Antipodean albatrosses and white-chinned petrels 2024

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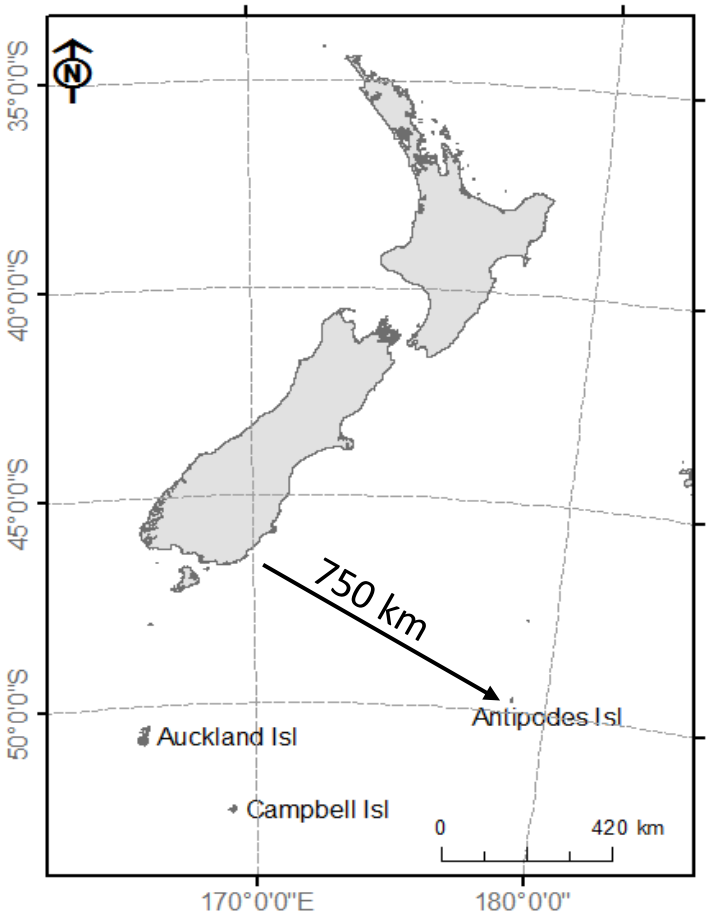
CSP project POP2022-10 Antipodes Island seabird research


35°0'0"S
40°0'0"S
45°0'0"S
50°0'0"S
750 km
Antipodes Isl
Auckland Isl
Campbell Isl
0
420 km
170°0'0"E
180°0'0"


E Whitehead

Objectives

Antipodean wanderers

1. Assess **population trends** (demographic parameters and population size)

2. **Whole-island count** of nesting pairs

Also – diet sampling, standard measures for taxonomy

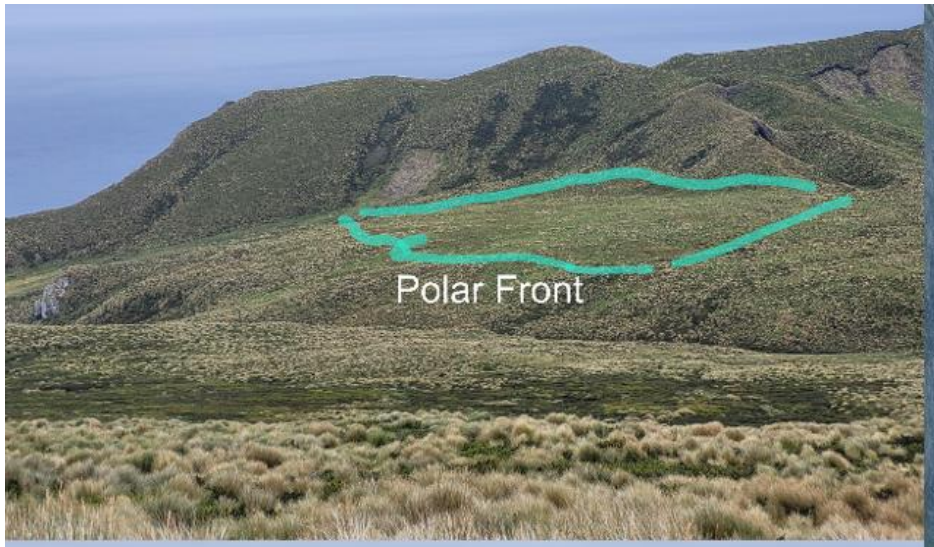
White-chinned petrels

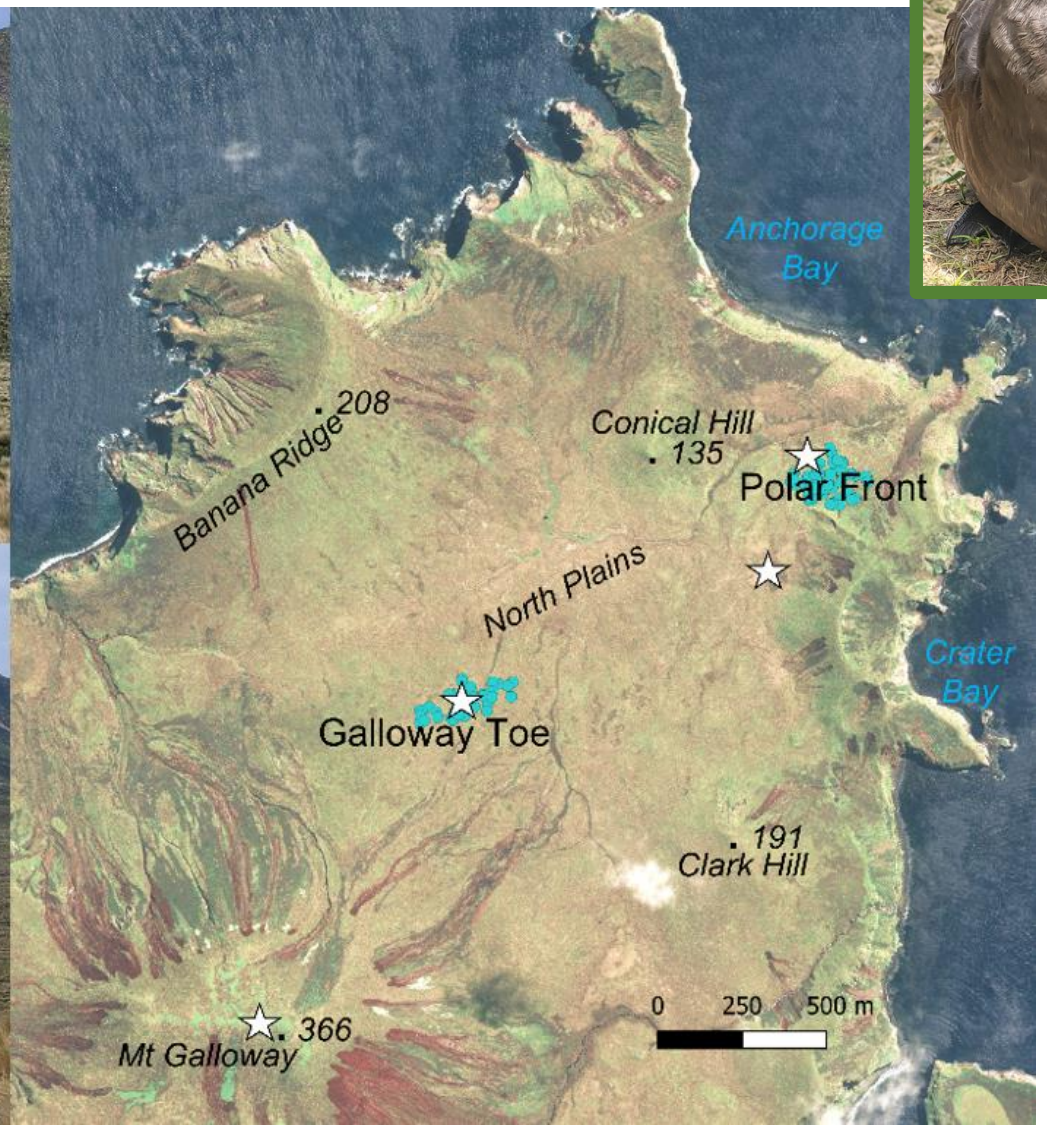
1. **Mark-recapture** study

Also – HPAI sampling

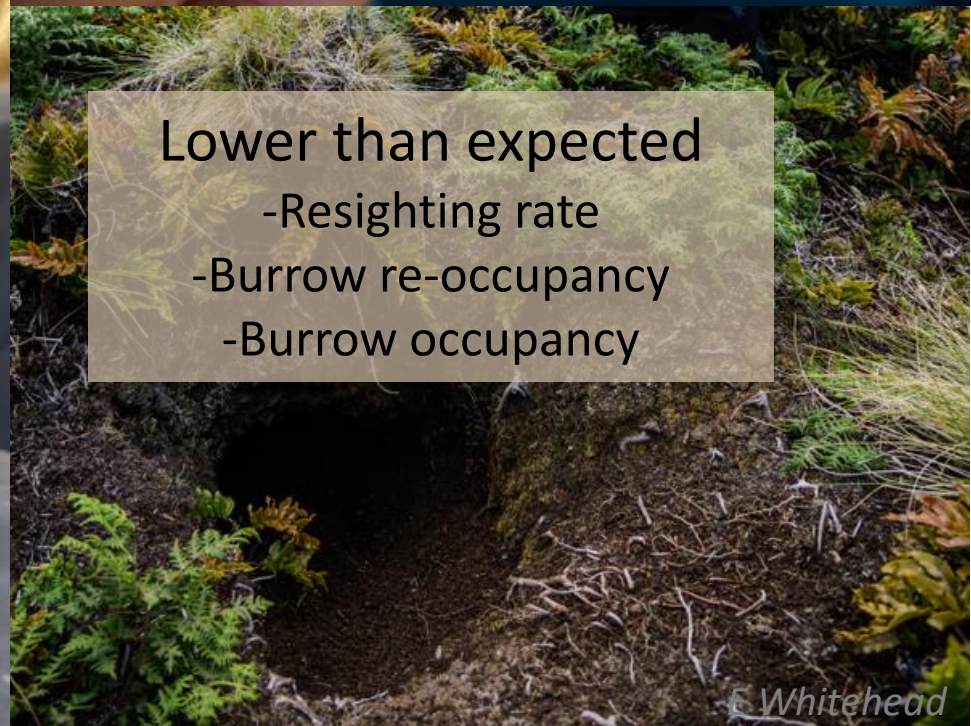
Timeline: 7 weeks from 19 Dec
4 ½ weeks from 31 Jan

Growing mark-recapture study

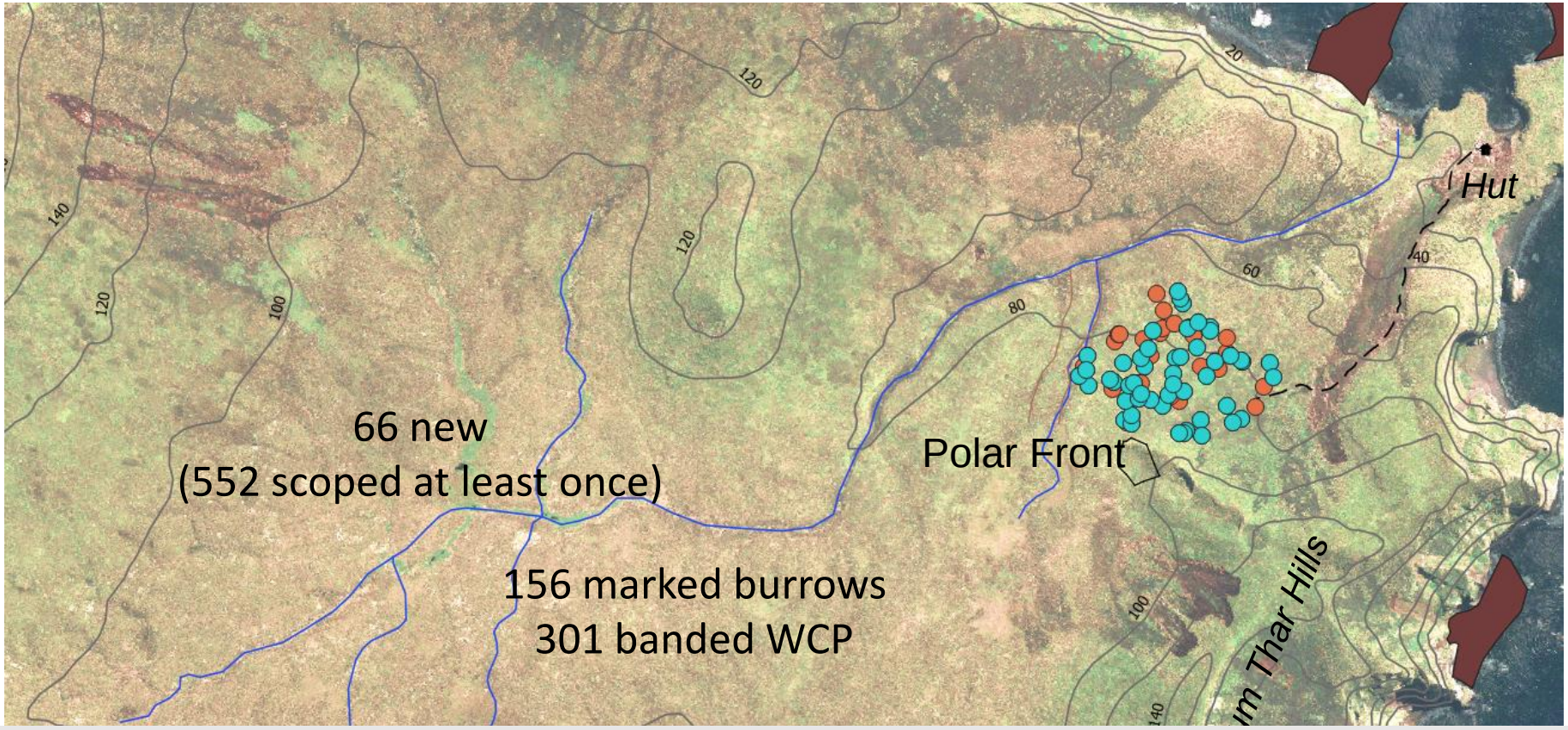




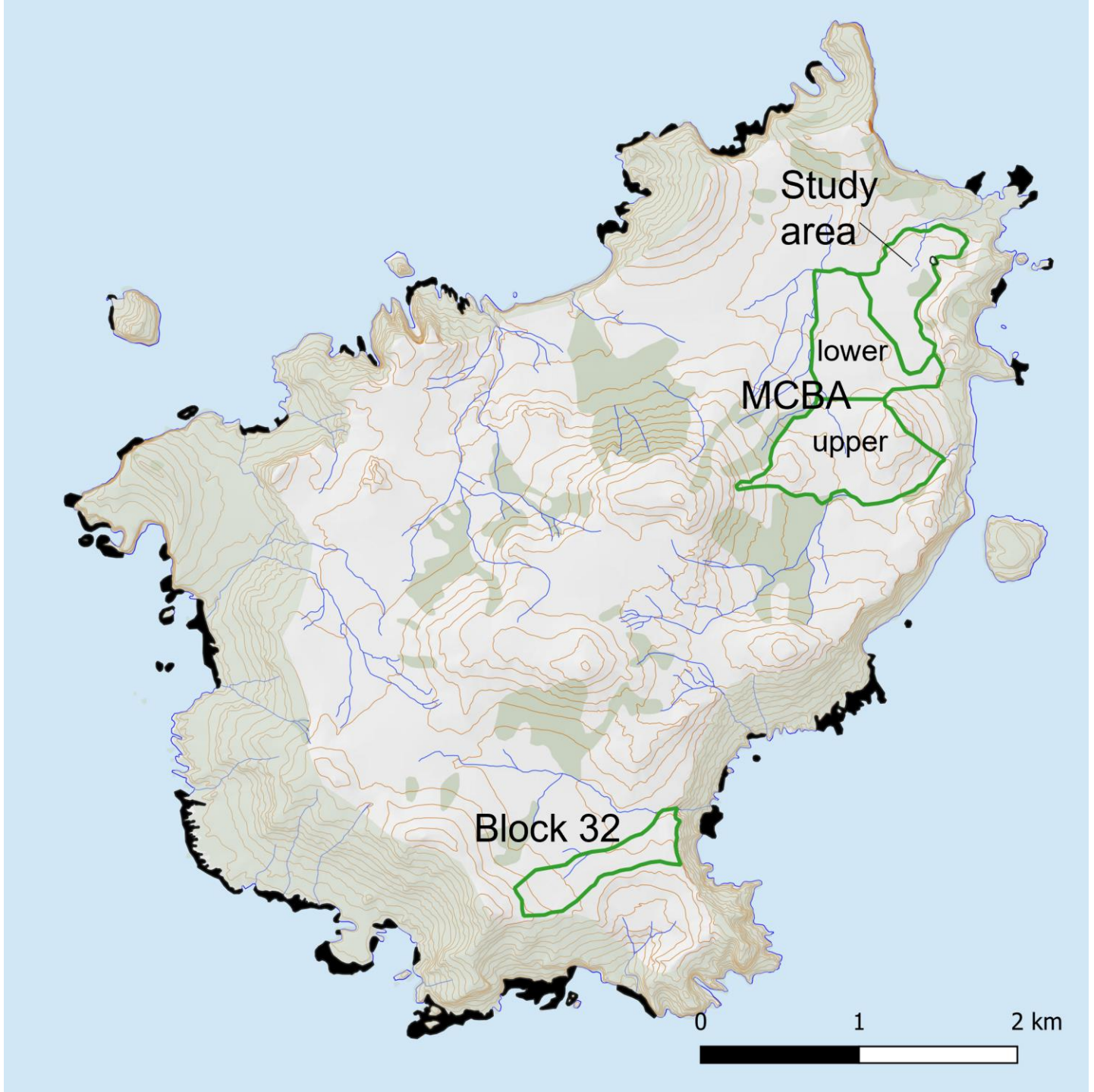

E Whitehead


Lower than expected
-Resighting rate
-Burrow re-occupancy
-Burrow occupancy
E Whitehead

Growing mark-recapture study



Next: recaptures of banded birds for 3+ years
More marked burrows, to 400 birds


Study
area
lower
MCBA
upper
Block 32
0
1
2 km

Productivity

E Whitehead

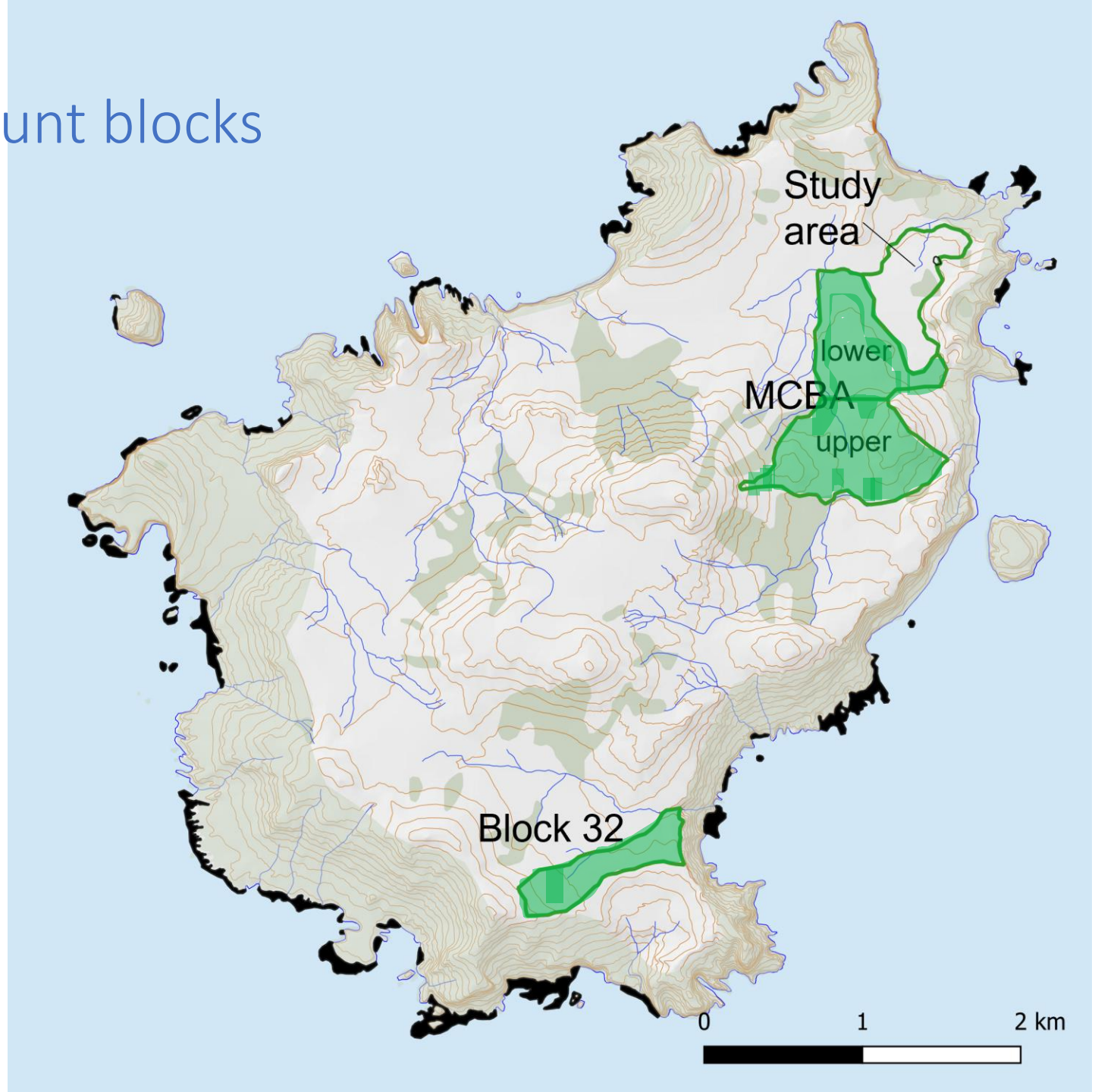
E Whitehead

Mark-recapture

Survival
Productivity
Recruitment

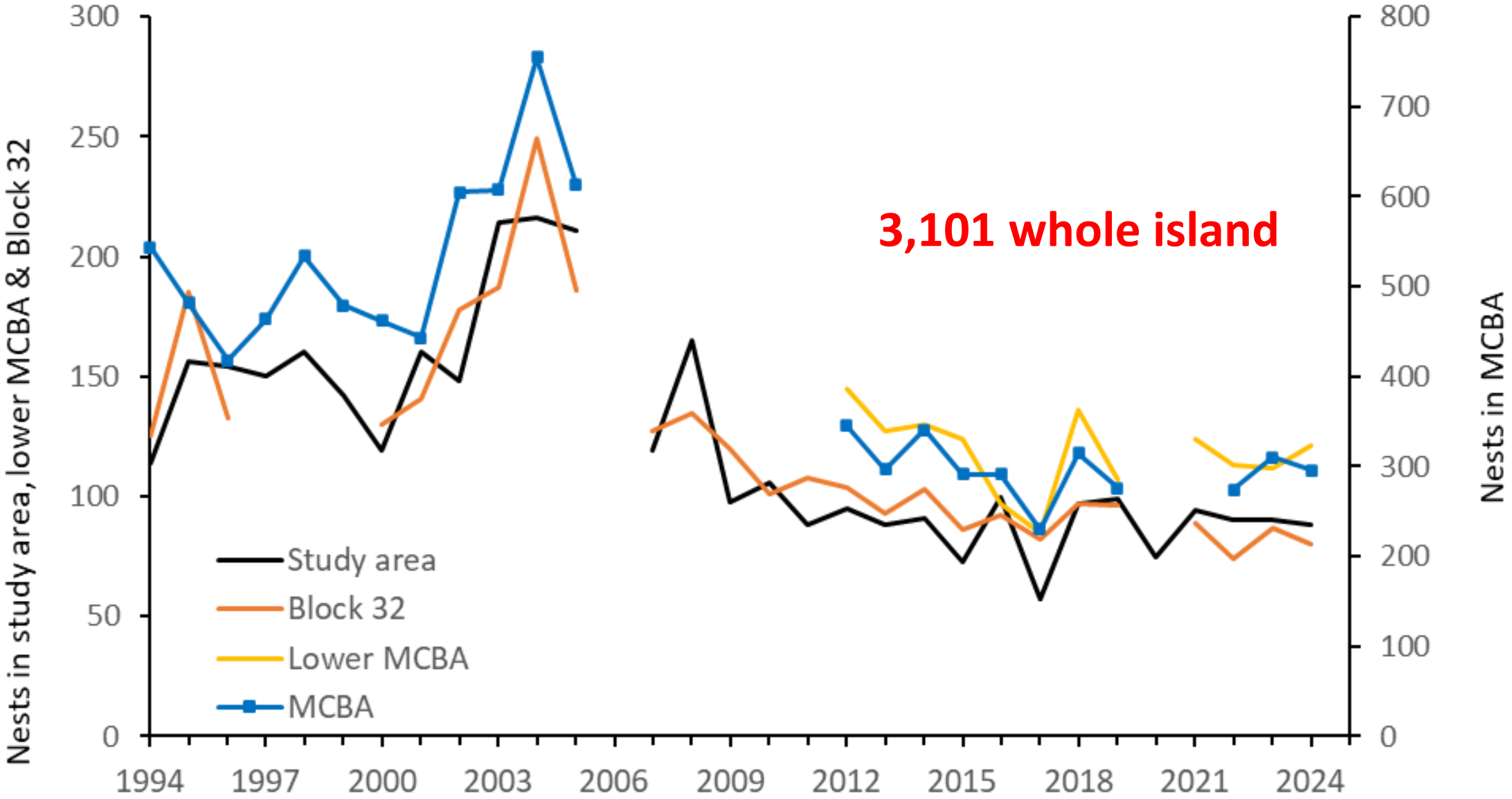
Model population health

Annual count blocks

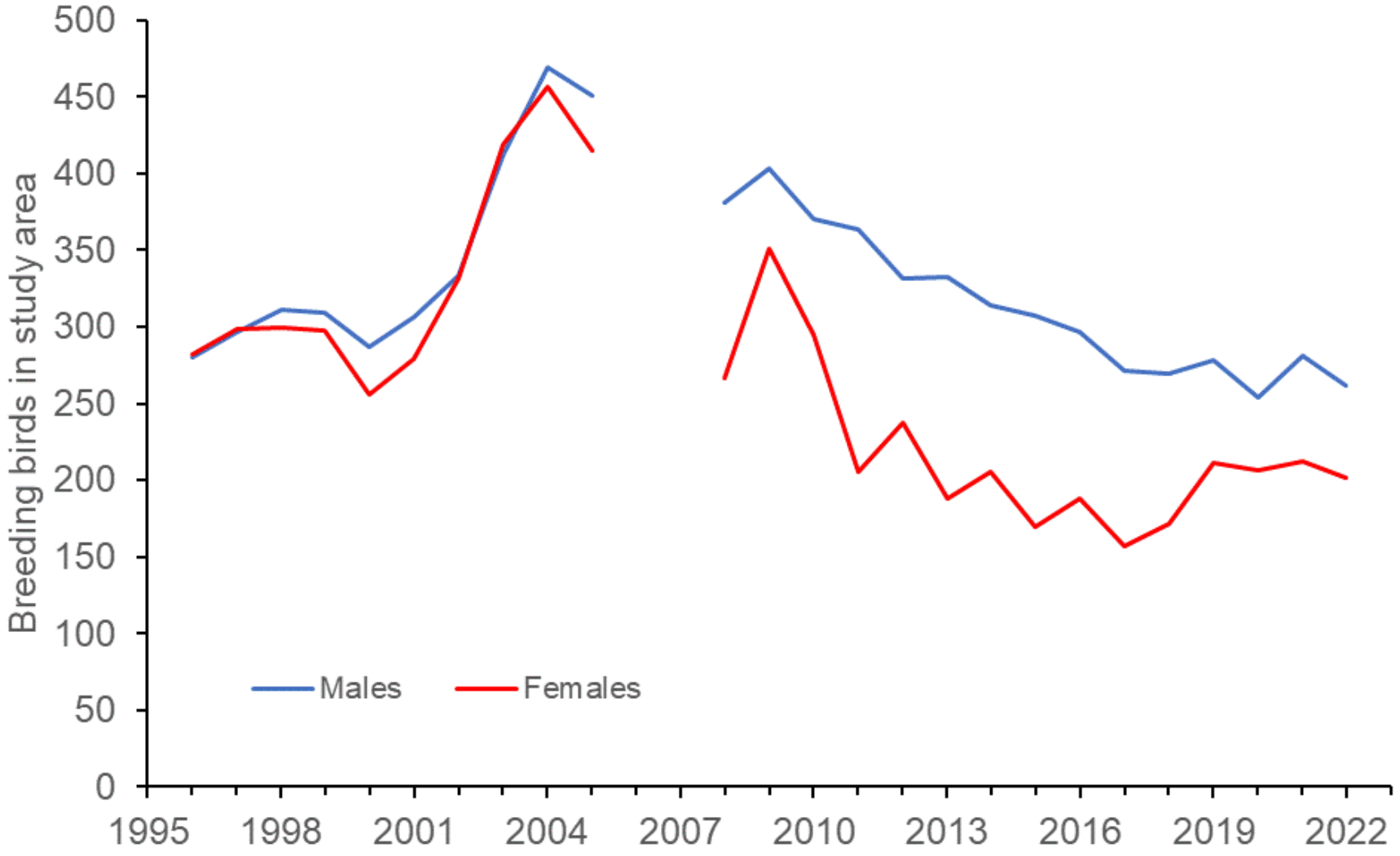


Study area nest numbers

Nest number in other areas

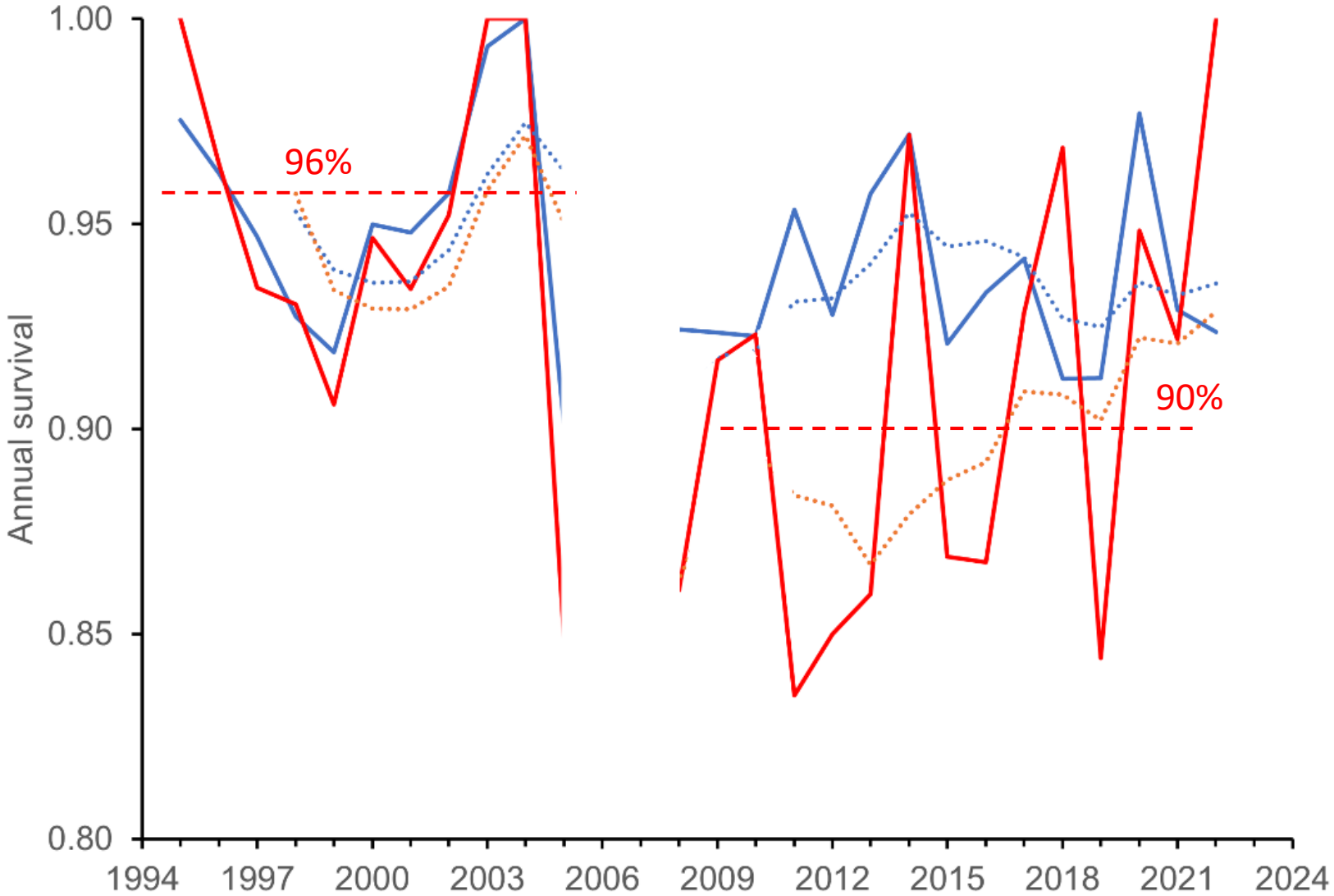


Mark-recapture: study area numbers

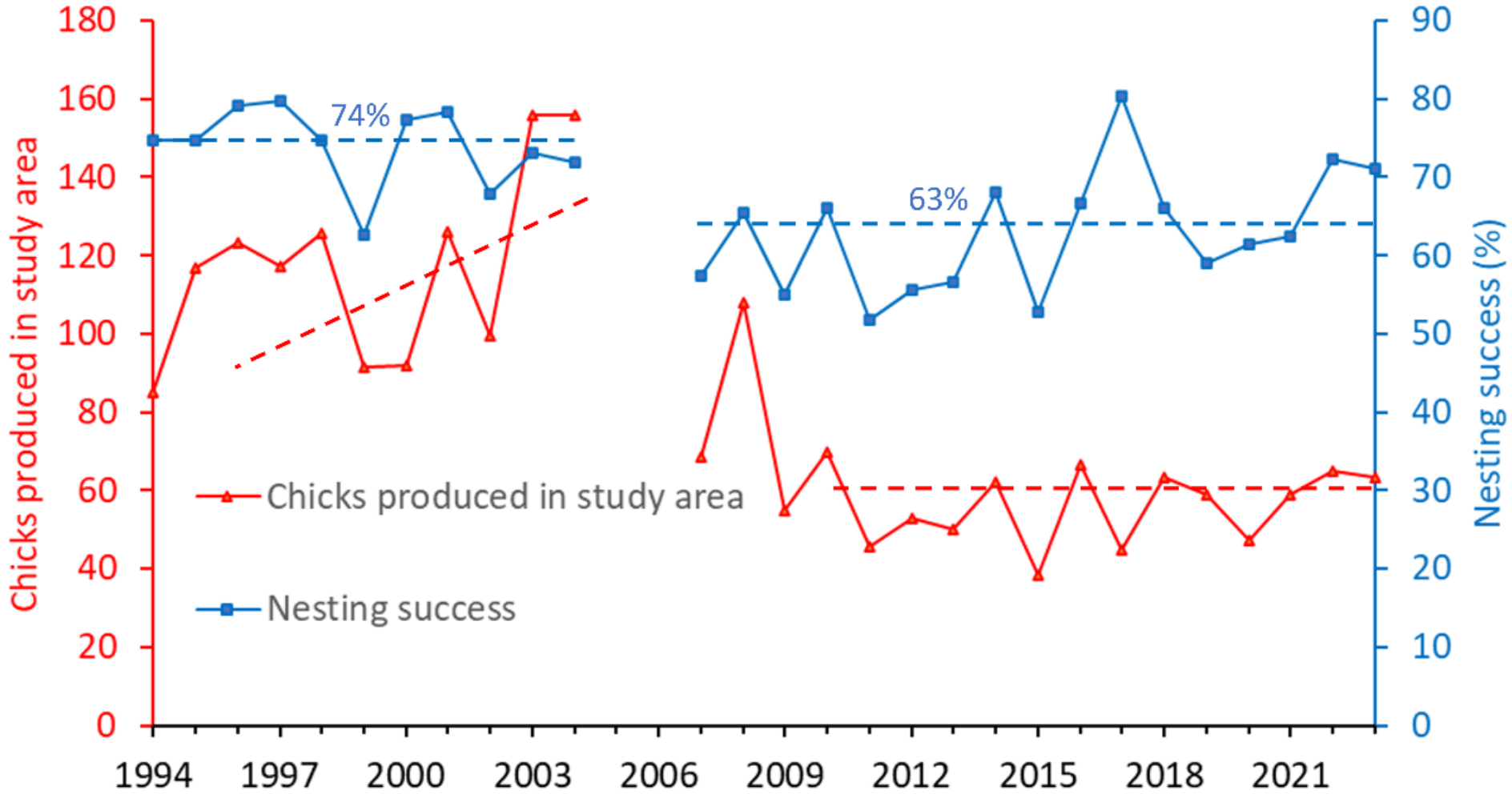


Mark-recapture: adult survival

Mark-recapture: adult survival



Study area: productivity



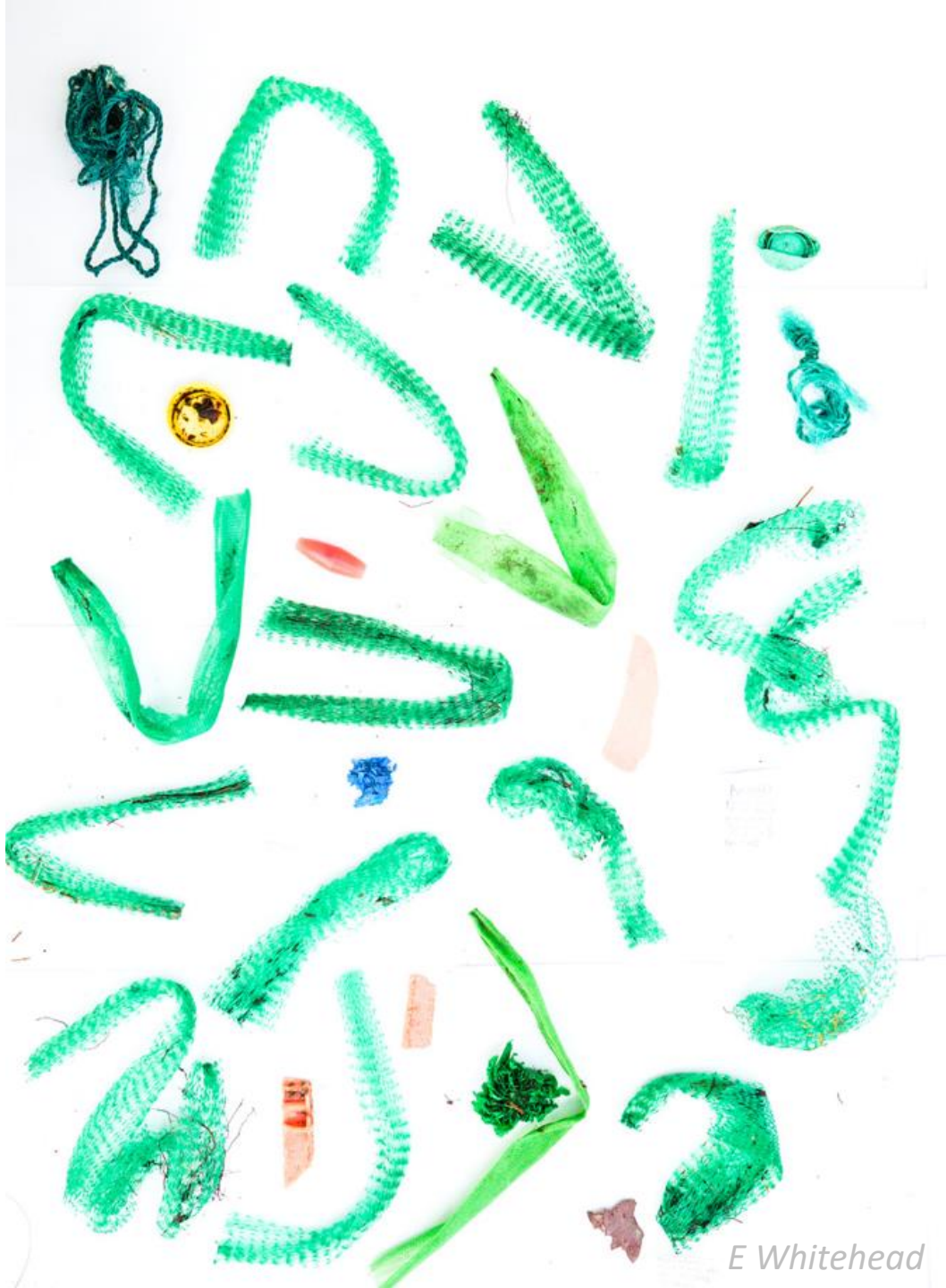
Long-term study, to date

- Rate of decline has slowed
- No improvement in breeding success –
  the same new low – 63%
- Pairs breeding across our 3 count blocks –
  stable around the new low – ~ ½ of 2000-05 average

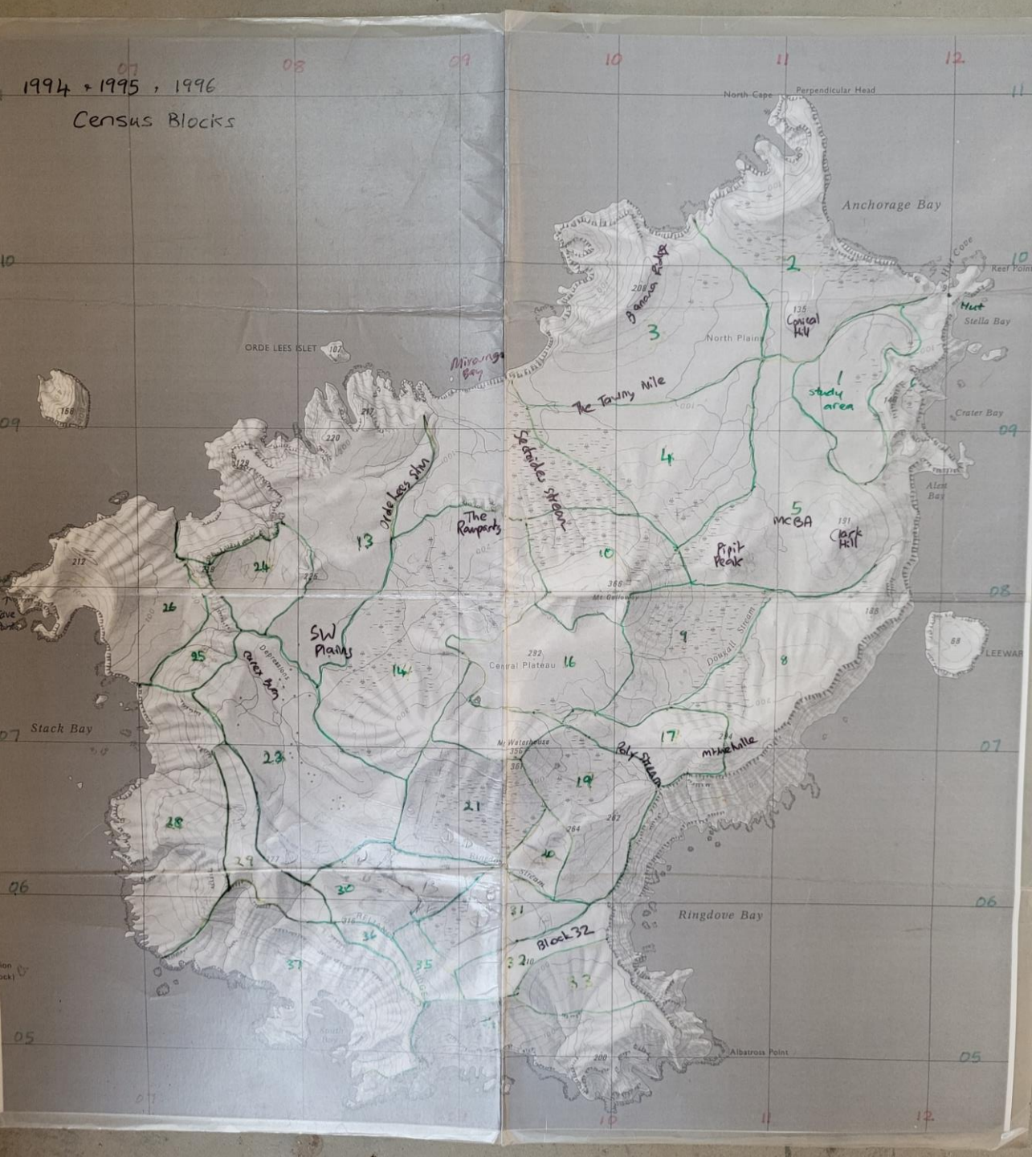
Nutritional stress over time
Feathers
Poo
Squid boluses

Standard measures
for taxonomy

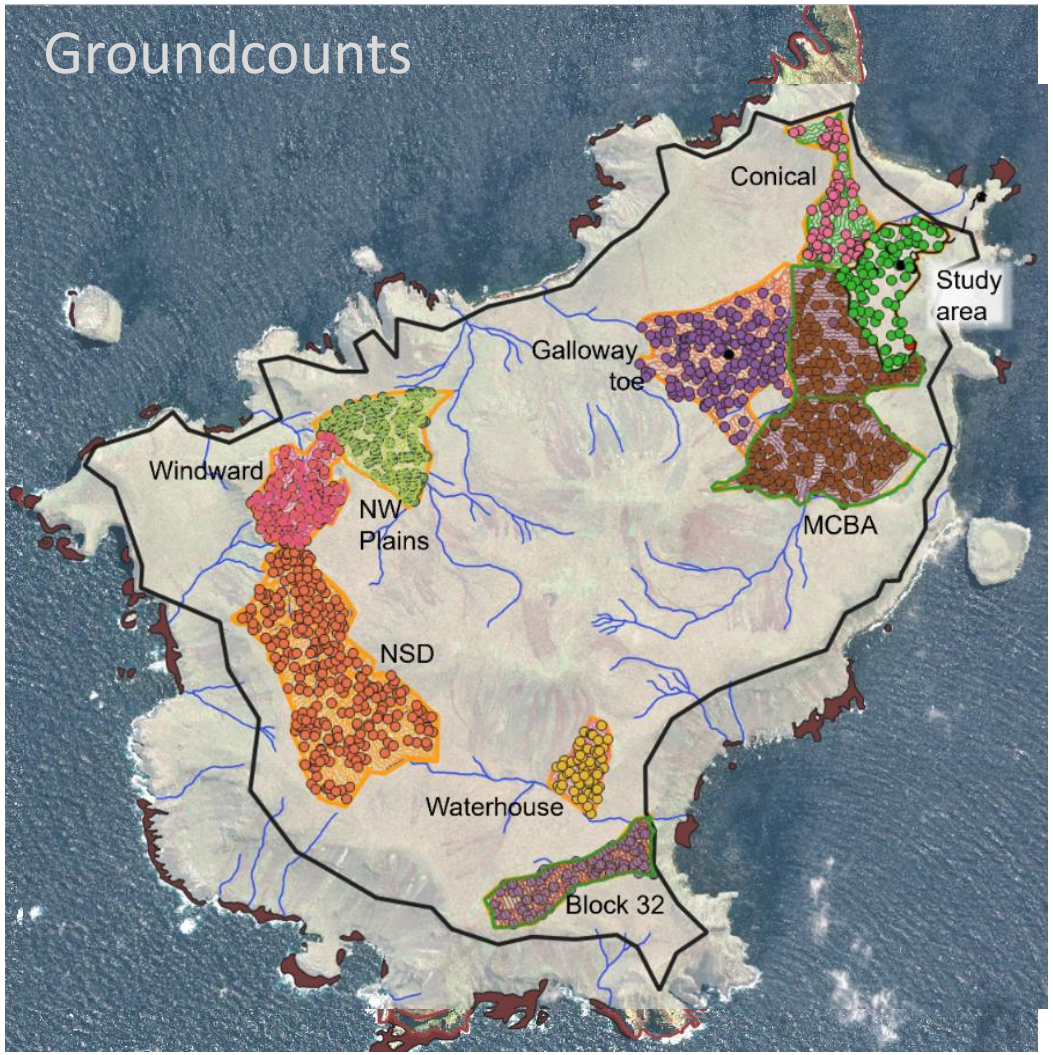
HPAI screening

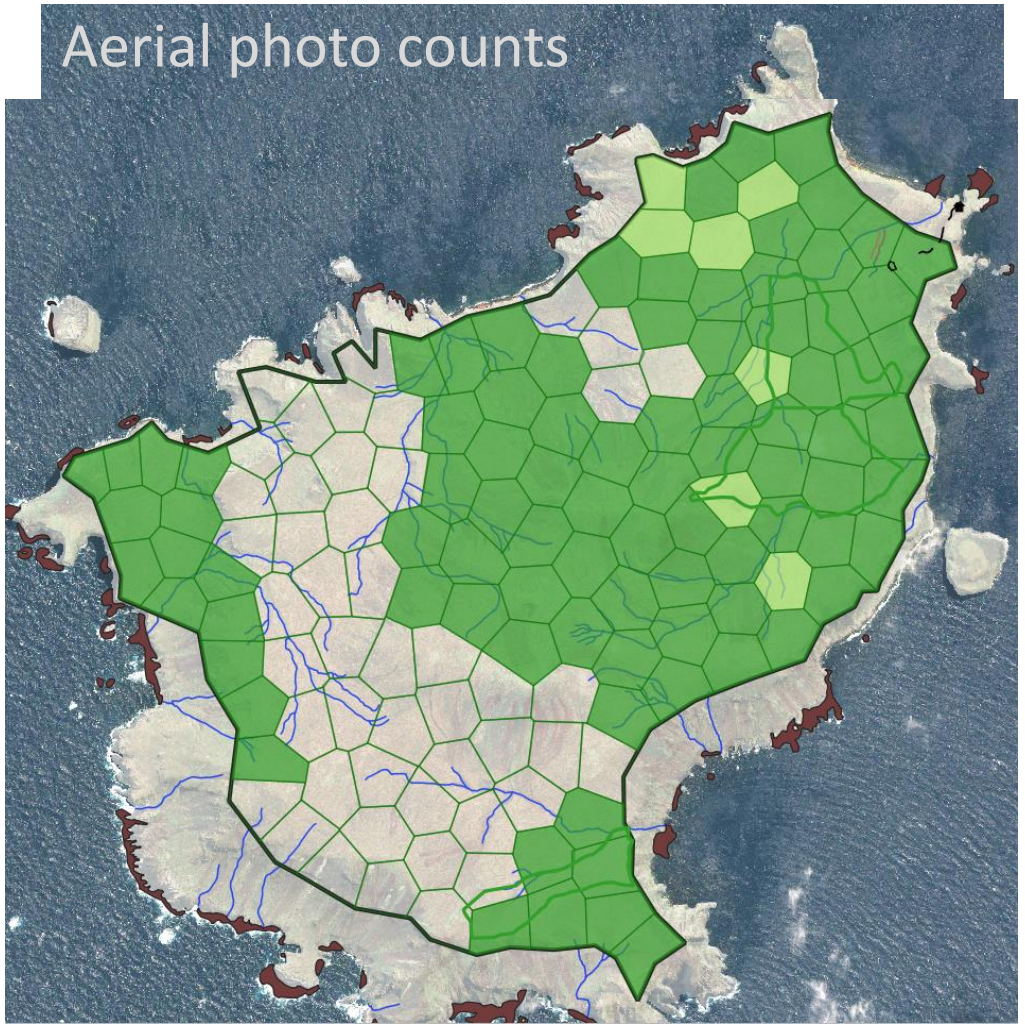


Whole-island count



Whole-island count






TALK
BIRDY
TO ME

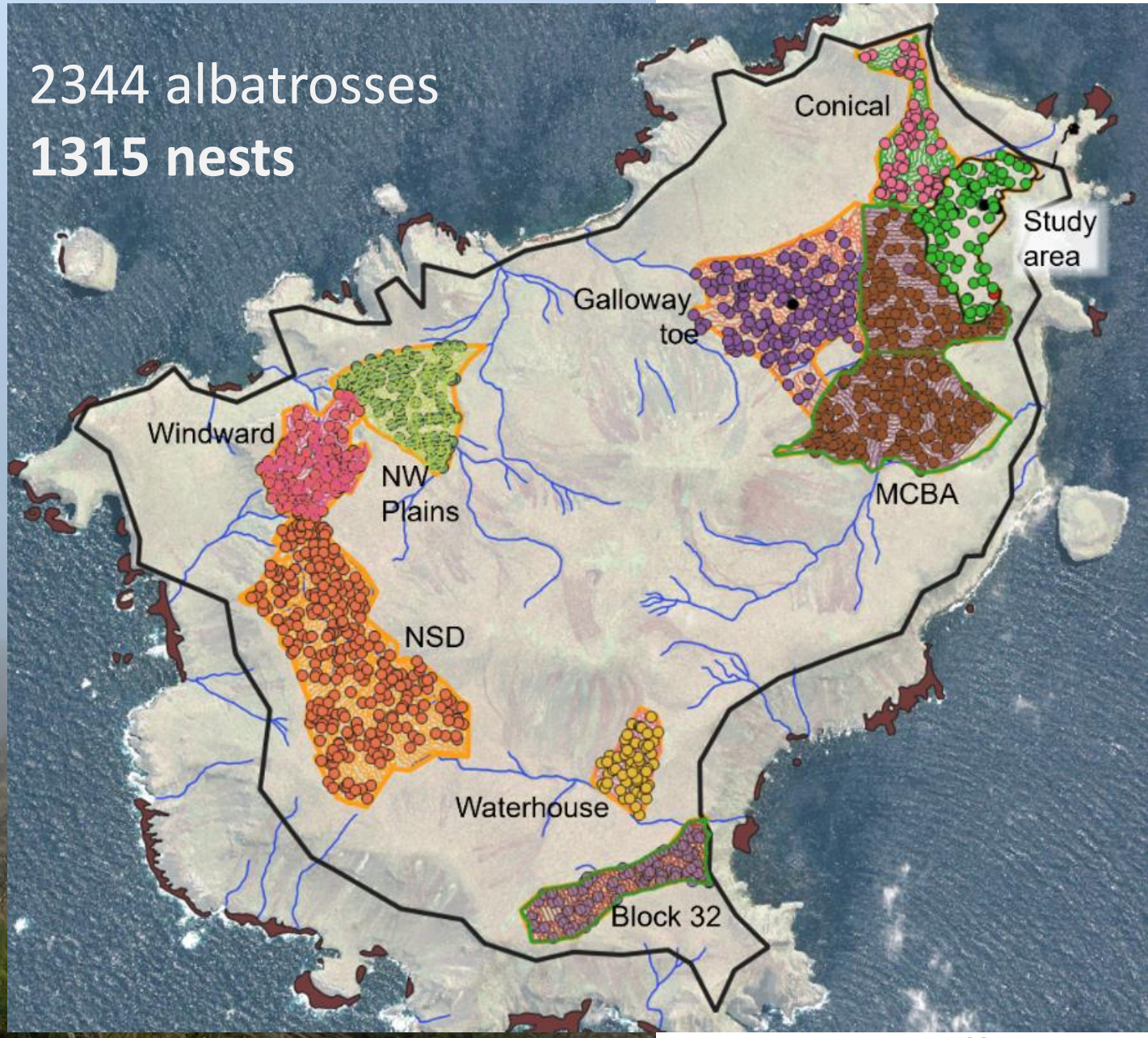
Groundcount

E Patterson

I Welch

E Whitehead

Groundcounts

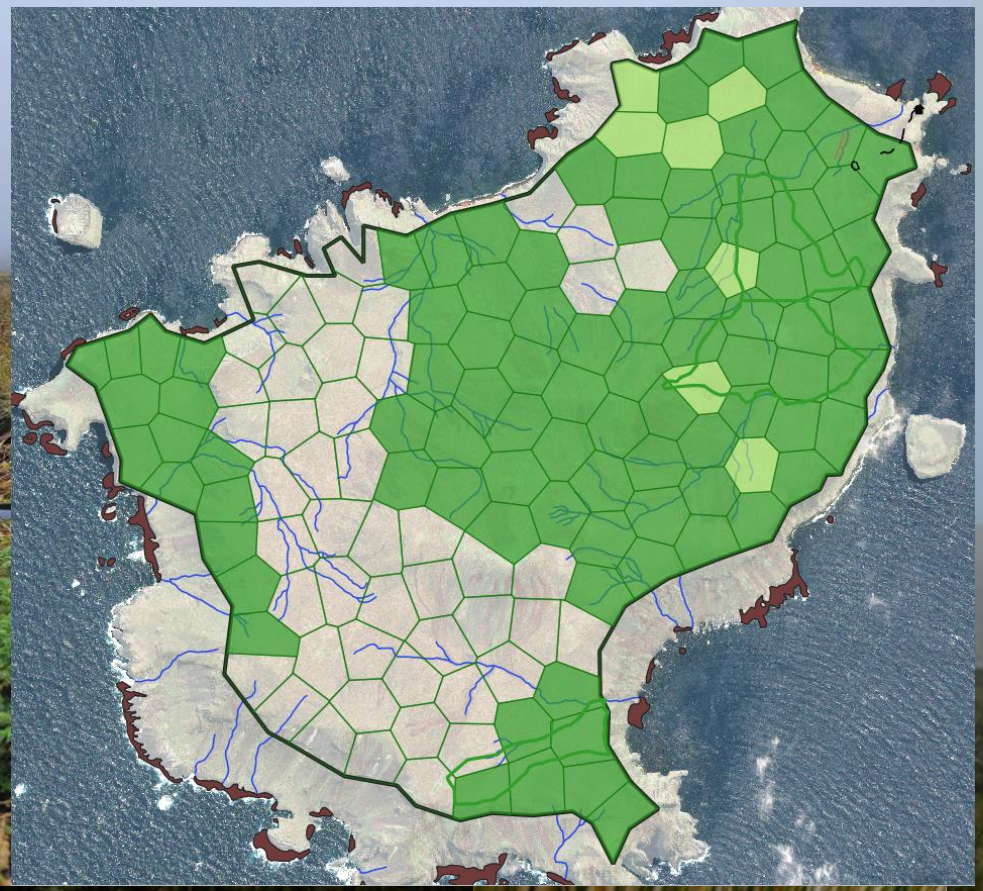


E Whitehead

Groundcounts

Area	Area (ha)	**N nests**	Total adults counted	Date range	Failure rate to date	2024 nesting pairs
MCBA	92.3	**296**	594	2-5 Feb	1.08-1.12	**324**
Block32	24.6	**80**	205	9-Feb	1.06	**84**
Conical Hill	25.7	**69**	169	7-8 Feb	1.06-1.07	**73**
Galloway Toe	54.4	**169**	324	11-16 Feb	1.05	**177**
Waterhouse	12.3	**59**	86	15-Feb	1.05	**62**
SW Plains	58.1	**114**	184	18-Feb	1.05	**119**
NSD	92.5	**312**	612	21-28 Feb	1.05	**326**
Windward	29.7	**128**	170	27-Feb	1.05	**134**
Study Area	30.2	**88**		throughout		**88**
TOTAL		**1315**	2344			**1388**

Drone in practise

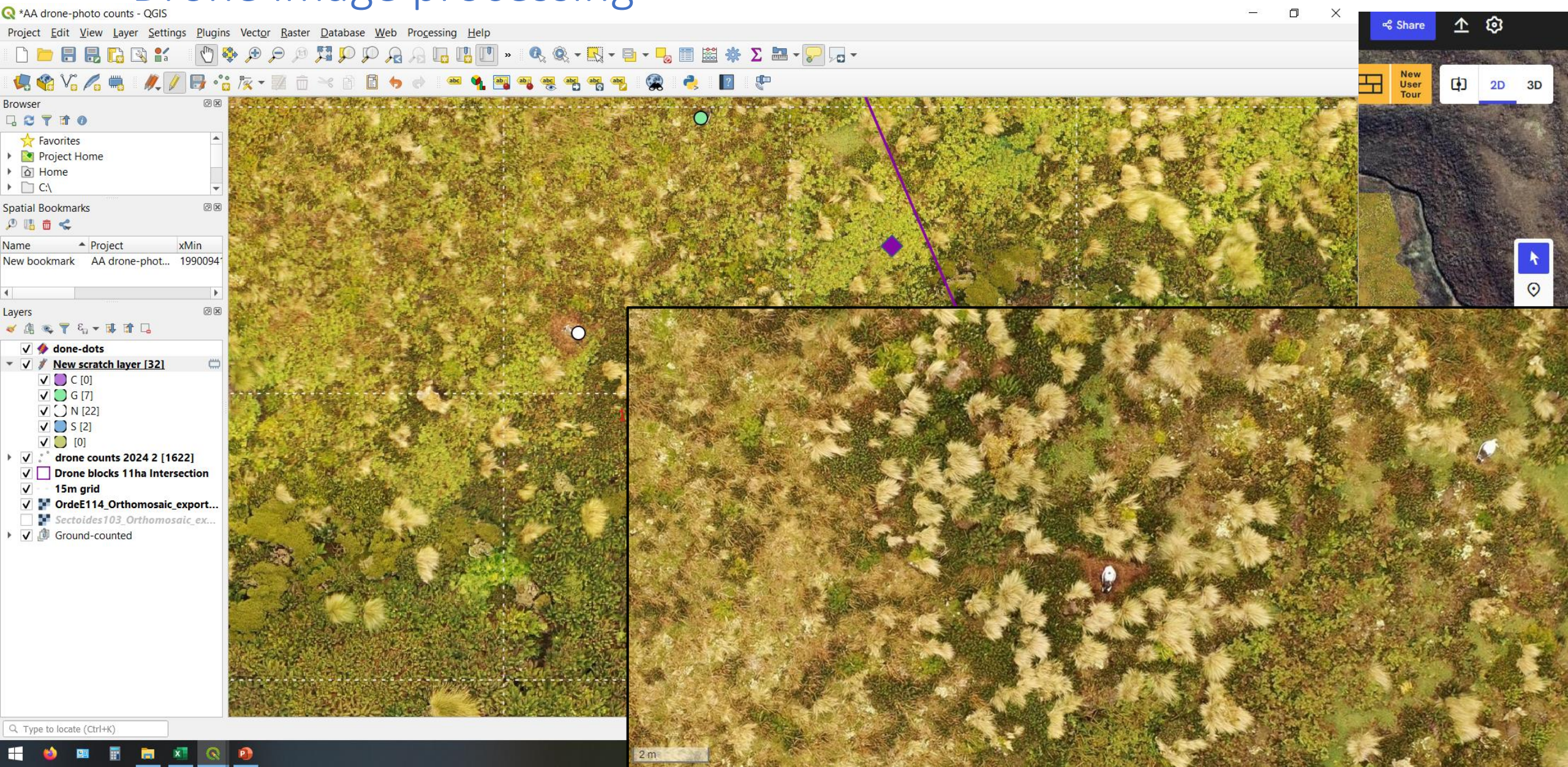


Nest-contents transects

Nest-contents transects

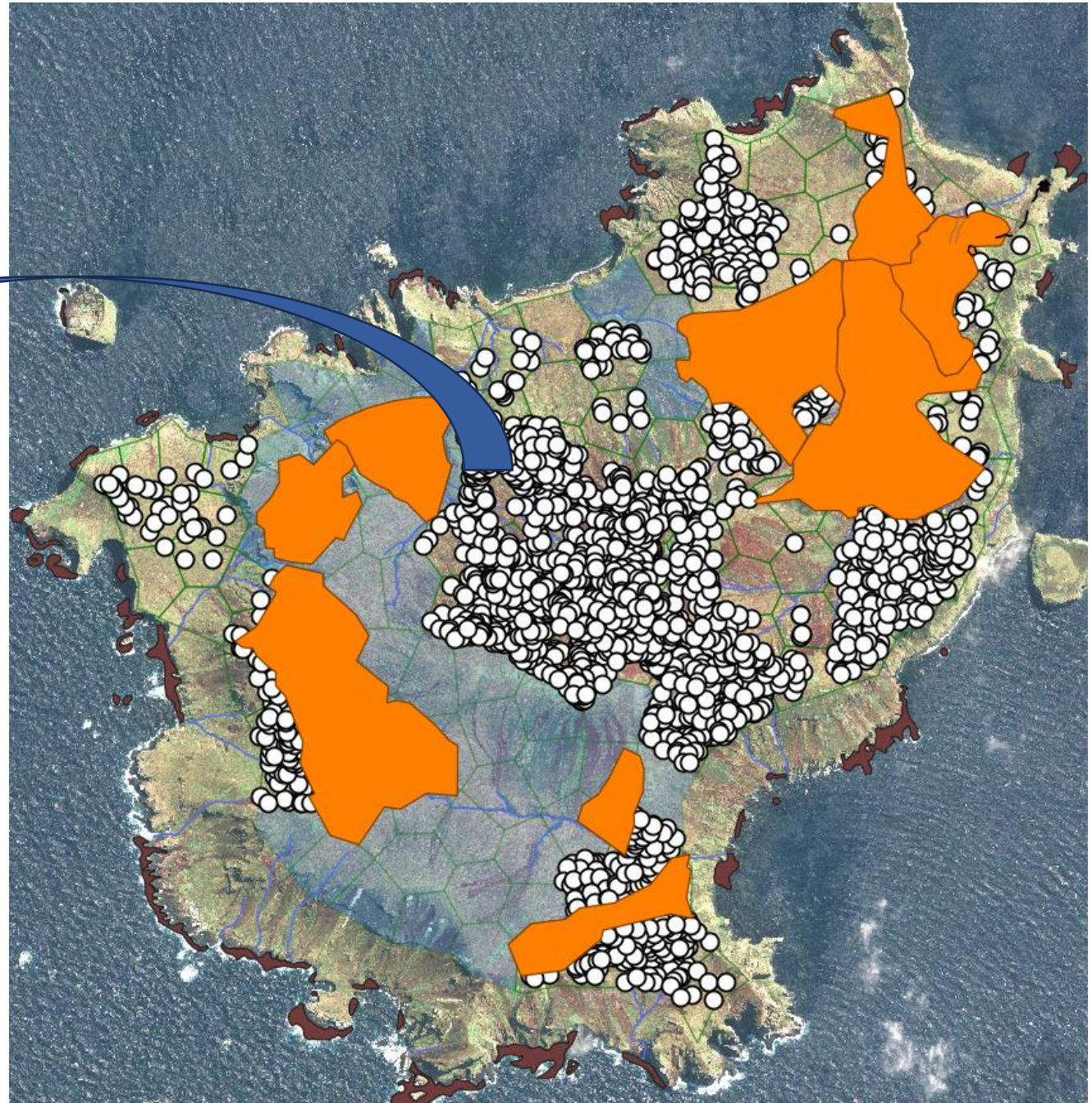
Date	Descript	Type	Bird on egg	Bird on empty nest	ANA (apparently nesting albatross)	Has-egg rate (bird on egg / ANA)	
						Has-egg rate	95% CI has-egg rate
2-Feb	MCBA (Clark Hill, mid MCBA)	swathes	114	40	154	0.7403	0.675–0.806
4-Feb	MCBA (Pipit Peak, top MCBA)	swathes	35	16	51	0.6863	0.4–0.972
5-Feb	MCBA lower	swathes	121	72	193	0.6269	0.524–0.73
7-Feb	Perpendicular Head to Conical Hill	swathes	41	20	61	0.6721	0.521–0.824
8-Feb	Clark Hill and top MCBA	transects	30	12	42	0.7143	0.516–0.912
9-Feb	Block 32	swathes	80	72	152	0.5263	0.418–0.635
11-Feb	Galloway toe	swathes	52	28	80	0.6500	0.608–0.692
12-Feb	Ramparts, Sectoides Stream to Orde Stream	transects	39	13	52	0.7500	0.653–0.847
12-Feb	Galloway toe	swathes	54	31	85	0.6353	0.552–0.719
14-Feb	Galloway toe	swathes	40	15	55	0.7273	0.512–0.942
15-Feb	Main route east direction Mt Waterhouse	transects	10	3	13	0.7692	–
15-Feb	Waterhouse	swathes	59	11	70	0.8429	0.737–0.948
16-Feb	Galloway toe	swathes	23	24	47	0.4894	0.318–0.661
21-Feb	Central Platau en route to NSD	transects	11	4	15	0.7333	–
22-Feb	NSD south of camp, across Dog	swathes	97	54	151	0.6424	0.545–0.739
23-Feb	NSD west of Carex Burn	swathes	69	23	92	0.7500	0.624–0.876
24-Feb	Study Area	SA round	89	21	110	0.8091	0.742–0.877
26-Feb	Mt Galloway north and south flanks	transects	37	18	55	0.6727	0.663–0.683
26-Feb	NSD side of Mt Waterhouse	swathes	38	18	56	0.6786	0.616–0.741
27-Feb	Windward, north end NSD	swathes	136	20	156	0.8718	0.801–0.943
28-Feb	NSD wrapup	swathes	47	23	70	0.6714	0.508–0.835

Drone image processing



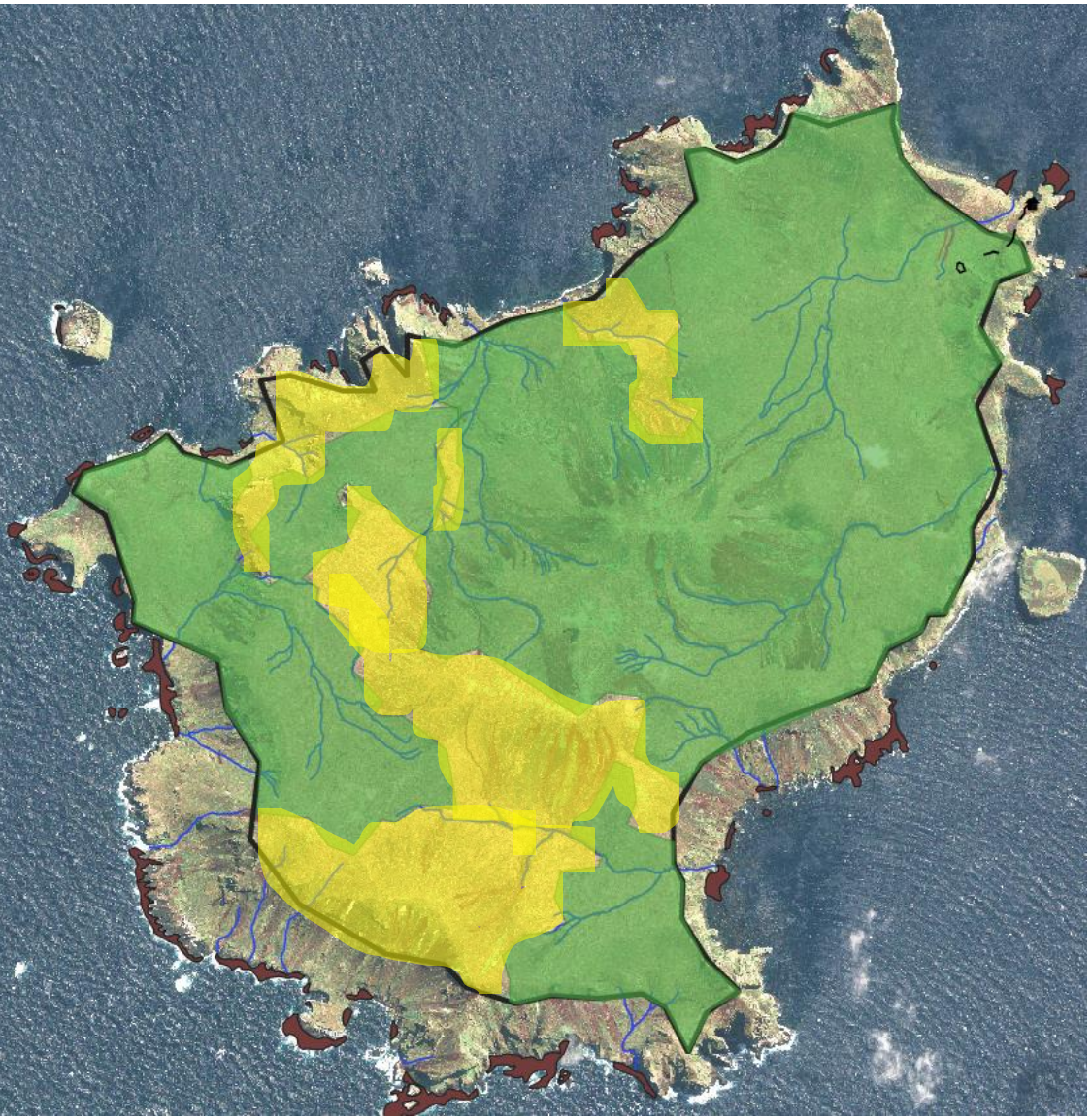
Drone-photo counts

Has-egg rate
Failure rate



Est **1,399** (95% CI 1,264–1,534) pairs breeding in the drone-only areas in 2024

Habitat-quality extrapolation



	n	Mean density (nests†/ha)	95% CI density (nests/ha)
Low	27	0.31	0.203–0.409
Medium	22	1.32	1.167–1.479
High	47	3.12	2.835–3.408

Est **597 pairs** breeding in not-counted areas in 2024

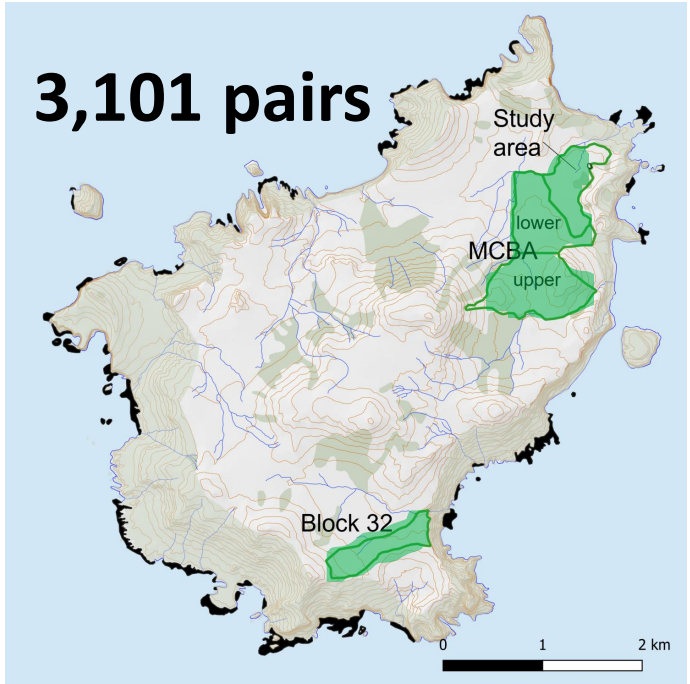
Whole-island breeding pair estimate

$\text{Ground}_{\text{corrected}}$

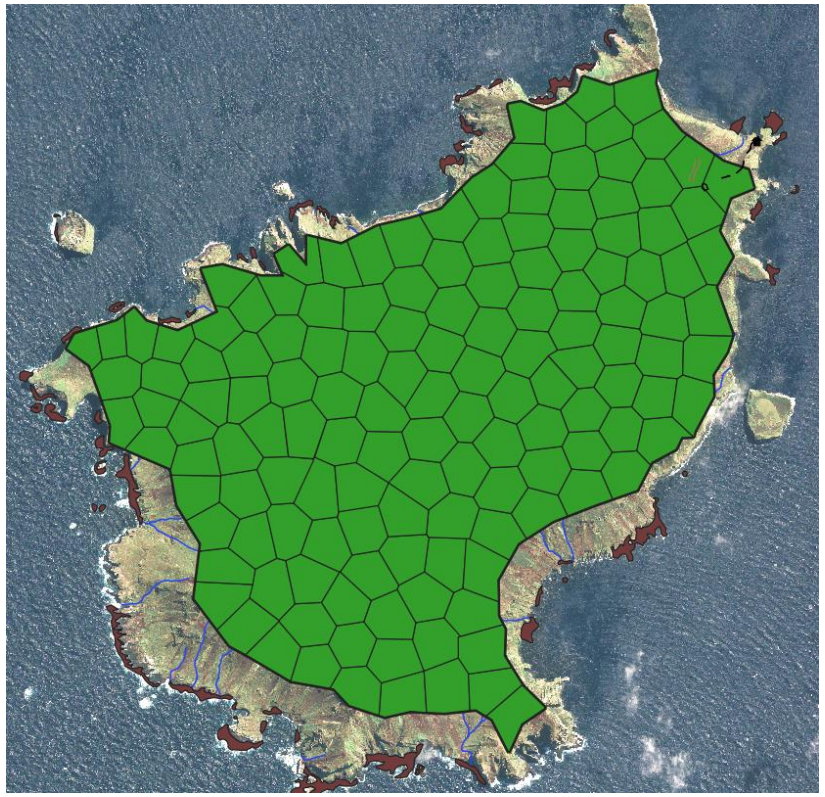
$\text{Drone-photo}_{\text{corrected}}$

Density by habitat quality

3,383 (3,182–3,585) pairs
Antipodean albatrosses breeding in 2024



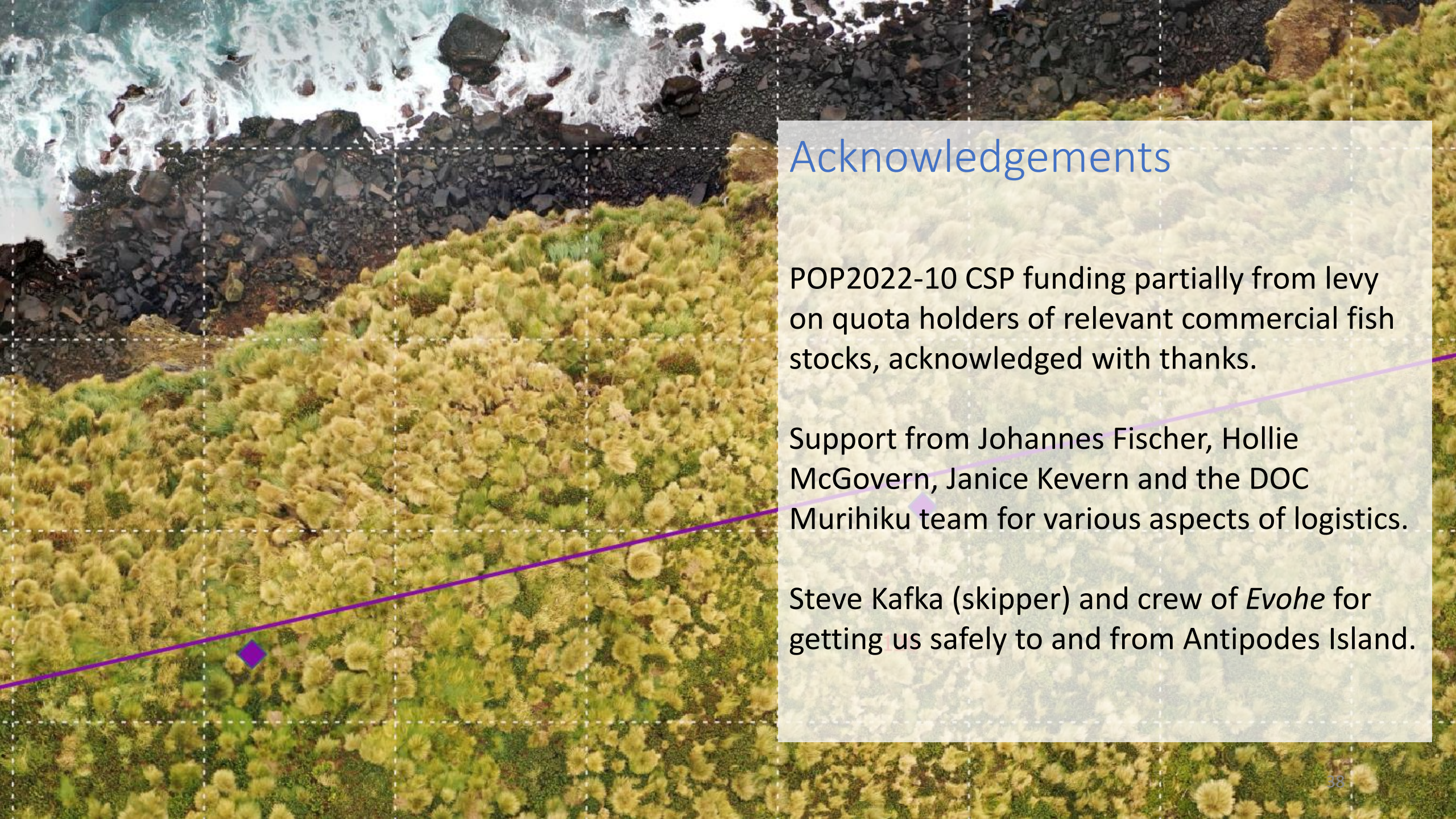
Next year



Ground$_{corrected}$

Drone-photo$_{corrected}$

~~Density by habitat quality~~



Acknowledgements

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Support from Johannes Fischer, Hollie McGovern, Janice Kevern and the DOC Murihiku team for various aspects of logistics.

Steve Kafka (skipper) and crew of *Evohe* for getting us safely to and from Antipodes Island.