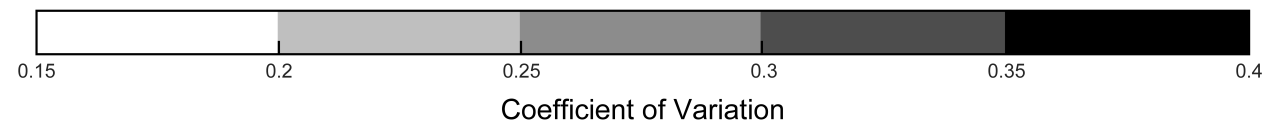
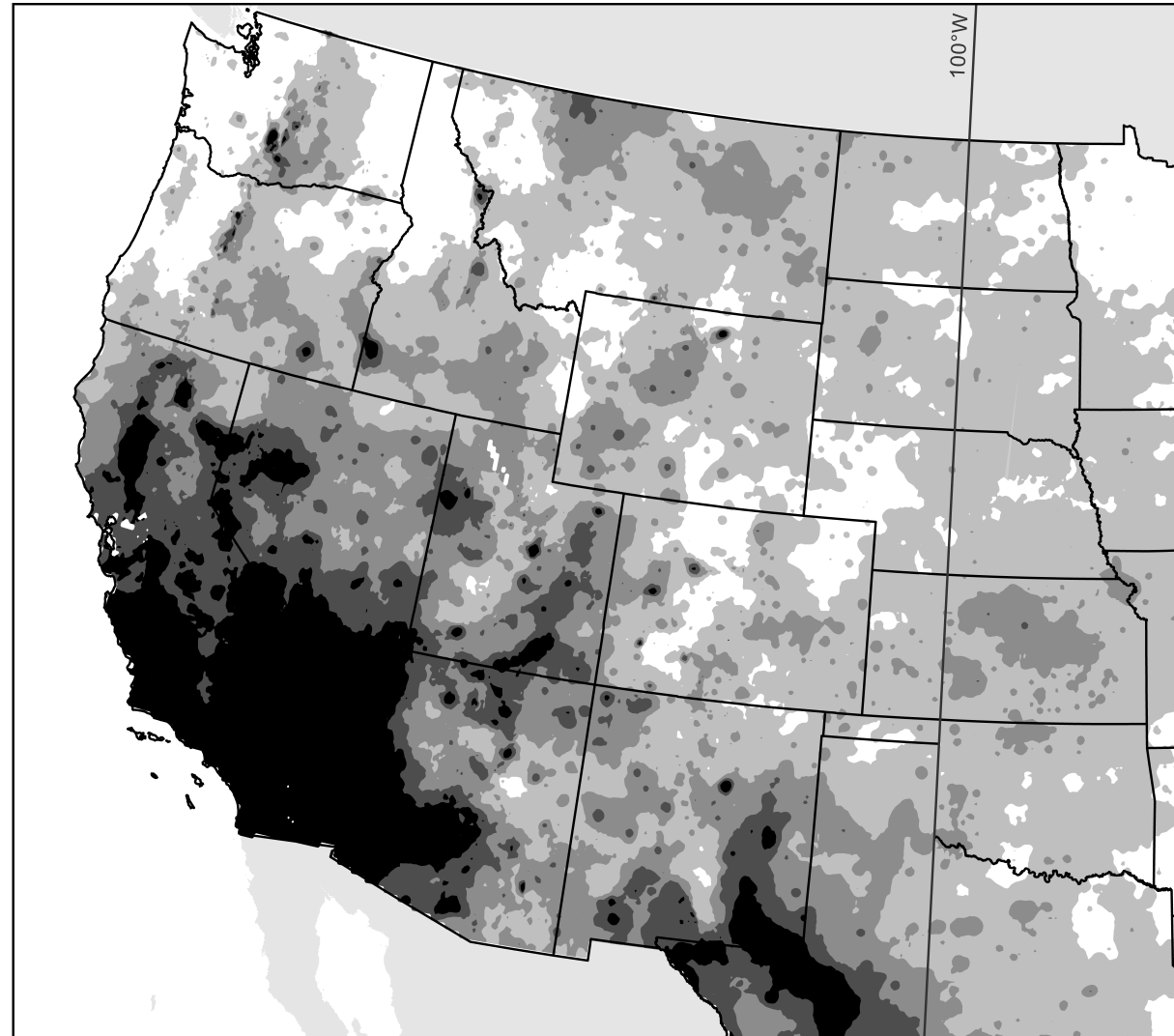
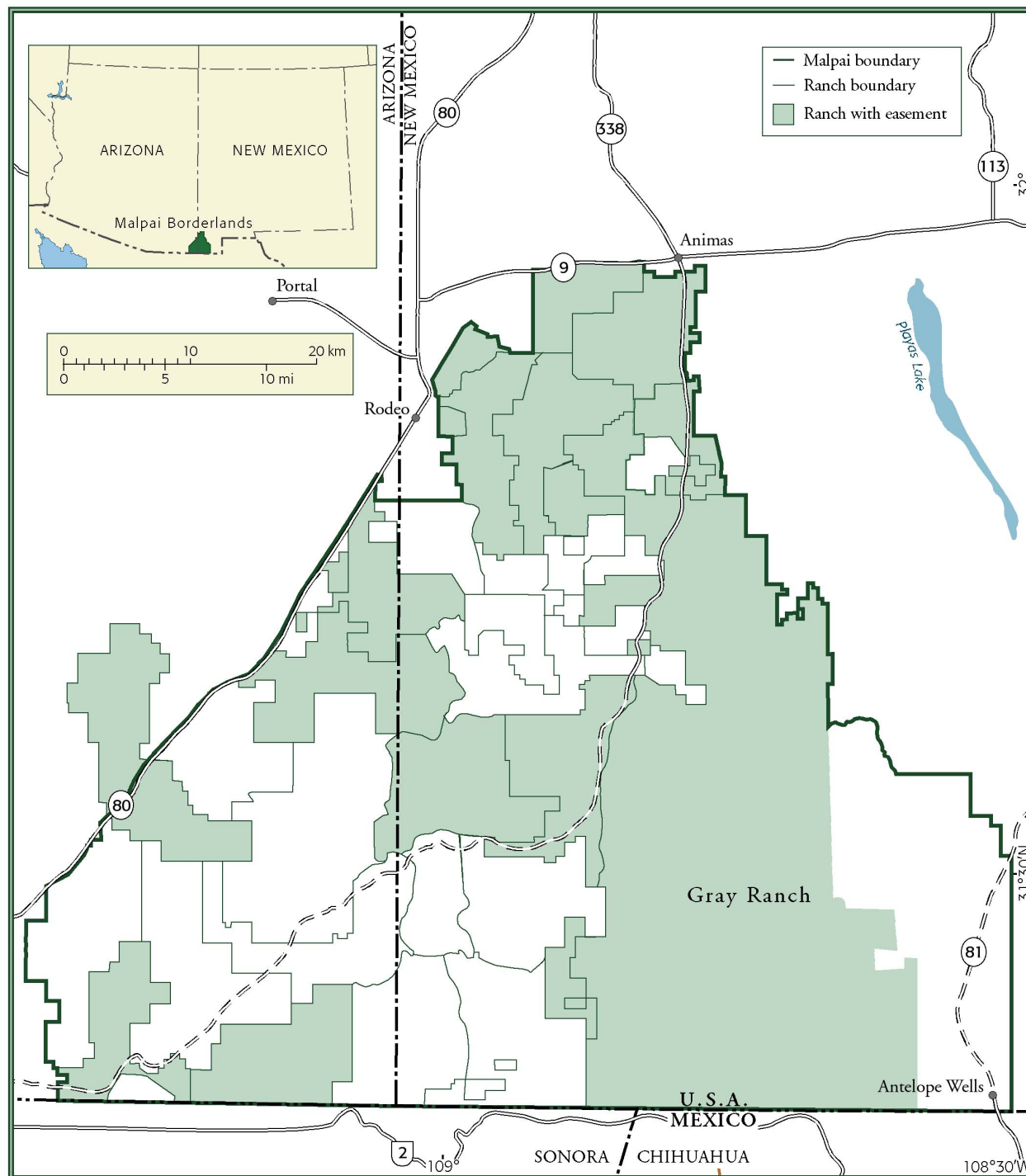


Official vs practical ecological knowledge on Southwestern public rangelands

Nathan F. Sayre, Department of Geography, UC-Berkeley
RINH/UCB International Workshop, 6 November 2017







12 MBG easements:
75,760 acres
TNC easement:
235,000 acres

67% of private land
in the area is covered

56% of overall area is
covered or linked by
leases to covered
private land

Stocking rate reductions on ranches with easements

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

Learning entrained by easements

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

“Seeing what could happen [when it didn’t rain] was a real eye-opener... Having to sell almost all the cattle made us realize you never want to overstock.” Monitoring taught us “the importance of keeping track of grasses... We learned a lot by being involved.”

Learning entrained by easements

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

Noticed that it took 50-100 percent more rain to fill stocktanks
Noticed more rapid grass response to rain events

“the rest showed how much impact cattle could do.” It “opened my eyes to what the land can do when it’s not hammered.”

Learning entrained by easements

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

Monitoring on the ranch led them to a “candid assessment of overgrazing”: the grass plants were still present, but they were “gobbled up.”

Learning entrained by easements

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

“The easement didn’t really change our management. Our management is based on the weather anyway.”

Learning entrained by easements

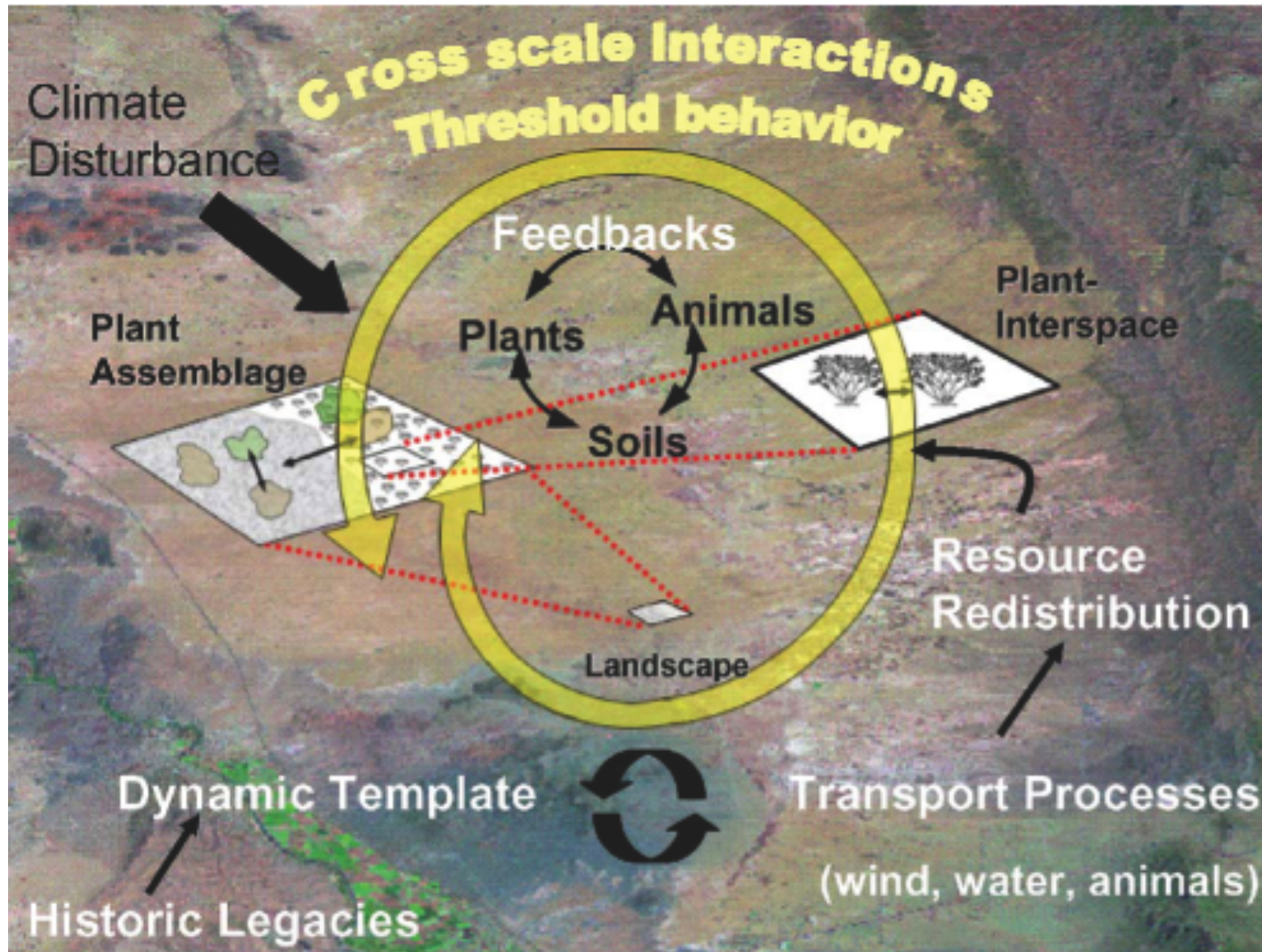
66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

Proceeds from easement sales enabled them to pay down their mortgages, which made it possible to run fewer cattle

Exceptions

66%*	N/A	0%
30%*	0%	40-50%
40%*	45%	0%
N/A	33%*	* = grassbank participant

Easements sold under financial duress; continued drought conditions and debt burdens constrain flexibility in stocking decisions.



Source: D.P.C. Peters and K.M. Havstad. 2006. Nonlinear dynamics in arid and semi-arid systems: Interactions among drivers and processes across scales. *Journal of Arid Environments* 65: 196-206.

Lynam and Stafford Smith (2003)

“for some purposes it may be as important to monitor the changing mental models themselves, as it is to measure grass cover, since such contextual information may determine the importance of other types of observation... *mental models are a crucial slow variable*”

Effects with agency personnel

- Believe the easements have prevented development
- Easement ranchers viewed as “more open-minded” and “progressive”

“People who have gone through a conservation easement process tend to be more pro-active, more willing to try more things, more likely to do their own monitoring. Not sure about cause and effect, but I do think the process of setting up the easement is part of a long term process of stewardship.” --Forest Service Range Officer