

Use of virtual fencing on fire-prone sagebrush rangelands

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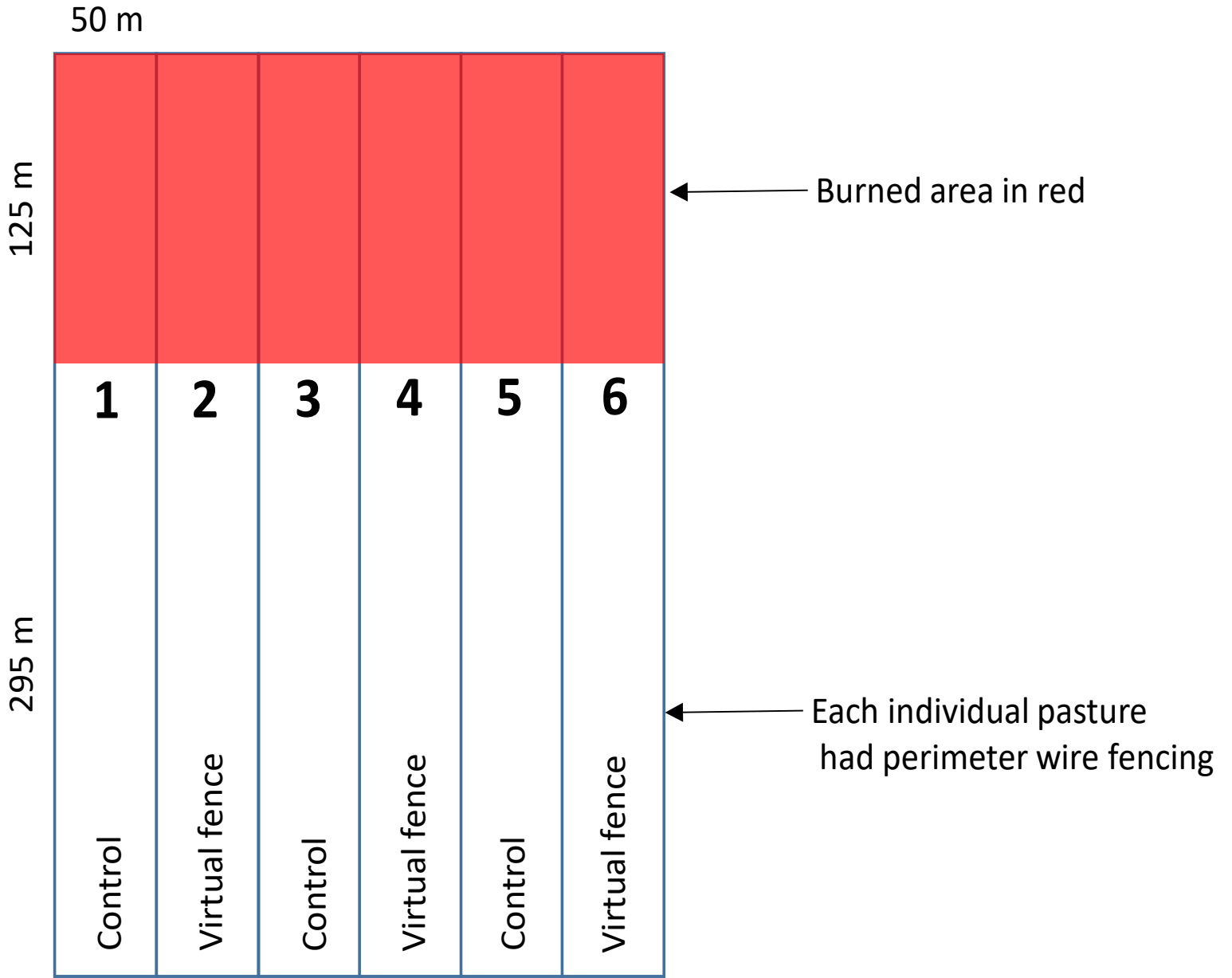
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The Wildfire Problem

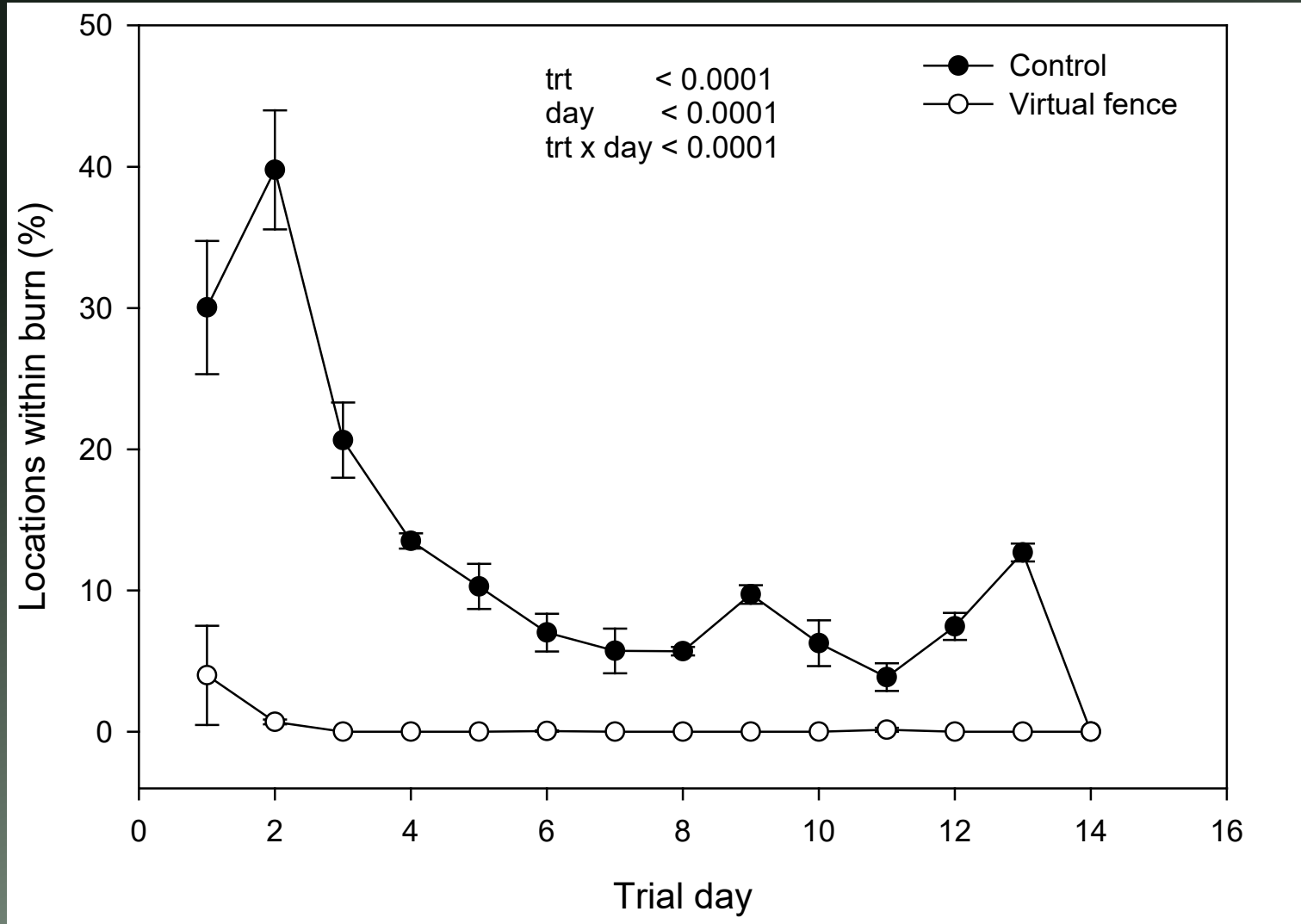
- Increase in prevalence of wildfire
- Fire and grazing
 - Challenges
 - Loss of post-fire grazing on federal lands
 - Opportunities
 - Fuel break creation/maintenance
 - Targeted fuel reductions in large rangeland landscapes



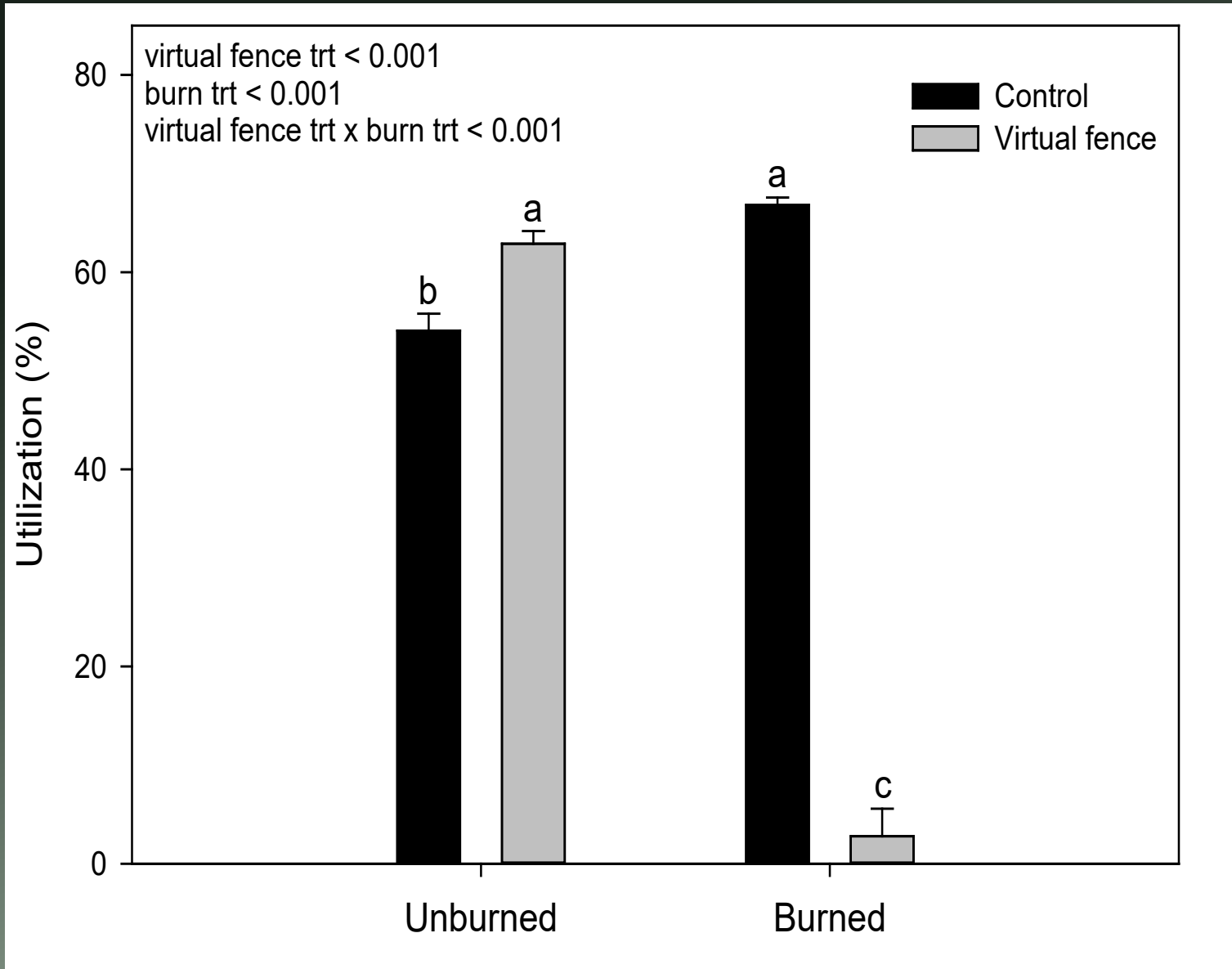




Virtual Fencing to Exclude Cattle from Burned Areas



Virtual Fencing to Exclude Cattle from Burned Areas



Conclusions

- Virtual fencing technology dramatically reduced but did not eliminate use of burned areas.
- Need additional tests in larger, more complex rangeland landscapes.

Virtual Fencing for Grazed Fuel Breaks



Virtual Fencing for Grazed Fuel Breaks

39 mature angus cows
23 pairs
16 dry cows

Pasture boundary

Pressure zone (140 m)
Fuel break zone (200 m)

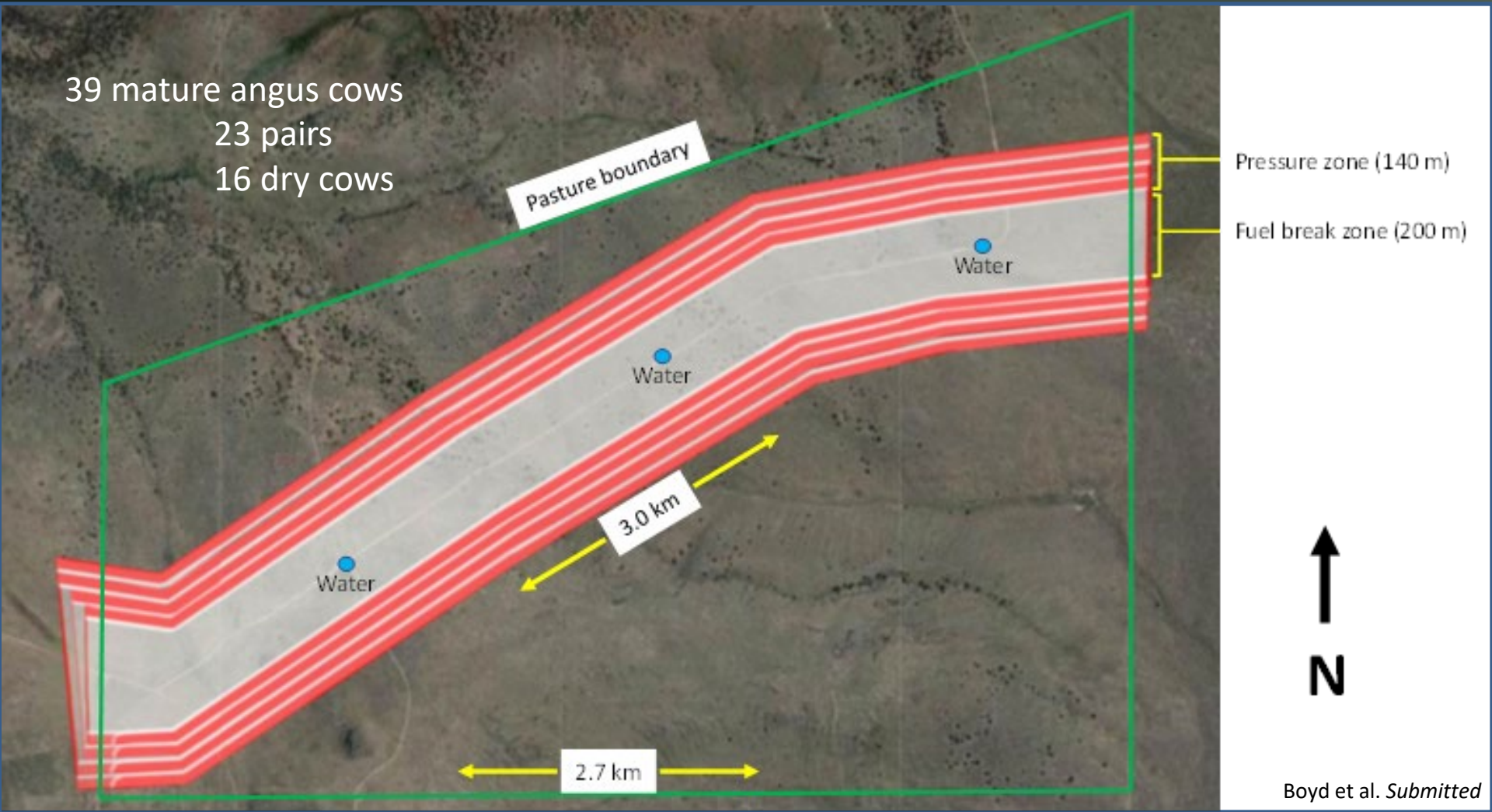
Water

Water

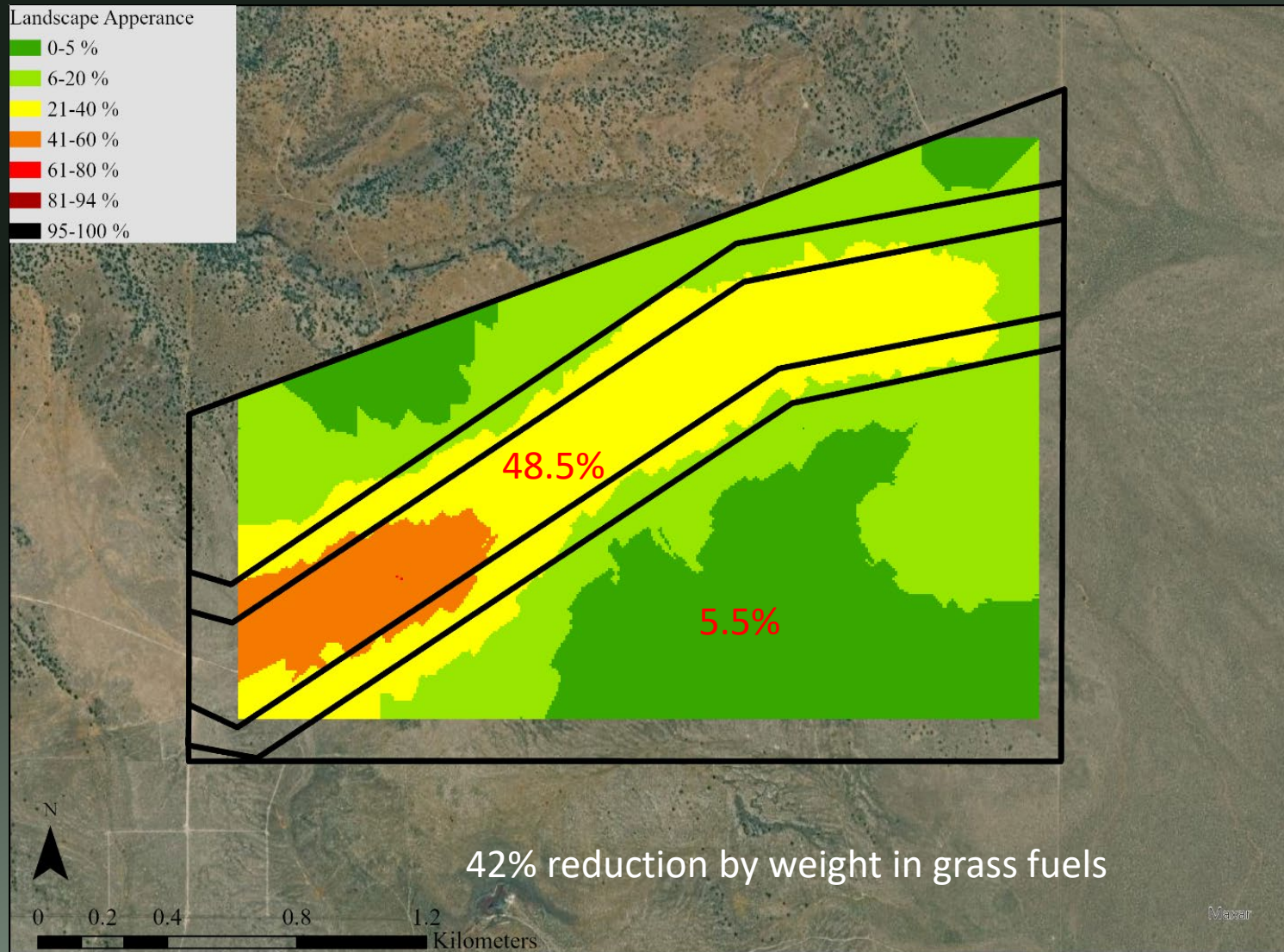
Water

3.0 km

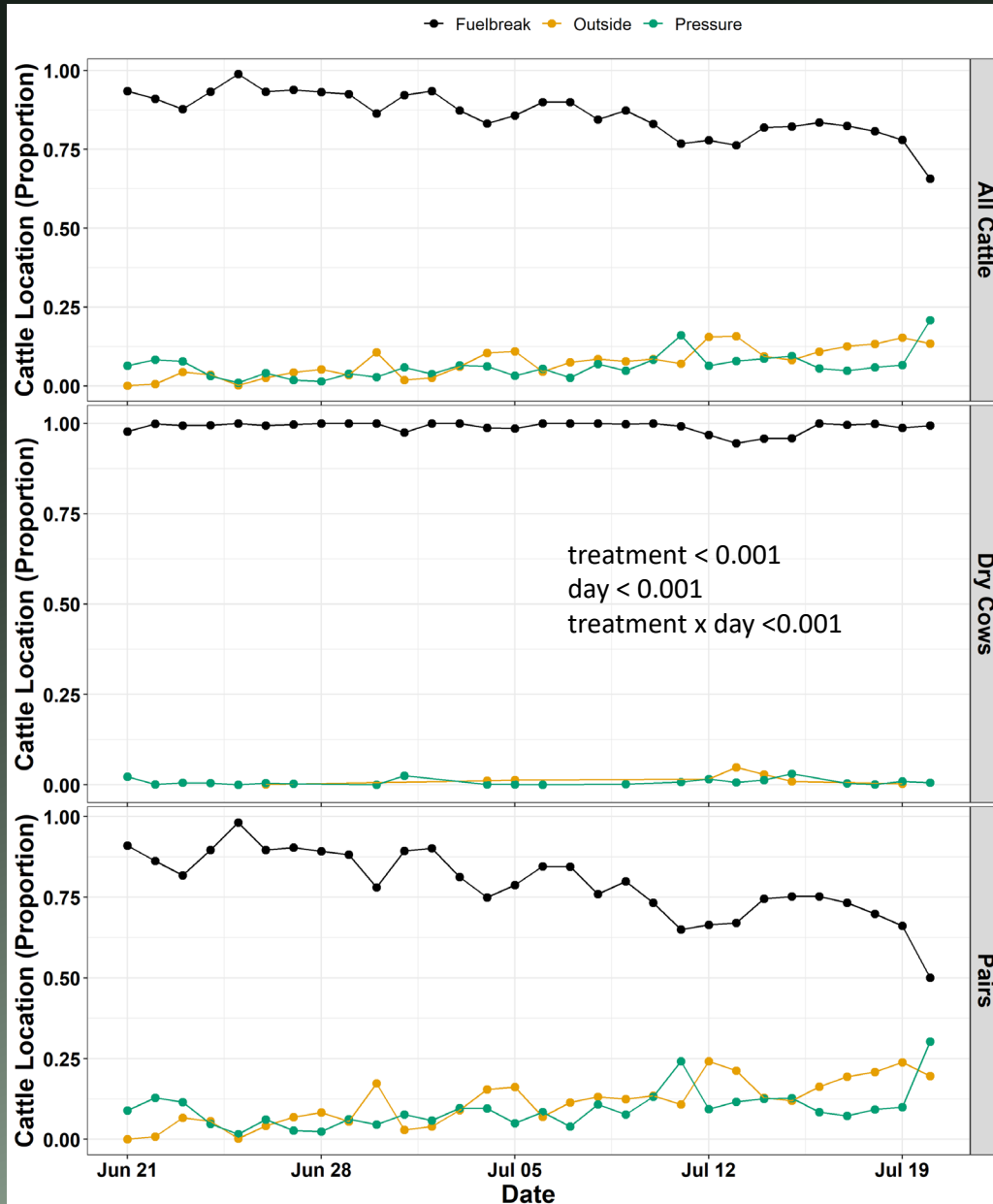
2.7 km



Virtual Fencing for Grazed Fuel Breaks



Virtual Fencing for Grazed Fuel Breaks



Conclusions

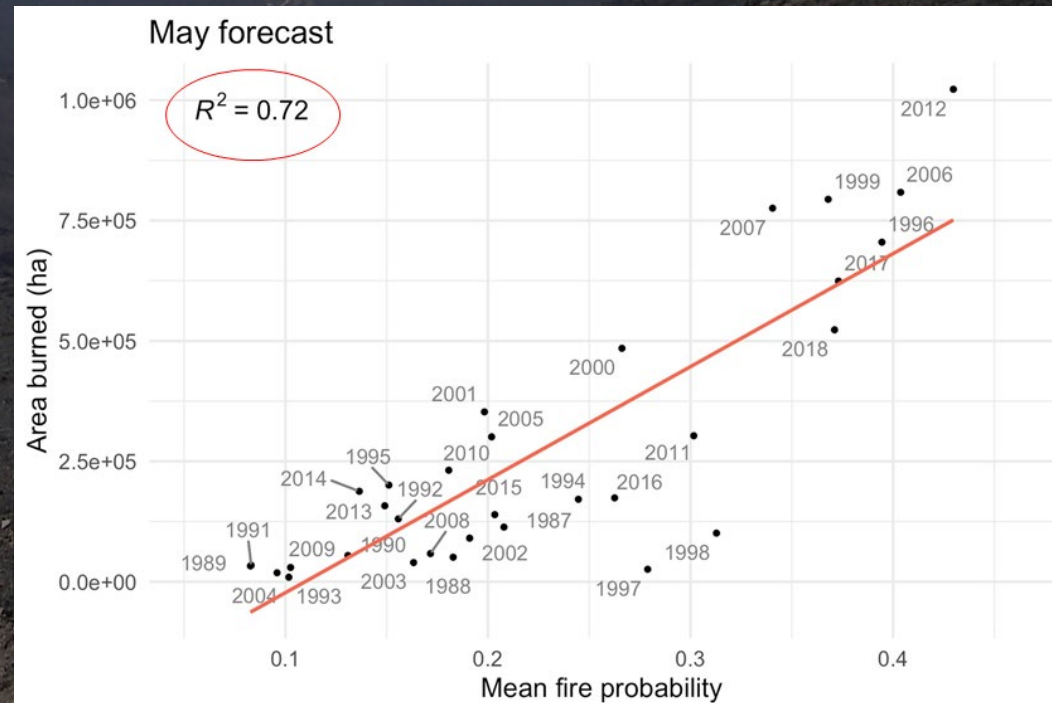
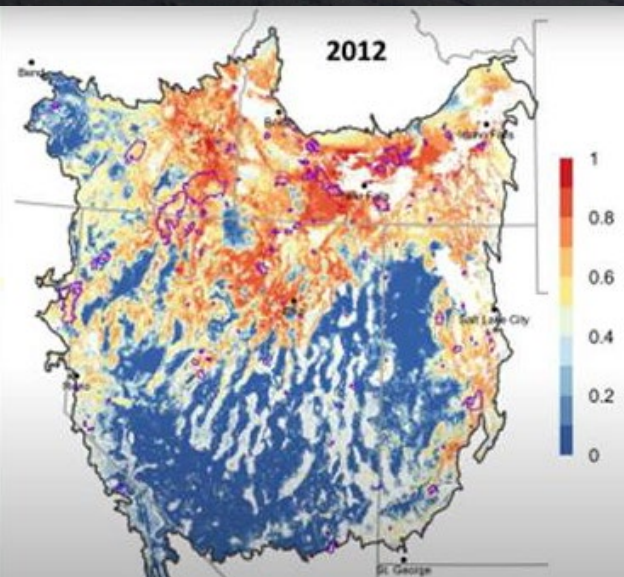
- Virtual fencing can concentrate grazing distribution to reduce grass fuels within fuel break perimeters
- Efficacy of containment relates strongly to animal reproductive status.

Large Scale Fuels Management

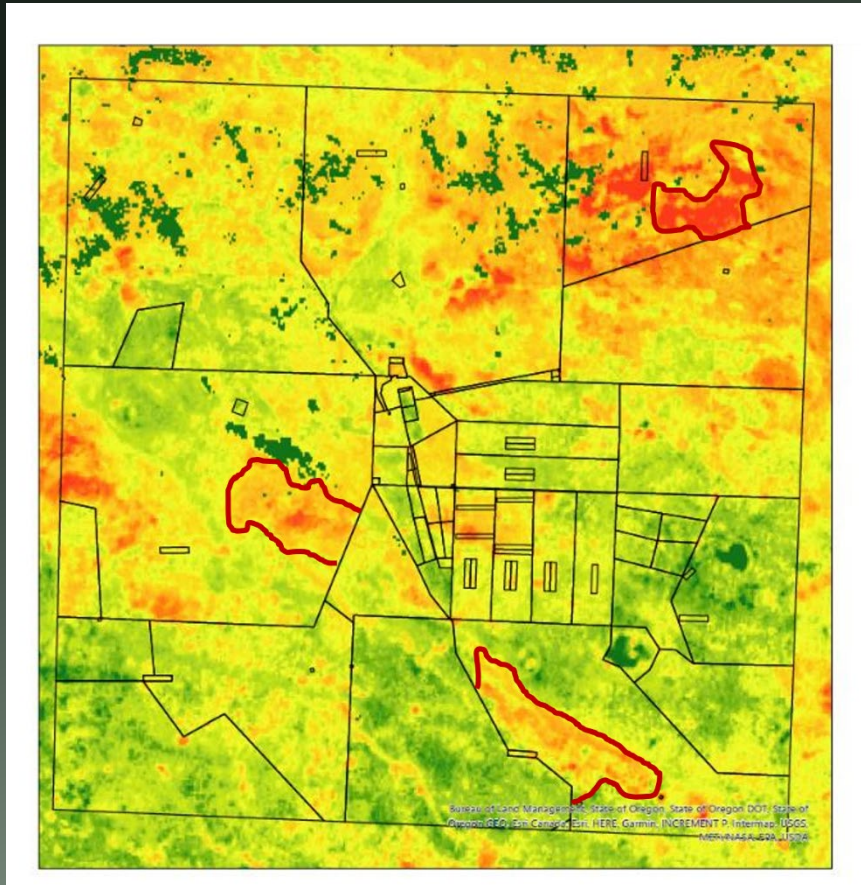


Large Scale Fuels Management

- Predicting wildfire occurrence
 - Hypothesis generation from plot data
 - Collaborative work with U of M to model wildfire probability at Great Basin Scale



Virtual Fencing for Targeted Large Scale Fuel Reduction



Take-homes

- Virtual fencing allows for spatially and temporally opportunistic containment in large fire-prone rangeland landscapes.
- Virtual fencing is not an “iron gate” and will work best when used as a tool within a larger strategy incorporating strategic water placement.
- Technology, including virtual fencing, allows us to strategically use grazing to meet management objectives.

Exploring the Boundaries of Virtual Fence



Access factsheets, videos, webinars & more resources

rangelandsgateway.org/vf



Webinar 1 - Recording, slides, handouts available online

Virtual Fence 101 & Vendor Comparison



Webinar 3 - January 23, 2025 - Registration is Open

Virtual Fence Economics

