

Baywide Little Penguins Monitoring Program

Data Report 5 (August 2008)

September 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 August 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 2007). 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 $\leq 700\text{g}$ (17 records) or $\geq 1700\text{g}$ (53 records) (i.e. outside the normal adult weight range at PINP of 760-1650g)¹;
- a time stamp of between 1am local time and sunset the following night (indicating penguins leaving the colony).

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 2007) developed by Emphron Informatics Pty Ltd. The result of this analysis is presented in Figure 1. 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 2 (July-September 2008).

¹ Such records generally result from two penguins crossing the weighbridge simultaneously, or excessively low weights, which generally result from one bird stepping on as the other steps off.

EWMA of De-Seasonalised Daily Mean Penguin Weights

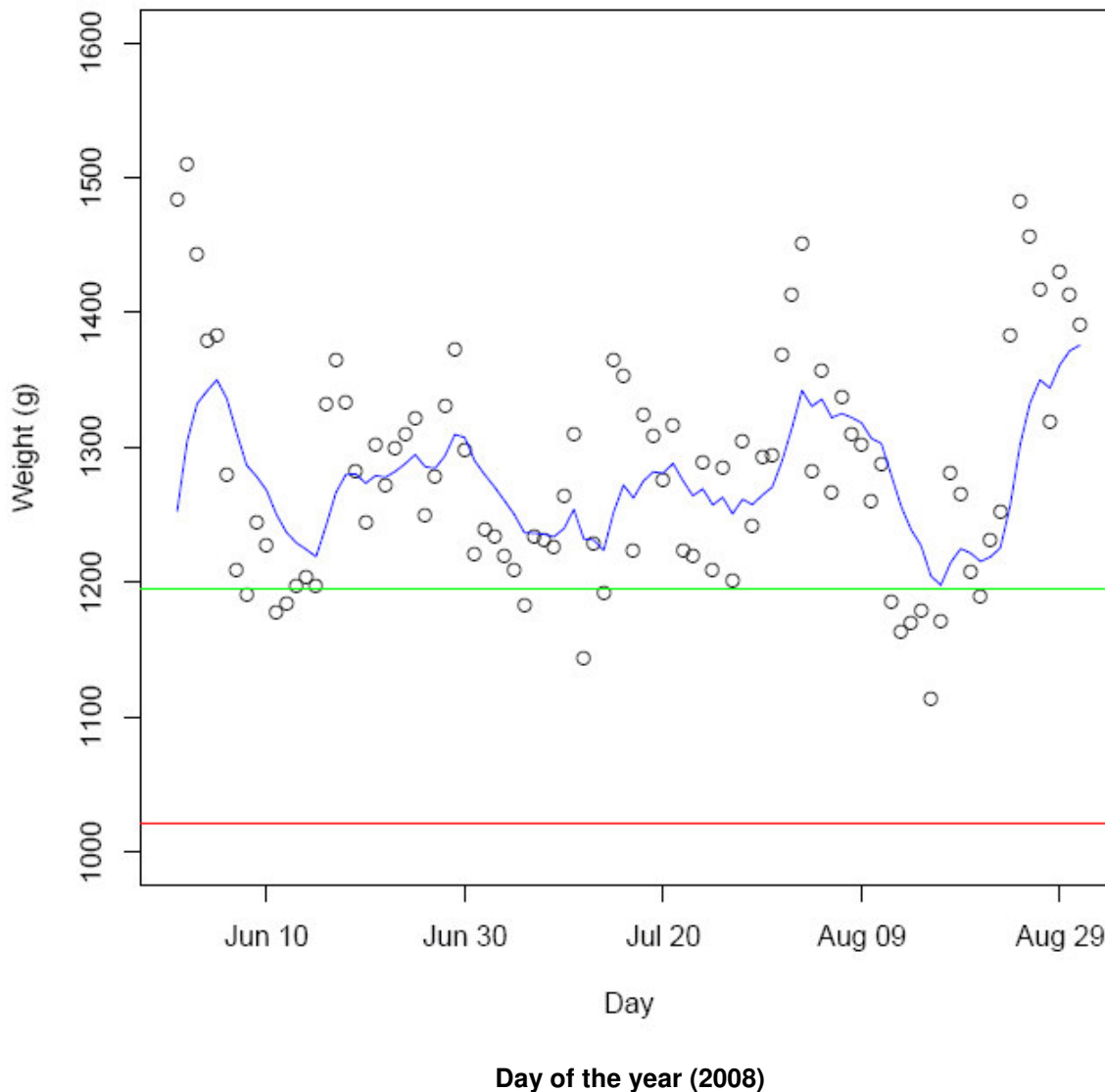


Figure 1. EWMA of de-seasonalised daily average weight for Little Penguins at PINP, measured using the Automated Penguin Monitoring System, for the period 1 Jun-31 August 2008 (this report relates to the August results only). The open circles indicate the mean daily weight, the blue line is the EWMA, the green line is the target value (long-term average) and the red line indicates the control limit of 1021g (average weight; analysis prepared by Emphron Informatics Pty Ltd).

Reference

PoMC 2007. Little_Penguins_Detailed_Design CDP_ENV_PR_020. Port of Melbourne Corporation. Published on www.channelproject.com/environment/monitoring.asp

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