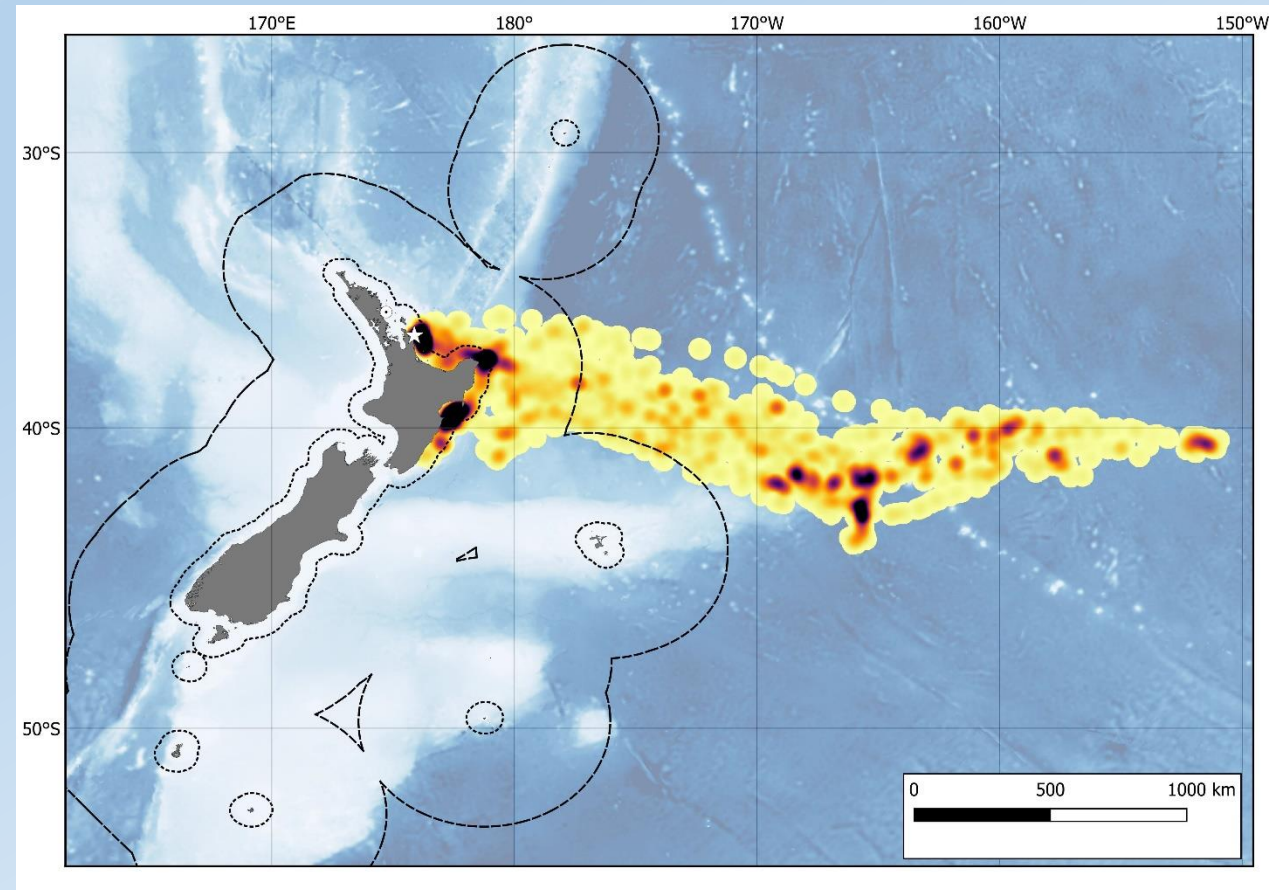




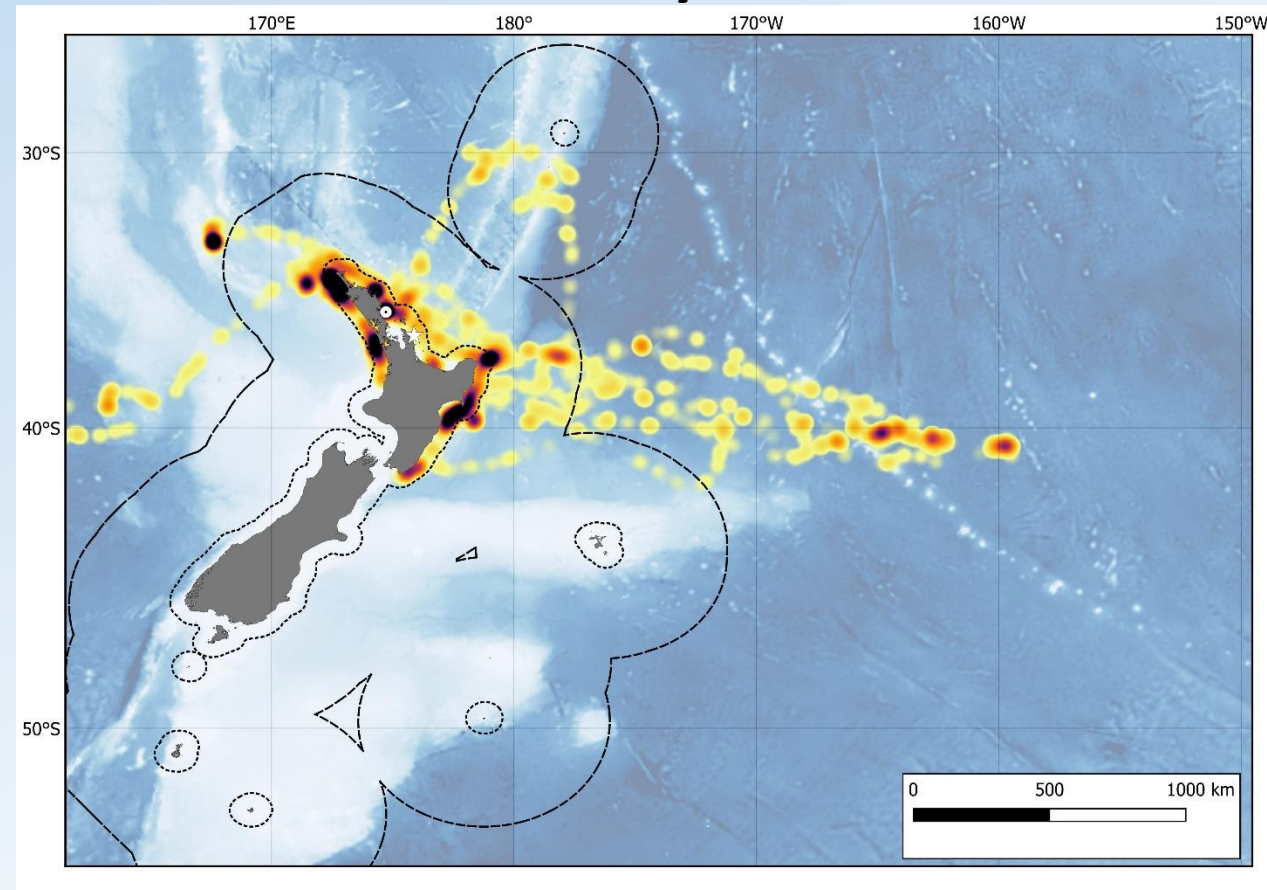
- Flight
- Forage
- Rest/raft

Results - Incubation

Ohinau

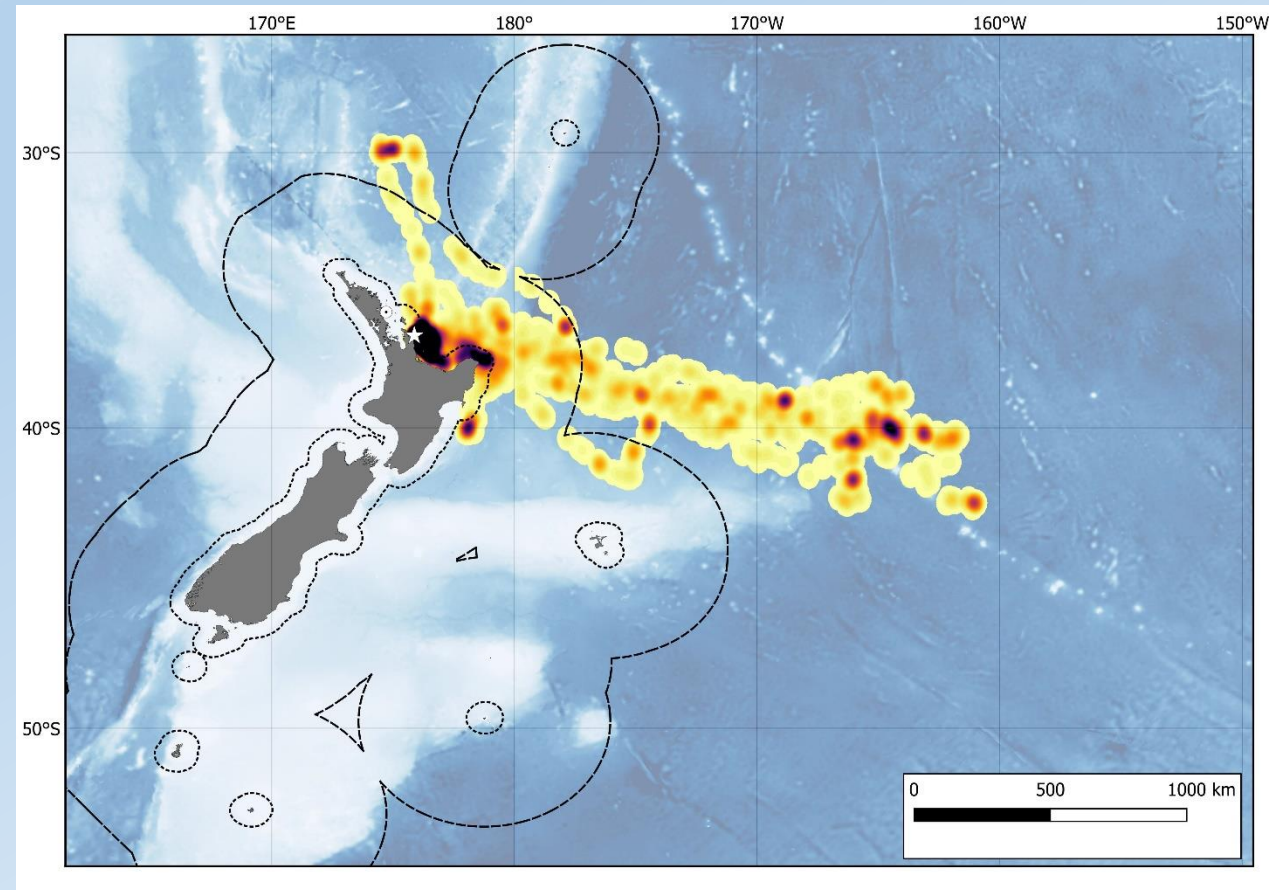


Lady Alice

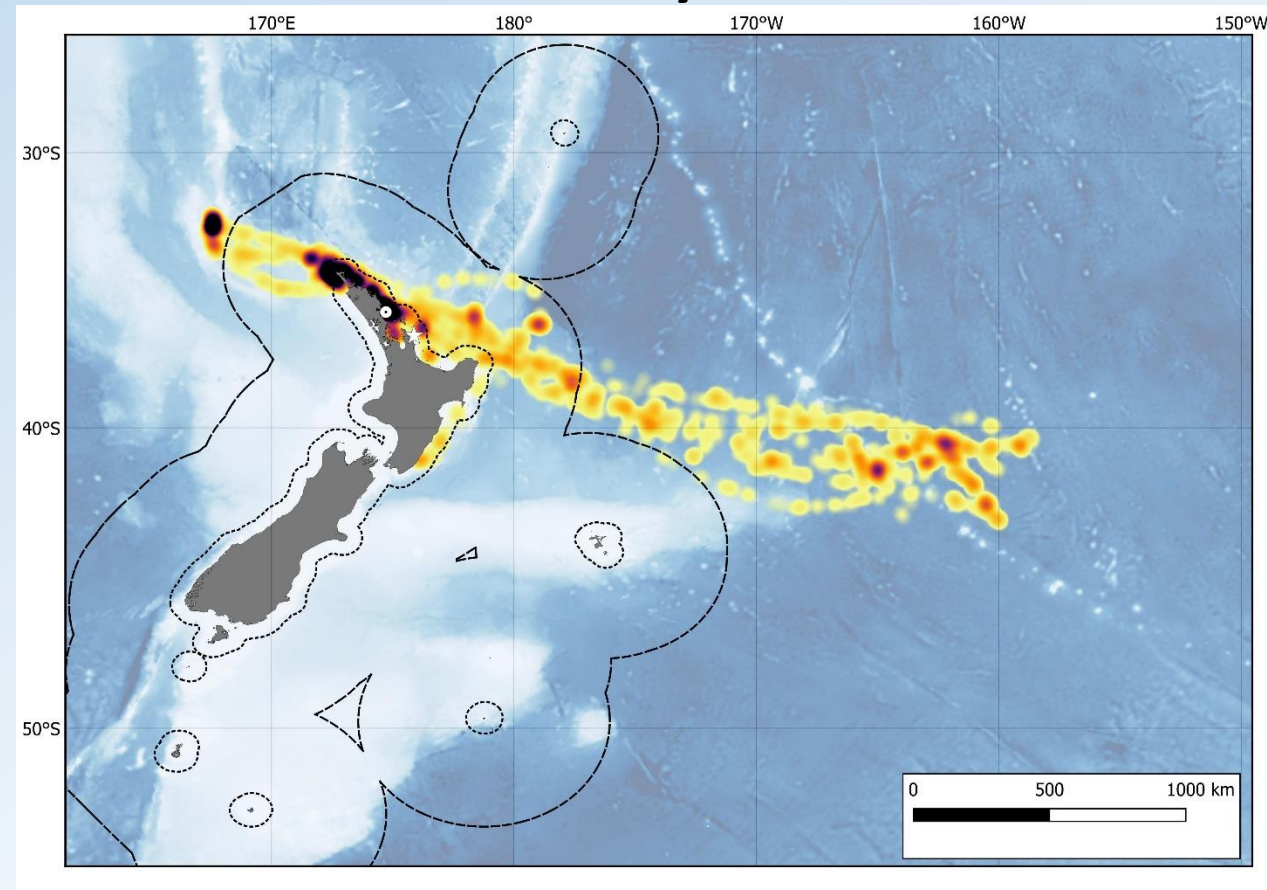


Results - Chick-rearing

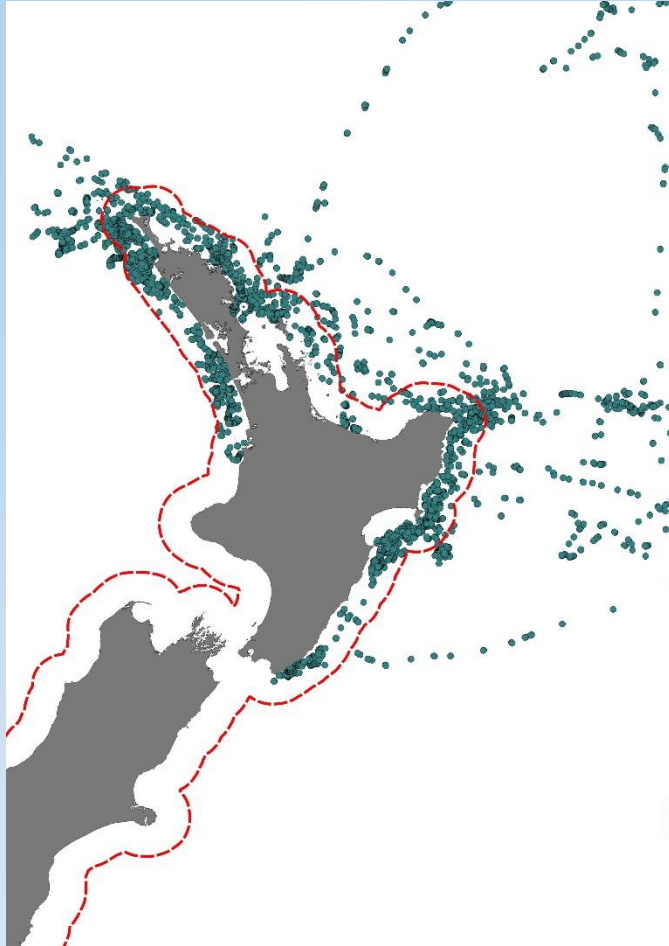
Ohinau



Lady Alice



Inshore versus pelagic

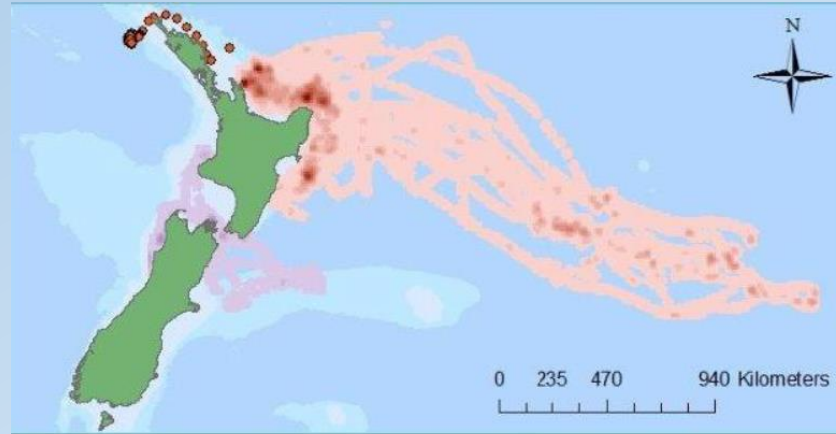


		Inshore ($< 50\text{km}$)	Pelagic ($> 50\text{km}$)
Ohinau	Incubation	37%	63%
	Chick-rearing	33%	67%
Lady Alice	Incubation	54%	46%
	Chick-rearing	40%	60%

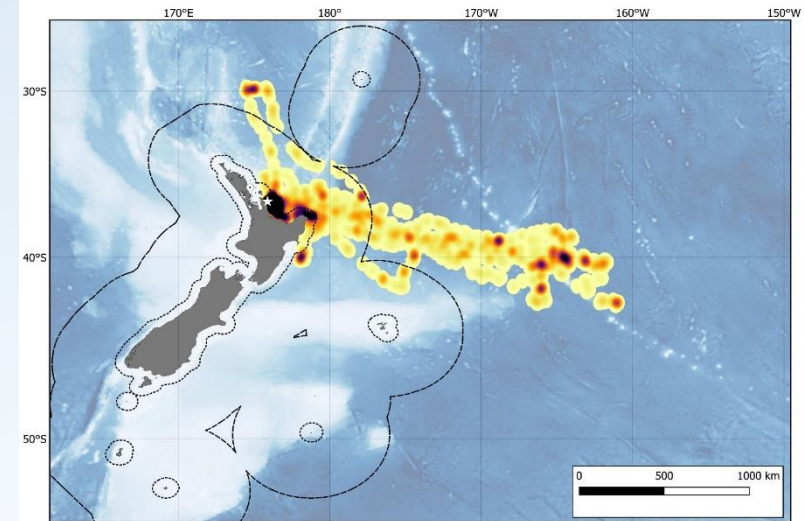
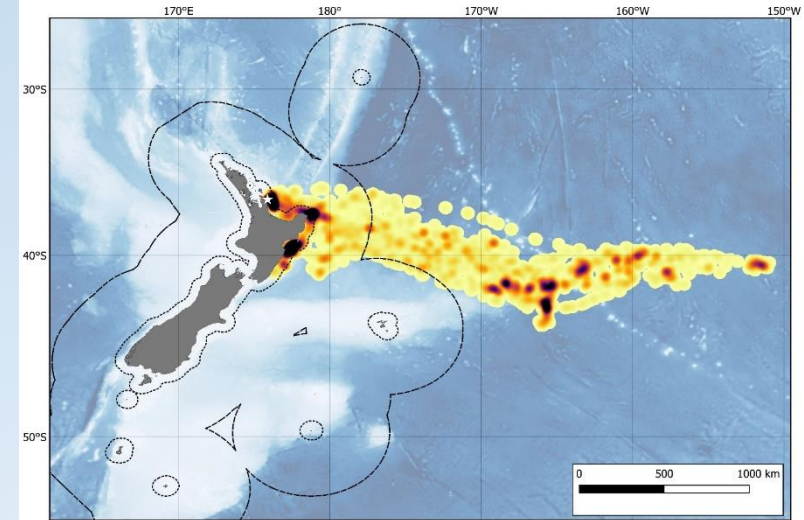
Comparison to previous tracking

2020

2014

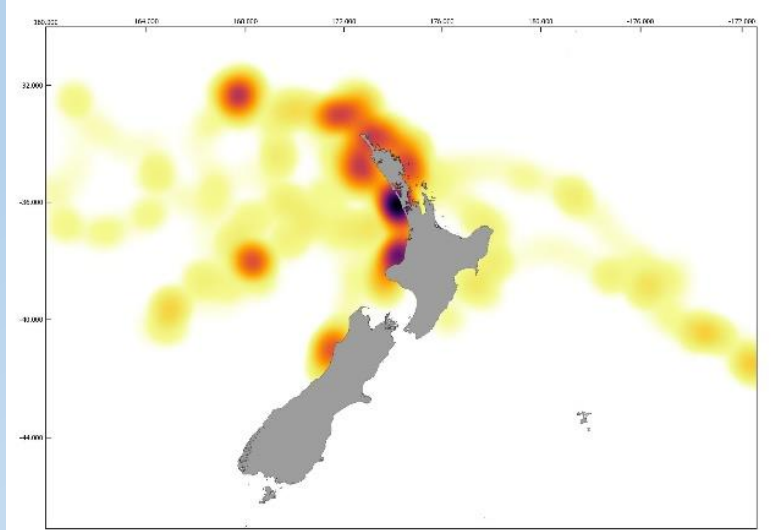


Waugh et al. 2014

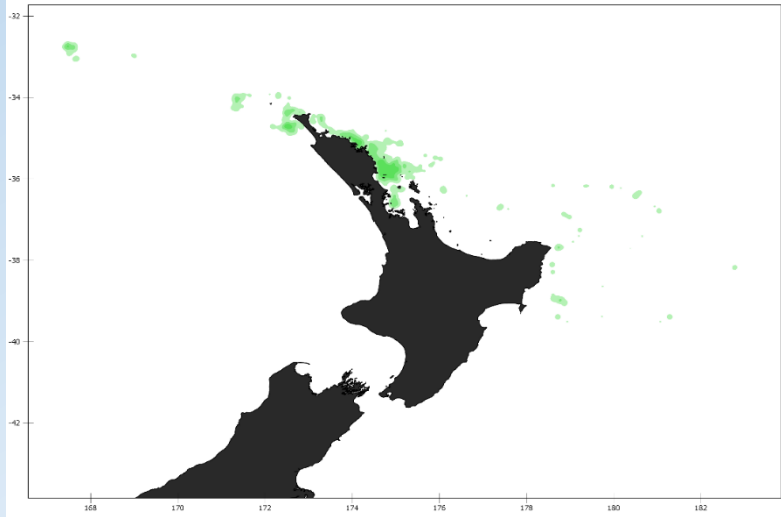


Comparison to previous tracking

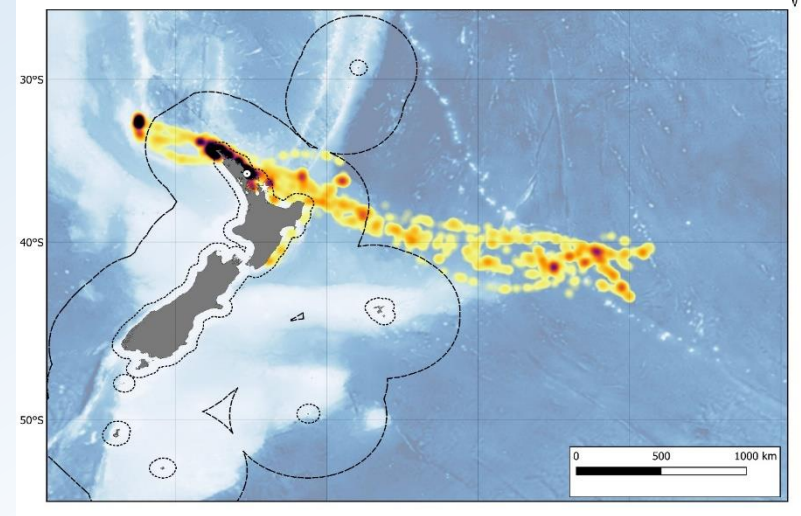
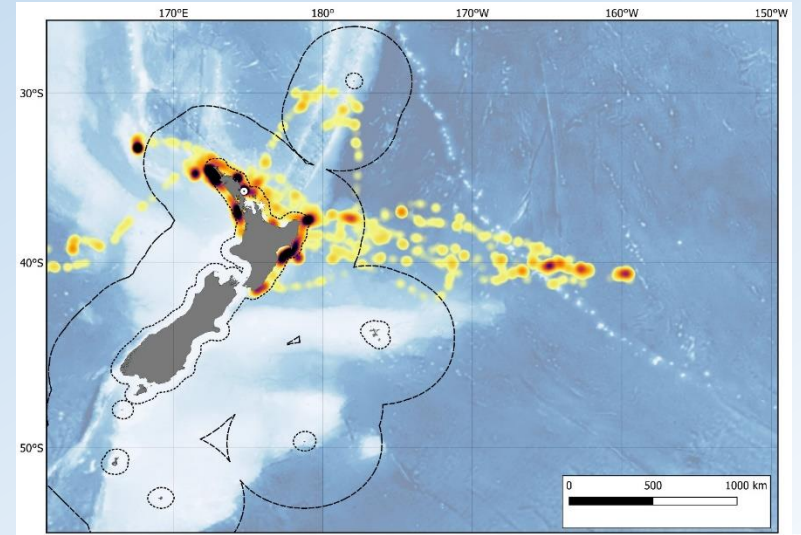
2018



2017



2020



Summary

- Now have a large a tracking dataset for FFSW
 - Birds exploit many of the same areas throughout the same season
 - Some annual variation of birds from Lady Alice
 - Ohinau birds very little variation between years
- Significant overlap in at-sea distribution between colonies



Next season...

- Continue demographic study on Ohinau and Lady Alice
 - Determine egg laying dates
 - Arrive on islands prior to egg-laying (late Nov)
- Population estimates
Whatupuke and Coppermine Islands



Acknowledgements

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