

# **Preliminary Results for New Zealand sea lion research ground component 2012/13 CSP Project 4426**

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# 1.0 Introduction

- Presentation of preliminary results for New Zealand sea lion research ground component 2012/13 CSP Project 4426
- Summary of details provided in CSP Report (Childerhouse 2013<sup>1</sup>)



<sup>1</sup> Childerhouse SJ (2013) Preliminary Report for CSP project 4426 NZ sea lion ground component 2012-13 v1.1. Report prepared for the Conservation Services Programme, Department of Conservation. 11 p.

## 1.2 Project requirements

- To conduct ground-based estimates of New Zealand sea lion pup production at Enderby and Dundas Islands using established techniques, timed in such a way as to ground truth aerial-based methods deployed in relation to CSP Project 4427
- To conduct a ground-based estimate of New Zealand sea lion pup production at Figure of Eight Island using established techniques
- To mark New Zealand sea lion pups at the Auckland Islands following established techniques, and conduct a three to five week period of resighting previously marked animals at Enderby Island

## 1.3 Project outputs

- A technical report (or reports) detailing:
  - ▶ the methods used and a summary of data collected
  - ▶ estimates of New Zealand sea lion pup production at the Auckland Islands based on ground methods
- Data collected, in an electronic format suitable for upload into the New Zealand sea lion database



## 2.0 Methodology

- As per the stated project requirements, “...using established techniques” and following Childerhouse (2012)<sup>1</sup>
- The research outlined here will follow exactly the same methods as undertaken previously by DOC and as described in Chilvers (2012)<sup>2</sup> and with reference to the aerial survey methods in Baker et al. (2012)<sup>3</sup>



1. Childerhouse SJ (2012) Methodology for CSP Project 4426 New Zealand sea lion ground component 2012/13. Report prepared for the Conservation Services Programme, Department of Conservation. 11 p.

2. Chilvers, BL (2012) Research to assess the demographic parameters of New Zealand sea lions, Auckland Islands 2011/12 Contract Number: POP 2011/01 Final Research Report, November 2012. Report prepared for the Conservation Services Programme, Department of Conservation. 11 p.

3. Baker B, Jensz K, Chilvers BL (2012) Aerial survey of New Zealand sea lions – Auckland Islands. DOCDM-872849. Report prepared for Ministry of Agriculture & Forestry, Deepwater Group Limited & Department of Conservation. 11 p.

## 2.1 Changes from previous years

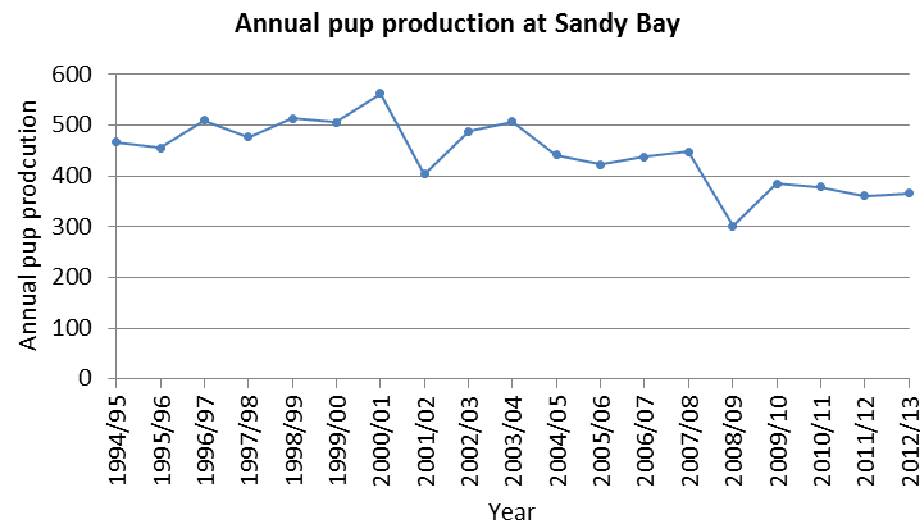
- Survey methodologies the same but
  - ▶ Reduced team size (6 to 4)
  - ▶ Reduced field season (2.5-3 to <1 month)
  - ▶ Dead pups not removed from colonies throughout season
  - ▶ Helicopter transport for Dundas survey
- Implications are
  - ▶ Reduced monitoring ability
    - Shorter season
    - No ancillary data (e.g. autopsies, foraging, limited disease monitoring)
- Reduced resighting effort at key sites and none at other sites around Auckland Islands

## 3.1 Results - Timing

- 6th January 2013 – departed Bluff aboard RV Tiama for the Auckland Islands
- 9th January – Surveyed Figure of Eight Island and arrived at Enderby Island and dropped the team off
- 31st January – departed Auckland Islands for Bluff
- 2nd February – arrived Bluff
  
- Considerably less research time than previous programmes (i.e. <1 month vs. 2.5-3 months)
- Enderby Is (n=23d), Dundas Is (n=3d), Figure of Eight Is (n=1d)

## 3.2 Pup production – Sandy Bay

Method	Date	Estimate ( $\pm$ SE)
Direct live count	16 <sup>th</sup> January	361
Direct dead count	16 <sup>th</sup> January	8
Mark-recapture count	16 <sup>th</sup> January	357 $\pm$ 4
Total number pups tagged	15-17 <sup>th</sup> January	347
<b>Total pup production 2013</b>	16 <sup>th</sup> January	365 [+1.1%]

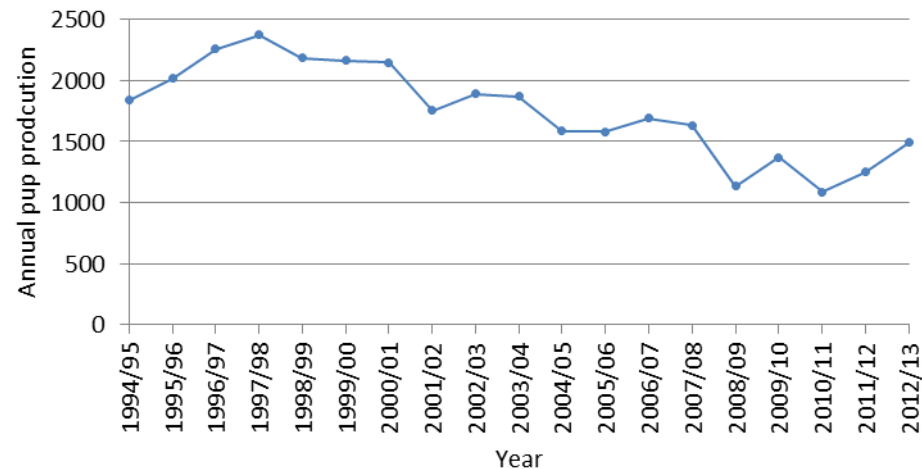




# 3.3 Pup production – Dundas Is

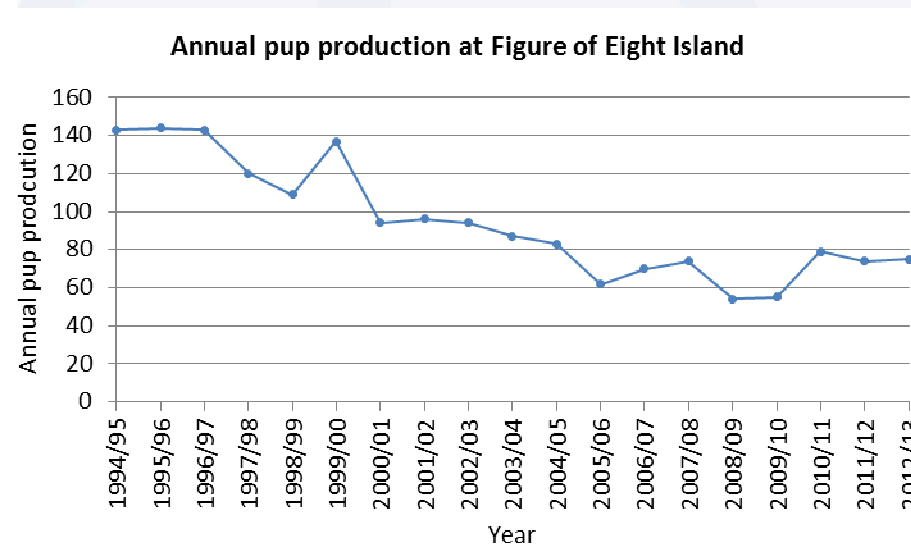
Method	Date	Estimate ( $\pm$ SE)
Direct live count	21 <sup>th</sup> January	1271 $\pm$ 25
Direct dead count	21 <sup>th</sup> January	127
Mark-recapture count	21 <sup>th</sup> January	1364 $\pm$ 46
Total number pups tagged	19-21 <sup>st</sup> January	400
<b>Total pup production 2013</b>	21 <sup>th</sup> January	1491 [+19.5%]

Annual pup production at Dundas Island



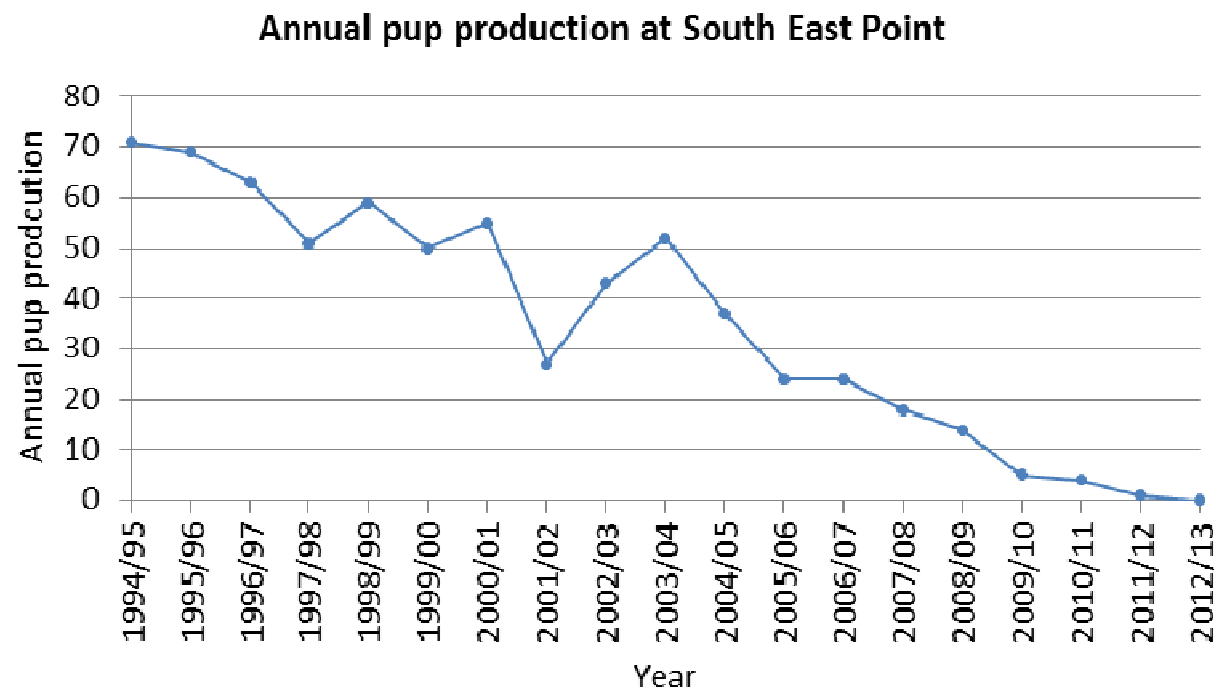
## 3.4 Pup production – Figure of Eight Is

Method	Date	Estimate ( $\pm$ SE)
Direct live count	9 <sup>th</sup> January	70 $\pm$ 1
Direct dead count	9 <sup>th</sup> January	5
Total number pups tagged	9 <sup>th</sup> January	33
<b>Total pup production 2013</b>	9 <sup>th</sup> January	75 [+1.4%]



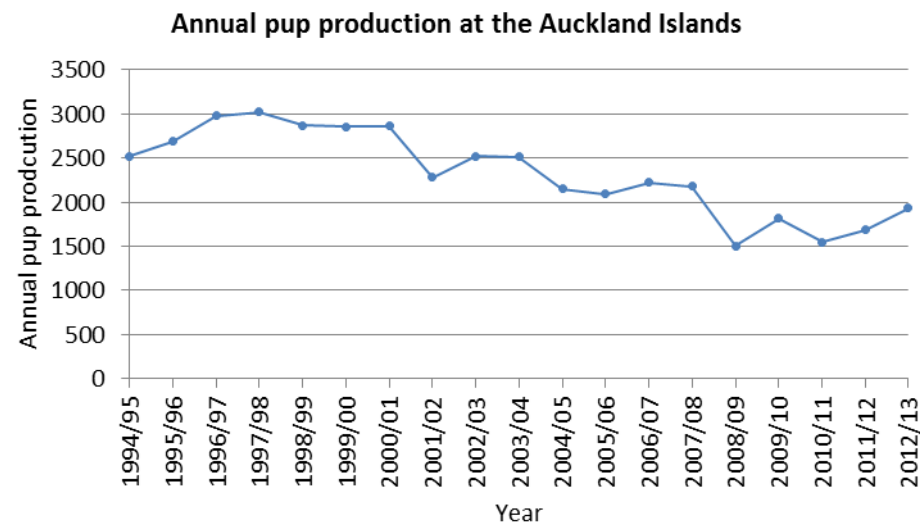
# 3.5 Pup production – South East Pt

- 8+ visits to South East Point
- No live or dead pups observed
- From 1 pup in 2011/12 to 0 pups in 2012/13



## 3.6 Pup production – Auckland Is

Location	Live pups	Dead pups	Total estimate
Sandy Bay, Enderby Is	357	8	365
Dundas Is	1364	127	1491
Figure of Eight Is	70	5	75
South East Point, Enderby Is	0	0	0
<b>Total Auckland Islands 2013</b>	<b>1791</b>	<b>140</b>	<b>1931 [+14.7%]</b>



## 3.7 Pup tagging

Location	No. pups tagged
Sandy Bay, Enderby Is	347
Dundas Is	400
Figure of Eight Is	33
South East Point, Enderby Is	0
Other sites Enderby Is	2
<b>Total tagged</b>	<b>782</b>



## 3.8 Resighting

- Over 2,100 individual tag, brand and micro-chip resightings were made
- All of these resightings are still being verified and validated and, once that is completed, the exact number of resightings will be available
- 6,914 resights in 2011/12(Chilvers 2012<sup>1</sup>)



## 3.9 Tagging data management

- Recording of flipper tags, micro-chips and brands
- New Zealand sea lion database, developed by Dragonfly, was used for the first time
- Overall, the database worked reasonably well
- Several technical problems arose that prevented its full use during the trip
  - ▶ reflects our lack of familiarity with the database
  - ▶ other issues that may require further modifications
- All tagging data entered in database
- Some resighting data entered
- Useful for searching and checking individual records

## 3.10 Helicopter work

- This was undertaken by Barry Baker (Latitude 42)
  - ▶ Separate report on this work
- Very successful for transport to Dundas
- Ground team coordinated with the Helicopter team to support assessment of the aerial survey methodology
- Dead pups left in the colony at Sandy Bay to allow for 'realistic' photography of live and dead pups



## 4.0 Conclusions

- Field component of the work 9<sup>th</sup> and 31<sup>st</sup> of January 2013
- Pup production was estimated for New Zealand sea lion colonies at:
  - ▶ Sandy Bay (n=365)
  - ▶ Dundas Island (n=1491)
  - ▶ Figure of Eight Island (n=75)
  - ▶ South East Point (n=0)
  - ▶ total pup production for the Auckland Islands in 2013 estimated as 1931 – a 14.7% increase on the estimate from 2012

## 4.1 Conclusions

- 782 pups were tagged at Sandy Bay (n=347), Dundas Island (n=400), Figure of Eight Island (n=33), South East Point (n=0) and elsewhere on Enderby Island (n=2)
- Over 2,100 tag, brand and micro-chip resightings of individual sea lions
- The New Zealand sea lion database was used for the first time, and it worked reasonably well
- Helicopter worked well for transport to Dundas Island
- It was a successful trip despite being considerably shorter than previous trips and having fewer personnel

## 5.0 Feedback and thanks

- Simon Childerhouse
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  - ▶ Email: [simon@blueplanetmarine.com](mailto:simon@blueplanetmarine.com)
- Thanks to:
  - ▶ Field team of Jacinda Amey, Derek Hamer, Ann McCrone
  - ▶ Dave Paton (BPM), Igor Debski (DOC), Sharon Trainor (DOC), Pete McClelland (DOC), Finlay Thompson (Dragonfly), Barry Baker (Latitude 42), Louise Chilvers (DOC)

