

## 11<sup>th</sup> Australasian Ornithological Conference (AOC) 2022

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Held as a virtual event the 11<sup>th</sup> Australasian Ornithological Conference was a fun and engaging experience running from 8 – 10 February 2022 organised by the University of Auckland. The advantage of a virtual conference is that you do not have to miss any talks, which is fantastic given that there were over a hundred 10-minute talks and five keynote sessions. The virtual platform allowed access to all the presentations until 31 March, meaning that you could continue to catch up on the talks you missed over the next couple of months.

The notable downside to any virtual conference is the ability to meet other like-minded people and network. However, the organisers of AOC did a fabulous job of mitigating this. At the end of each day there was an opportunity to virtually meet other AOC delegates, through a quiz at the end of the first day, a 4x4 networking session at the end of the second day, and similarly a social session at the end of the conference where you were connected in random groups of six for ten minutes. I enjoyed hearing from other AOC delegates about their research and it because of the virtual set up, it provided an opportunity to go back and watch their talk if you had missed it.

My presentation (Phylogeography, taxonomic status and the effect of human colonisation on the genetic structure of the pied shag, *Phalacrocorax varius*) was in the second seabird symposium and focussed on my honours research I conducted at the University of Otago under the supervision of Dr Nic Rawlence. My presentation covered my three research objectives; identifying the genetic differentiation between pied shag sub-species, identifying if the New Zealand population has undergone a population bottleneck, and identifying if the New Zealand population demonstrates geographic genetic structuring. For those interested, I will be giving an extended presentation on this work at the Birds New Zealand Auckland branch meeting on Tuesday 4 October. Alternatively, please contact me and I can send you my AOC video file. The seabird symposium housed several very interesting presentations, one of my personal favourites was Colin Miskelly's presentation (translocated petrels return to ancestral feeding grounds). Colin presented research focussed on tracking of translocated common diving petrels (*Pelecanoides urinatrix*) which found that as adults translocated petrels were travelling to ancestral feeding grounds (c. 55km further away). Although translocated petrels were able to successfully rear young, Colin's research highlighted that there are much higher energetic costs, which may be insurmountable when source sites and restoration sites are widely separated.

The conference also included a poster session, with delegates giving a quick introduction to their poster. The range and diversity of posters was great, from genetic aspects of avian biology to sensory ecology in avian biology. A personal favourite (and ABSA poster award winner) was Kamyra Patel's poster on plastic ingestion in seabirds from a sensory ecology approach. The poster introduced Kamyra's upcoming master's project (the effect of sensory

ecology on seabird plastic ingestion – focussing on shags, gannets, and albatrosses), hopefully we will see the results from her research in the near future!

Overall, the virtual AOC experience was great! A special thanks to Birds New Zealand for providing me with the opportunity to attend and present at AOC. A very special occasion as this was my first presentation at a scientific conference, hopefully the first of many!

Ngā mihi nui,  
Michael Fox

**Research Objectives**

1. What is the genetic differentiation between the New Zealand and Australian sub-species?
2. Has the New Zealand population experienced a population bottleneck (loss of genetic variation)?
3. Does the current New Zealand population show geographic genetic structure?

*P. hypoleucos?*      *P. varius?*

Northern New Zealand  
Central New Zealand  
Southern New Zealand

Figure 1: Michael Fox’s presentation; Phylogeography, taxonomic status and the effect of human colonisation on the genetic structure of the pied shag, *Phalacrocorax varius*

### SEABIRD PLASTIC INGESTION - A SENSORY ECOLOGY APPROACH

Kamya Patel, Ariel-Micaiah Heswall, Anne Gaskett

**Sensory ecology studies how animals perceive and interact with each other and the environment<sup>1</sup>. Seabirds’ sophisticated sensory systems evolved with their extreme pelagic and colonial lifestyles but could also make them vulnerable to sensory traps such as bright lights or the scent of fish on fishing vessels<sup>2,3,4</sup>.**

**Which Aotearoa birds eat plastic?**

- Surface feeders<sup>5</sup> Albatrosses
- Pursuit divers<sup>6</sup> Shags
- Plunge divers<sup>7</sup> Gannets

**Why do seabirds eat plastic?**

- Plastic may act a sensory trap?
- Plastic colours could look like prey or biofluorescing could emit DMS<sup>8,9</sup>
- Birds deliberately eat plastics that resemble prey.

**Aims**

- Test how different types of plastics will change in colour and odour.
- Explore and document the types of plastics ingested by shags, albatrosses and gannets.
- Record important information about sensory features.

**Methods**

- Measure plastic colour and odour at monthly intervals using spectrophotometry and mass spectrometry.
- Collect ingested plastic through dissections and faeces.
- Compare ingested plastics with the Sustainable Coastlines database on beachcast plastics.
- Compare characteristics of ingested plastics between species and against existing species’ spectral data.
- Measure sizes of sensory features such as eyes, nostrils, optic tecta and olfactory bulbs with a CT scanner.

**Project significance**

1. First record of how ocean plastics change in odour and colour over time.
2. First multispecies survey of plastics ingested by Aotearoa albatross, gannets and shags.
3. Researching plastic ingestion from a seabird’s sensory perspective; a novel view.
4. New data about fundamental features of seabird sensory anatomy.
5. Conservation information for taonga species.

1. Martin & Stevens (2013). Sensory ecology, behaviour and evolution. 2. Rayner et al. (2011). Nature Communications. 3. Anderson et al. (2011). Endangered Species Research. 4. Poot et al. (2008). Ecology and Society. 5. Weimerskirch et al. (1986). Ibis. 6. Grønli et al. (2006). Marine Biology. 7. Rippen Coulter et al. (2004). Ibis. 8. Day (1986). Unpublished Doctoral Dissertation, The University of Alaska. 9. Savoca et al. (2016). Science Advances. Images: https://www.pingreeg.com

Figure 2: Kamya Patel’s poster, winner of the ABSA poster award.