Provenance of Illegally Traded Pangolins from Stable Isotope Analysis of Scale Samples

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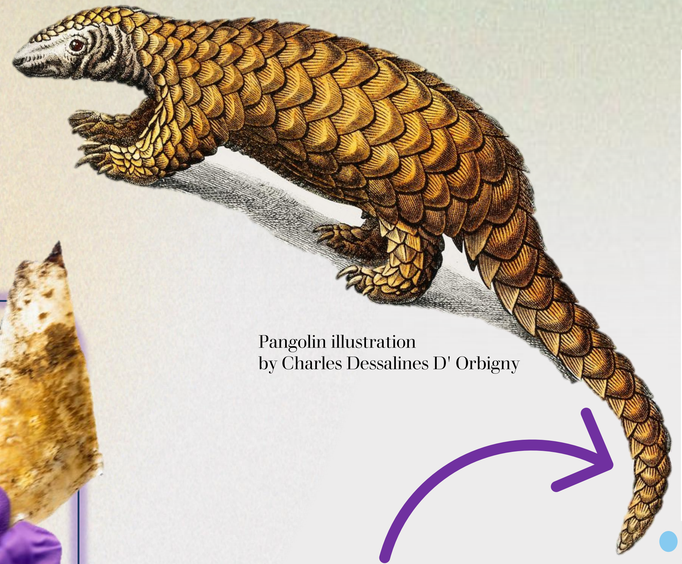
Why bother ?

- The most poached mammal
- Critically endangered
- Vital to ecosystem balance



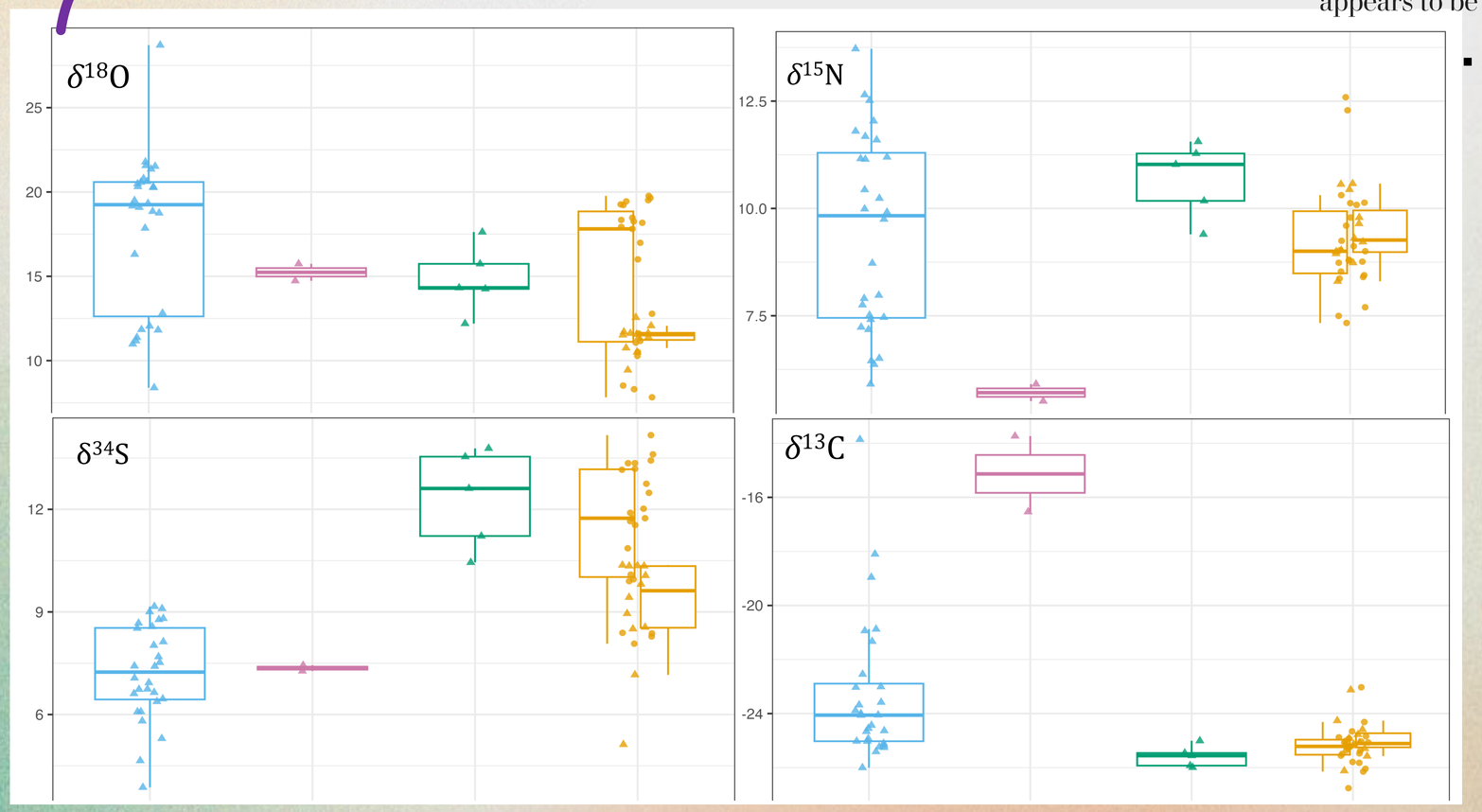
Pangolin illustration
by Charles Dessalines D' Orbigny

Getting there...

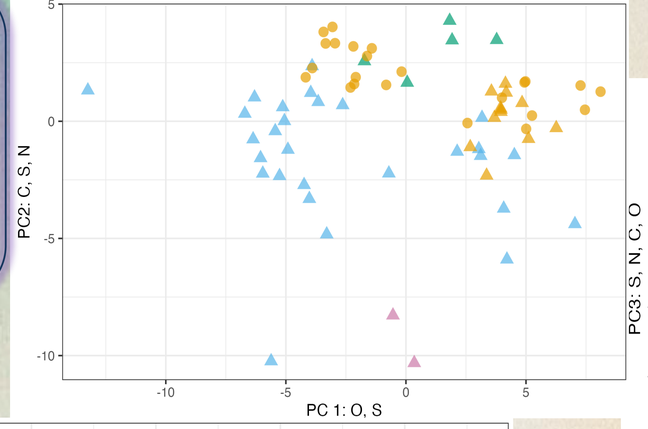
1. Collection & preparation of powdered samples
2. IRMS – Isotope Ratio Mass Spectrometer
3. Data synthesis

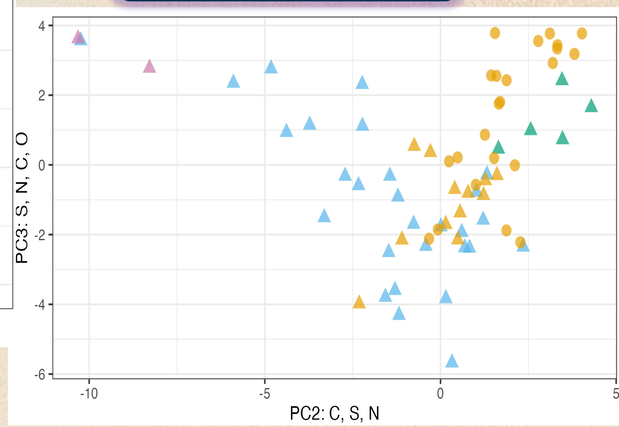
Narrowing it down.

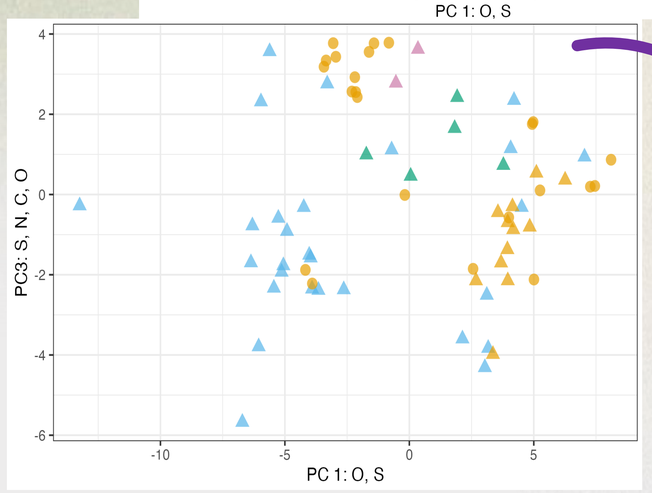
✓ Principal component analysis for all species followed by *Manis tricuspus* specific PCA for seizure comparison



All Species PCA



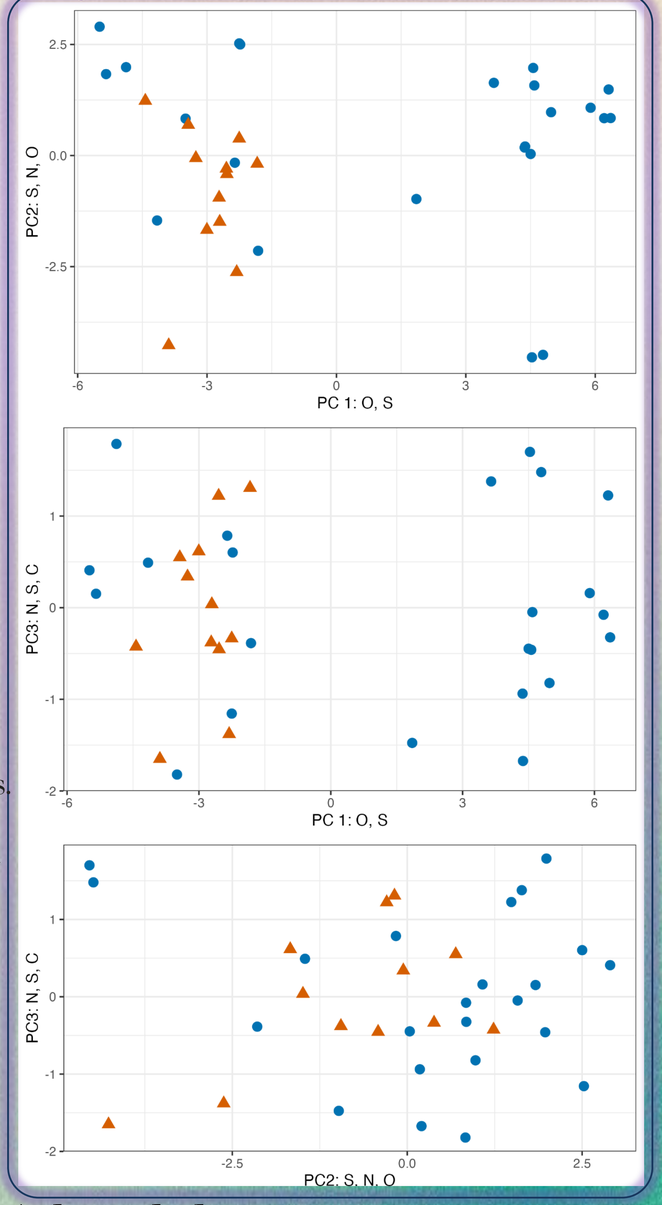




M.gigantea *M.temminckii* *M.tetradactyla* *M.tricuspus*

Seizure: ○ *Hong Kong* △ *Singapore*

M.tricuspus PCA Seizure Comparison



Take Aways

- The Hong Kong seizure is clearly from a more widespread area than the Singapore seizure. *M. tricuspis* in the HK seizure, appears to be derived from at least two distinct populations.
- $\delta^{15}N$ and $\delta^{13}C$ show that *M. temminikii*; the only savannah dwelling pangolins, are distinct from the three other forest dwelling pangolins. $\delta^{13}C$ typically distinguishes forest from savannah dwelling species and $\delta^{15}N$ reflects protein consumption. Collectively the isotopes show habitat and diet differences among the savannah versus forest dwelling pangolins.

Don't be shy,

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