

Projects of Forest Entomology in Pfynwald 2007–2017



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1. Epigeic arthropod diversity

Do diversity and abundance of

- ground beetles (Carabidae) and
- spiders (Araneae)

differ between IR and CO treatments?

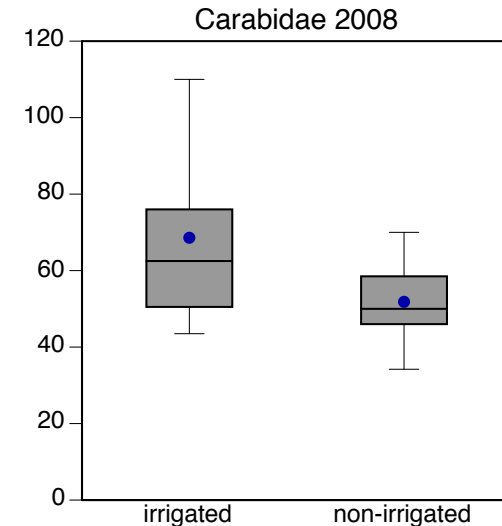
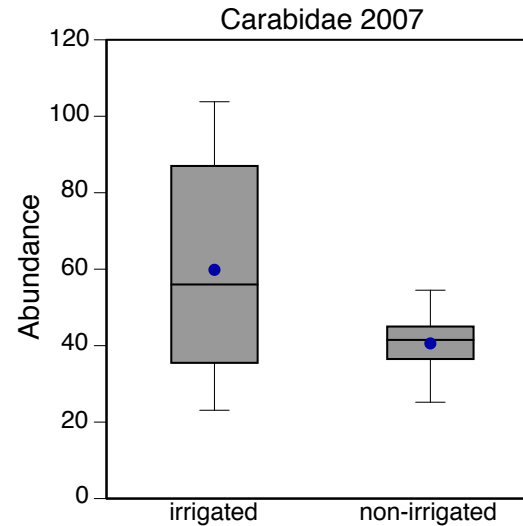


- 2 sampling years (2007/08)
- April – September
- 3 pitfall traps / plot

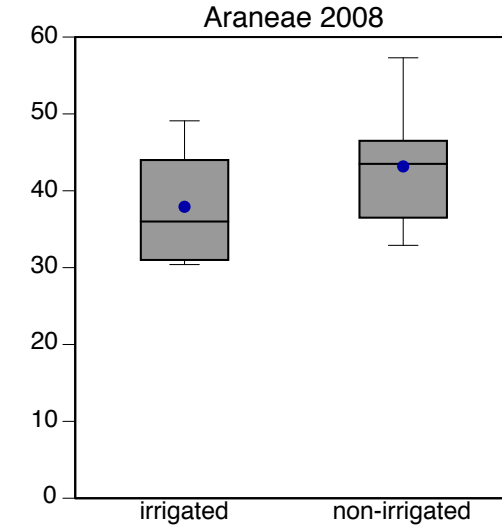
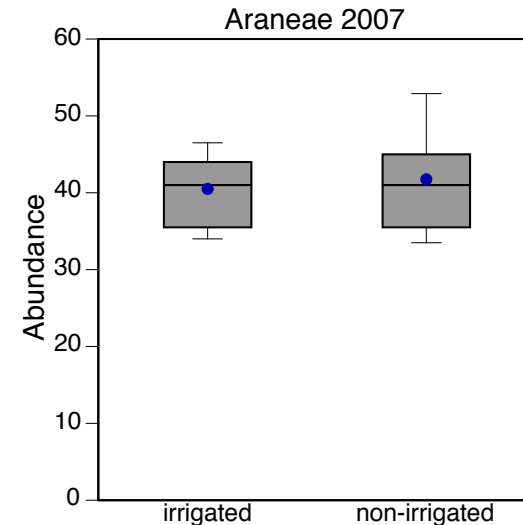
1. Diversity of ground arthropods

Abundance

Ground beetles



Spiders



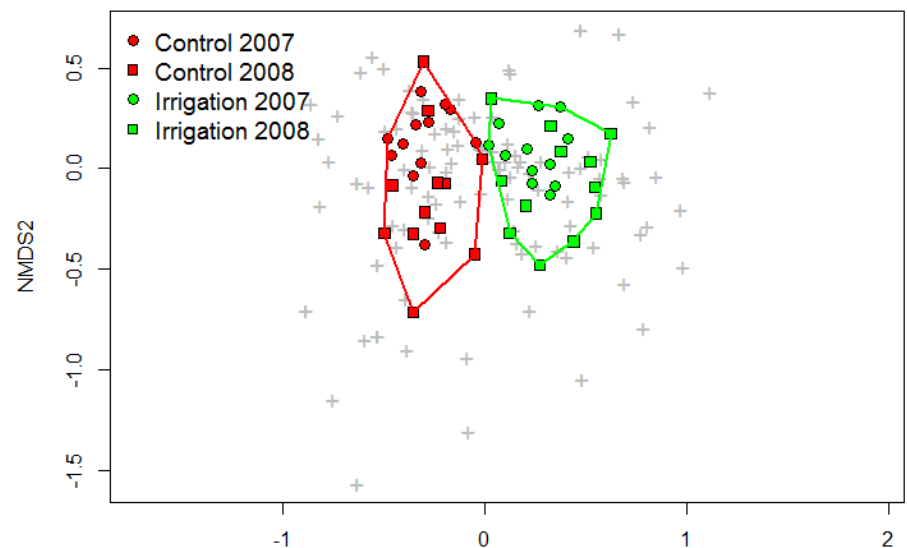
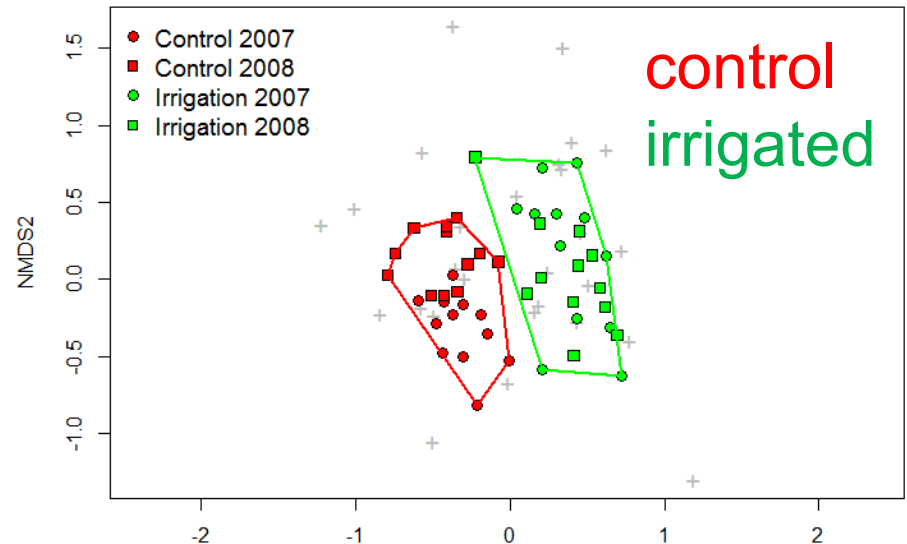
1. Diversity of ground arthropods

Communities

Ground beetles



Spiders

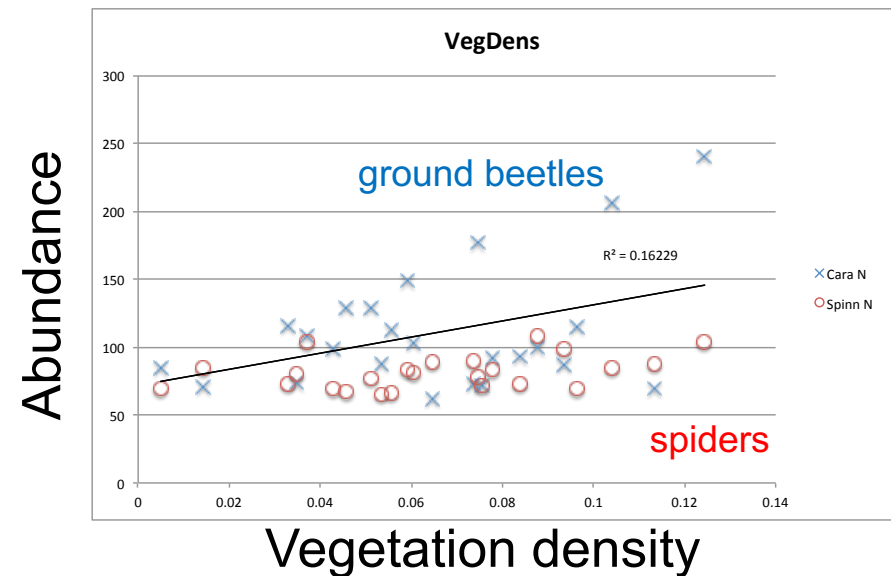


1. Diversity of ground arthropods

Vegetation density (2008)



- 6 photos per plot
- standardized projected vegetation per meter



2. Gall formation by gall wasps

Does the number of oak galls differ between treatments?

- 2 sampling years (2007/08)
- 20 oak shrubs / plot assessed in September

	irrigated	non-irrig.
2007	1.6	1.2
2008	2.4	2.7
Total	2.1	2.1



3. Pine shoot beetle feeding

Larval feeding



maturation feeding



3. Pine bark beetle shoot feeding

A) Dropped shoot counts („Abbrüche“)



	irrigated	non-irrig.
2007	11.9	13.8
2008	2.4*	4.9*
Total	7.1	9.3

beetles prefer (slightly) stressed trees

→ Bose *et al.* (subm.)

3. Pine bark beetle shoot feeding

B) Shoot feeding in canopy



data not evaluated yet

- counts of dead and living shoots in the canopy (2015)

4. Resin flow in pine

- MSc thesis Crest Simeon

Does resin flow depend on irrigation and crown transparency?



Measurements

- sampling 102 trees
- different crown transparencies
- April and August 2014
- 24h resin flow

4. Resin flow in pine

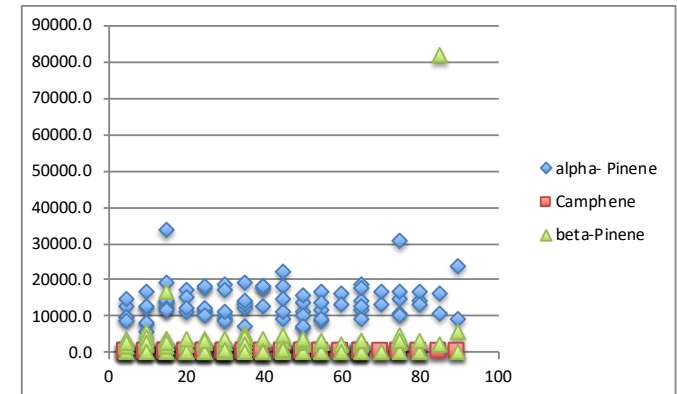
Results

- positive effects of temperature and tree size on resin flow
- no difference between irrigation and control
- no relationship between crown transparency and resin flow

→ Rissanen *et al.* (subm.)

Resin chemistry (terpenes)

- data available...



5. Vertical insect distribution

Questions

- vertical insect distribution in a pine forest
- interactions with irrigation?

Methods

- 6 scaffolds
- 3 altitudes
- sampling May–Aug
- 2016, 2017

Status

- insects sorted to taxonomic groups representing bark feeders, sap suckers, pollinators, predators
- identifications pending

