

# Portals to the World



Mute Swan - *Cygnus olor*  
Understanding population change



Week 3

Tiff Ki

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From the comfort of your own home, join Tiff Ki and Sara Steele as they highlight Tiff's work with UK mute swan populations. We'll hear how research is helping scientists to understand the reasons for swan population changes. This session will include a recorded video from the Museum of Zoology, as well as a live interview plus a question and answer period. At the end, we'll review the inspired art making opportunity with Nathan Huxtable from the Fitzwilliam Museum.

# The Feeding Patterns of Mute Swans



Mute swan  
*Cygnus olor*

Resident all year round in the  
UK

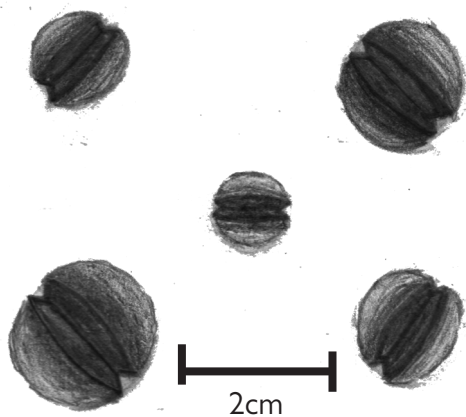
Swans feed on fresh water plants, both submerged plants and those along the waters edge. They use their long necks and a behaviour called 'upending' to reach plants under the water.

Swans also commonly eat agricultural crop plants such as oilseed rape and wheat.

They can eat up to 3.5kg or 8lbs of vegetation a day.

## Decline in Mute Swans due to Lead Fishing Weights

Mute swan populations across the UK declined dramatically 60 years ago and remained at very low numbers until around 40 years ago.



When examined, swans showed signs and symptoms of lead poisoning.

Lead weights such as those shown here, are used to weigh down fishermen's lines. These often brake or are discarded in the water.

Swans come into contact with discarded materials like lead weights when they feed from the riverbed. Their behaviour of 'upending' to reach the deeper plants is shown here.

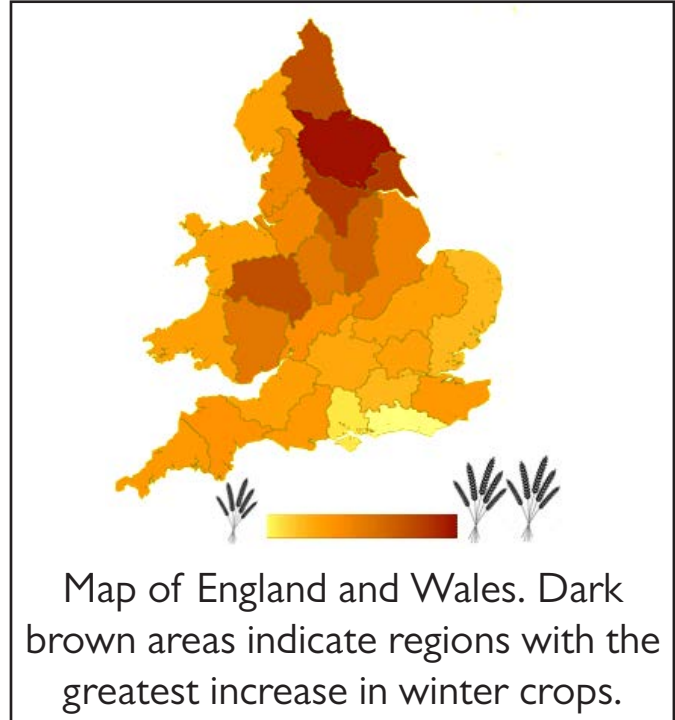
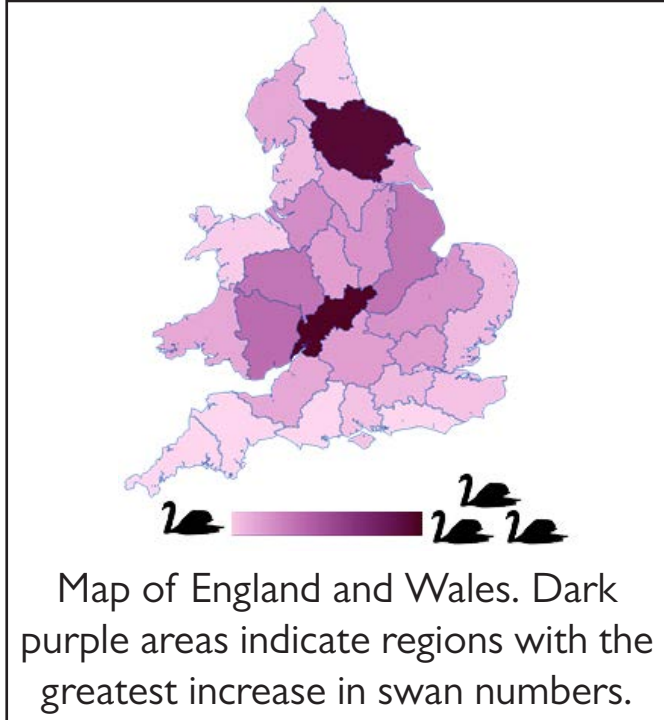


The lead weight remains in the swan's stomach, causing many negative side effects including anemia (iron deficiency).

A ban on the use of lead weights for fishing 30 years ago helped mute swan populations increase.

# Rise in Mute Swans due to Winter Crop Expansion

Over the last sixty years, Britain has seen considerable changes to farming practices and production; including an increase in winter crops such as oilseed rape and wheat. These maps show a correlation between areas with an increase in winter crops and an increase in swans. This correlation has persisted beyond the swan population increase achieved after the lead weight ban.



## The Impact of Winter Crops on other Birds

The expansion of winter crops had varying effects on UK bird populations.



Wood Pigeon  
*Columba palumbus*  
Found across the UK



Skylark  
*Alauda arvensis*  
Resident across the UK

Some bird species, such as the wood pigeon have benefited from winter crop expansion. Whereas others such as skylarks have been disadvantaged by the loss of wintering habitat on the stubbles left after an autumn harvest.

# Citizen Science and Understanding Population Change

Conservation scientists like Tiff understand that good conservation policy and practice relies on strong evidence and they cannot do it alone. They rely on members of the public who give their time to survey studies and collect data (citizen scientists) to help understand change in wild animal populations and the environment. (Even our scientists volunteer their time to collect data in similar studies to their own, like Jack talked about in Week One of our course.)



The evidence we gather helps us understand the environmental and human factors that influence wild populations. This evidence helps us to develop effective conservation policy and practice, like the ban on lead weights by fishermen to save the mute swan.

As we collect more datasets through survey studies, we can understand how wild animal populations grow, spread and decline. And, in the case of the mute swan, how they can recover.



The data used in this talk and handout is from the BTO's Wetland Bird Survey (WeBS).

## Speaker Biography

Tiff Ki



Tiff is a conservation scientist based at the University of East Anglia. She also works within conversation and ecology groups at the Department of Zoology here at Cambridge University. Tiff is interested in understanding biodiversity and ecosystems (the systems that support life), so she can help develop better strategies to balance biodiversity and human development. She is passionate about scientific outreach, both how we connect with scientific ideas but also how we can reach out and spend more time in nature, especially within the school curriculum.