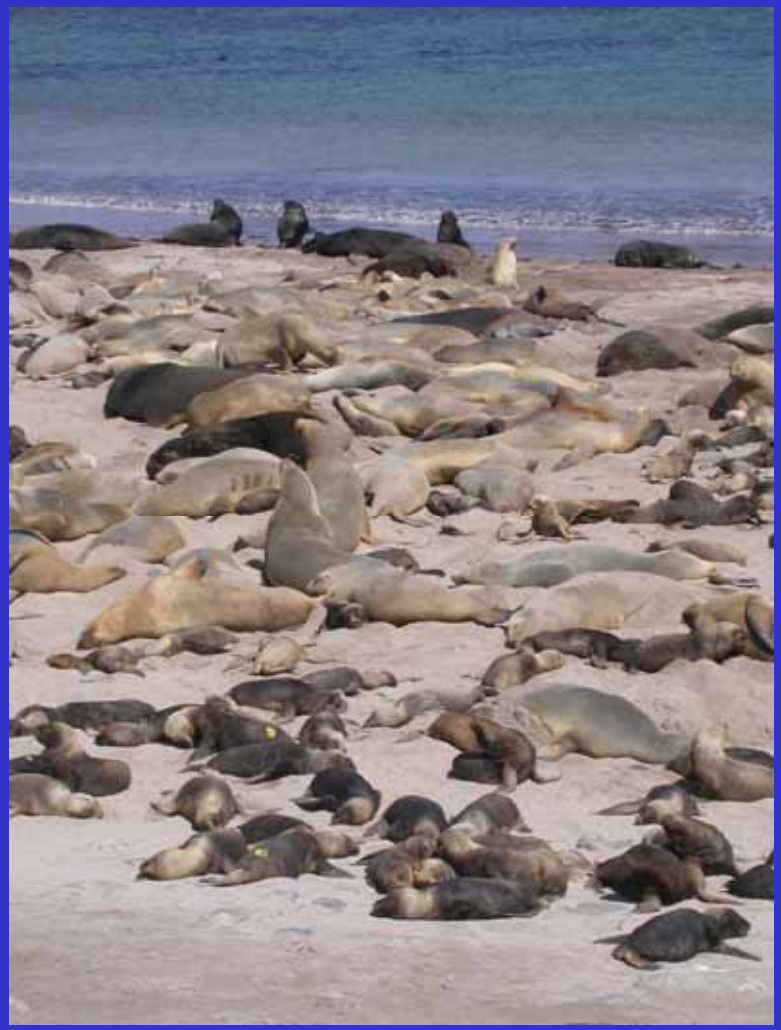
New Zealand sea lion research Summer 2008/2009

B. L. Chilvers

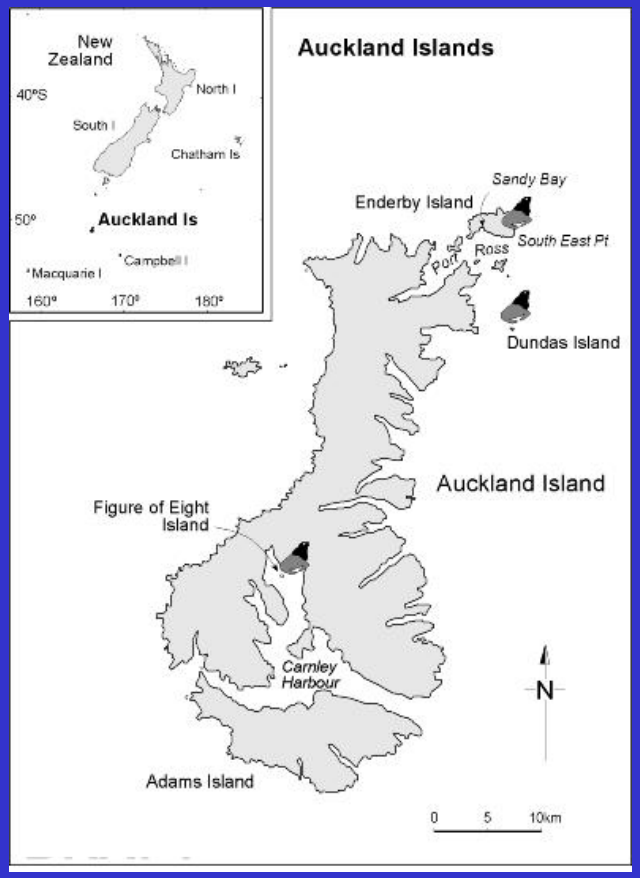


NZ sea lion research objectives Auckland Islands

- Measure Auckland Islands pup production
- Tag pups produced during 2008/09
- Data to estimate survival and reproduction of previously marked female NZ sea lions
- Maintain and update the NZ sea lion database
- Characterise and analyse the at-sea distribution of poorly known age and sex classes of NZ sea lions

Pup production - methods and date of estimate

- Sandy Bay (Enderby Island) - Mark/Recapture estimate (16/1/09)
- Dundas Island - Mark/Recapture estimate (21/1/09)
- S.E. Point (Enderby Island) - Direct count -daily counts
- Figure of 8 Island - Single direct count - (9/1/09)



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Pup production 2008/09 - Results

- Sandy Bay = 301
  - 289+/-2 live pups
  - 12 dead pups
- Dundas = 1132
  - 1065 +/- 16 live pups
  - 67 dead pups
- South East Point = 14
  - 8 live pups
  - 6 dead pups
- Figure of 8 = 54
  - 48 live pups
  - 6 dead pups

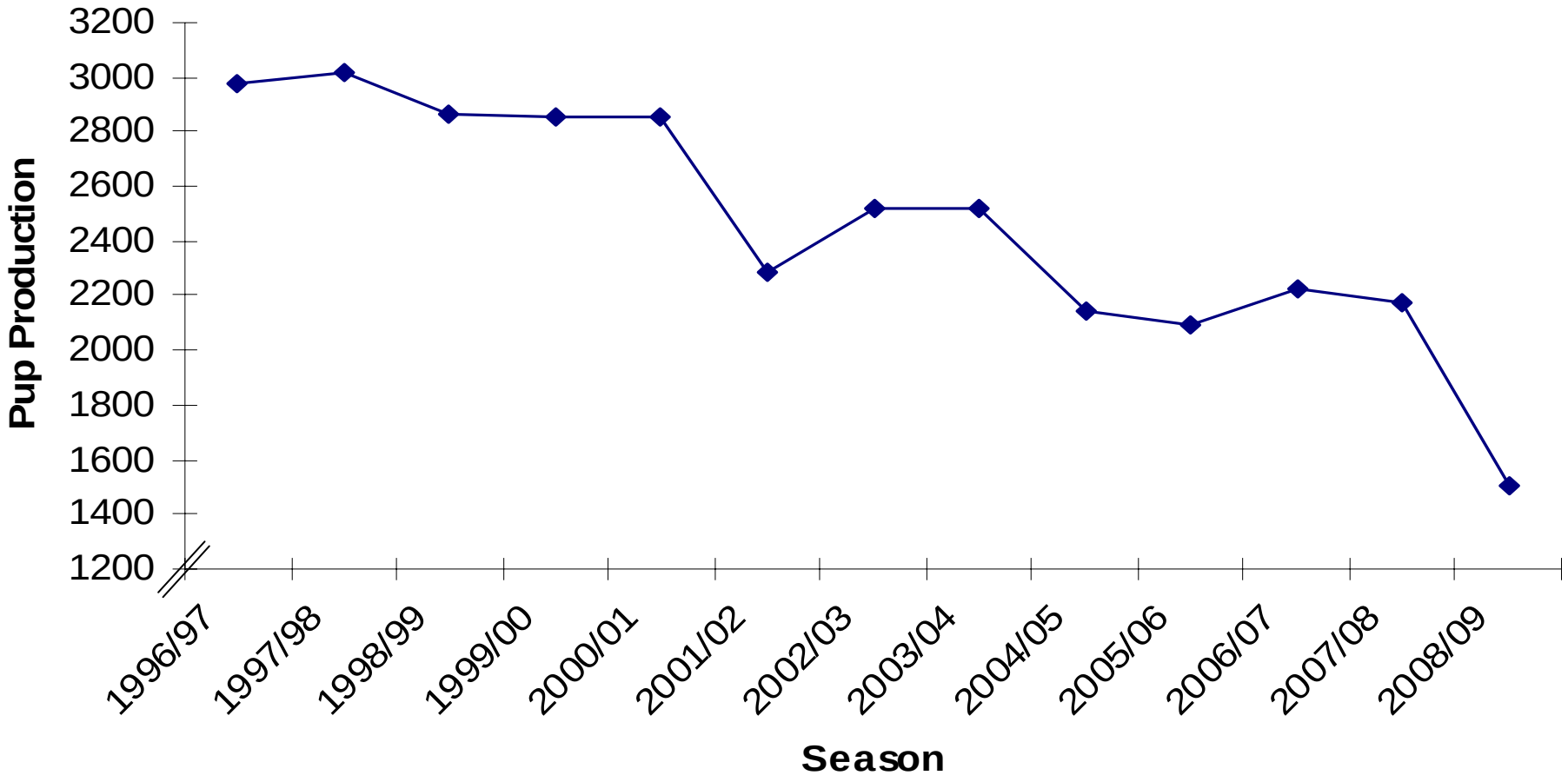
Total for Auckland Islands =

1501 +/- 18 08/09

2175 +/- 46 07/08

- 31%

AUCKLAND ISLANDS PUP PRODUCTION 1997-2009



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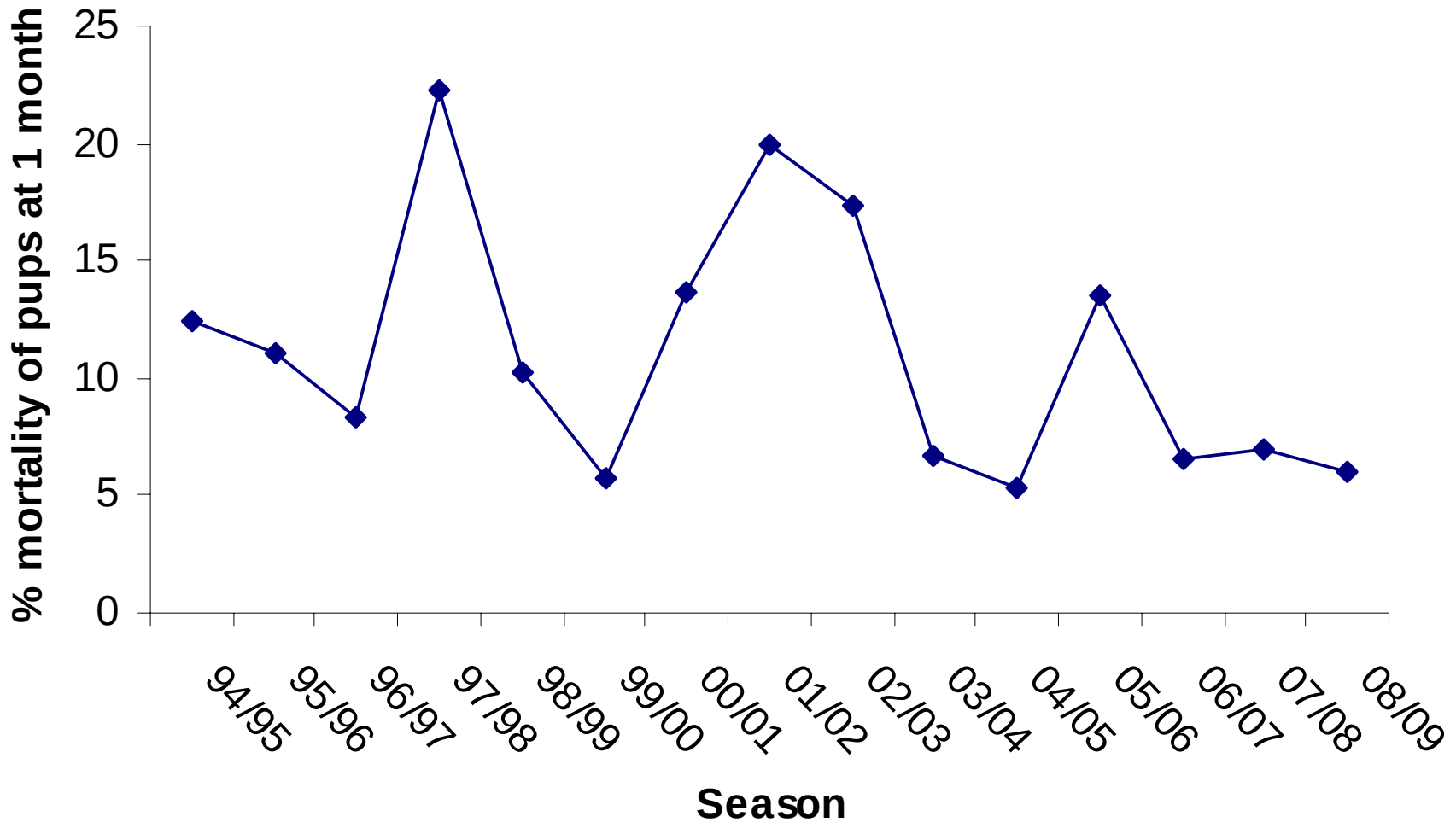
Pup tagging – Satellite tagging

- 701 pups were double tagged for population studies.
- Eleven juvenile sea lions (4 male / 7 female) aged between 2 and 5 years were captured and satellite tagged at Sandy Bay, Enderby Island. Deployment lasted between 11 and 40 days.
- Enderby, Rose, Dundas, Ewing, Fig. of 8, Adams, Campbell, Snares and Stewart Islands, Ross and Carnley Harbours, NE Auckland Islands and Catlins / Otago searched or reports obtained.

Pup Mortality



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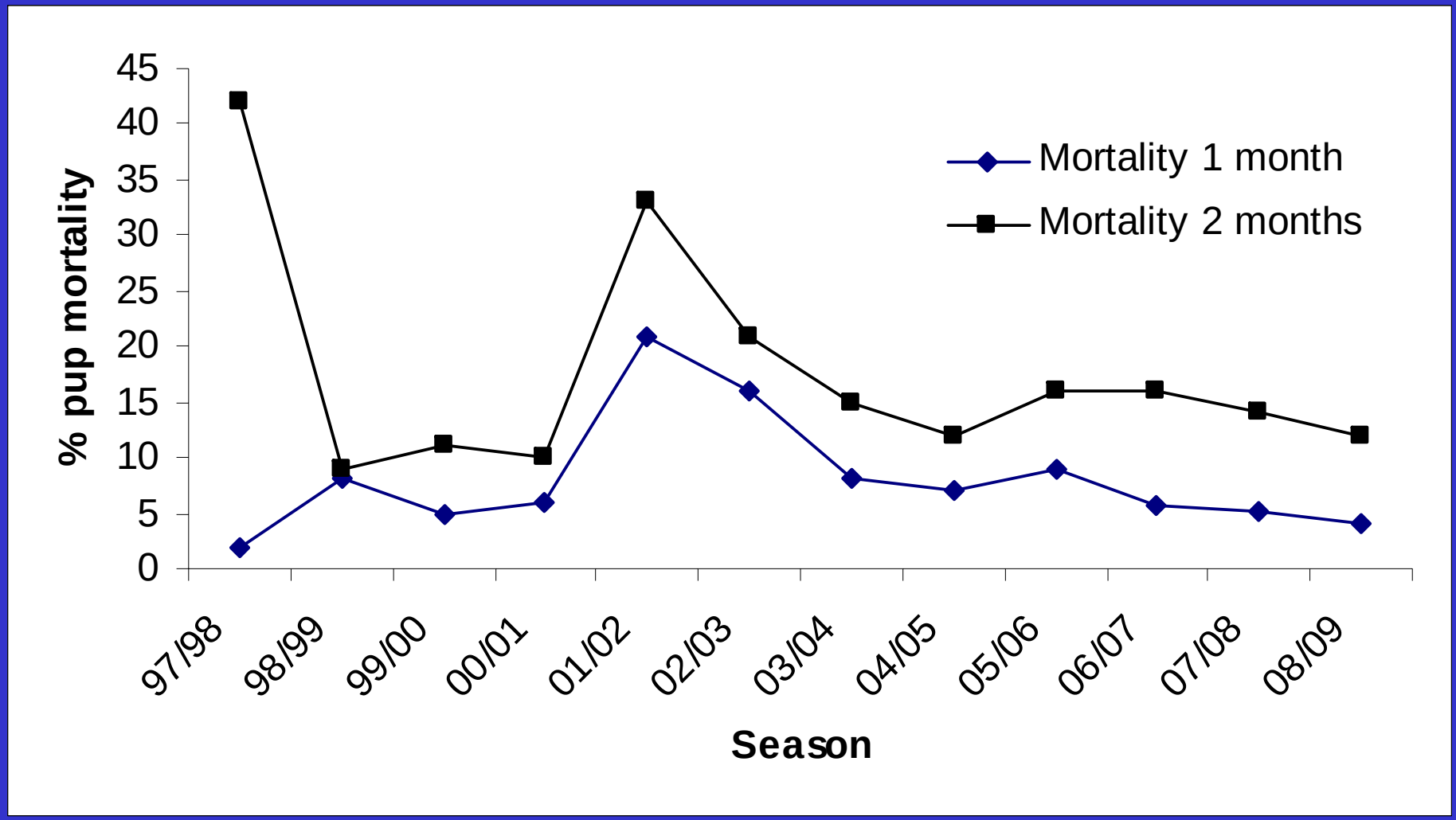
Pup Mortality – Sandy Bay



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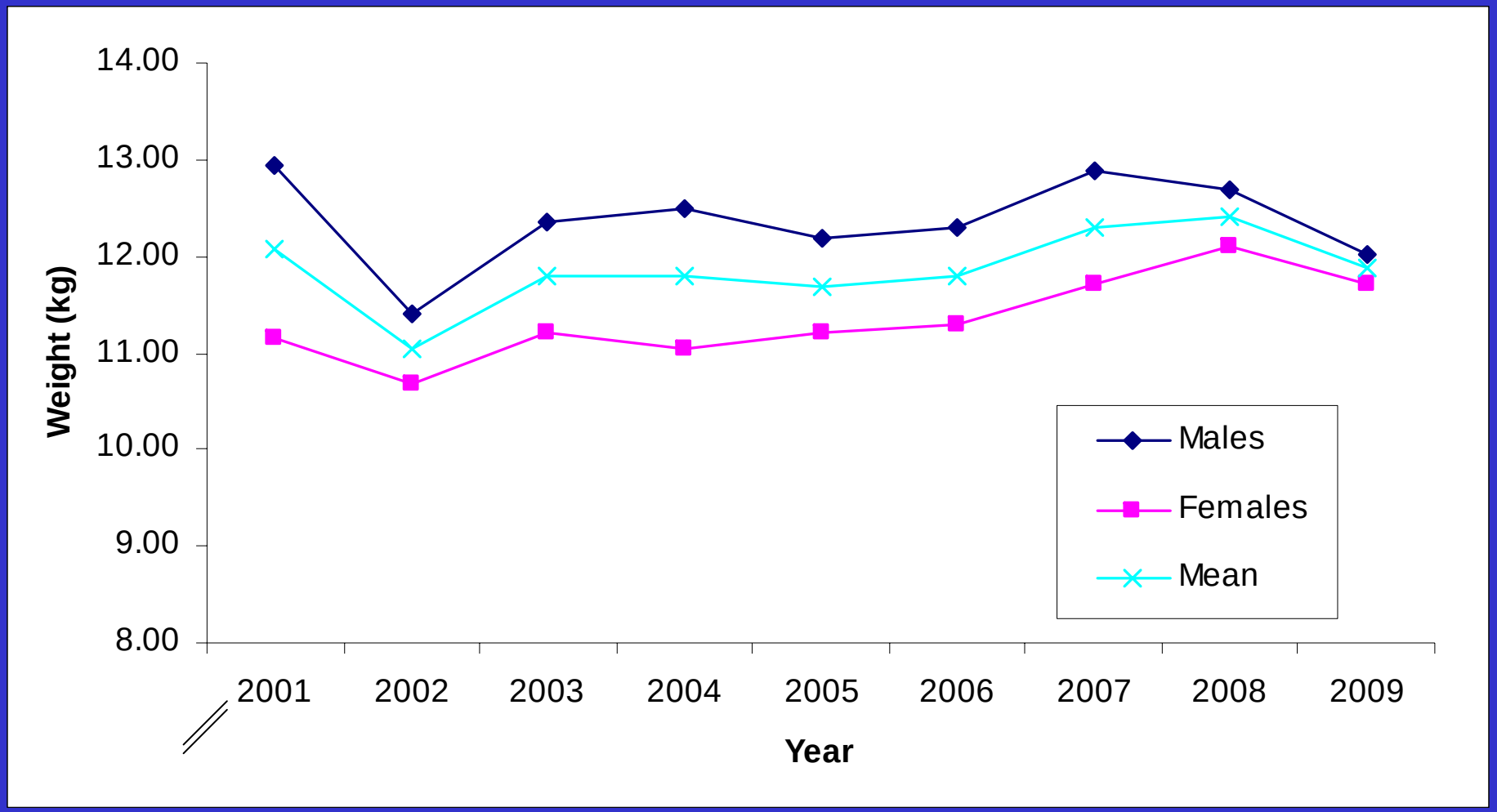
Pup weights at 1 month – Sandy Bay



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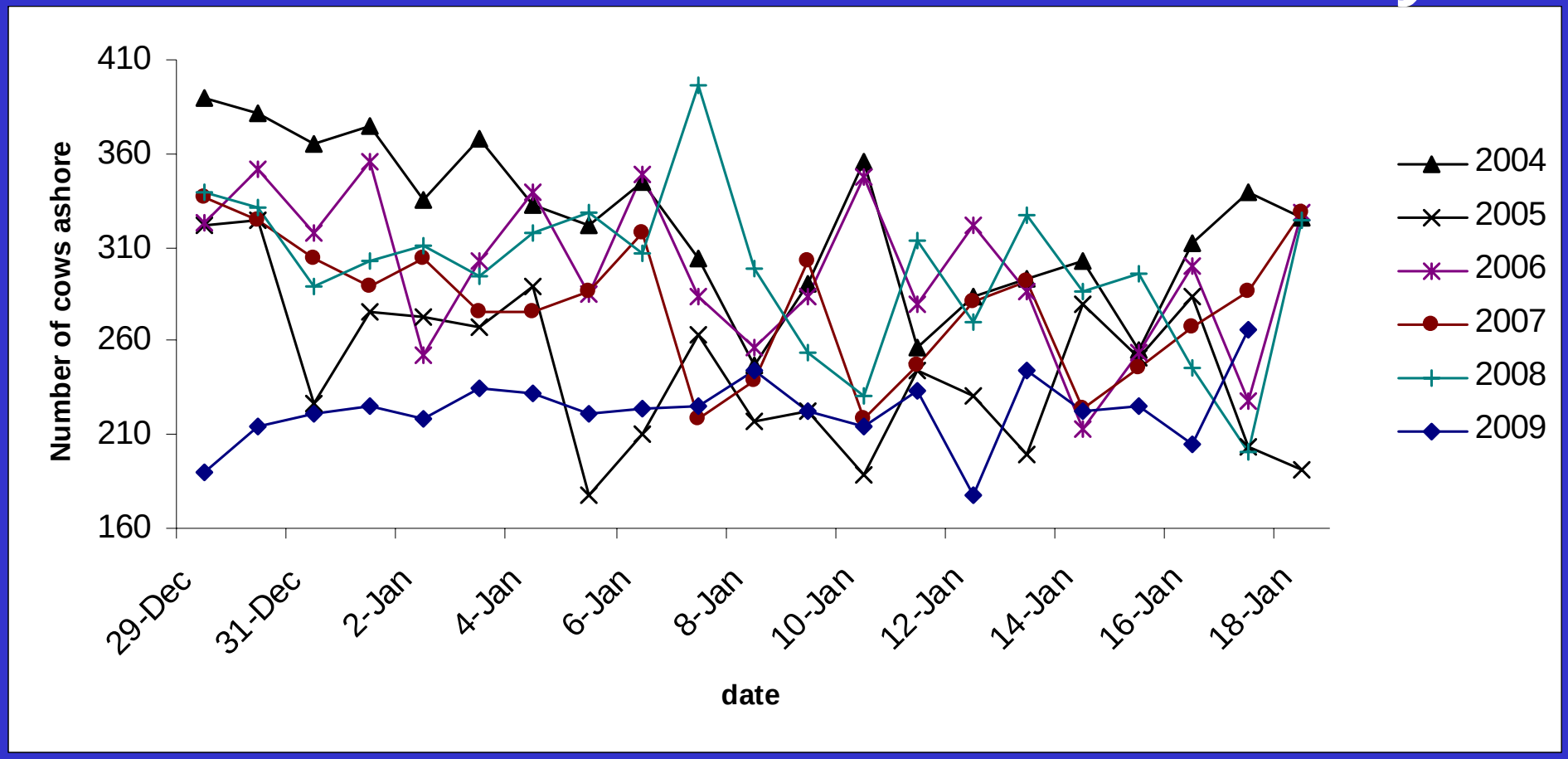
Number of females ashore daily



31% drop in pup production due to 30% decrease in # females ashore

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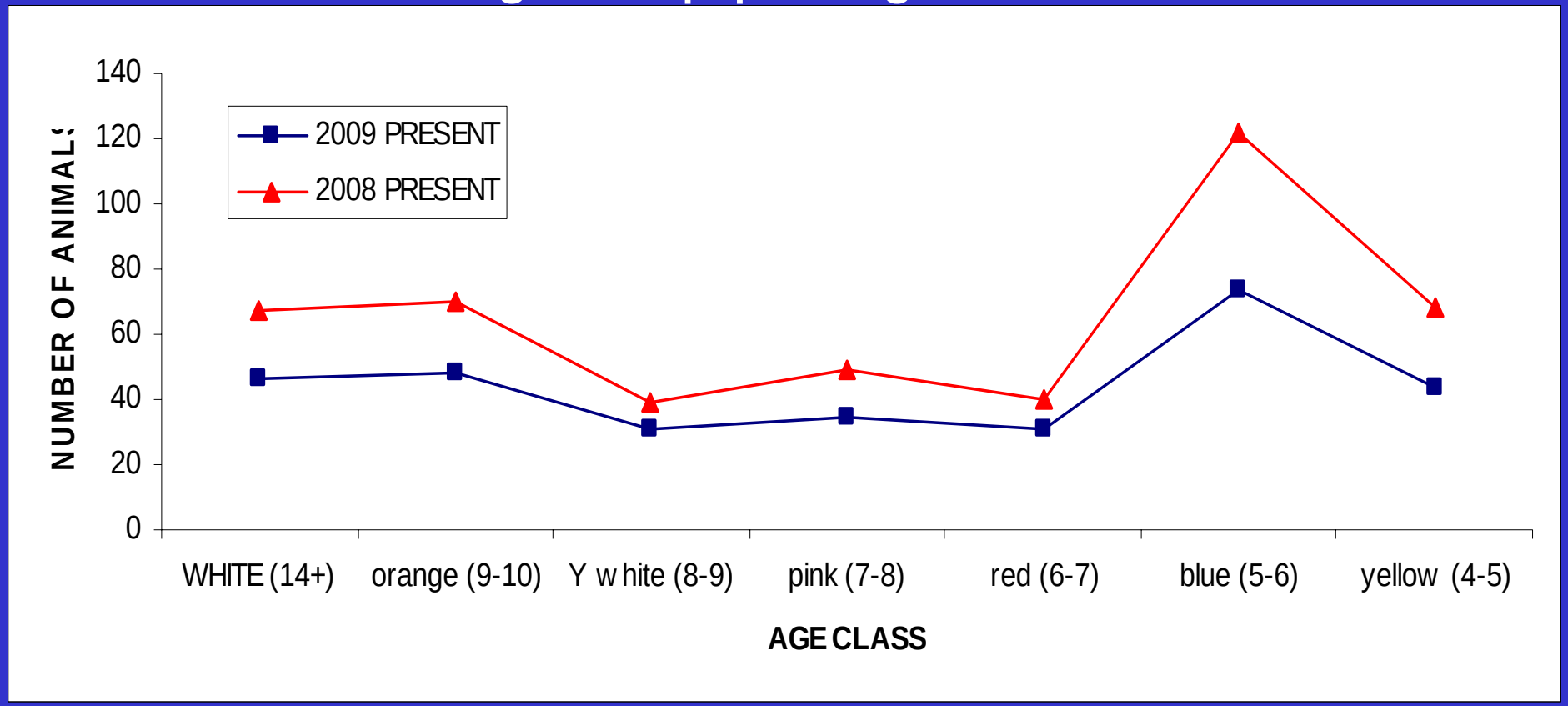
Number of identifiable females seen at Sandy Bay 07/08 vs 08/09

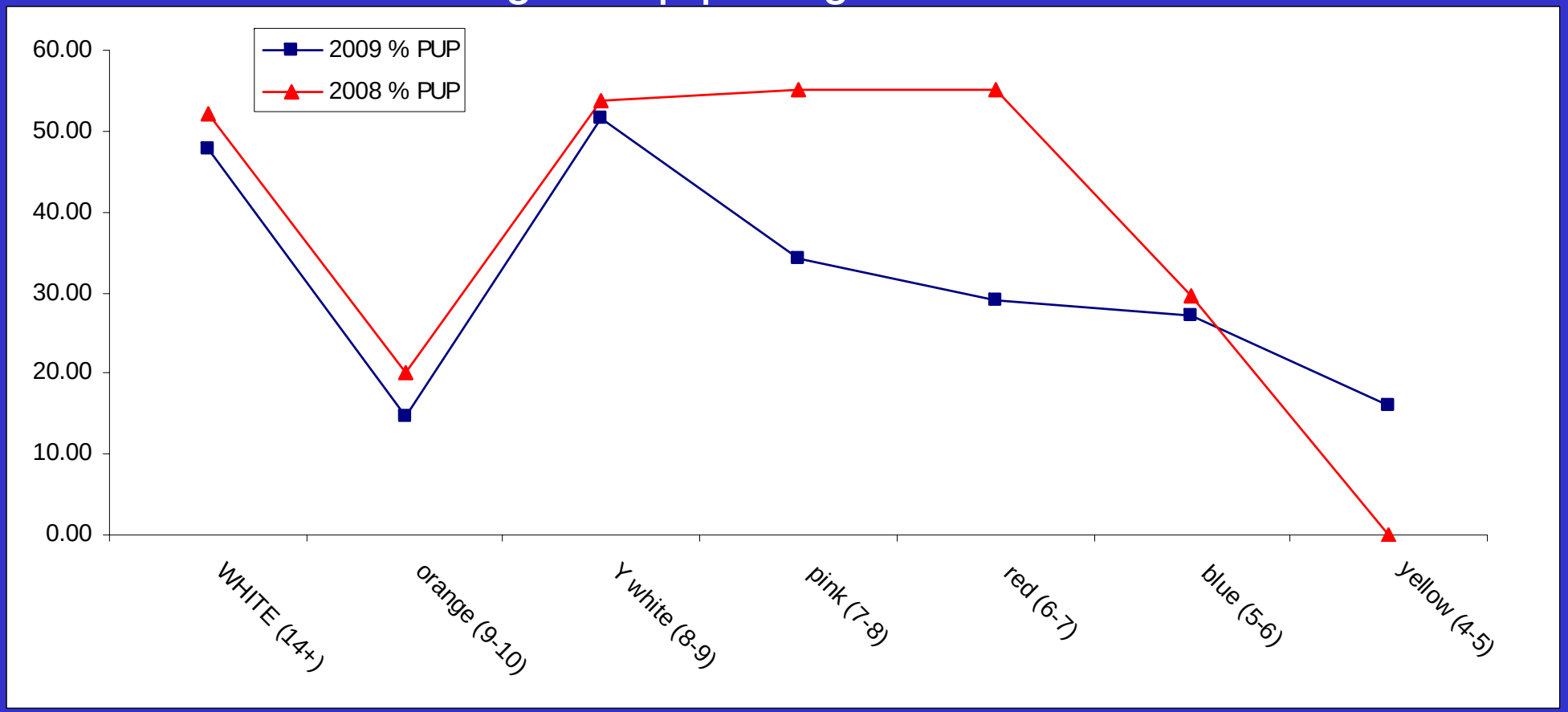
Average drop per age class 30%



Red and Blue (02 & 03) bacteria year females

Percentage identifiable females pupped at Sandy Bay 07/08 vs 08/09

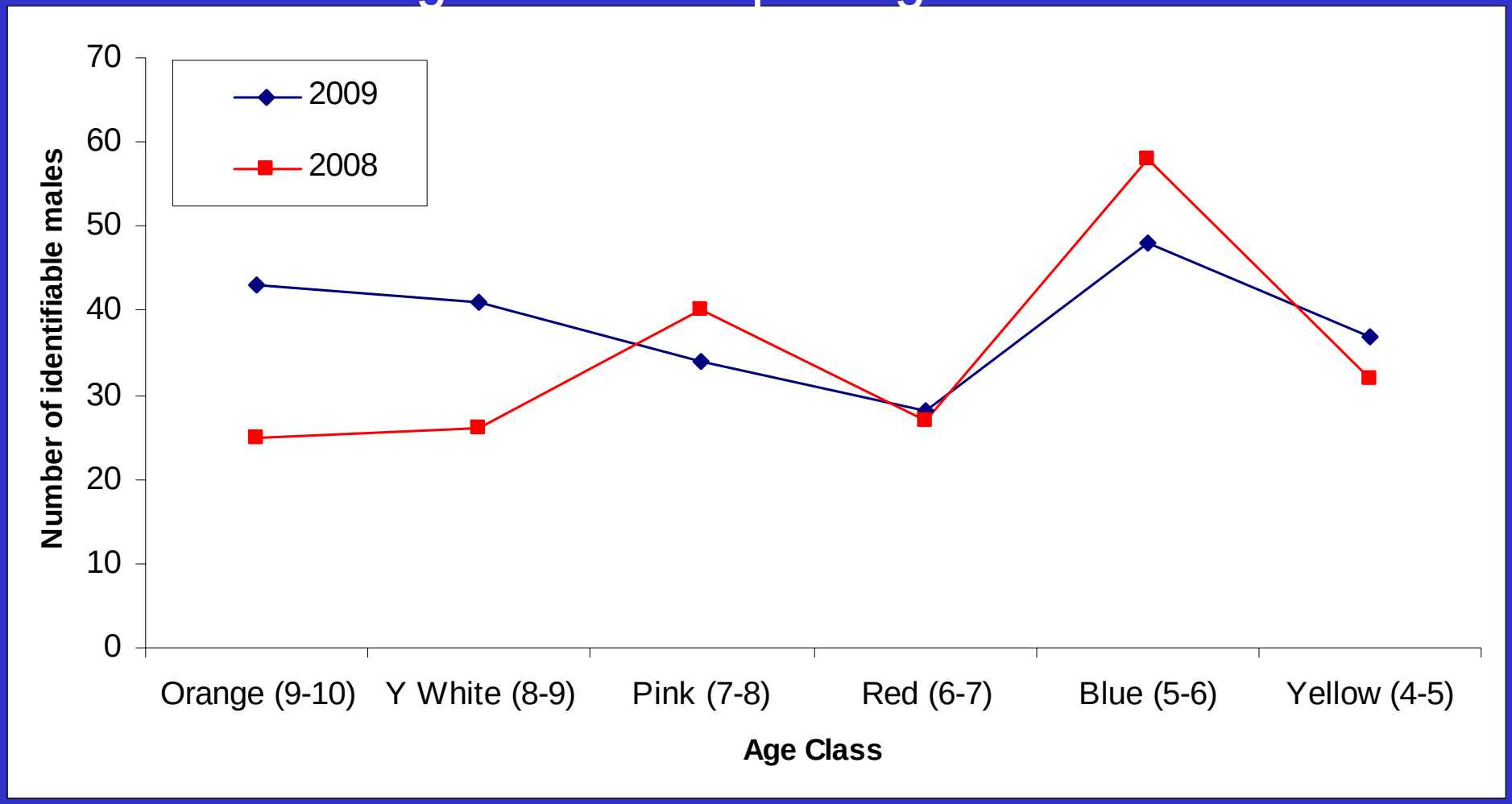
Average drop per age class 6.5%



Red and Blue (02 & 03) bacteria year females

Number of identifiable males seen at Sandy Bay 07/08 vs 08/09

Average increase per age class 3%



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Conclusion

31% drop in pup production due to 30% decrease in females

Why drop in females? Not likely bacterial

* No sign in tissue samples so far analysed
* Low mortality in pups * No significant decrease in fecundity
* Spread low occurrence in winter due to sparse distribution
* Winter distribution, abundance and appearance reported normal
* Did not affect males * Normal pup weights
* Normal number of dead bodies after winter
* Not influence from previous bacterial outbreaks

Not likely dispersal

* Philopatric species * No increases in numbers elsewhere