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CLIMATIC CONTROLS OF EARTHWORM ACTIVITY/AESTIVATION IN AGROECOLOGICAL ZONES OF THE INLAND PACIFIC NORTHWEST

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How do soil moisture and temperature influence earthworm
aestivation?



EPSCoR



Summary

- Introduction
 - ▣ Literature
 - ▣ Past Research
- Methods
 - ▣ Sample Sites
 - ▣ Collection, etc.
- Results
- Conclusion
- Ethics



Why they are important

- Ecosystem Engineers
 - ▣ Change soil structure
- Decomposition and soil OM
- Increase Bacteria and Fungi



Unrealistic data (problem statement)

- Earthworm research observed with unrealistic population densities and settings.

http://www.uclan.ac.uk/research/environment/groups/earthworm_research_group.php



Aestivation

- Pass dry season dormant
- Burrow, Coil, Aestivate



Literature



- Population factors:

OM, Soil type, pH, Moisture-Holding Capacity, Rainfall, temperature, cultivations, crop residues, and cropping patterns.

(Edwards and lofty 1982b, Lee 1985). (Location)

Past Research

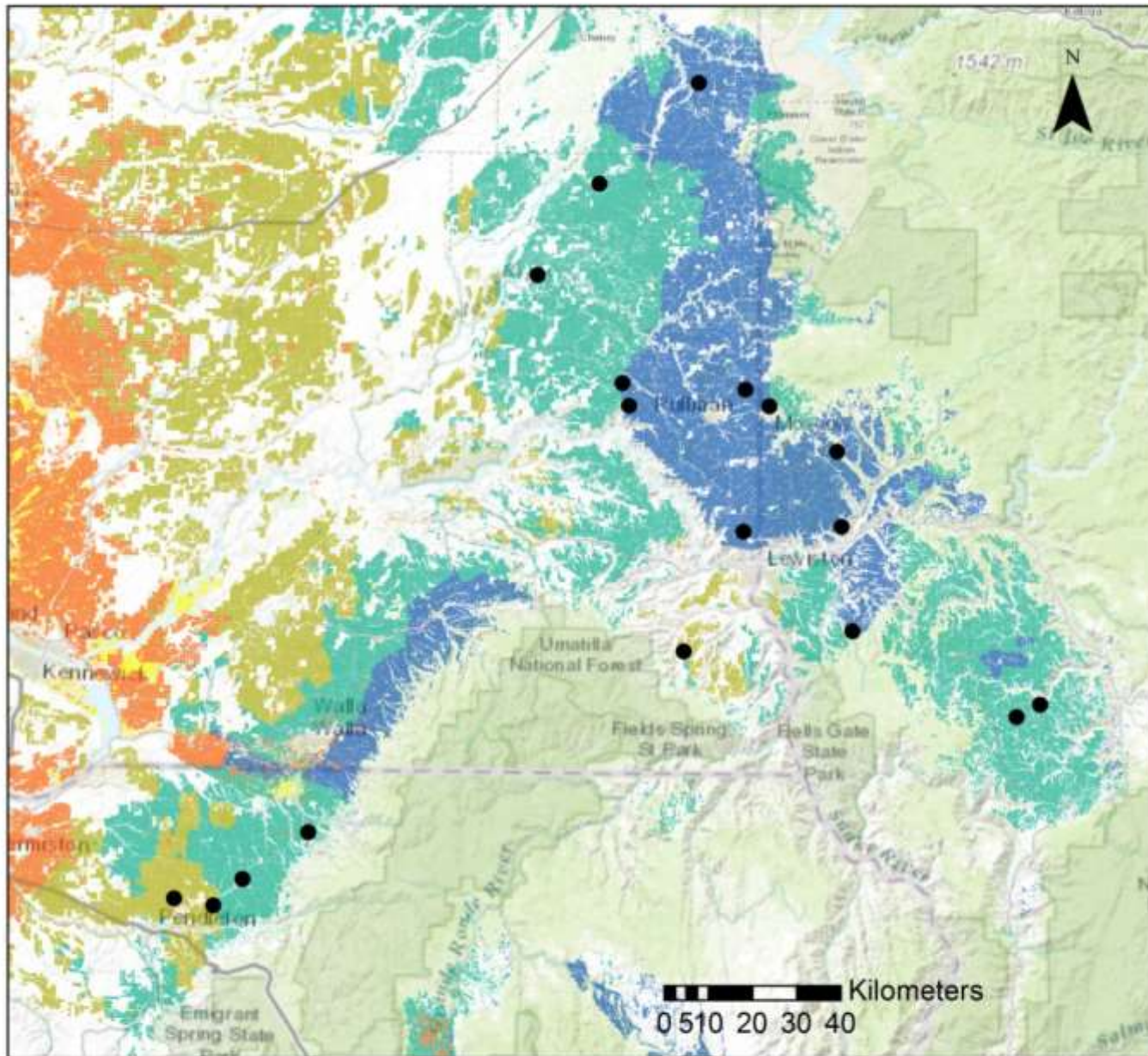
- Precipitation isn't the only factor effecting earthworm activity and distribution
- *A. trapezoides* is the dominant species in Inland Pacific Northwest Agricultural fields



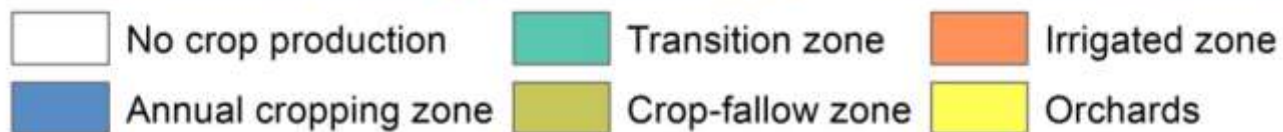
Research Question



- At what soil moisture/temperature do earthworms aestivate?
- Is this the same across different Agro-ecological zones?



n= 21

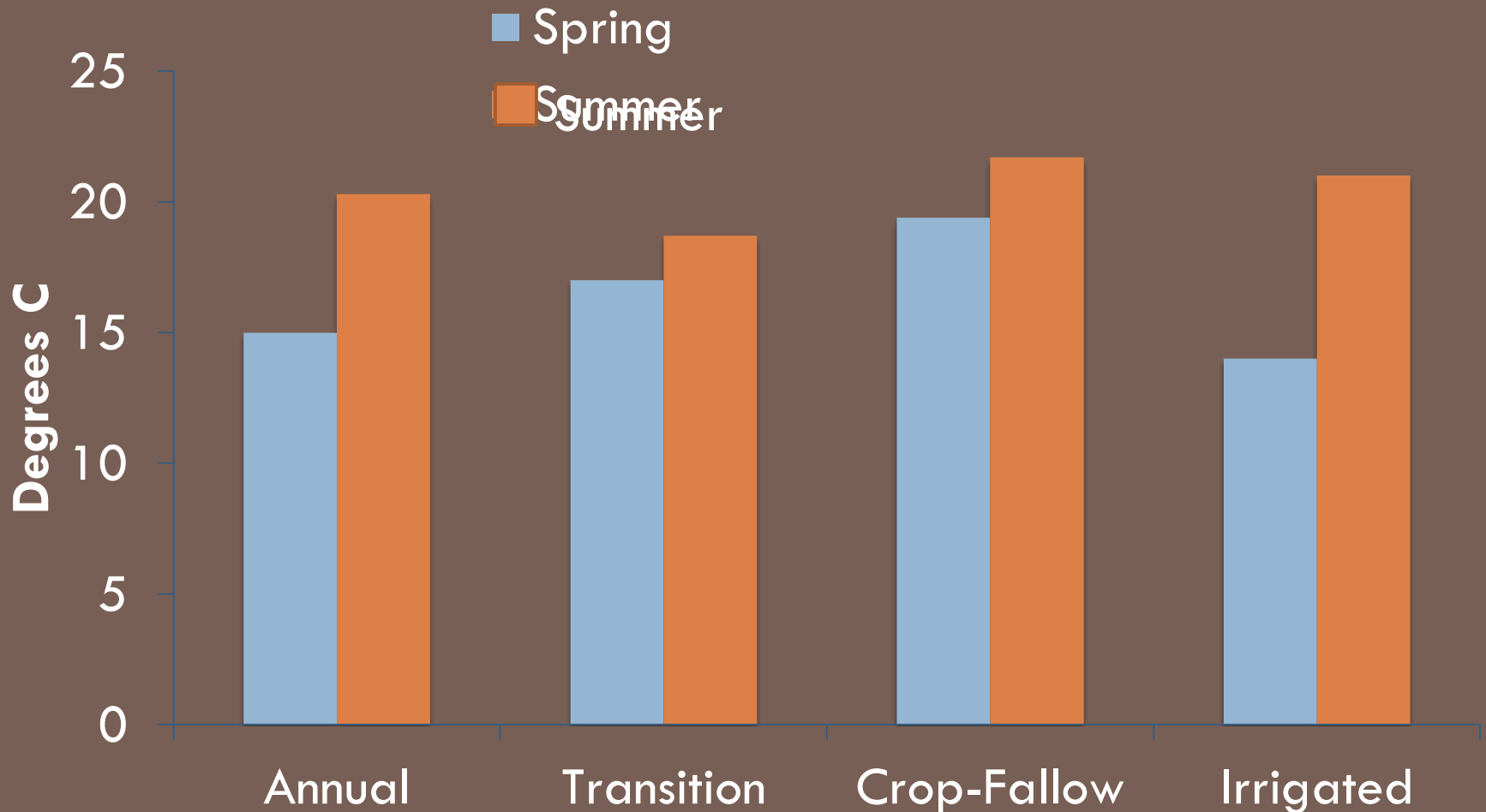


Methods

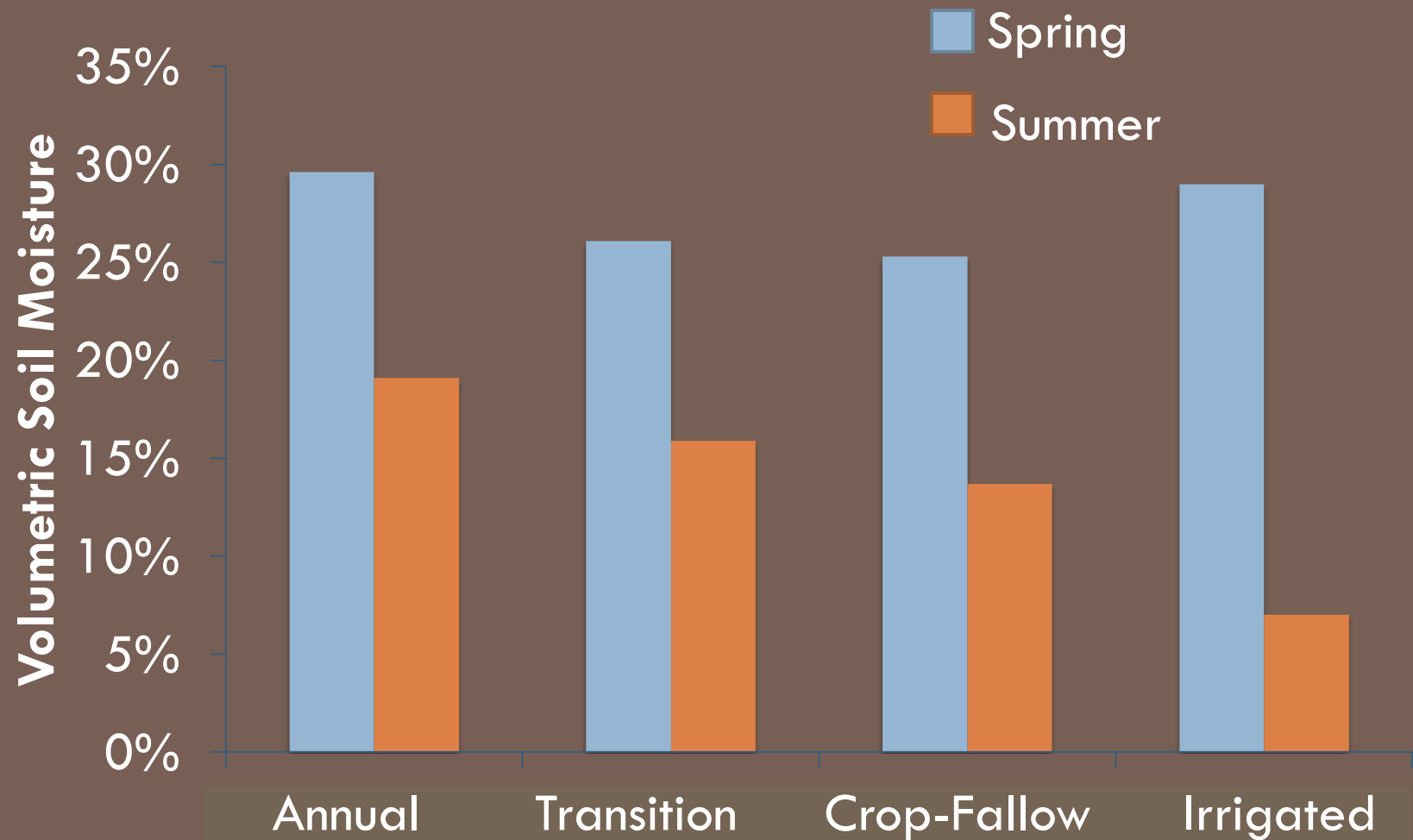
- Collection
- Processing
- Compare Results



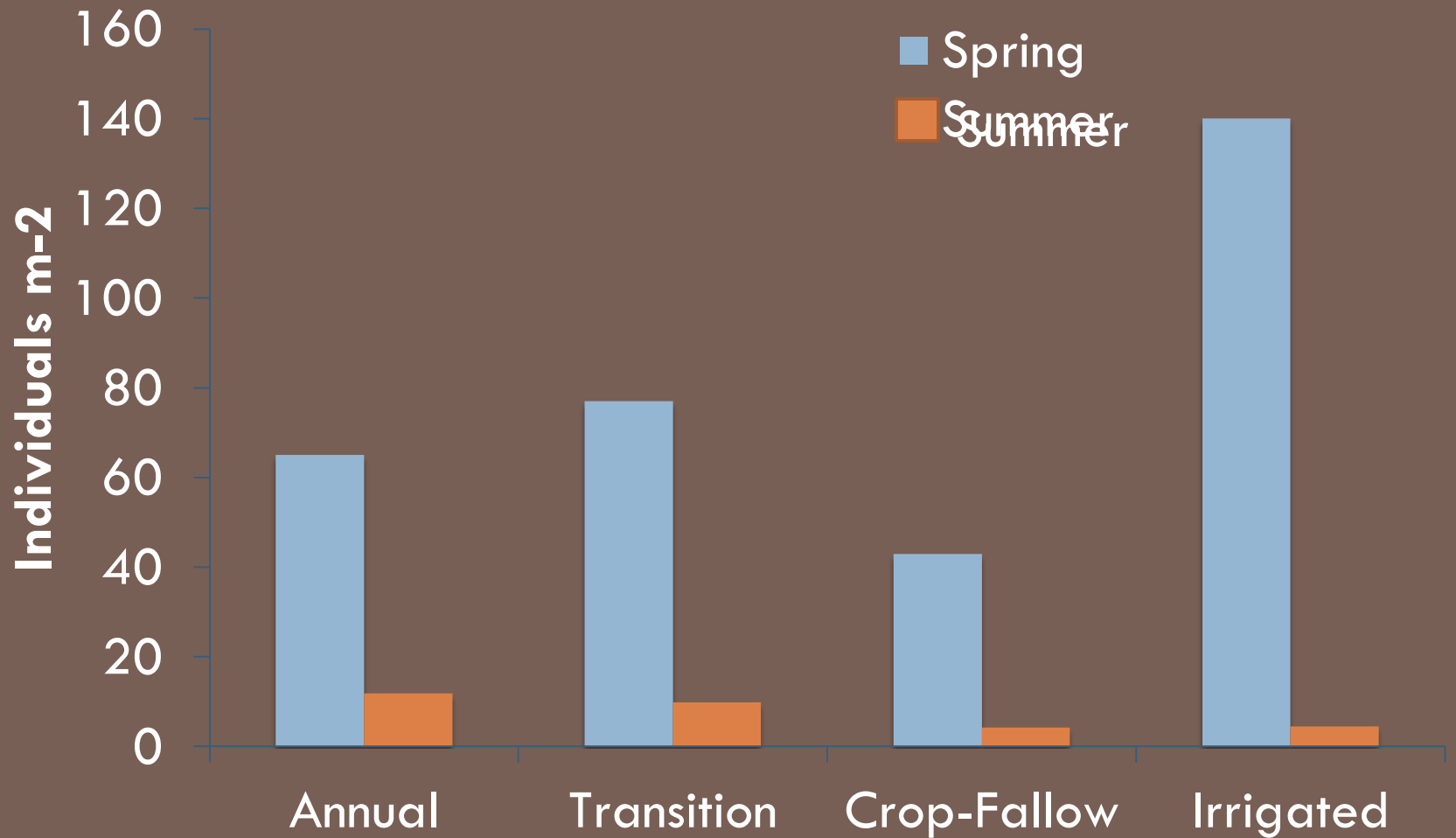
Results: Soil Temperature



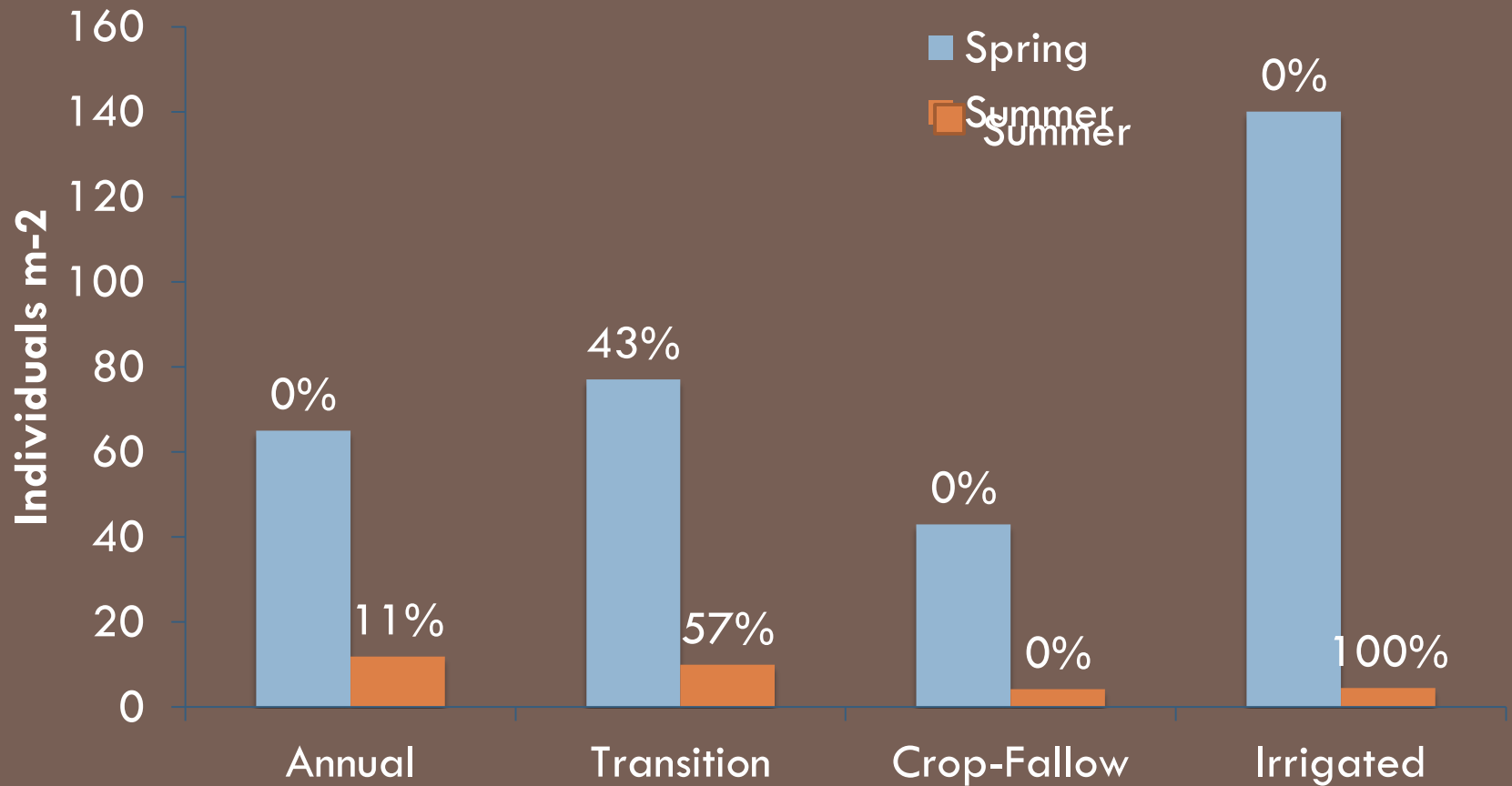
Results: Soil Moisture



Results: Earthworm Density



Results: Aestivation



Conclusion

- Earthworm presence correlated with season.
- Drier = reduced density
- More factors than soil moisture
- Future Research



Ethics



- In order to extract earthworms we have to take them out of their habitat as well as compact the soil. Should we just let natural cycles be and not further investigate.

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