

Evolutionary paleoecology and the biology of extinction

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Introduction and theory

Brachiopods, environmental preference, and extinction

Ecology and survival in Cenozoic mammals

Community connectedness in Cenozoic mammals

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Evolutionary paleoecology

... the consequences of distinct ecological factors on differential rate dynamics, particularly rates of faunal turnover and diversification.

(Kitchell 1985 Paleobiology)

Emergent properties

Species level

trait that cannot be reduced to organismal level.

product of one or more traits/factors.

Survival

Law of Constant Extinction

Van Valen 1973 “Red Queen” paper.

survival probability/extinction is taxon–age independent.

Brachiopods and mammals: a comparison

Permian versus Cenozoic

marine versus terrestrial

warming versus cooling

single region versus multiple regions

Series of questions

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Ecological traits

- ▶ substrate affinity
- ▶ habitat preference
- ▶ affixing strategy

Methodology

Survival: time till event

FAD – LAD

Preliminary results

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Ecological traits

- ▶ dietary category
- ▶ locomotor category
- ▶ body size

Expectations

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Ecological traits

Expectations

Preliminary results

