

Avian flu: a new pressure for Falklands seabird populations

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THE potential effects of Highly Pathogenic Avian Influenza (HPAI H5N1) (bird flu) on our globally and nationally important wildlife is of great concern, both in terms of species conservation and ecosystem functioning, and associated implications for tourism, public health and our wider economy.

After all, the virus has had widespread and, in certain regions, catastrophic impacts on wildlife.

In the UK, for example, a recent assessment from the RSPB reports a 54% decline in breeding northern gannets in Wales, and a 76% decline in breeding skuas in Scotland when compared to previous surveys.

HPAI reached the Falklands in October 2023. The virus has since been recorded around the archipelago, with cases found in various species in Stanley and on outer islands' breeding sites.

Fortunately, in the Falklands, observations of larger scale mortality are currently limited. The most significant outbreak recorded has been within the black-browed albatross colony on Steeple Jason Island, home to the world's largest colony of the species with ~210,000 breeding pairs.

Falklands Conservation visited Steeple Jason as part of the long-term Falkland Islands Seabird Monitoring Programme (FISMP) in November 2023 and January and March this year to estimate breeding pair numbers and breeding success (expressed as the number of chicks raised per breeding pair) of various seabird species.

During these trips, we were able to assess both the presence and distribution of bird flu in gentoos, rockhoppers and skuas, but particularly within the albatrosses.

Dead albatross adults, which are rarely observed in the colony in 'typical' seasons were detected dotted around the colony in November.

In January, we estimated several thousand dead adults at the colony – it is unfortunately impossible to determine the number of birds that may have perished at sea – along with clusters of dead chicks and empty nests amounting to several tens of thousands.

During our more recent trip in March, we noted new areas of large-scale breeding failure.

Based on our counts, the number of breeding pairs at the start of the season remained comparable to last year, whilst the breeding success dropped to 21% (38% last



The effects of Avian Flu on Steeple Jason seabirds

season.) Confirmed HPAI cases through swabbing and the characteristics of dead birds witnessed in Steeple's albatrosses strongly suggests that this year's breeding failures was predominantly the result of HPAI.

It is important to be cautious about drawing conclusions from just one data point in time about how HPAI might be affecting the population, and interpretation of the counts should be done with consideration of pre-existing baseline information.

Long-term monitoring shows that large-scale breeding failures in our albatrosses are not unprecedented, and these can be linked to a range of pressures. For example, in 2010, breeding success at Steeple was also at 21% following a violent storm in December. Breeding success was also relatively low in 2019 (25%) and 2021 (29%), for undetermined reasons. Similarly, on New Island, the long-term albatross study colony managed by Dr Paulo Catry of ISPA (and funded by FIG) showed that the 2016 breeding success was 20%, following large-scale chick mortality caused by an unidentified disease. This year, although no HPAI has so far been confirmed in dead albatross on New Island, breeding success was nonetheless at its second lowest in the past decade (43%), likely as a result of high-level predation from other birds, which may or may not be linked to foraging conditions in the presence of the current El Niño.

Seabirds face a wide range of existing pressures aside from that of HPAI. These include other diseases, predation, fire, loss of breeding habitat (from fire, grazing and erosion), impacts on forage fish availability through climate change and fishing, severe weather events (storms and heat

stress), and incidental mortality in fishing gear. Annual monitoring provides an indication of the impact of these combined pressures on the status of the breeding population.

In a recent study in the Falklands incorporating Falklands Conservation's (FC) demographic study data for Steeple, we show that increased adult mortality in albatrosses following violent storms could drive population declines by almost 2% if this occurred once every 5 years. Events like HPAI could have a similar impact and will worsen this prospect.

Over the longer term, the FISMP shows that the BBA breeding success on Steeple (always based on counts in mid-March) has taken a downward trend since 2015 - a year which coincided with downturns in other seabird populations and a strong El Niño event. A similar trend is apparent at New Island, where, after an initial multi-season increase, breeding success has been declining back to the levels when monitoring first started in 2003. It is at this stage unclear as to whether the current downward trend in breeding success forms part of a larger-scale and naturally oscillating trend for albatrosses, or whether there is genuine cause for concern.

Certainly, impacts of consecutive and cumulative threats are a real concern. Repeated low breeding success means that there will eventually be a shortage of chicks that can mature into breeding adults. Pressures affecting adult survival are of particular worry, as seabirds are usually long-lived, take several years to mature to breeding age, and species generally only have one or two eggs. Therefore, any additional adult mortality can make it difficult for



a population to recover.

Losses of breeding adults as a result of HPAI or otherwise may not necessarily be detected immediately in following seasons, as the impact on the colony may in parts be buffered by non-breeders replacing the breeders. Demographic study sites with ringed individuals, such as those managed on Steeple by FC and on New Island by Dr. Catry, can provide some insight into population age structures and changes. In addition, annual monitoring of breeding pairs and breeding success will help quantify any longer-term impact caused by a shifting age structure in a population.

But while monitoring programmes provide a crucial tool for understanding the status of a breeding population, and research can inform how that may occur, it is simply not enough in itself to help seabird populations. Actions to reduce threats are the only thing that prevents simply monitoring wildlife out of existence. Resilience of populations can, and is, being increased by disturbance reduction, habitat improvement, invasive species removal, biosecurity measures and taking positive management actions that protect our inshore and offshore ecosystems, and ultimately our economy.