

# Baywide Little Penguin Monitoring Program

## Data Report 6 (October 2008)

November 2008

### Introduction

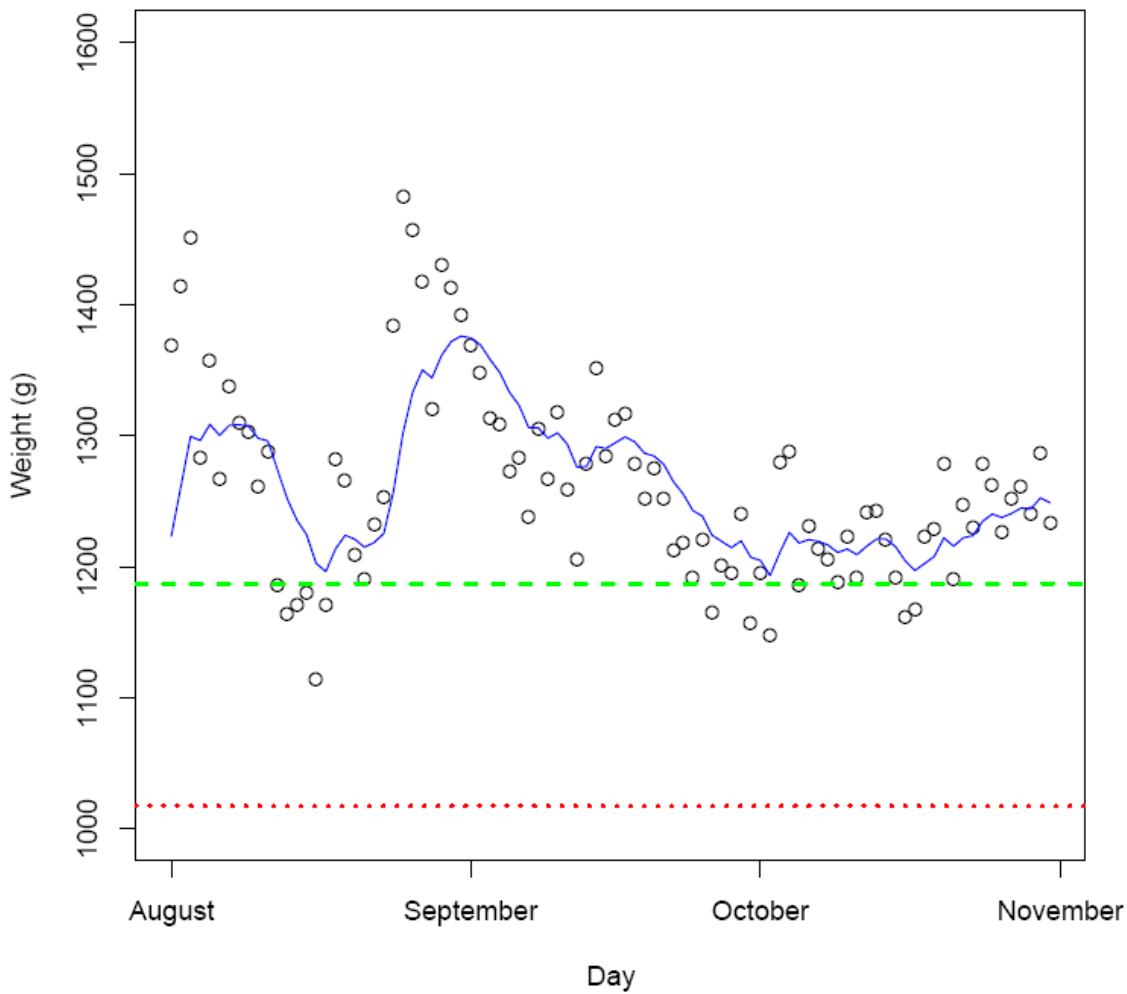
This report provides an analysis of data collected on the body mass of Little Penguins (*Eudyptula minor*) for the Channel Deepening Project Baywide Monitoring Program, for October 2008. The data were collected at Phillip Island Nature Park (PINP) using an Automated Penguin Monitoring System (APMS, Australian Antarctic Division) located in the Summerland Peninsula penguin colony, Phillip Island, as described in the detailed design for the Program (PoMC 2008). The analysis applies only to penguins weighed on entry to the colony. Where fluctuations in Little Penguin weights occur outside expected variability, further investigation will be undertaken.

### Results

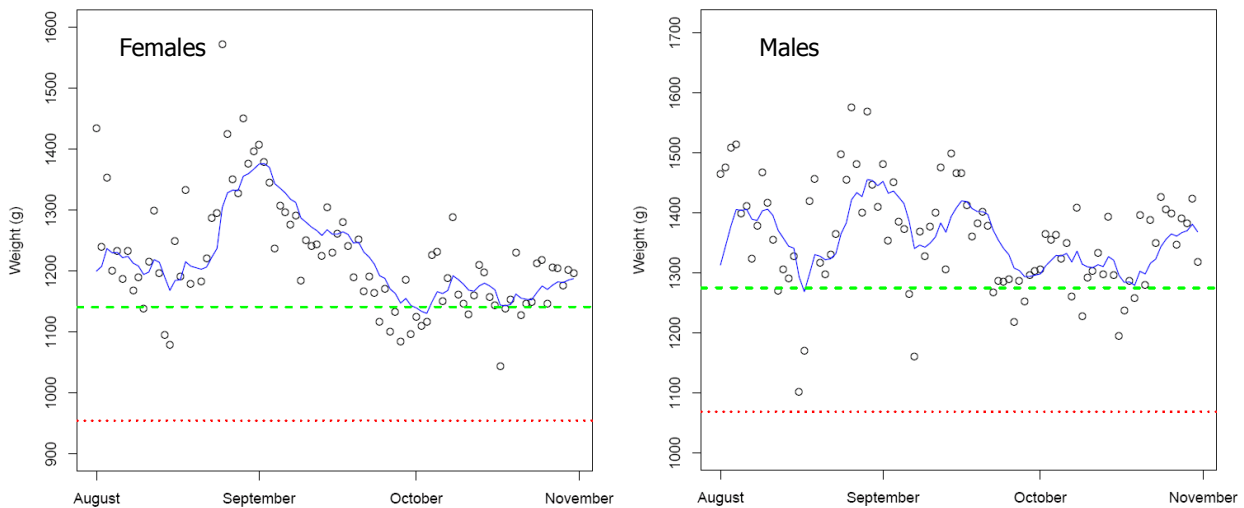
The raw data were filtered to remove irrelevant or spurious records. Records were removed from the raw data if they included:

- weight readings of  $\leq 700\text{g}$  (indicates one bird stepping off as the following bird steps onto the platform, 26 records)
- weight readings of  $\geq 1700\text{g}$  (indicates two birds on the weighing platform at the same time, 60 records)
- a time stamp of between 1am local time and sunset the following night (indicating penguins leaving the colony).

There were a total of 1828 records after filtering, 405 of which were known to be female, and 338 of which were known to be male. The filtered data were de-seasonalised (to account for known seasonal variation in Little Penguin weight) and analysed using a control chart according to the detailed design for the project (PoMC 2008) developed by Emphron Informatics Pty Ltd (Emphron 2008). The results of this analysis are presented in Figure 1 for all filtered data, and in Figure 2 for females and males separately. Data from the preceding two months is included to provide recent historical context. There is no evidence of any reduction in de-seasonalised body weight and all EWMA values were well above the control limit, indicating no change in average body weight outside of expected variability. Ecological interpretation of these results will be provided in Quarterly Report 3 (October-December 2008).



**Figure 1.** EWMA of de-seasonalised daily average weight for Little Penguins at PINP, measured using the Automated Penguin Monitoring System, for the period 1<sup>st</sup> August to 31<sup>st</sup> October 2008 (this report relates to the October results only). The open circles indicate the mean daily weight, the blue line is the EWMA, the green dashed line is the target value (long-term average) of 1187g, and the red dotted line indicates the control limit of 1018g (average weight; analysis prepared by Emphron Informatics Pty Ltd).



**Figure 2.** EWMA of de-seasonalised daily average weight for female and male Little Penguins from PINP, 1<sup>st</sup> August to 31<sup>st</sup> October, 2008 (this report relates to the October results only; open circles indicate average daily weight; blue line is the EWMA; green dashed line is the target value (long-term average) of 1141g for females and 1275g for males; red dotted line is the control limit of 955g for females and 1069g for males (analysis by Emphron Informatics Pty Ltd).

## Reference

Emphron 2008. Channel Deepening Project Bay-Wide Monitoring Program: Little Penguins. Report 2007.0035. Emphron Informatics Pty Ltd

PoMC 2008. Little\_Penguins\_Detailed\_Design CDP\_ENV\_PR\_020 (Rev 1). Port of Melbourne Corporation. Published on [www.channelproject.com/environment/monitoring.asp](http://www.channelproject.com/environment/monitoring.asp)

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