The impact of wild bird carcase collection in HPAI virus H5N1 transmission: a veterinary risk assessment

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Introduction

- Highly pathogenic avian influenza (**HPAI**) has affected **wild birds** globally in recent years.
- Where mass mortality occurrs, the main mitigation option to prevent onward transmission of the virus is carcase collection.

Collection of HPAI-infected wild bird carcasses.
Source: https://www.bbc.co.uk/news

Objective

A **veterinary risk assessment** (VRA) was commissioned by the Scottish Government to assess **how carcase collection may influence the risk of onward transmission** of HPAI H5N1 to:

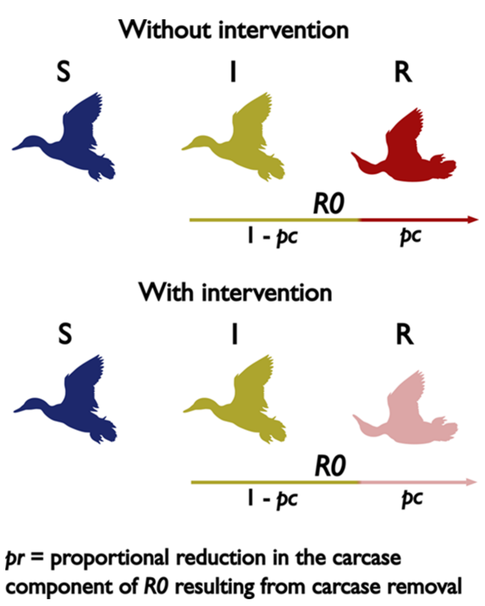
- other wild birds
- wild mammals
- captive birds

Materials and Methods

- A qualitative VRA was conducted, based on extant literature and expert opinion, and has been reviewed by relevant expert groups.
- A quantitative framework was subsequently developed to clarify the risk assessment step concerning the relative contribution of live birds and carcasses to the spread of HPAI in wild bird populations.

Risk pathways

Model structure



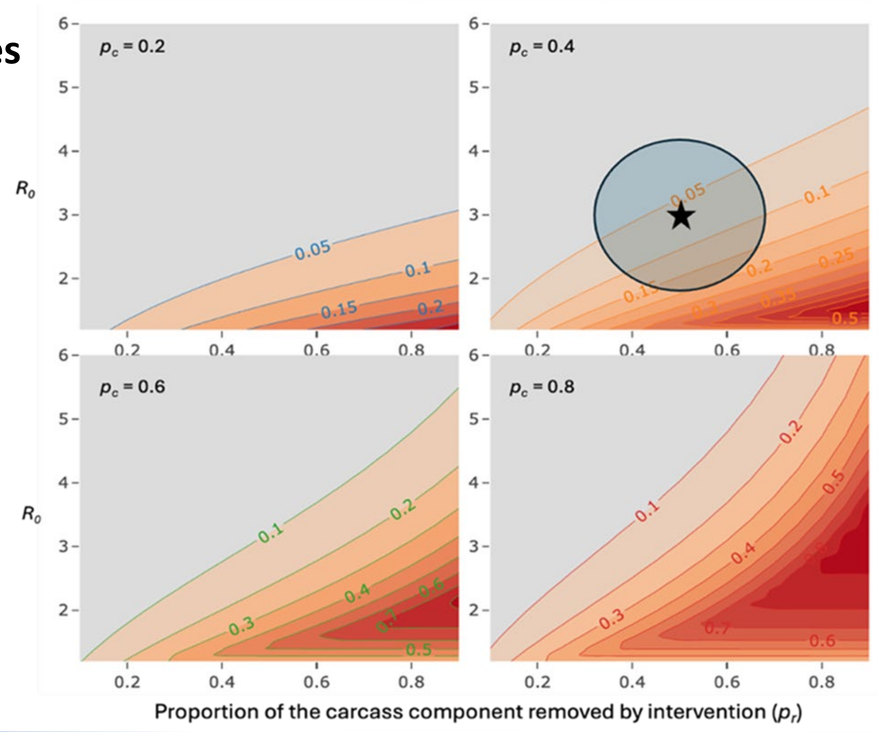
pr = proportional reduction in the carcase component of *R0* resulting from carcase removal

Results

Overall likelihood estimates

	Without intervention	With intervention
Wild birds - High density areas	High	High
Wild birds - Low density areas	Medium	Low
Wild carnivores	High	Medium
Captive birds	Low	Low

Model estimates



Discussion and conclusions

Collecting carcasses in the event of mass mortality of wild birds appears to have **limited impact on the risk of onward spread** of HPAI H5N1 (high uncertainty across all estimates).

Given the global spread of HPAI, its significant impact on wild birds, the economy, and its zoonotic potential, we believe **this work provides a valuable evidence-based tool to inform decision-making** regarding one of the top priority One Health diseases.