

# Potential role of Whooper Swans (*Cygnus cygnus*) in reassortment and dissemination of avian influenza A (H5N2) in Eastern Asia

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## Abstract

Surveillance of whooper swan migration is important for monitoring avian influenza transmission risk potential from east to west China between the East Asian–Australasian and Central Asian flyways. Here, we characterised the evolutionary and reassortment history of H5N2 viruses isolated from 1866 fresh faeces samples of wintering whooper swans collected in the Sanmenxia Reservoir area, China. This was combined with information on the migration routes of whooper swans in Eastern Asia to elucidate the role of whooper swans in spreading the virus. All segments of the new H5N2 isolates belong to the Eurasian avian-like lineage and are closely related to wild-bird viruses from China, Korea and Mongolia covering the wintering, stopover and breeding grounds in migration routes of whooper swans. We further found that the temporal-spatial migration process of whooper swans was identical with the virus transmission and reassortment pathway in Eastern Asia particularly.

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