

Jornada Basin LTER

Deb Peters (USDA ARS) Niall Hanan (NMSU) LTER SCIENCE COUNCIL MEETING 2018 MADISON, WI



Jornada Basir

LTER

- Submitted LTER VII Proposal to NSF 1. (March 2018).
 - Adapted trigger-feedback**a**. heterogeneity framework for understanding dynamics of state change in dryland landscapes.
 - b. Research integrated in space and time through multiple lines of evidence.
 - **DSIS: Data Science Integrated System** С. to be developed with common database structure for core datasets and data from individual PI projects.
 - d. New Co-PIs: Niall Hanan, Nicole Pietrasiak & Colby Brungard (NMSU), Ferran Garcia-Pichel (ASU).
- Successfully completed our 7th annual 2. **Desert Data Jam for middle and high** school students.
- Our LTER children's book, One Day in the 3. Desert, was published in Nov 2017.
- Led submission of Jornada papers for two 4. special features in 2018 (BioScience, **Ecosphere**).



NATIONAL SCIENCE FOUNDATION LONG TERM ECOLOGICAL RESEARCH

LTER Science Council Meeting May 16 and 17, 2018

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LONG TERM ECOLOGICAL RESEARCH

Role of OM in drylands:

•OM (litter, plant material) transport and redistribution by wind and water

•H: OM accumulation reduces bare soil evaporation -> increases PAW -> increases grass recovery -> promotes state change in degraded shrublands & increases resiliency in grasslands to shrub invasion.

JRN work on OM:

•Can we use small structures (ConMods) to increase OM accumulation and enhance grass recovery?

•ConMods: Connectivity modifiers

reduce movement of OM, soil, and seeds by water or wind

•Thus leading to grass recovery in degraded shrublands, and potential for state change reversal.











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Manuscript in prep: Modifying feedbacks to overcome resource constraints and promote state change reversal: a multi-scale long-term experiment in wind- and water-controlled ecosystems.

Peters DPC, Okin GS, Herrick JE, Savoy HM, Anderson J, and Scroggs SLP.

Expanding ConMods to Cross-scale study:





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