

LPI-2858

Source

Title: Booming during a bust: Asynchronous population responses of arid zone lizards to climatic variables

Author(s): John L. Read, Kelli-Jo Kovac, Barry W. Brook, Damien A. Fordham

Reference: Read, J.L., Kovac. K., Brook, B.W., Fordham, D.A. (2012). Booming during a bust: Asynchronous population responses of arid zone lizards to climatic variables. *Acta Oecologica*, 40: 51-61. [DOI](#)

Summary

This study monitored lizard populations during 15 years at an Australian arid zone. The authors found asynchronous demographic responses to rainfall and other climatic variables among different lizard species. In addition to precipitations, key demographic rates were strongly correlated with temporal variability in temperature.

System description

System type: Terrestrial

Location: PITGRID research site

Latitude: -30.48 **Longitude:** 136.92

Country: Australia **Region:** Oceania

Study description

Methods

The study area occupied 1 ha of chenopod shrubland. The PITGRID array consisted of 401 cylindrical pits, 500 mm deep and 150 mm in diameter,

dug flush with the ground level on a 5 m grid that excluded every second perimeter pit. Each 4-5 week trapping session (one in November, one in February) comprised ten days when all pits were opened, with each trapping day separated by at least 24 h with all pits closed. Each individual captured was permanently marked with a unique toe-clip combination and returned to their location of capture. Data for the 6 most abundant lizard species were reported. Long-term daily rainfall and temperature data for the closest weather stations were obtained from the Australian Bureau of Meteorology. Vegetation condition was assessed through a series of four colour photopoints taken at the beginning of each annual sampling session. A condition score, ranging from 0 to 7, accounted for cover and seed production of chenopod shrubs and ephemeral species and incorporated a greenness index.

Community type: Non-trophic

Start year: 1991

End year: 2005

Duration: 15 years

Number of species: 6

Area: 0.01 km²

Species	Start	End	Count	Missing	Units
<i>Ctenotus schomburgkii</i>	1991	2005	15	0	Individuals/ha
<i>Ctenotus leonhardii</i>	1991	2005	15	0	Individuals/ha
<i>Ctenotus regius</i>	1991	2005	15	0	Individuals/ha
<i>Lucasium stenodactylum</i>	1991	2005	15	0	Individuals/ha
<i>Rhynchoedura ornata</i>	1991	2005	15	0	Individuals/ha
<i>Diplodactylus conspicillatus</i>	1991	2005	15	0	Individuals/ha

Number of environmental variables: 10

Variable	Start	End	Count	Missing	Units
Annual rainfall	1991	2005	15	0	mm
Vegetation condition	1991	2005	15	0	Condition score (0-7)
Autumn minimum temperature	1991	2005	15	0	Degrees Celsius
Winter minimum temperature	1991	2005	15	0	Degrees Celsius
Spring minimum temperature	1991	2005	15	0	Degrees Celsius
Summer minimum temperature	1991	2005	15	0	Degrees Celsius
Autumn minimum temperature	1991	2005	15	0	Degrees Celsius
Winter minimum temperature	1991	2005	15	0	Degrees Celsius
Spring minimum temperature	1991	2005	15	0	Degrees Celsius
Summer minimum temperature	1991	2005	15	0	Degrees Celsius

Comments: