MOULT SEQUENCE AND INTENSITY IN THE HOUSE SPARROW

Moult causes aerodynamic and physiological costs…but

is moult shaped to reduce these costs?

Guallar & Quesada 2023. Moult intensity constraints along the complete moult sequence of the House Sparrow (*Passer domesticus*). Avian Research 14

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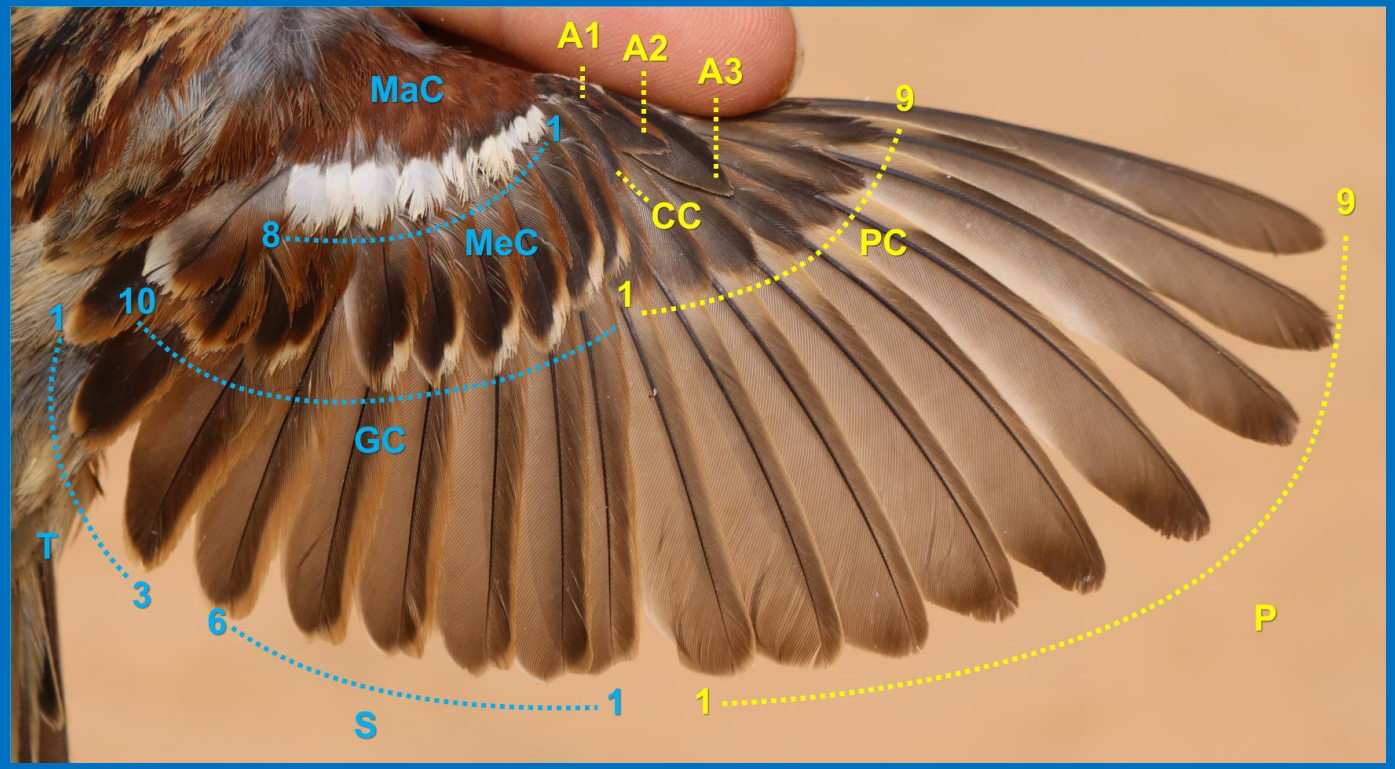
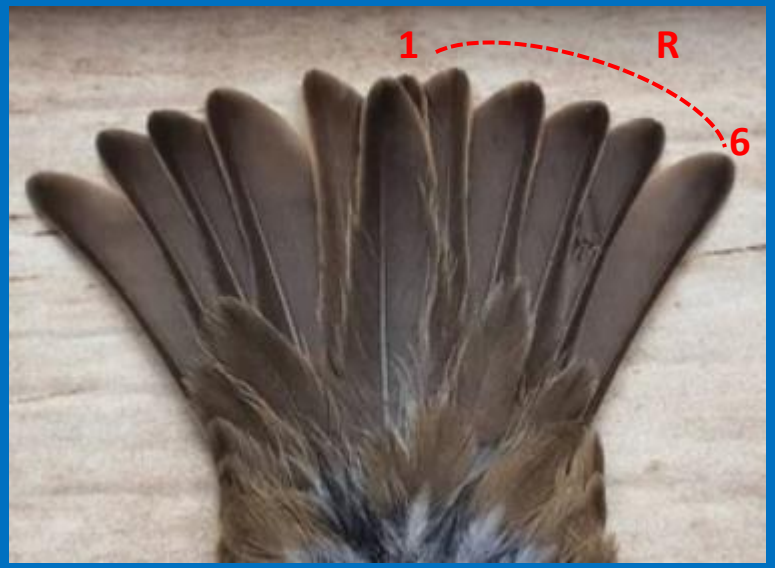
Feather numbering





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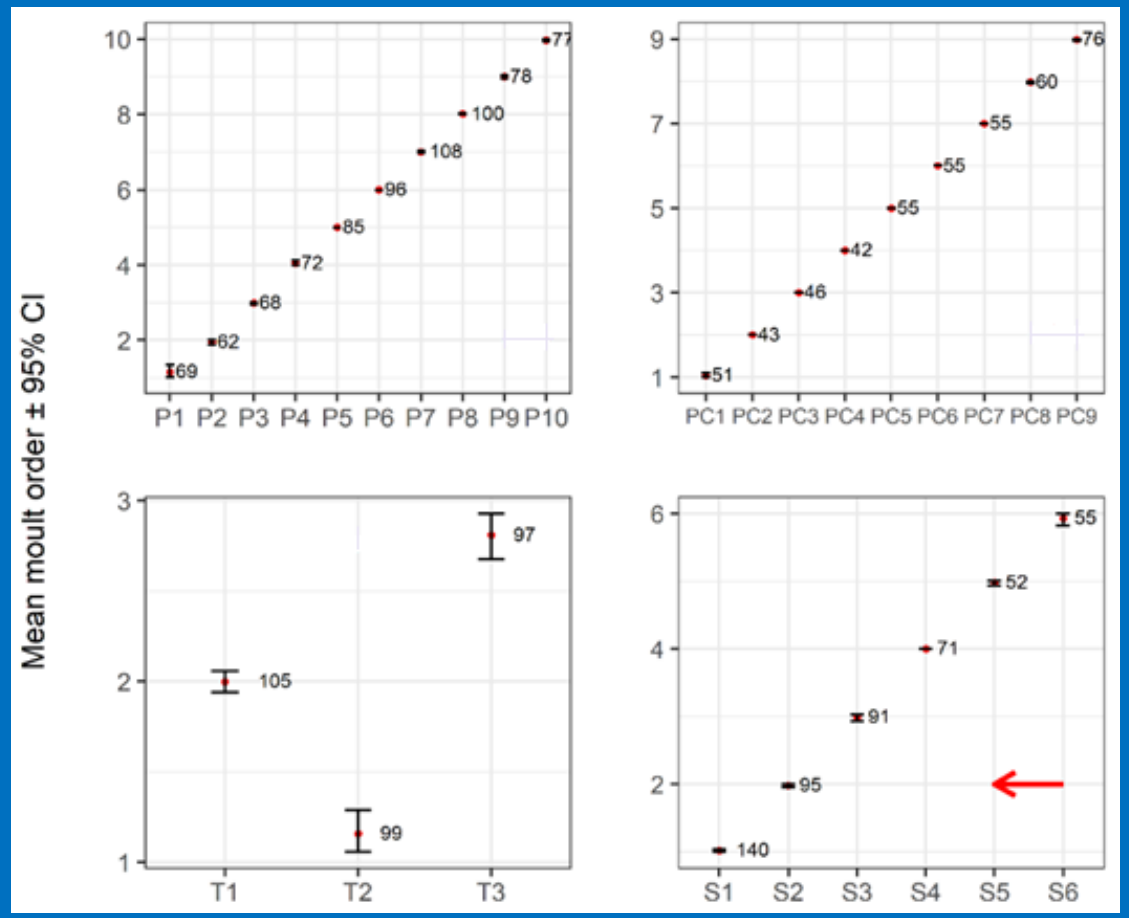
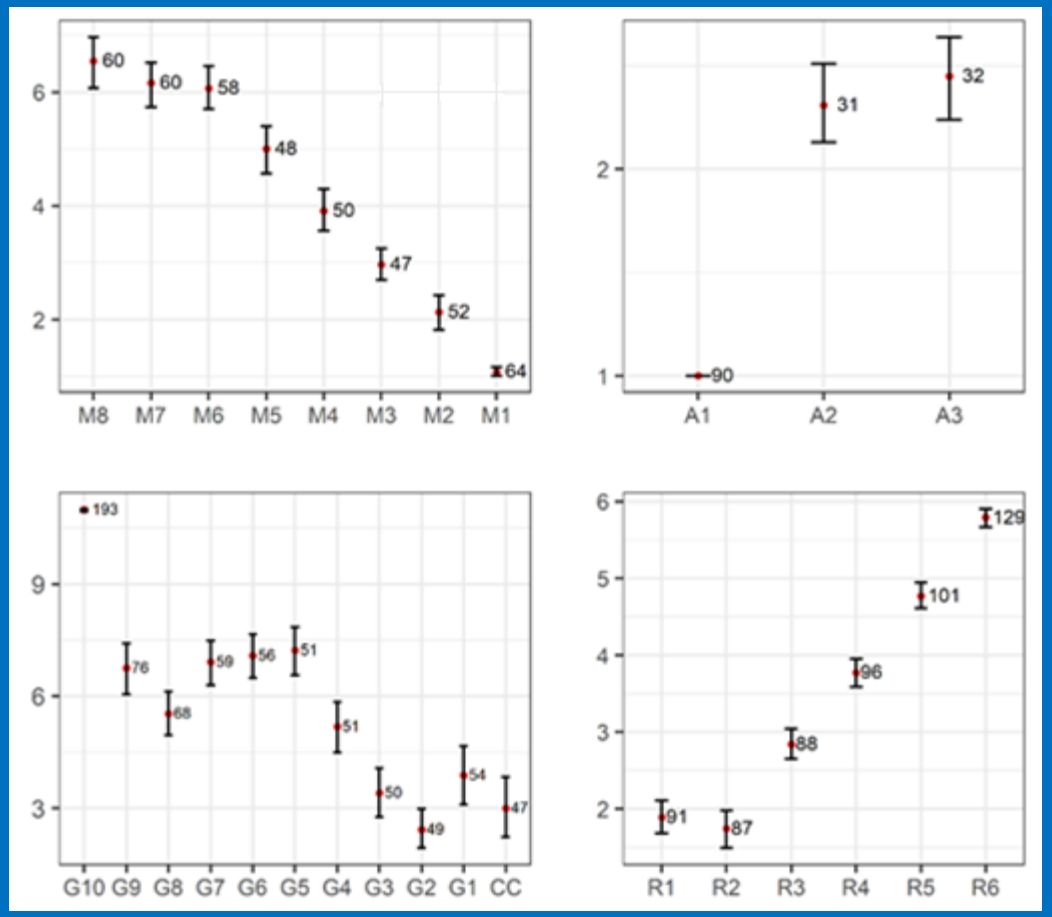
Moult sequence within tracts





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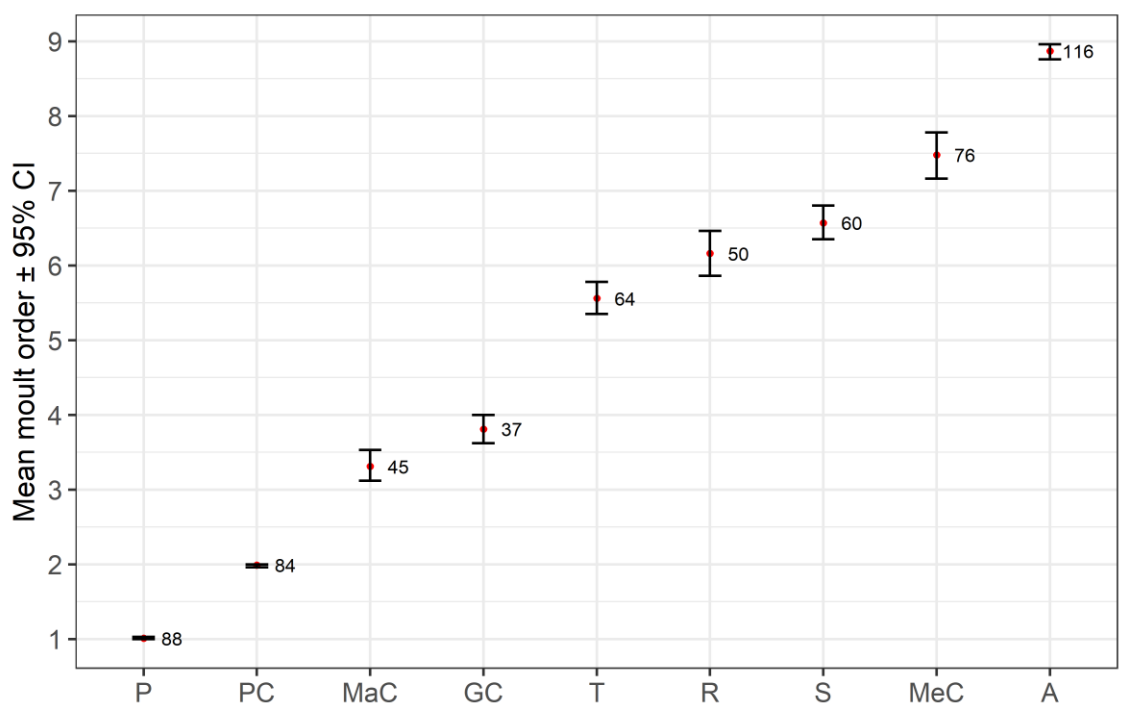
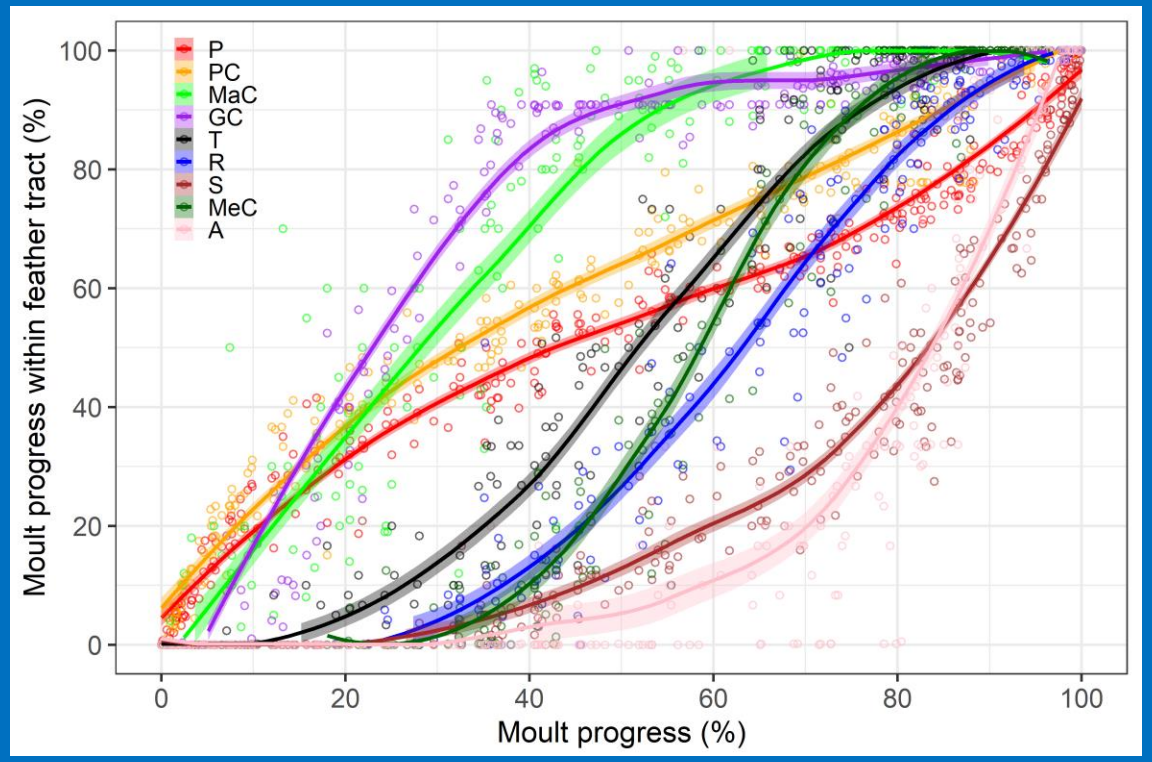
Moult sequence among tracts





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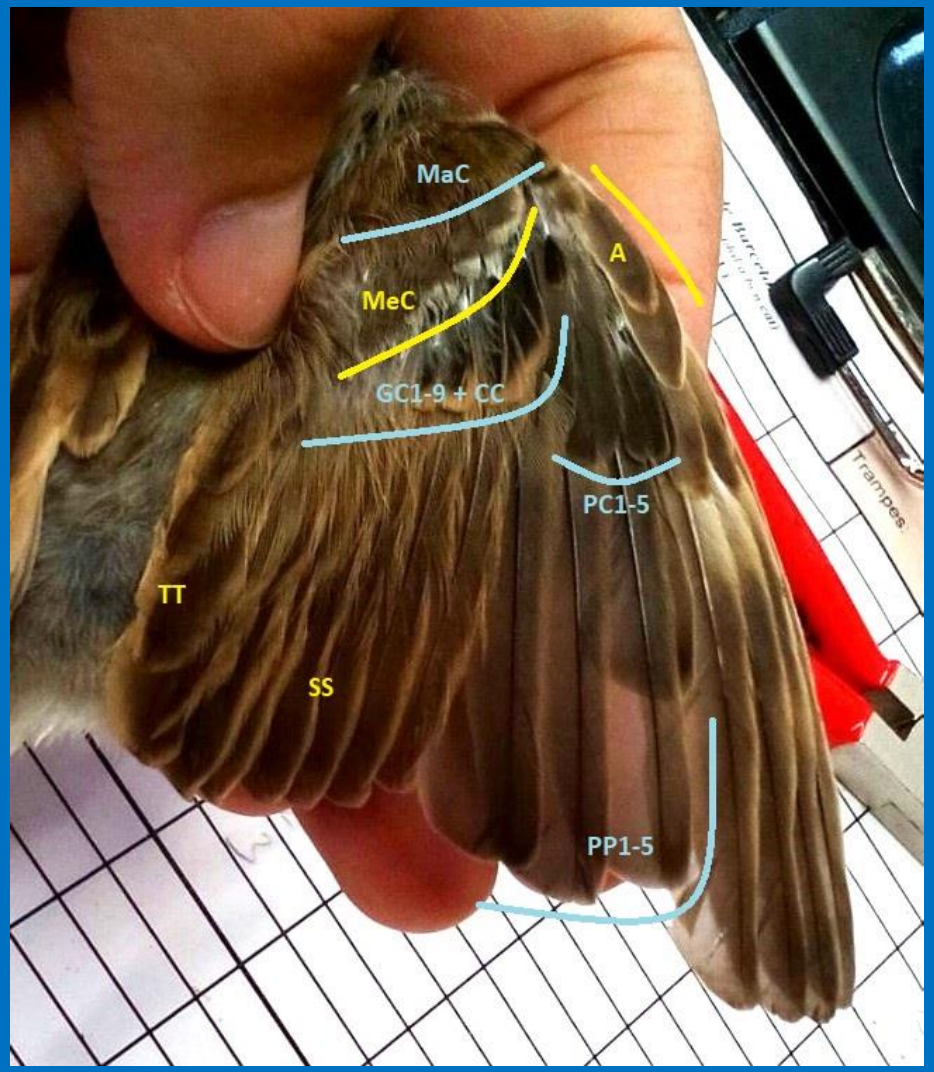
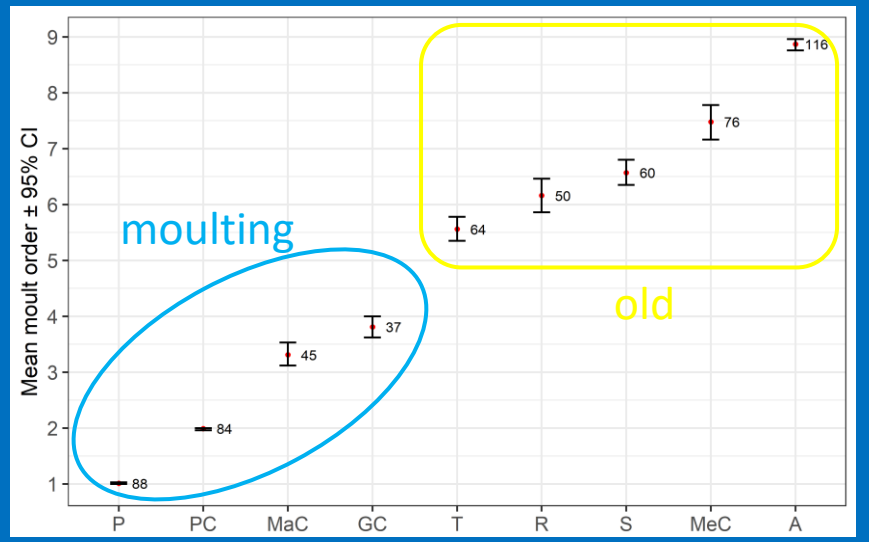
Moult sequence within and among tracts





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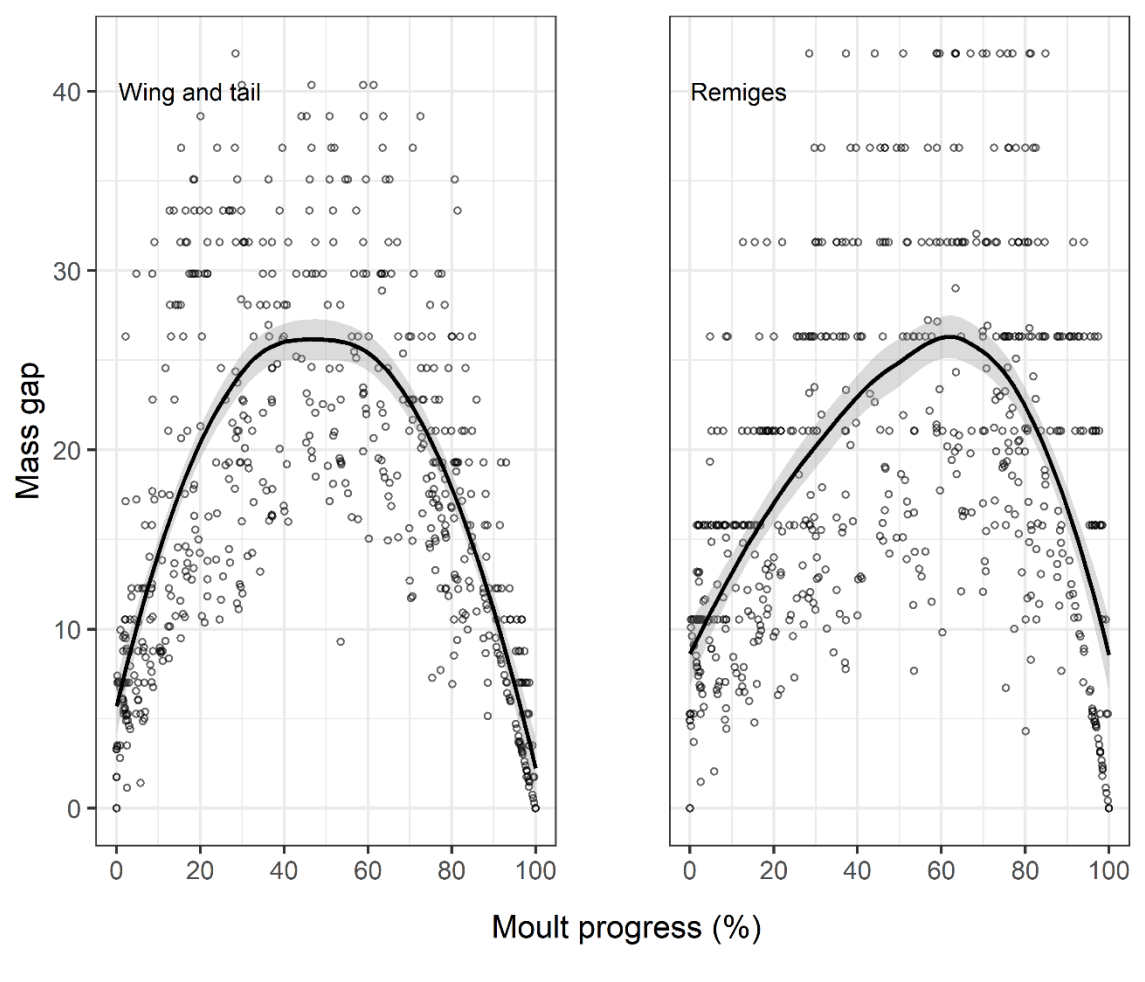
Moult intensity dynamics on wing and tail



Mass gap is a measure of moult intensity associated with the physiological cost of moult

Moult progress: % of feathers growing or grown

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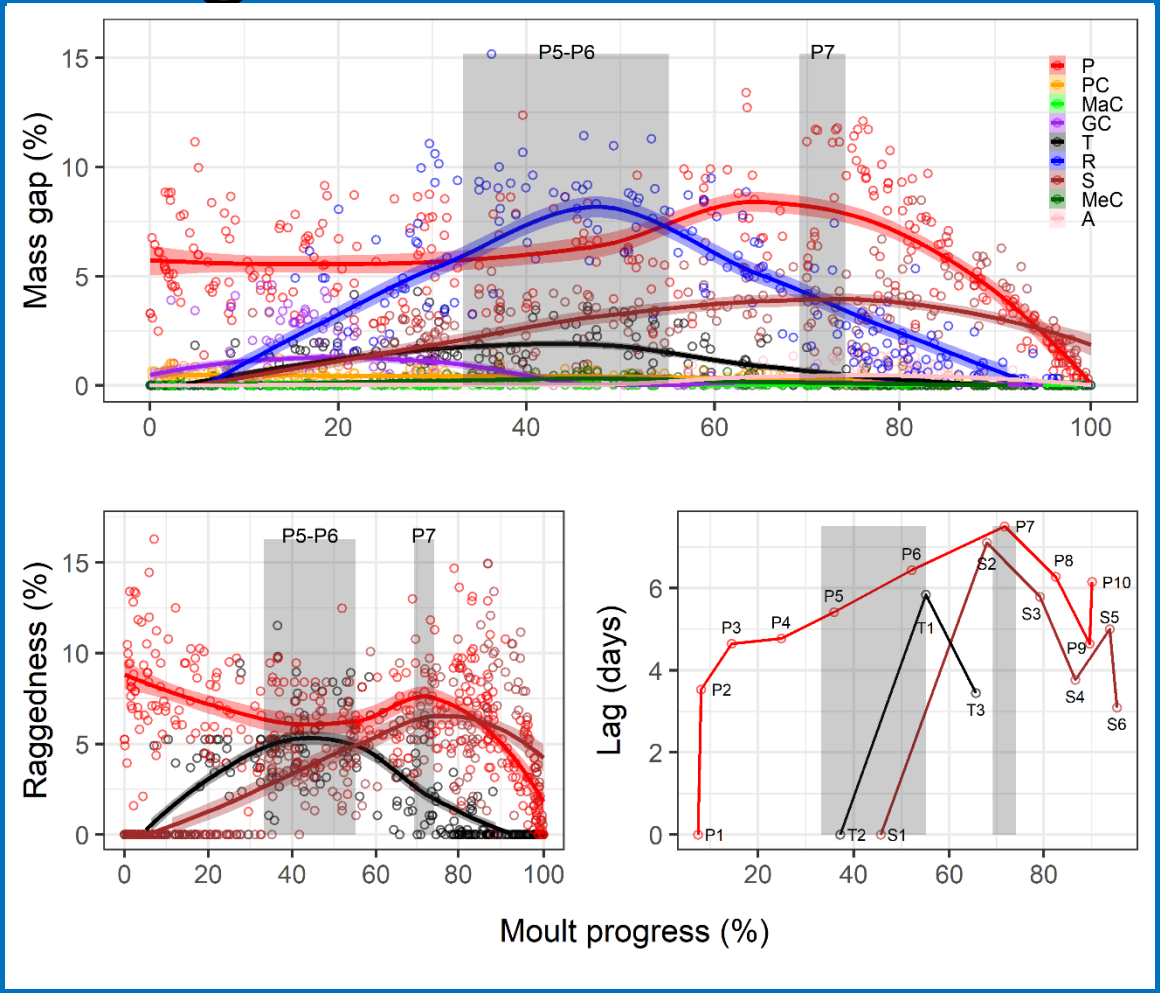
Wing- and tail-feather moult intensity



Raggedness is a measure of moult intensity associated with aerodynamic cost of moult

Notice the lag between moult of primaries P5-P6 and moult of P7 (the latter forming the wingtip)

The largest aerodynamic loss associates with gaps in the central remiges, ie., inner PP and outer SS (Hedenström & Suanada 1999)

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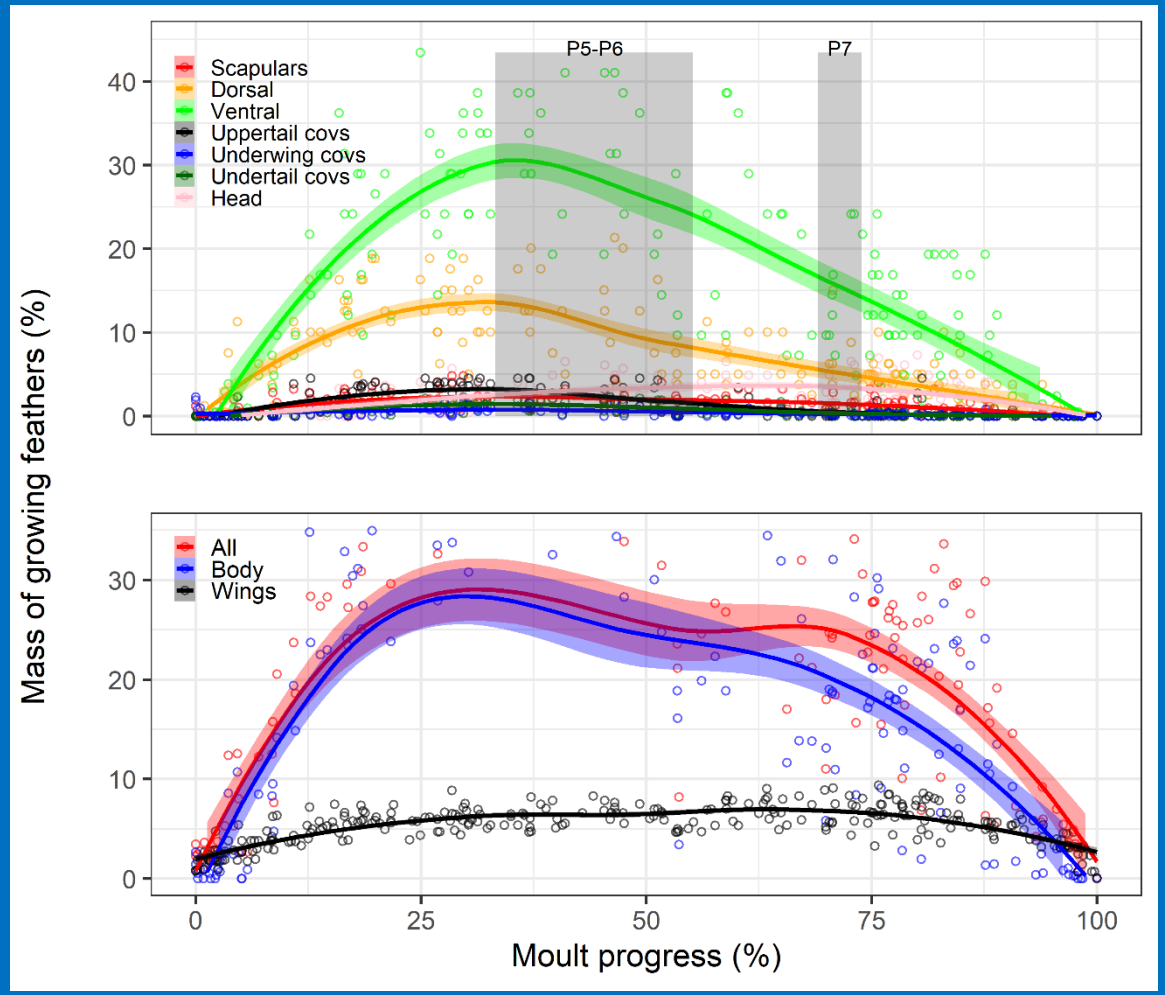
Moult intensity (body and full plumage)



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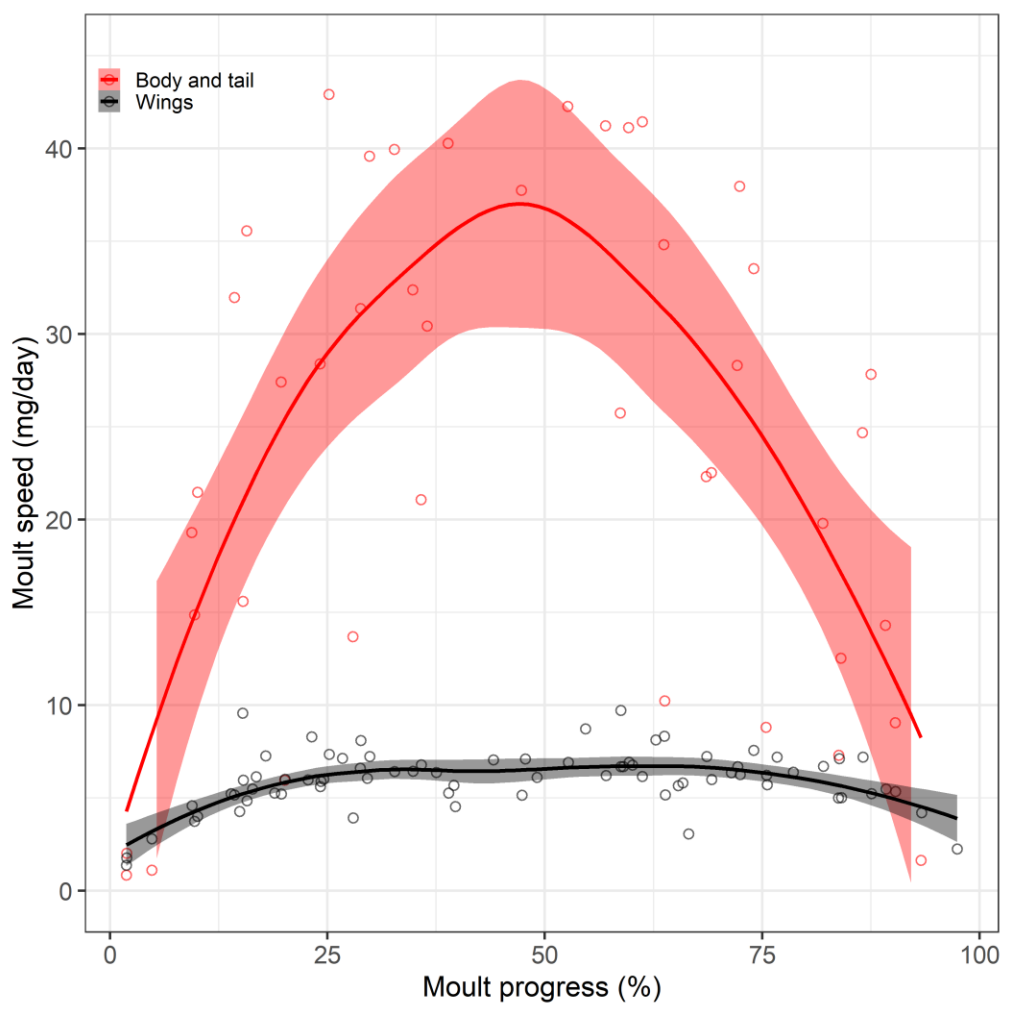
Moult speed



Body moult does not seem to be under strong physiological constraints.
Remex moult appears to be tightly coordinated (via sequence and intensity) to reduce aerodynamic losses.

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