

## 22. Does age matter? Foraging behavior and stress of known-age breeding Magellanic penguins *Spheniscus magellanicus* at Matillo Isl., Argentina

Sabrina Harris<sup>1,3</sup>, Klemens Pütz<sup>2</sup>, Gabriela Scioscia<sup>1</sup>, Andrea Raya Rey<sup>1,3</sup>

<sup>1</sup> Centro Austral de Investigaciones Científicas CADIC-CONICET, Houssay 200, Ushuaia, Argentina.

<sup>2</sup> Antarctic Research Trust, Am Oste-Hamme-Kanal 10, 27432, Bremervörde, Germany.

<sup>3</sup> Wildlife Conservation Society, Argentina, Amenábar 2595, Piso 2 Of 19, Buenos Aires, Argentina.

Life history theory states long-lived individuals compromise between current reproduction and survival over successive breeding attempts in order to maximize their fitness. Seabirds must forage efficiently to breed successfully, and the cost of reproduction may be reflected in higher stress levels of the breeding individuals. Known-age breeding Magellanic penguins *Spheniscus magellanicus*, between 4 and 20 years old, with less than 20-day old chicks were equipped with GPS devices (IgotU) and TDR – accelerometers (DVL-400, Little Leonardo, Japan) for one foraging trip on the same day (n = 10). Upon recovery of devices, a drop of blood was extracted from their tarsal vein and blood smears were made *in situ* and stained in the laboratory with Giemsa stain. Foraging distance increased ( $F = 9.98$ ,  $p = 0.01$ ), and path sinuosity decreased with age of breeders ( $F = 5.49$ ,  $p = 0.04$ ). Heterophil to lymphocyte ratio, used as a proxy of stress, also decreased with age ( $F = 7.66$ ,  $p = 0.02$ ). Older individuals went further and in straighter paths and had lower stress levels than younger breeders, which may indicate individuals continue adjusting their foraging behaviour on successive breeding attempts and lower stress levels may be reflecting more efficient behaviors as individuals age. Life-long fitness of individuals is defined as the number of offspring produced given the accumulative costs of reproduction and the current study on Magellanic penguins suggests these costs seem to reduce as individuals age.