

Mountain building and species radiations in the Andes:

a reconstruction of surface uplift and species diversification since the Late Cretaceous from a compilation of paleo-elevation estimates, thermochronology, and phylogenetic data

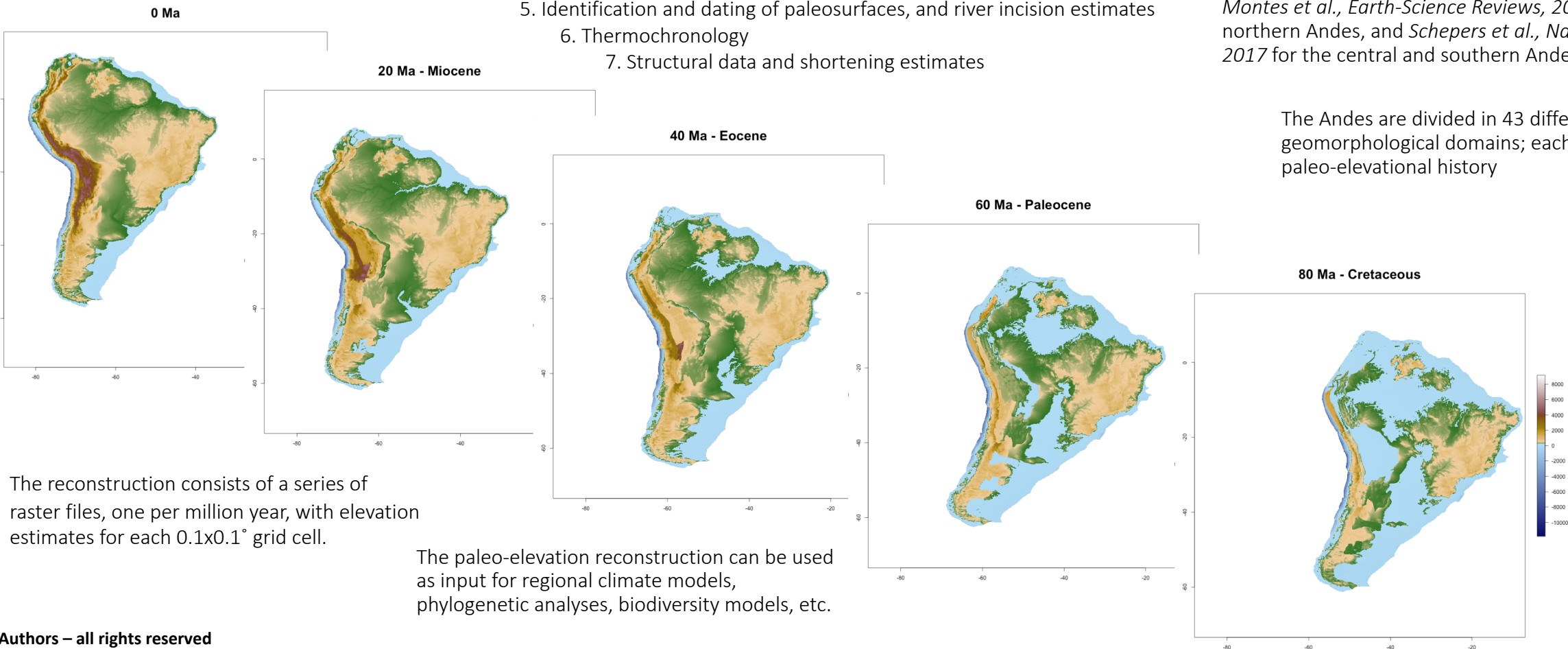
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The underlying tectonic reconstruction is from *Montes et al., Earth-Science Reviews, 2019* for the northern Andes, and *Schepers et al., Nat. comm., 2017* for the central and southern Andes.

The Andes are divided in 43 different geomorphological domains; each has its own paleo-elevational history

This paleo-elevation reconstruction is based on a compilation of >300 studies including:

1. Stable isotope paleoaltimetry data
2. Stratigraphic data from foreland basins
3. Paleobotany, paleontology, palynology, and fossil leaf physiognomy
4. Climatic indicators of elevation
5. Identification and dating of paleosurfaces, and river incision estimates
6. Thermochronology
7. Structural data and shortening estimates



The reconstruction consists of a series of raster files, one per million year, with elevation estimates for each 0.1x0.1° grid cell.

The paleo-elevation reconstruction can be used as input for regional climate models, phylogenetic analyses, biodiversity models, etc.