

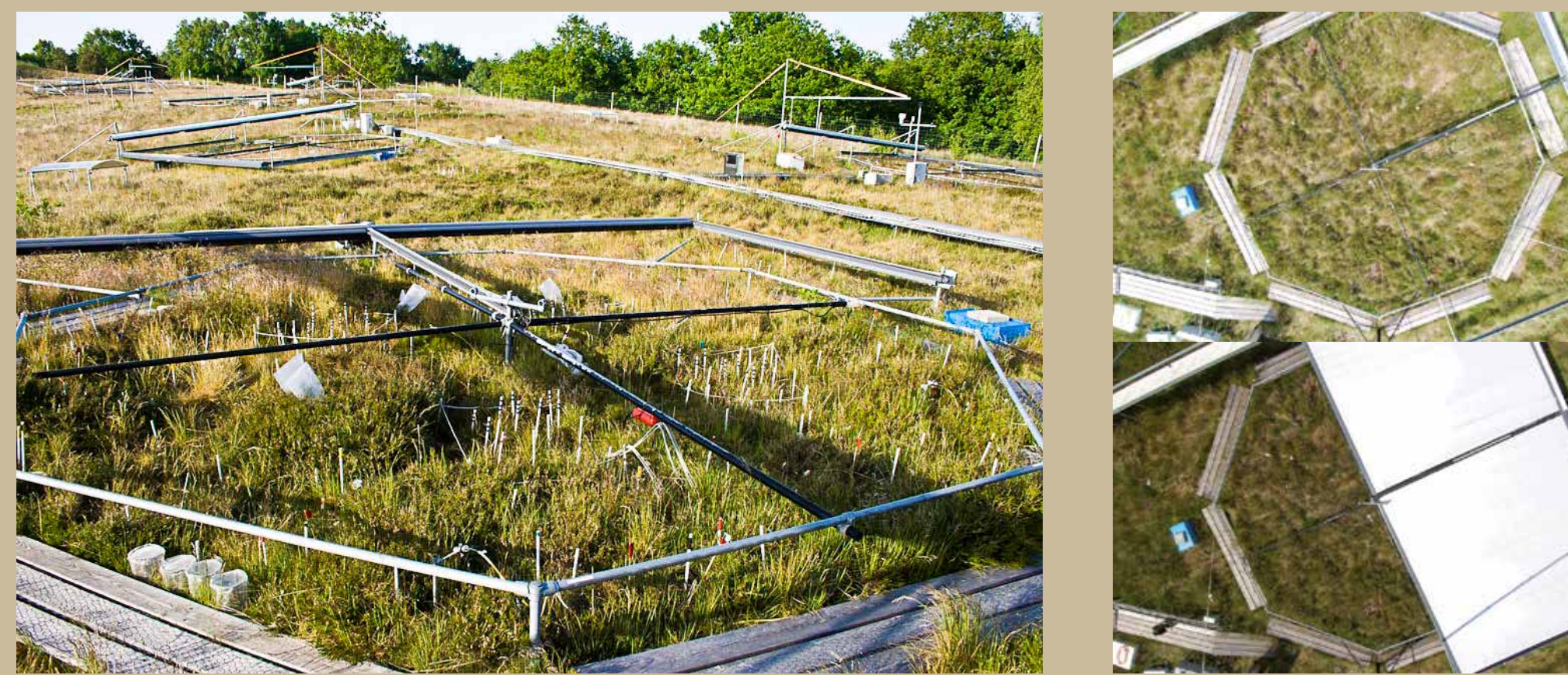
Multi-factor climate change effects on insect herbivore performance

Christoph Scherber, DJ Gladbach, K Stevnbak, RJ Karsten, IK Schmidt, A Michelsen, KR Albert, KS Larsen, TN Mikkelsen, C Beier & S Christensen

The CLIMAITE Experiment

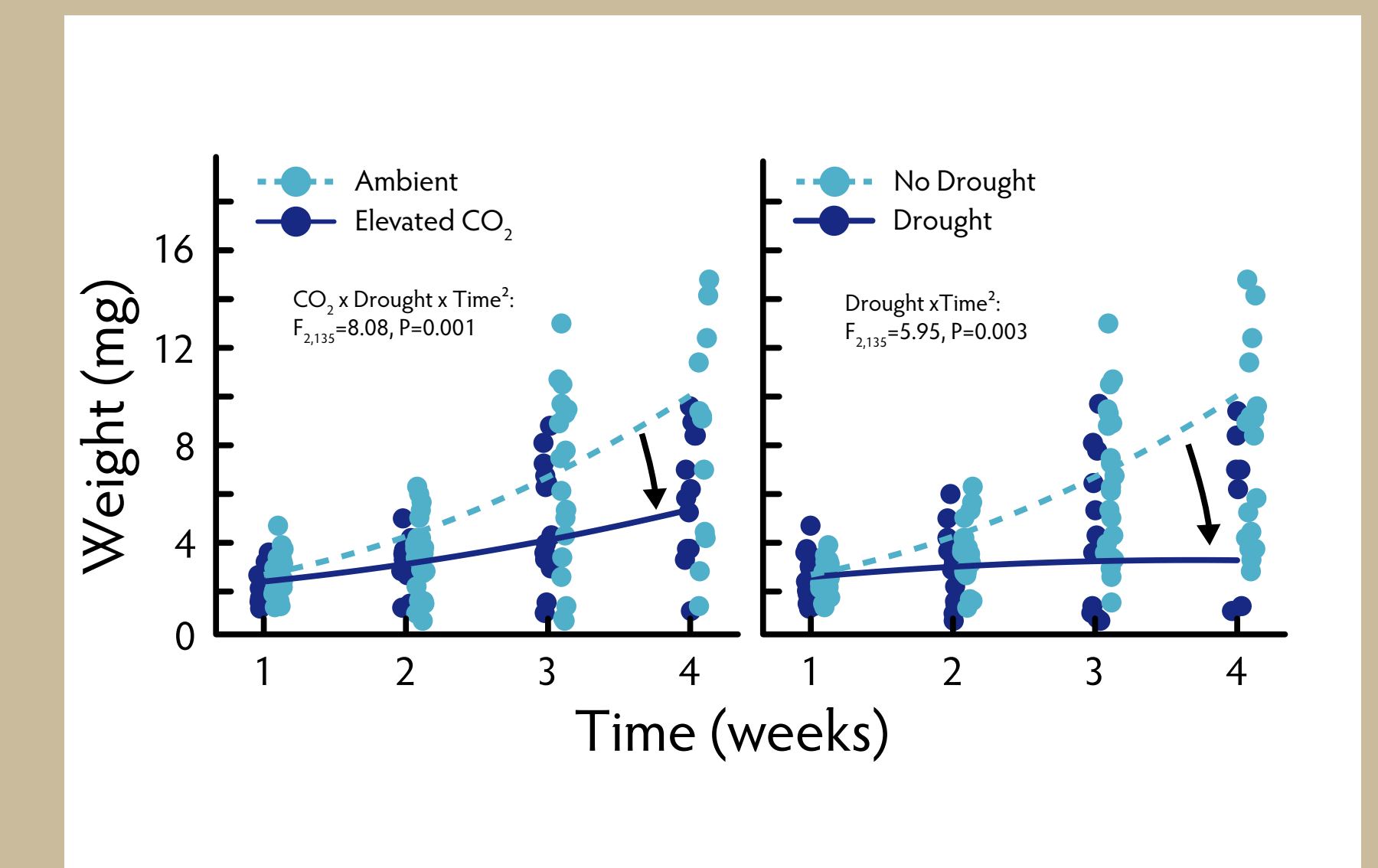
Established 2006 in heathland at Roskilde (Denmark)

- N=72 plots
- Laid out as a split-plot, manipulating
 - Atmospheric CO₂
 - Drought severity
 - Near-soil air temperature

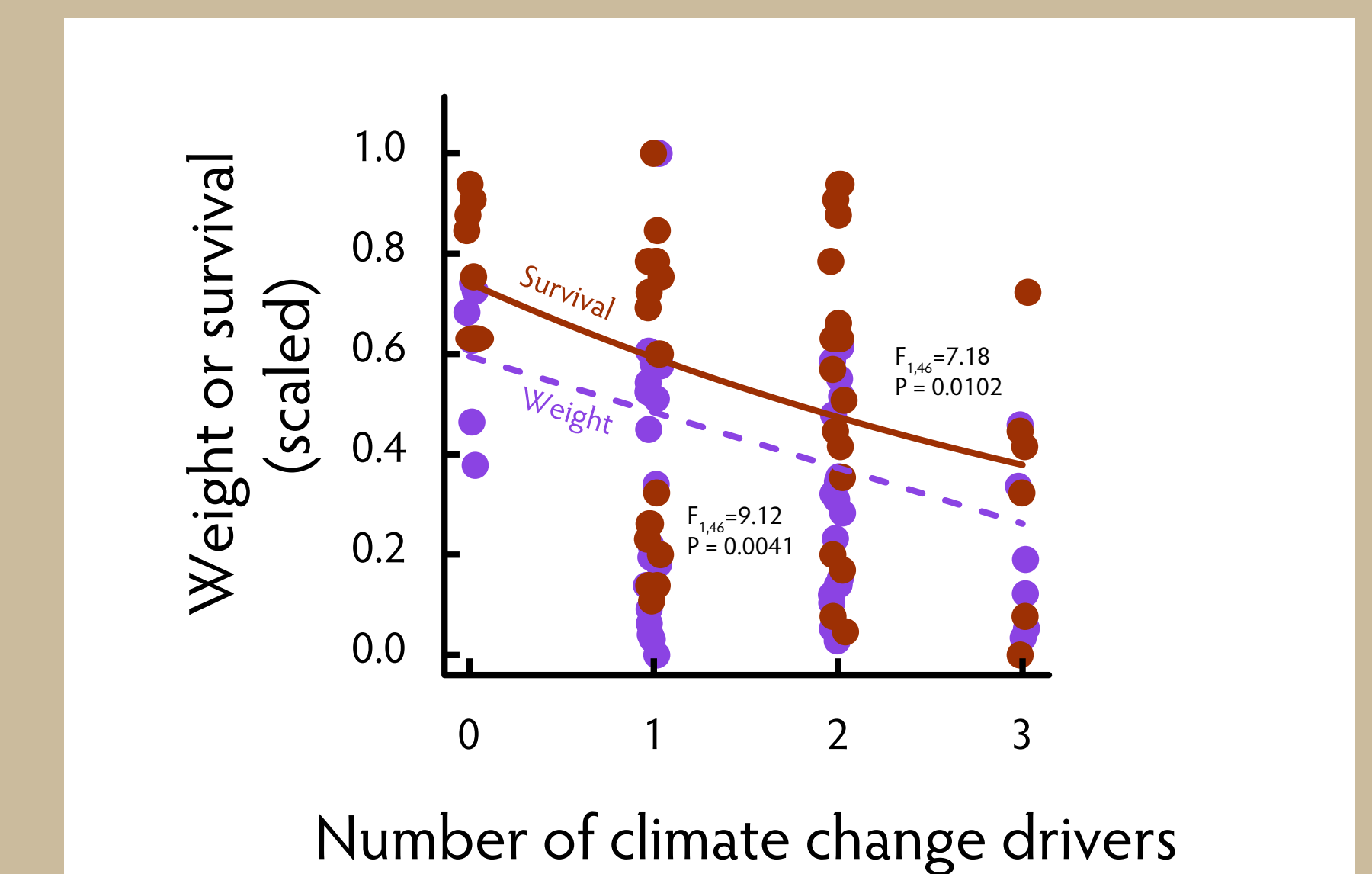


Our main findings

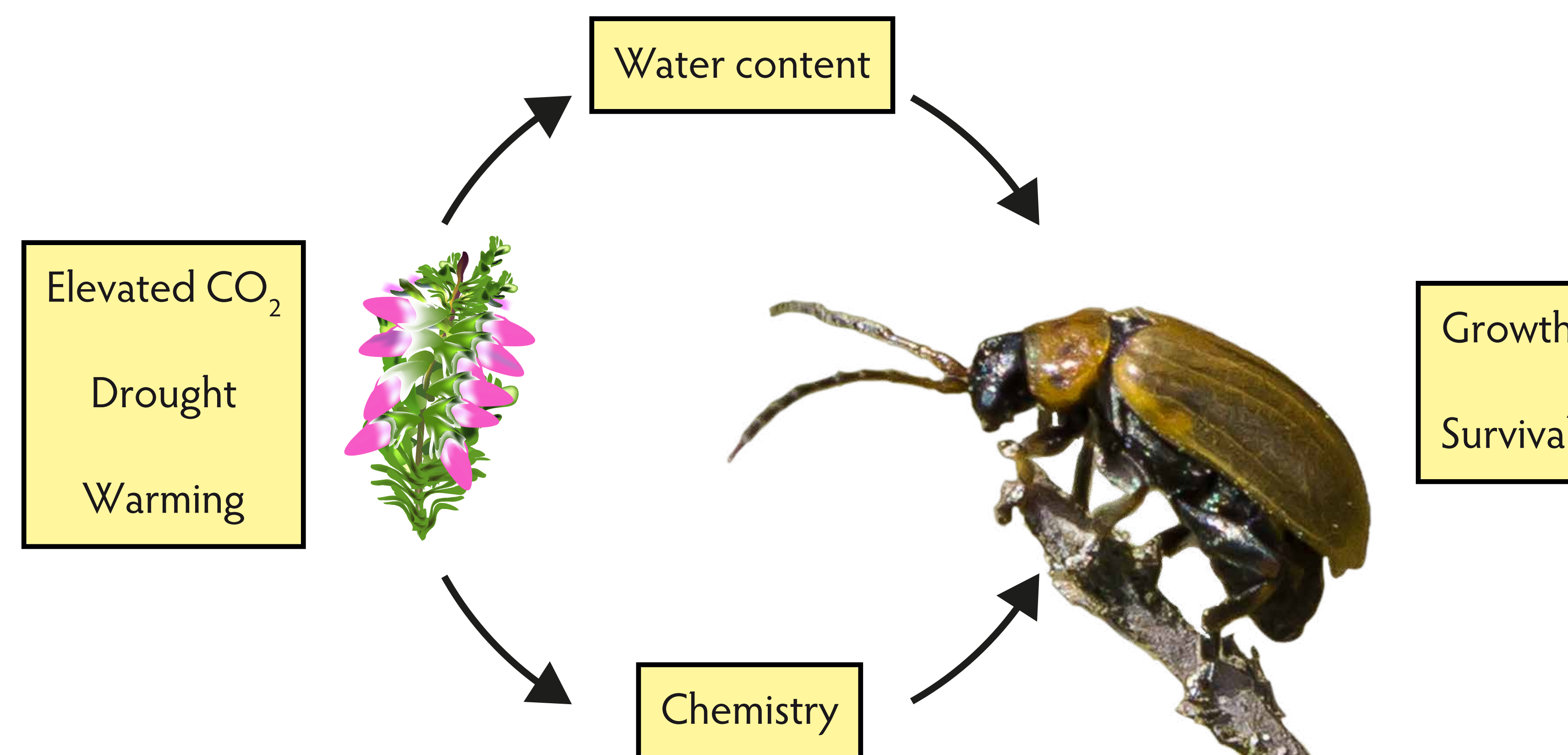
- Herbivore growth and survival were lower under drought and elevated CO₂



- The **number of climate change drivers** turned out to be important for insect herbivore performance



How does climate change affect plant-herbivore interactions?



Cage experiment with beetles

- 1 herbivore enclosure cage per plot (N=48)
- Each cage received 9 larvae of the Heather Beetle (*Lochmaea suturalis* THOMSON) at random
- Growth and survival of larvae were measured
- Covariates: leaf chemistry, soil water content etc.



Key references

- C. Scherber et al. (2013) *Ecology & Evolution* 3:1449–1460.
 K. Stevnbak, C. Scherber et al. (2012) *Nature Climate Change* 2, 805–808.

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