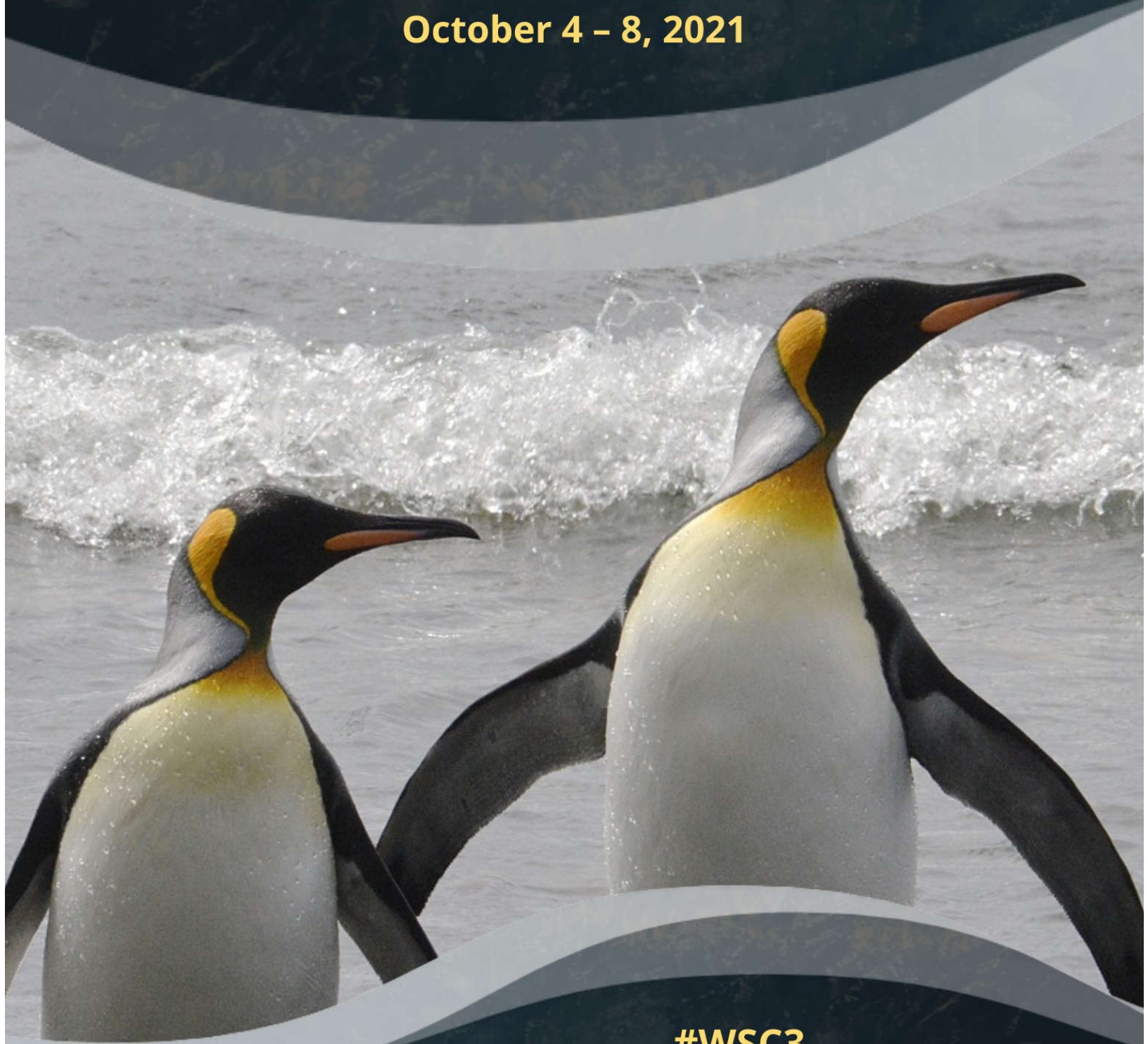




3rd World Seabird Conference

October 4 – 8, 2021



#WSC3

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manufactured from 100% recycled plastic, remotely controlled sound system activation/deactivation, and remote auditory and visual monitoring of restoration efforts.

L – Physiology

1A-L-51: Tourism at Martillo Island, Tierra del Fuego (Argentina): are Magellanic penguins (*Spheniscus magellanicus*) feeling it?

Authors: Sabrina Harris¹, Gabriela Scioscia¹, Andrea Raya Rey¹

¹CADIC-CONICET

Wildlife tourism is increasing all over the world, and its effects may be detrimental to the species involved. Negative effects of human visitation on seabirds may be worse at particularly stressful life stages such as breeding. The current study took place at Martillo Island, Argentina, where approximately 4000 pairs of Magellanic penguins (*Spheniscus magellanicus*) breed every year. Two groups were defined: individuals nesting within 20 meters of the tourist trail (n=27) and individuals not breeding within sight of the tourists (n=54). Breeding adults were sampled during egg incubation (September/October 2017, n=31) and chick rearing in two distinct years with (2017) and without tourism visitation in 2020 due to the global pandemic (December 2017/January 2017 and January 2020, n=50). A drop of blood was extracted from the tarsal vein and blood smears were made. Smears were fixed with alcohol 70% and dyed with Giemsa stain. Leucocyte types (lymphocytes, heterophils, eosinophils, basophils and neutrophils) were identified under optical microscope at x1000. Percentage of each cell type was estimated as well as the eosinophil/lymphocyte (E/L) and heterophil/lymphocyte (H/L) ratio as a proxy of immune response to parasites and long-term stress, respectively. For 2017, GLMs were generated with factor (tourism vs. no tourism) and stage (incubation or chick rearing) as fixed effects. Tourism had an effect on all values: higher percentage of heterophils (t=3.18, p<0.05), eosinophils (t=2.76, p<0.05) and heterophil/lymphocyte (t=4.22, p<0.05) and eosinophil/lymphocyte ratios (t=3.45, p<0.05) and lower lymphocyte counts (t= 4.12, p<0.05) than in areas not visited by tourists with no differences between stages (incubation or chick rearing). In 2020, however, there were no differences in physiological parameters between birds nesting in areas usually visited vs. not visited by tourists (percentage of heterophils (t=0.96, p=0.34), eosinophils (t=1.00, p=0.32) and lymphocyte counts (t= 0.87, p=0.39), and H/L (t=0.56, p=0.58) and E/L ratios (t=1.07, p=0.29). These results are preliminary as a larger sample is needed over a more extended period of time. However, there seem to be differences in physiological parameters of individuals exposed or not tourism and these effects are reverted once tourism does not occur. In view of these results, questions rise as to the consequences of growing tourism on the Magellanic penguin colony at Martillo Island.

1A-L-52: Huffin' and puffin: seabirds use large bills to dissipate heat from energetically demanding flight

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Endothermic animals regulate body temperature by balancing metabolic heat production and heat exchange with the environment. Heat dissipation is especially important during and immediately after demanding activities such as flapping flight, the most energetically expensive mode of locomotion. As uninsulated appendages, bird bills present a potential avenue for efficient heat dissipation. Puffins possess large bills and are members of the bird family with the highest known flight cost. Here, we used infrared thermography to test whether wild tufted puffins (*Fratercula cirrhata*) use their bills to dissipate