Rangelands common experiment working group

Jornada: criollo vs. British breed, predict increased profitability and no difference or less environmental impact due to broader diet breadth

Walnut Gulch: mesquite herbicide effects on ecosystems in paired watersheds, forage availability as production effect and water availability as key environmental effect.

Georgia Coastal Plain: Pasture, cattle production with a farmer, in development.

Great Basin: Perennial to annual grass transition, sage grouse key issue, grazing shifted to cheatgrass system. Or restore/maintain system via fire management and seeding to maintain a natural system. So compare native vs. cheatgrass landscapes, not replicated.

Southern Plains: Wheat-grazing flexible vs. wheat-grazing-canola rotation, no-till, effects on ag profitability and water, soil GHG measurements

Central texas/Blackland prairie: north ranch vs south ranch, 200 + acres, annuals plus old world bluestem/bernuda grazed until hay needed is BAU; use organic fertilizers, overseeding with legumes and rotational grazing, not replicated.

CPER: continuous season-long vs. adaptive rotational grazing determined by multi-stakeholder group, 10 pastures but adaptive management uses all as a unit. Livestock production, vegetation goals, and biodiversity goals

Upper Mississippi Basin: continuously grazed unimproved pasture vs interseeding corn beans in cropland with living mulch, grazing treatments integrated, 1 acre watersheds, h flumes, dairy, daily weight gain

Mandan: integrated livestock crop component, cover crop component, still defining on cropland, BAU “2” on a long-term pasture study

Upper Chesapeake: ASP: using beef animals to graze cover crops working into crop rotation, but small plots so cant feed animals long-term, so no animal data

Archbold: BAU: bahia grass, N fertilizer, long-term rotations, in dry season use seminative system, and supplemental feed; ASP—intensify on improved, maximize grass production and use fire or fences to get better grazing, patch burn can improve heterogeneity for conservation goals

Platte River: season long cool, season grass system vs. fertilized rotated improved forage pasture, maybe integrated crop livestock system, corn stover, cover crops, livestock performance.

Replication issues, 3 sites with replication

6 sites with observatory in BAU and ASP

~6 sites with cover crops as component of livestock production system

6 sites with perennial pastures/range

Add inferential footprint of study added to survey

Enterprise budget as standard for all sites and tradeoffs with environmental quality variables that are salient for the site and standardized via meta-analysis approaches (i.e., not necessarily the same environmental variables)

How long do we need to characterize differences between ASP and BAU

Example of simulated enterprise budgets for analysis as a start—project now with Jean, Brian, David.