Silvopastoral systems in the Southwest

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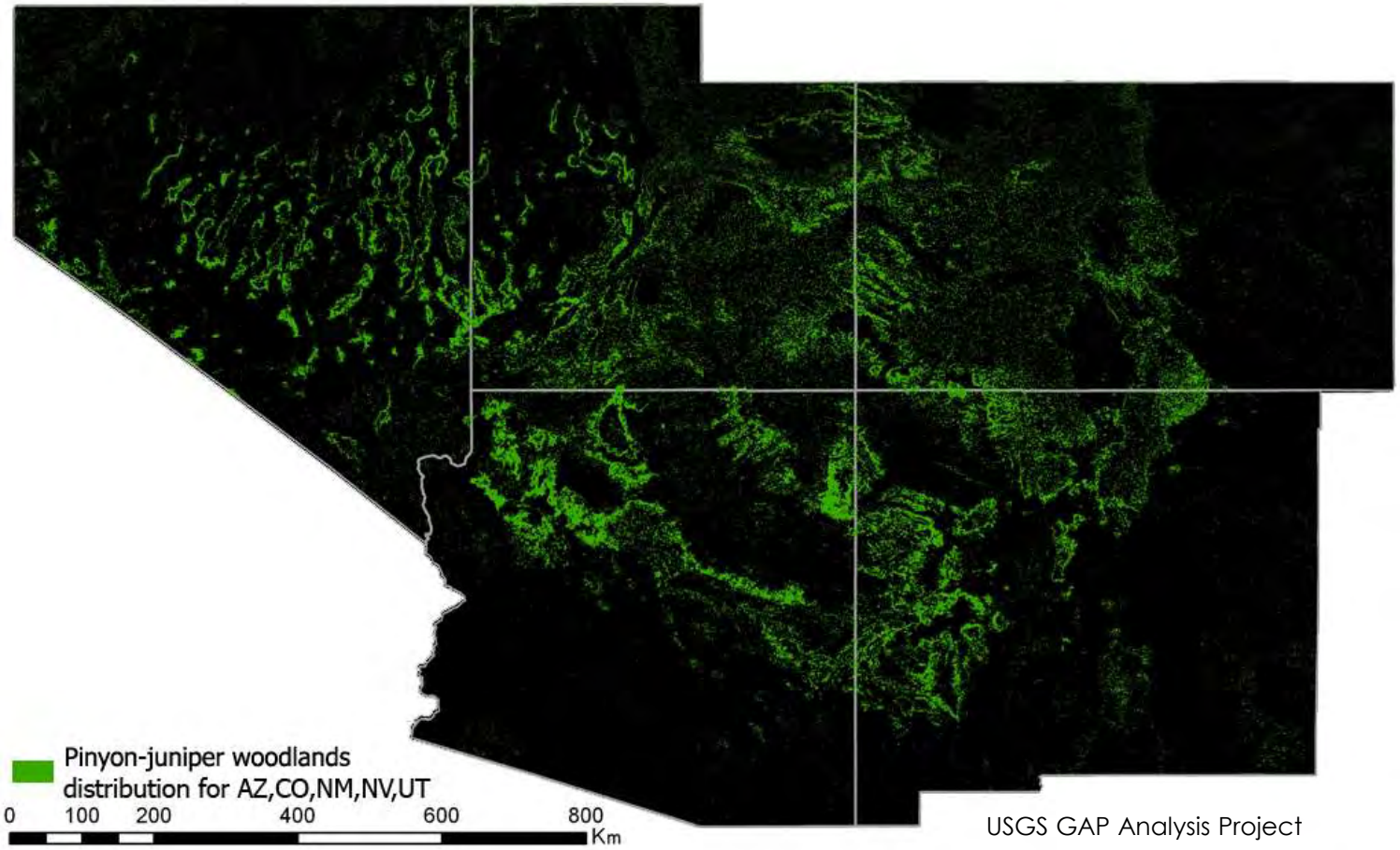
Pastoral vs. silvopastoral

PJ woodlands (pigmy forests), the third largest vegetation type in the U.S.

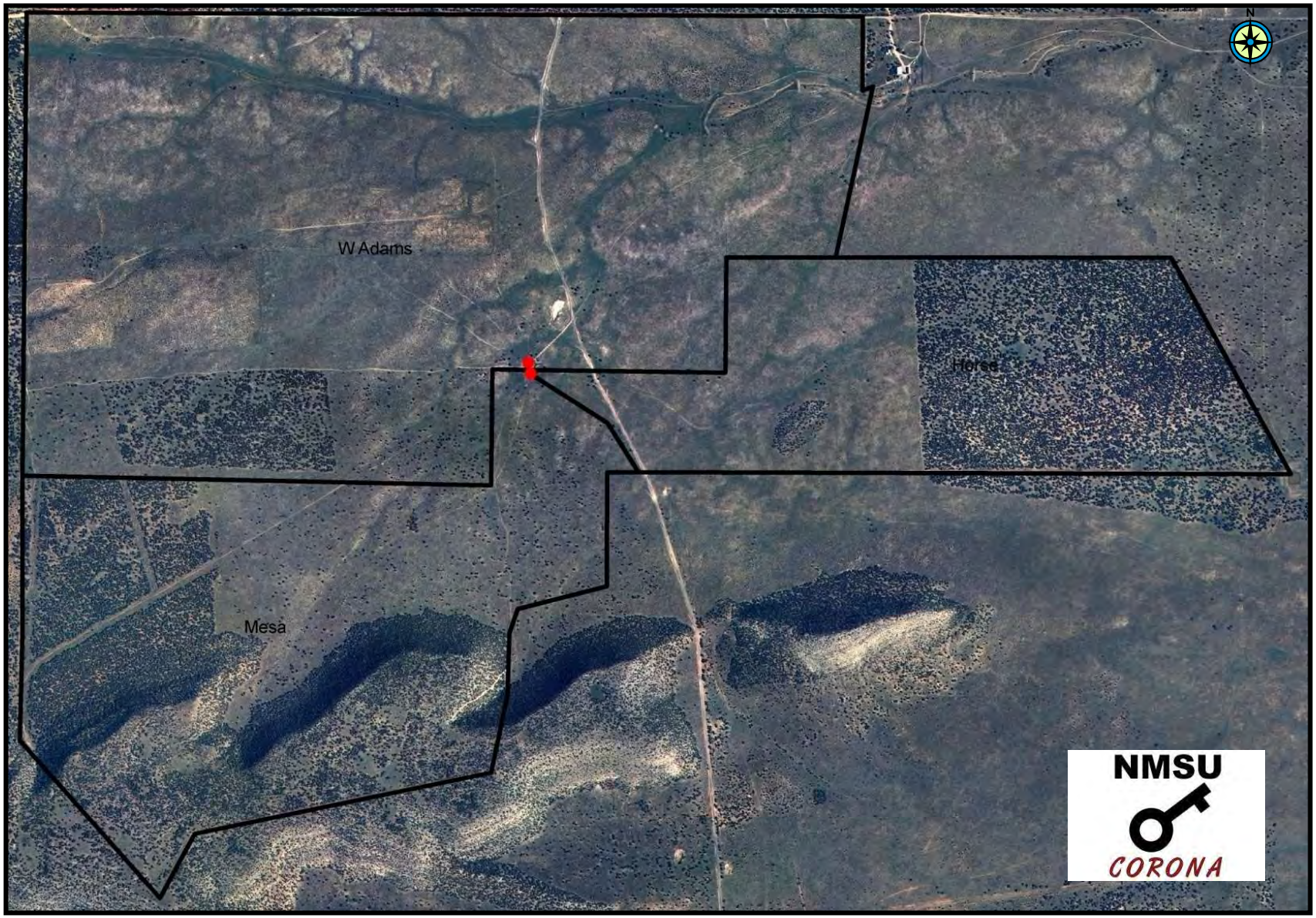


USGS GAP Analysis Project

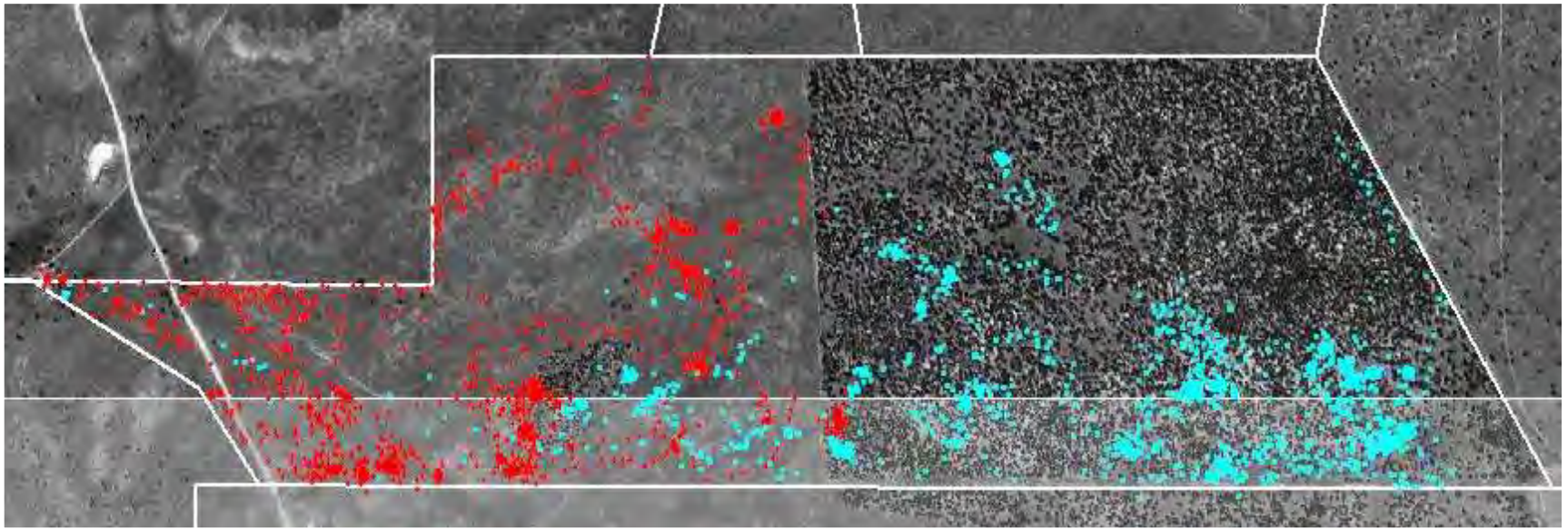

VOLVO
Vermeer
863
JAN 22 2009

What do the cows like?

Our research lab

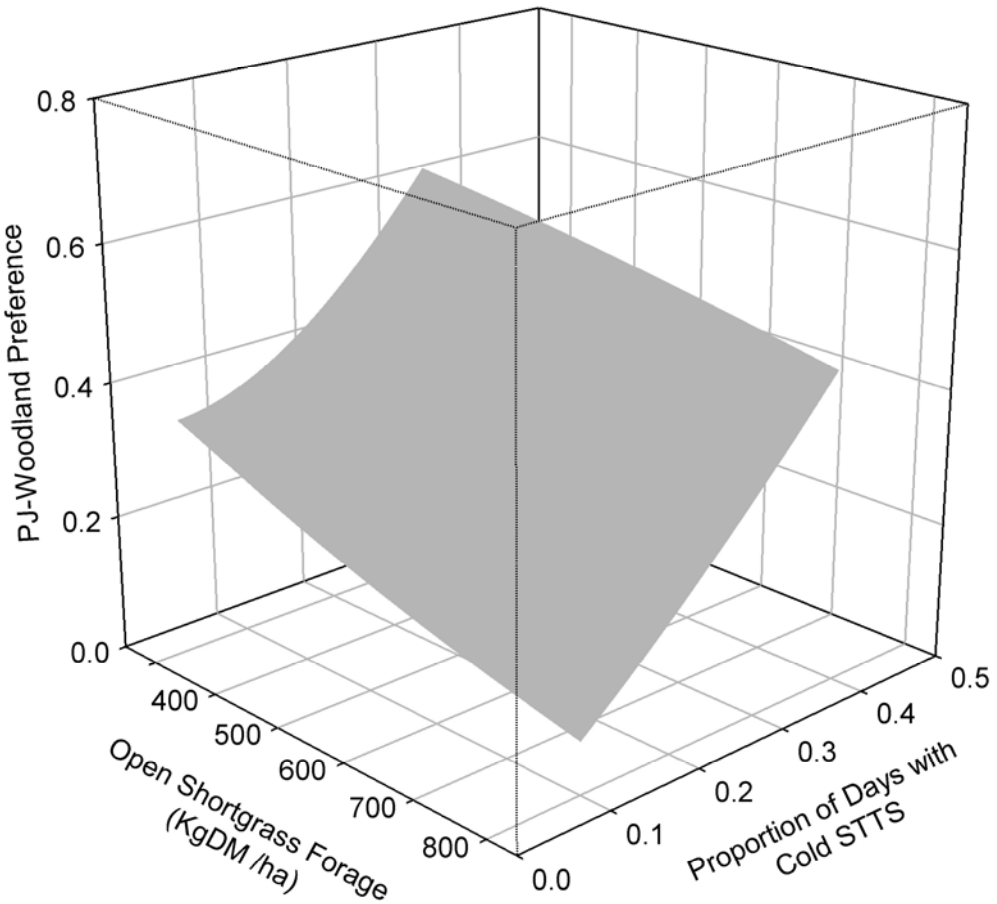


Woodland selection in relation to weather



Black Rubio et al. (2008); Range. Ecol. Manage. 61:394-404

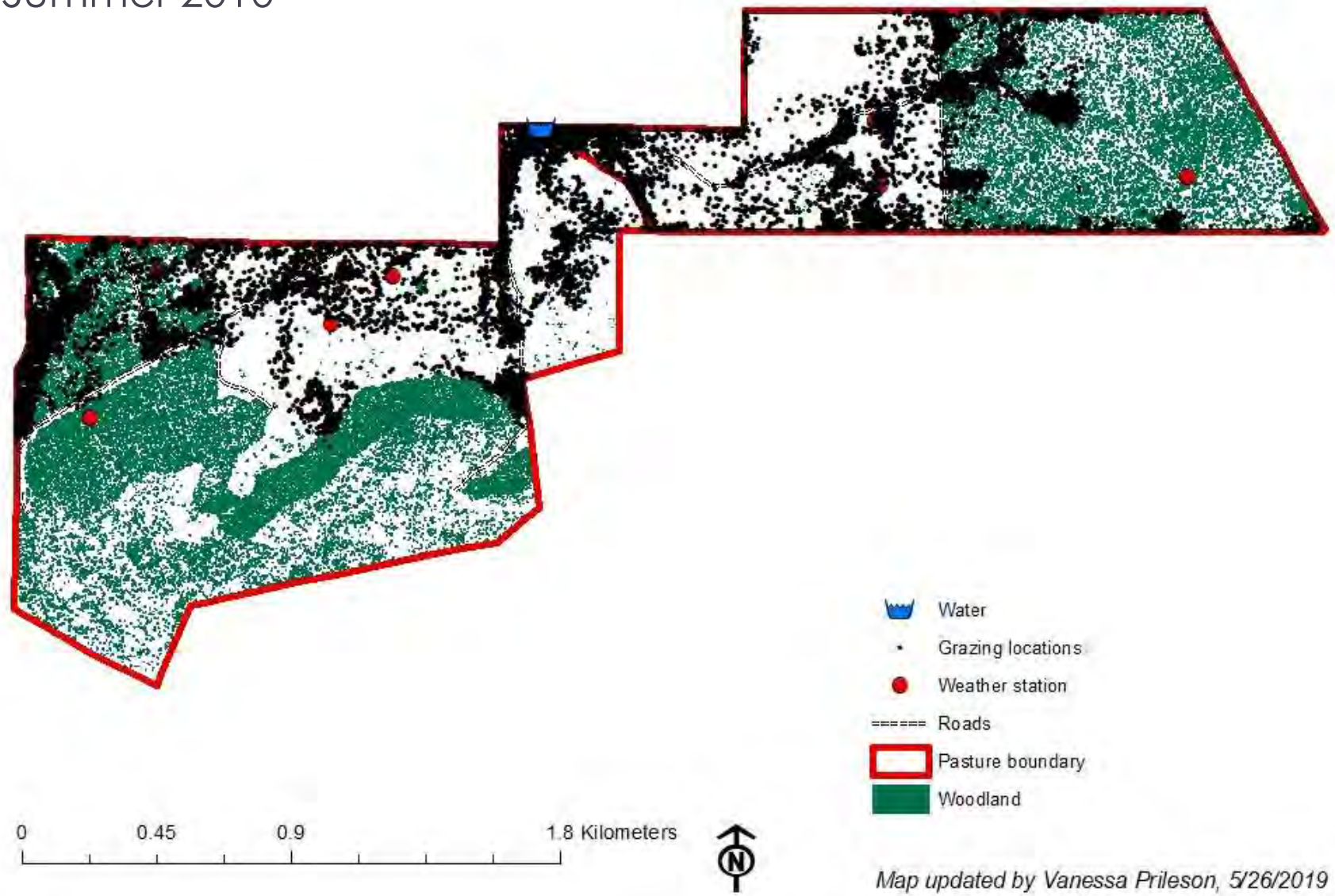
Woodland selection in relation to weather



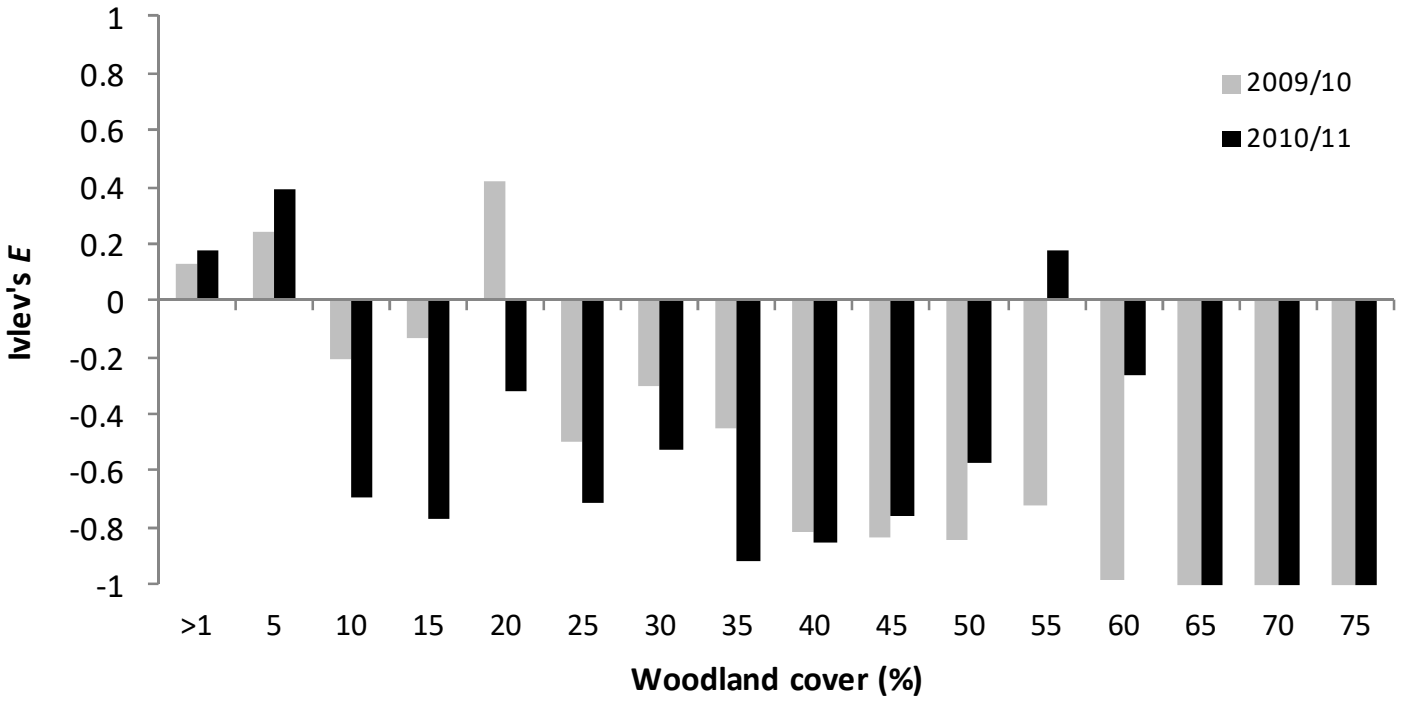
Black Rubio et al. (2008); Range. Ecol. Manage. 61:394-404

Woodland selection in relation to stand cover

Summer 2010

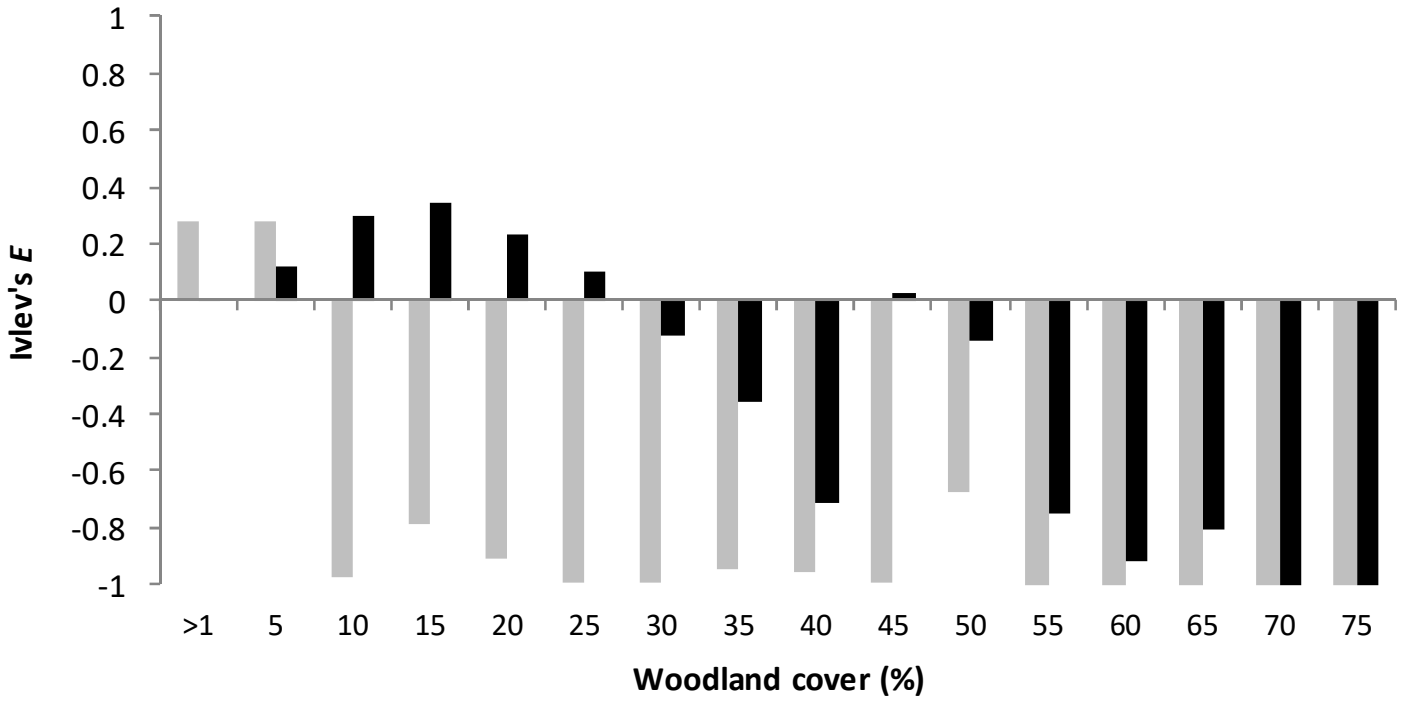

Water
Grazing locations
Weather station
Roads
Pasture boundary
Woodland
0
0.45
0.9
1.8 Kilometers
N
Map updated by Vanessa Prileson, 5/26/2019

Woodland selection in relation to stand cover (Winter)



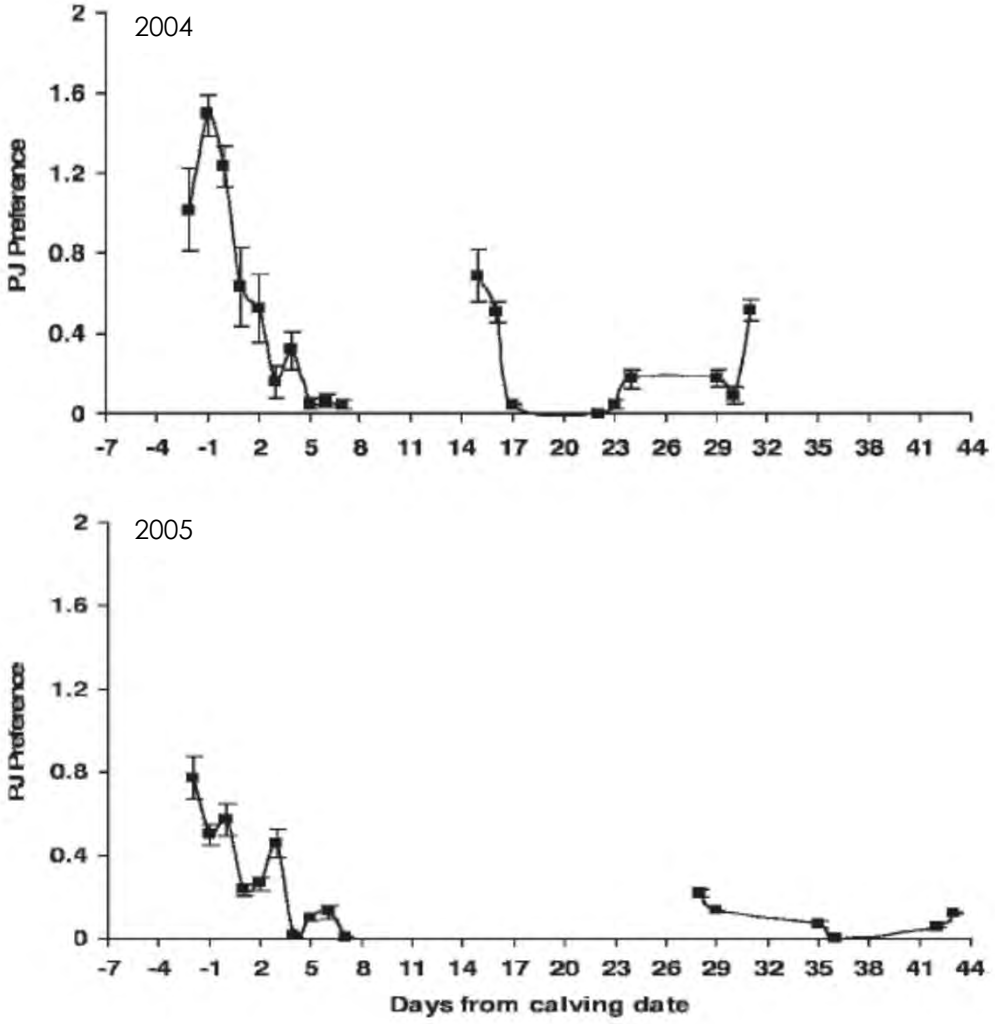
Prileson (2013); MS Thesis; NMSU; 113p.

Woodland selection in relation to stand cover (Summer)



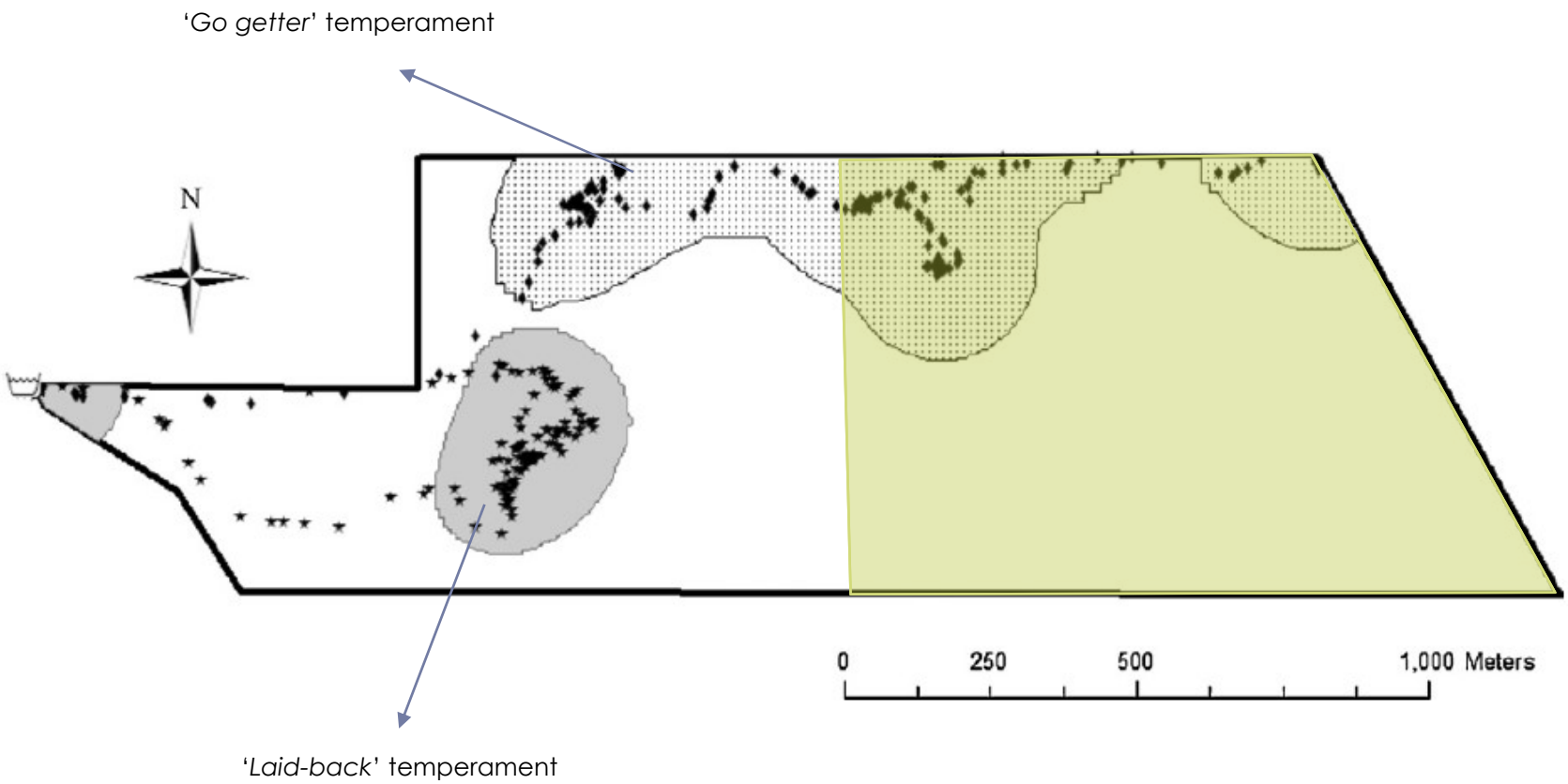
Prileson (2013); MS Thesis; NMSU; 113p.

Woodland selection and animal physiological state



Black Rubio et al. (2008); Range. Ecol. Manage. 61:394-404

Woodland selection in relation to animal temperament



Wesley et al. (2012); Appl. An. Behavior Sci. 139:183-194

Goodman et al. (2016); Rangelands 38:292-296

Woodland selection in relation to stocking rate

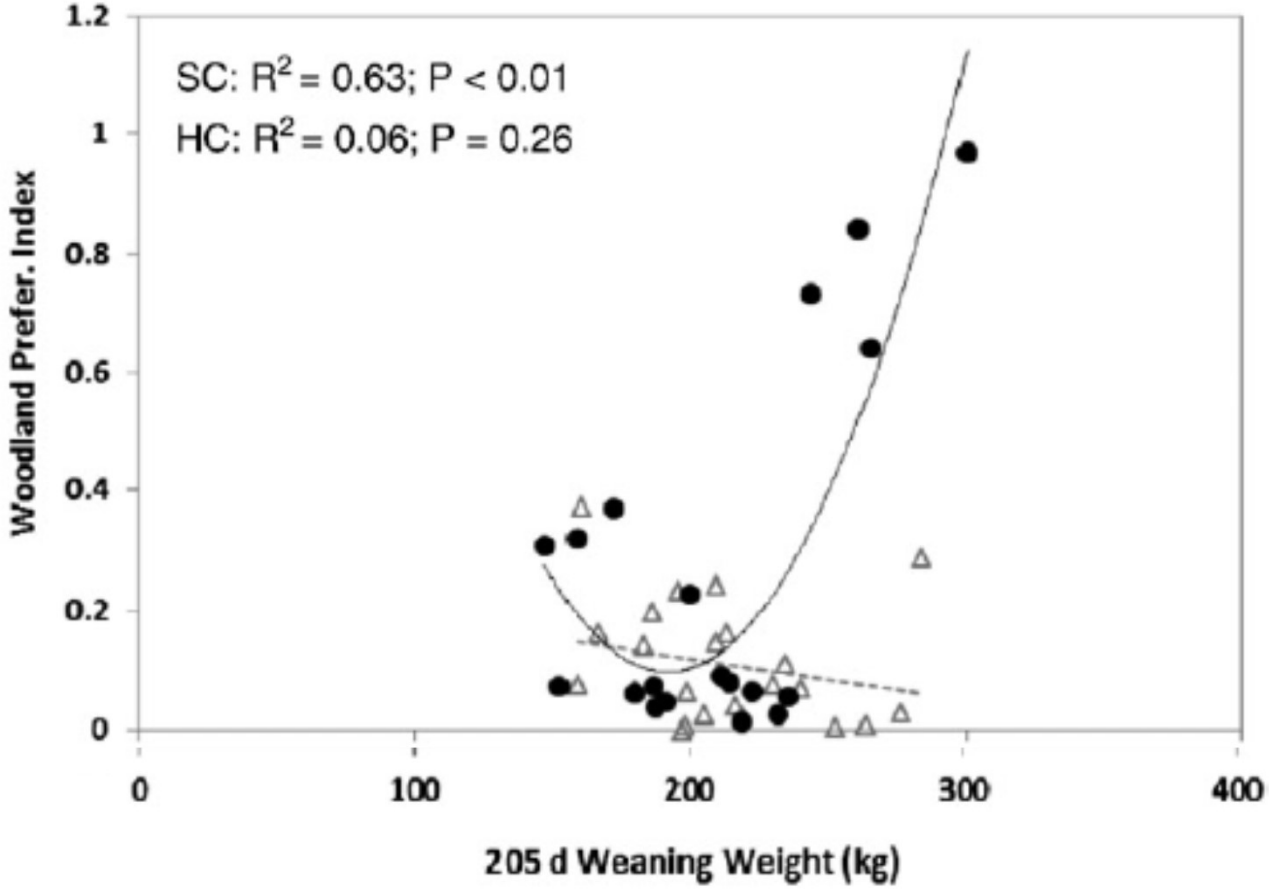
Variables	Forage allowance		SE	*P* Value
	High	Low		
Woodland Preference [3]				
Day + night	0.114	0.461	0.057	<0.001
Night $_{predawn}$	0.063	0.497	0.056	<0.001
Day	0.136	0.459	0.060	<0.001
Night $_{post\ sunset}$	0.116	0.418	0.049	<0.001

[1] Periods were: 24 h (day + night), predawn night hours (from midnight to sunrise), daytime hours, and postsunset night hours (from sunset to midnight).

[3] Preference index: % time spent in woodland/% woodland cover.

Sawalhah et al. (2016); Range. Ecol. Manage. 69:134-143

Woodland selection and calf weaning weights



Sawalhah et al. (2016); Range. Ecol. Manage. 69:134-143

Patches of open to dense piñon juniper woodland appear to improve grazing habitat quality for beef cattle and, under moderate stocking, may allow cows to wean heavier steer calves.

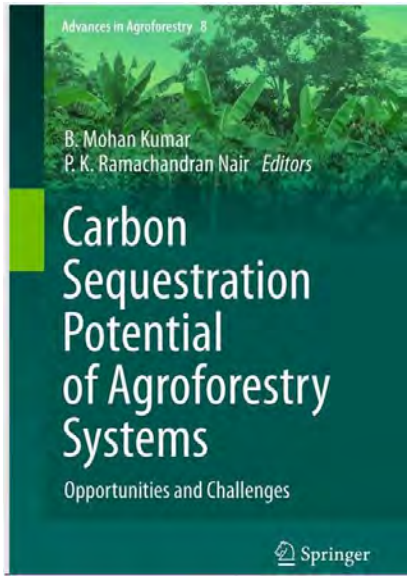
Photo: Shad Cox


© Carl Lengyel

Silvopastoral approaches to woodland management?

Lesson 1: Silvopastoral systems in the dry tropics close to Ibagué, Colombia

Lesson 2: Silvopastoral systems in the Chilean Patagonia



Carbon Sequestration Potential of Silvopastoral and Other Land Use Systems in the Chilean Patagonia

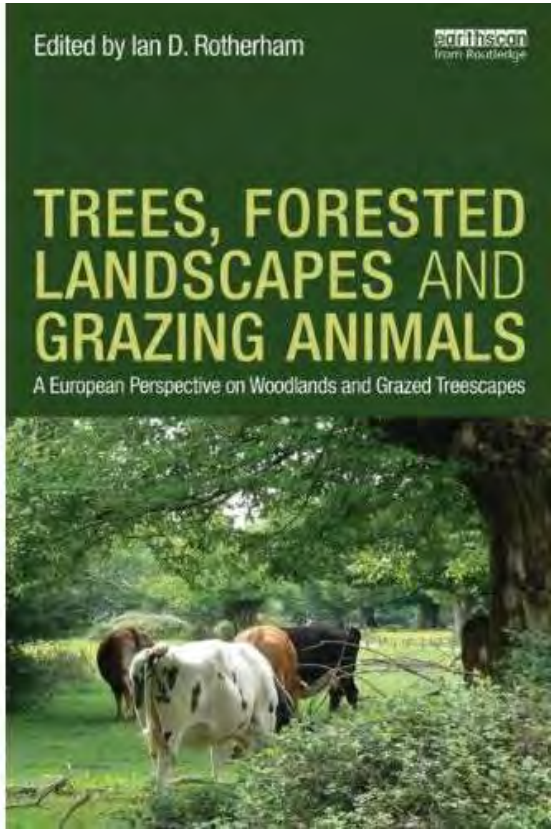
Francis Dube, Naresh V. Thevathasan, Erick Zagal, Andrew M. Gordon, Neal B. Stolpe, and Miguel Espinosa

Cross-disciplinary synergies

Transitioning from pastoralism to silvopastoralism

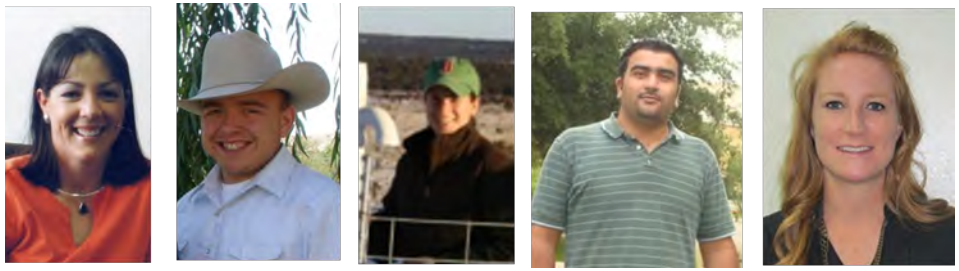
Managing grazed treescapes for:

1. Improved grazing animal welfare?
2. Carbon-neutral calf production?
3. Improved ecosystem function?



Published February 14, 2013

Thank you!



Acknowledgements: This research was funded by State of NM Rangeland Ecosystems grant, USDA-AFRI Hatch Grant 1000985, and the Corona Range and Livestock Research Center.