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Alfred Newton Lecture

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Using waterbird telemetry data to support freshwater wetland conservation in China

Despite attention focused on coastal wetland loss in China, freshwater habitat is also subject to rapid loss. Declines in migratory waterbirds overwintering on the Yangtze River Floodplain since the early 2000s contrast with the favourable conservation status of the same species elsewhere in Far East Asia. Evidence suggested that factors away from Chinese wintering grounds could contribute, but we lacked waterbird flyway definition to understand where along their migratory corridors these species were potentially being impacted. Recent deployment of over 2000 telemetry devices on 42 species of waterbird throughout Far East Eurasia confirmed the Yangtze River Floodplain's outstanding importance for wintering cranes, herons, ducks, geese, swans and wading birds, breeding from western Yamal (70°E) to Anadyr (180°E) in the Russian Arctic, throughout the eastern Russian taiga forest, the Mongolian steppes and temperate China.

Unlike farmland-feeding waterbirds in Europe, North America, Japan and Korea, telemetry showed that Yangtze River Floodplain waterbirds are prisoners of their wetland wintering habitat, trapped by economic development, disturbance and heavy persecution. Continued wetland loss and degradation has therefore affected all species along their migratory flyways. Specialist-feeding wintering waterbirds are

increasingly concentrated at Poyang Lake (PL 29°8'N, 116°17'E) because of large inundation area (1,400 km²), exceptional water quality (the “last pot of clear water” in the Yangtze River Floodplain) and nature protection measures. Telemetry data has also shown how recent proposals to construct dams around PL will affect water level recession patterns and waterbird feeding at the last major Yangtze River Floodplain wetland of global significance, necessitating swift action to safeguard the site and its waterbirds for future generations.

Professor Lei Cao of RCEES at the Chinese Academy of Sciences, researches effects of climate change, habitat destruction and human disturbance on movement patterns, distribution and abundance of migratory waterbirds on the East Asian-Australasian Flyway. Professor Cao's group has combined deployment of cutting-edge telemetry devices with international waterbird monitoring and research throughout Eurasia to generate a better understanding and create a basis for their effective future conservation. Professor Cao has published over 60 articles on ecology, ornithology and multidisciplinary sciences in international journals including *Nature*, *Current Biology*, *Biological Conservation*, *Ibis*, *Ambio*, *Aquatic Ecology*, *Aquatic Conservation* and *The Condor*.

The 2019 Alfred Newton Lecture will be delivered as the opening lecture of the BOU's 2019 Annual Conference (BOU2019) on 27 March 2019 at the University of Warwick, UK.