

Marine moult migration of the freshwater Scaly-sided Merganser *Mergus squamatus* revealed by stable isotopes and geolocators

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Scaly-sided Mergansers *Mergus squamatus* breed on freshwater rivers in far eastern Russia, Korea and China, wintering in similar habitats in China and Korea, but nothing was known of their moulting habitat. To investigate the moult strategies of this species, we combined wing feather stable isotope ratios (males and females) with geocator data (nesting females) to establish major habitat types (freshwater, brackish or saltwater) used by both sexes during wing moult. Although most Scaly-sided Mergansers of both sexes probably moult on freshwater, some males and non-breeding and failed breeding females appeared to undertake moult migration to brackish and marine waters. Given the previous lack of any surveys of coastal or estuarine waters for this species during the moult period, these findings suggest important survey needs for the effective conservation of the species during the flightless moult period.

Keywords: habitat use, *Mergus*, Primorye, remigial moult, $\delta^{13}\text{C}$, $\delta^{15}\text{N}$.