

Supplementary material

Fig A3. Linear relationships between predicted $\delta^2\text{H}_\text{P}$ and pied flycatcher $\delta^2\text{H}_\text{F}$ across 15 sampling locations based on A) weighted growing season $\delta^2\text{H}_\text{P}$ average (GSD; Bowen et al. 2005), and B) long term May-Oct average $\delta^2\text{H}_\text{P}$ derived from our IsoMAP model. We

used parameters based on these relationships in our transfer equations [GSD: $\delta^2\text{H}_\text{F} = -0.79 + 1.13(\delta^2\text{H}_\text{P})$; May-Oct: $\delta^2\text{H}_\text{F} = -29.48 + 0.82(\delta^2\text{H}_\text{P})$].

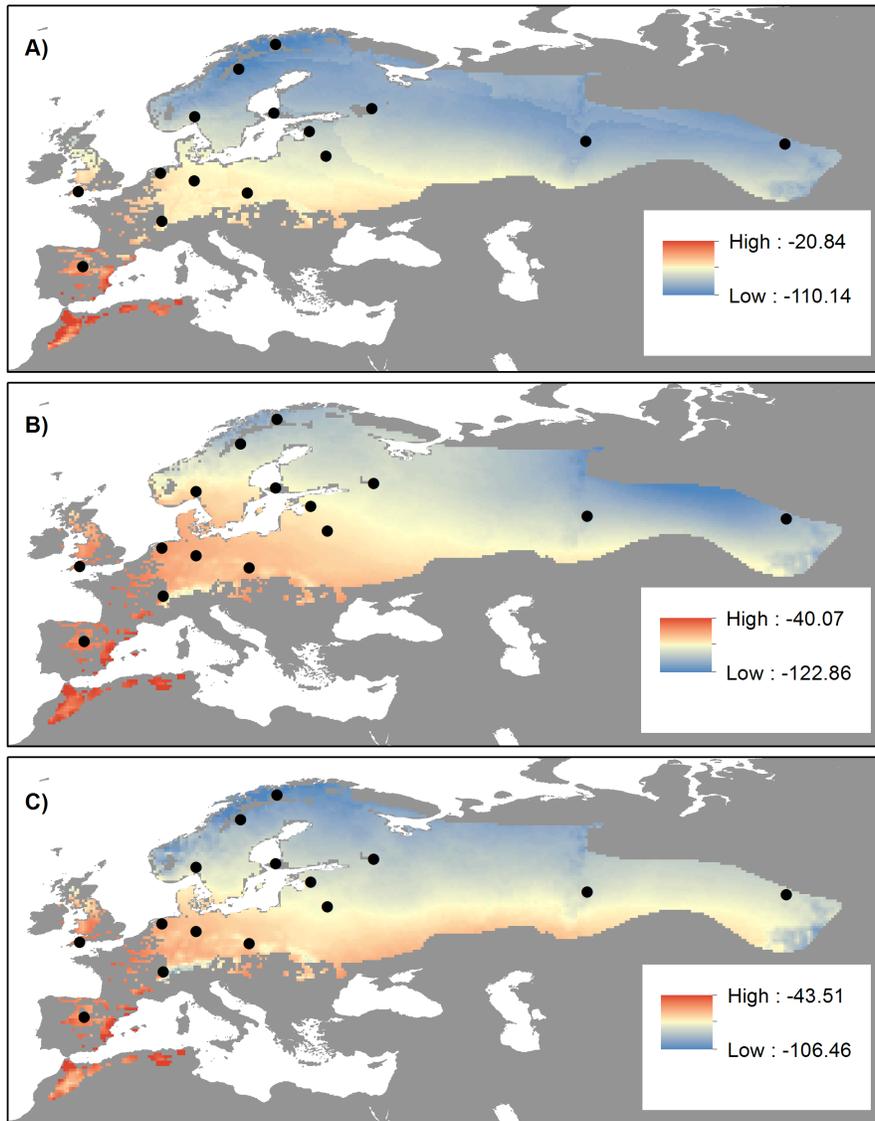


Fig A4. Isoscapes of $\delta^2\text{H}_F$ for the pied flycatcher breeding range based on calibrated differences from $\delta^2\text{H}_p$ predicted in the A) GSD model (Bowen et al. 2005) and the May-

Oct IsoMAP model for B) long term average, C) 2008 only. Black circles represent pied flycatcher sampling sites (n = 15).

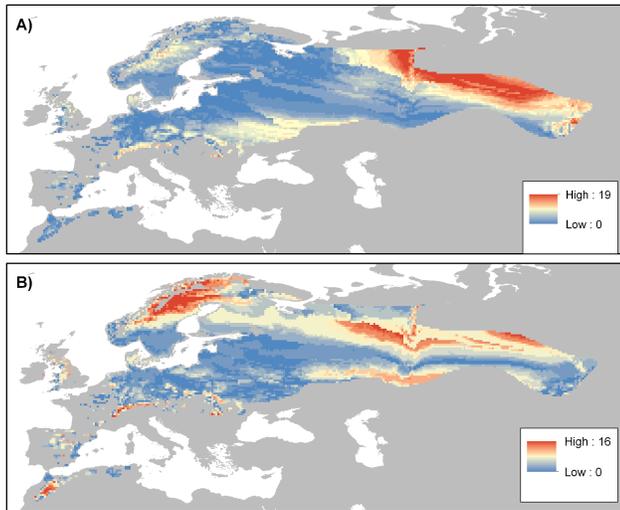


Figure A5. Differences in assignments of likely breeding season origin for 23 adult pied flycatchers based on $\delta^2\text{H}_F$ in feathers sampled in Ghana using between A) GSD (Bowen et al. 2005) and long term average May-Oct IsoMAP, and B) long term average May-Oct IsoMAP and year-specific May-Oct IsoMAP $\delta^2\text{H}_F$ model predictions. “Cooler” areas of the map indicate areas of agreement for different methods and “Warm” areas indicate areas of divergence.