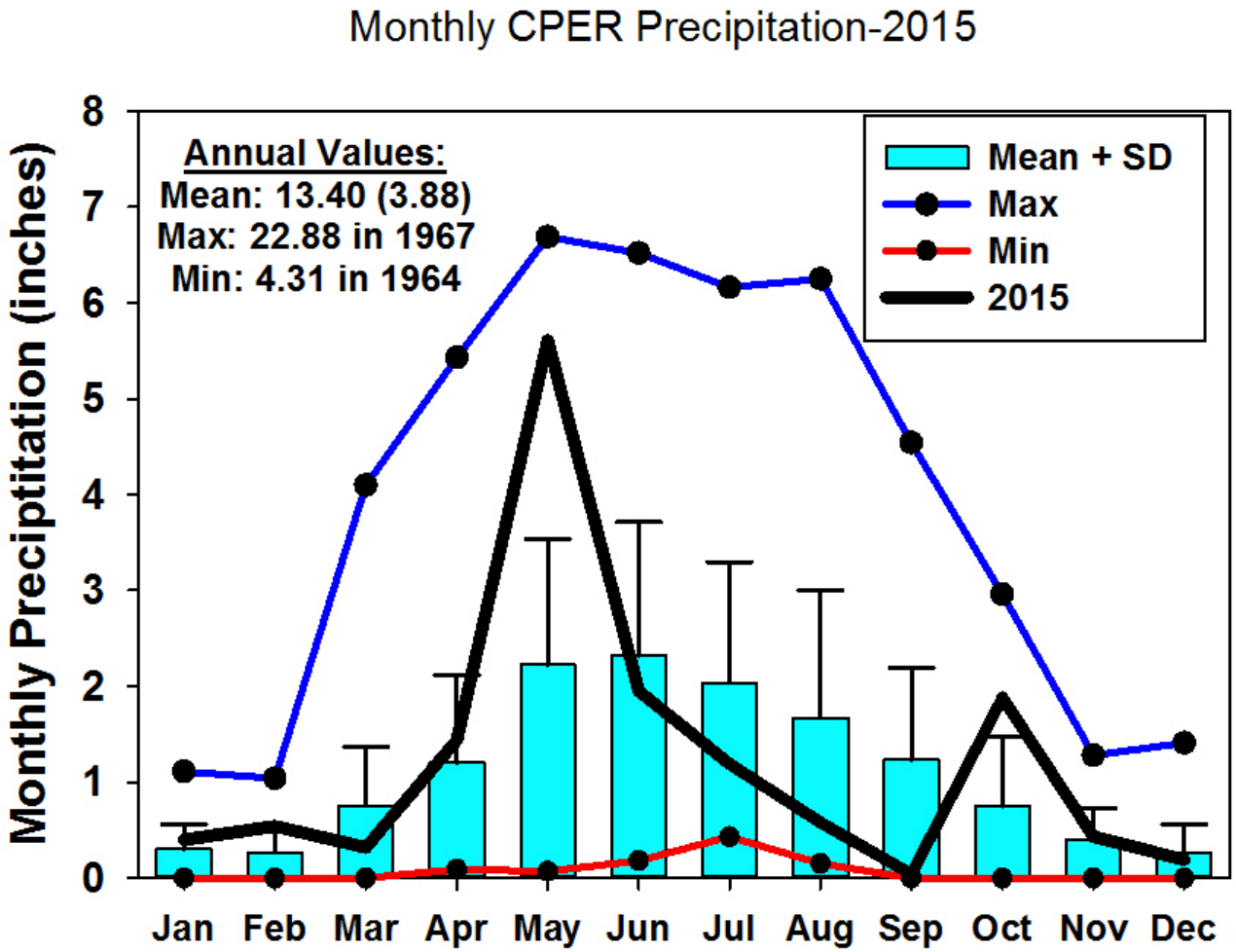
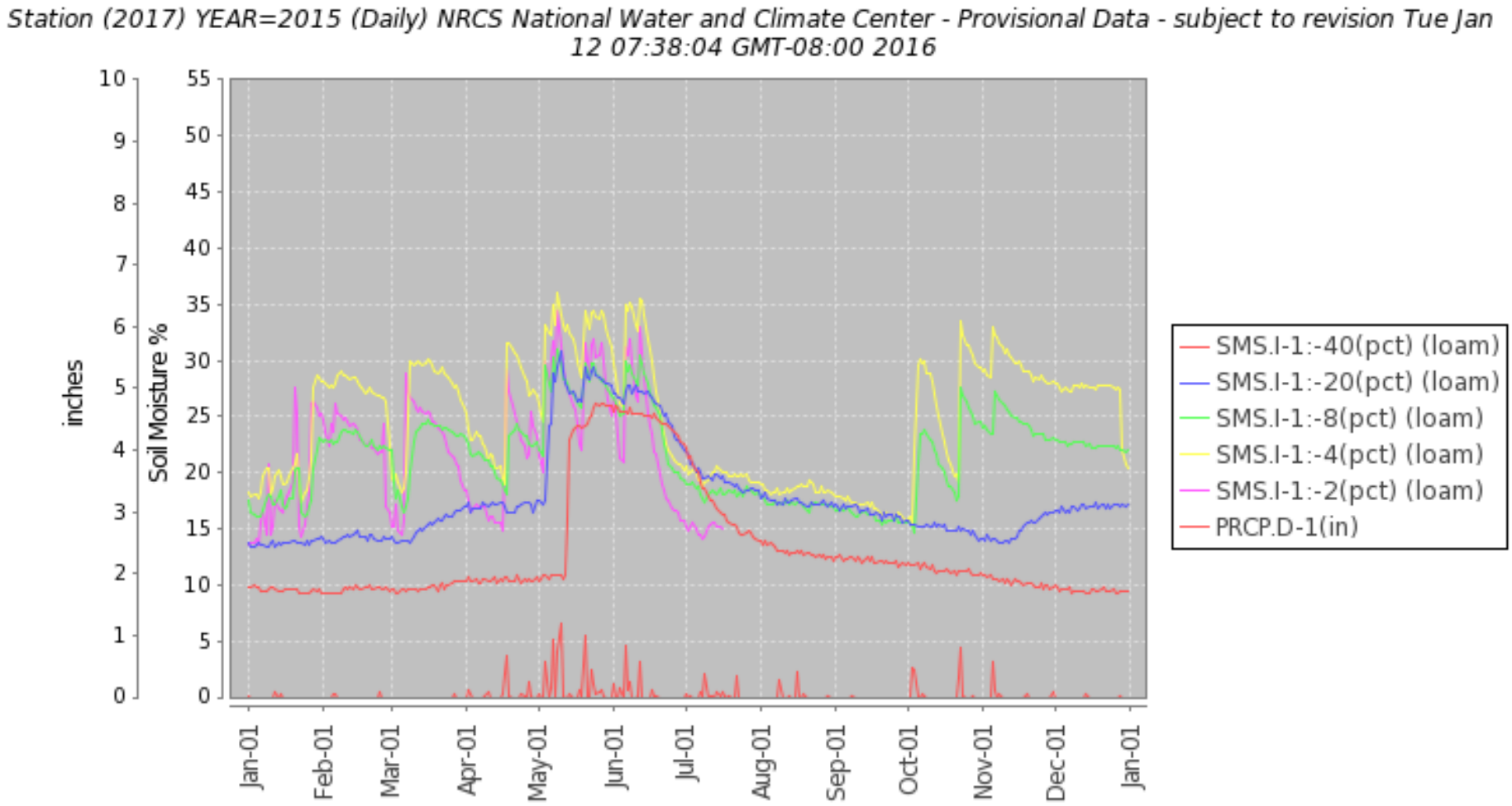


Total 2015 Precipitation: 15.0 inches

Soil Moisture 2015



GOALS

Vegetation

OBJECTIVES

A: Increase percentage of cool season grasses and non-shortgrass native plants, by weight and number of plants

B: Increase variation in vegetation structure, composition, and density within and among pastures*

C: Maintain or increase size of fourwing saltbush and winterfat shrubs

Note: All vegetation objectives are relative to ecological site potential

Western Wheatgrass

		Net Change in Tiller Density (2015-2013)		Rate of Increase in Tiller Density (2015/2013)	
Ecosite	Block	AGM	TGM	AGM	TGM
Uplands	Nighthawk	6.4	1.4	2.7	2.3
	Highway	7.8	2.6	4.1	2.4
	Crossroads	6.4	3.0	1.8	2.3
	Hilltank	1.0	1.1	1.9	1.7
	South	19.5	4.7	3.8	2.5
	Ridgeline	12.1	2.7	2.1	1.2
	Saltflat	8.9	3.7	1.9	2.0
	Elm	5.8	2.2	3.0	2.2
	Headquarter	18.9	1.4	2.0	1.7
	Snowfence	11.5	6.2	2.9	6.6
Plains	**Mean**	**9.8**	**2.9**	**2.6**	**2.5**
Salt Flats	Saltflat	19.1	34.5	3.0	4.2
	Elm	29.4	12.9	4.8	4.9
	Headquarter	3.4	14.3	1.7	1.4
Salt Flats	Mean	17.3	20.6	3.2	3.5

Western Wheatgrass

		Net Change in Tiller Density (2015-2013)		Rate of Increase in Tiller Density (2015/2013)	
Ecosite	Block	AGM	TGM	AGM	TGM
Uplands	Nighthawk	6.4	1.4	**2.7**	**2.3**
	Highway	7.8	2.6	**4.1**	**2.4**
	Crossroads	6.4	3.0	1.8	2.3
	Hilltank	1.0	1.1	1.9	1.7
	South	19.5	4.7	**3.8**	**2.5**
	Ridgeline	12.1	2.7	2.1	1.2
	Saltflat	8.9	3.7	1.9	2.0
	Elm	5.8	2.2	3.0	2.2
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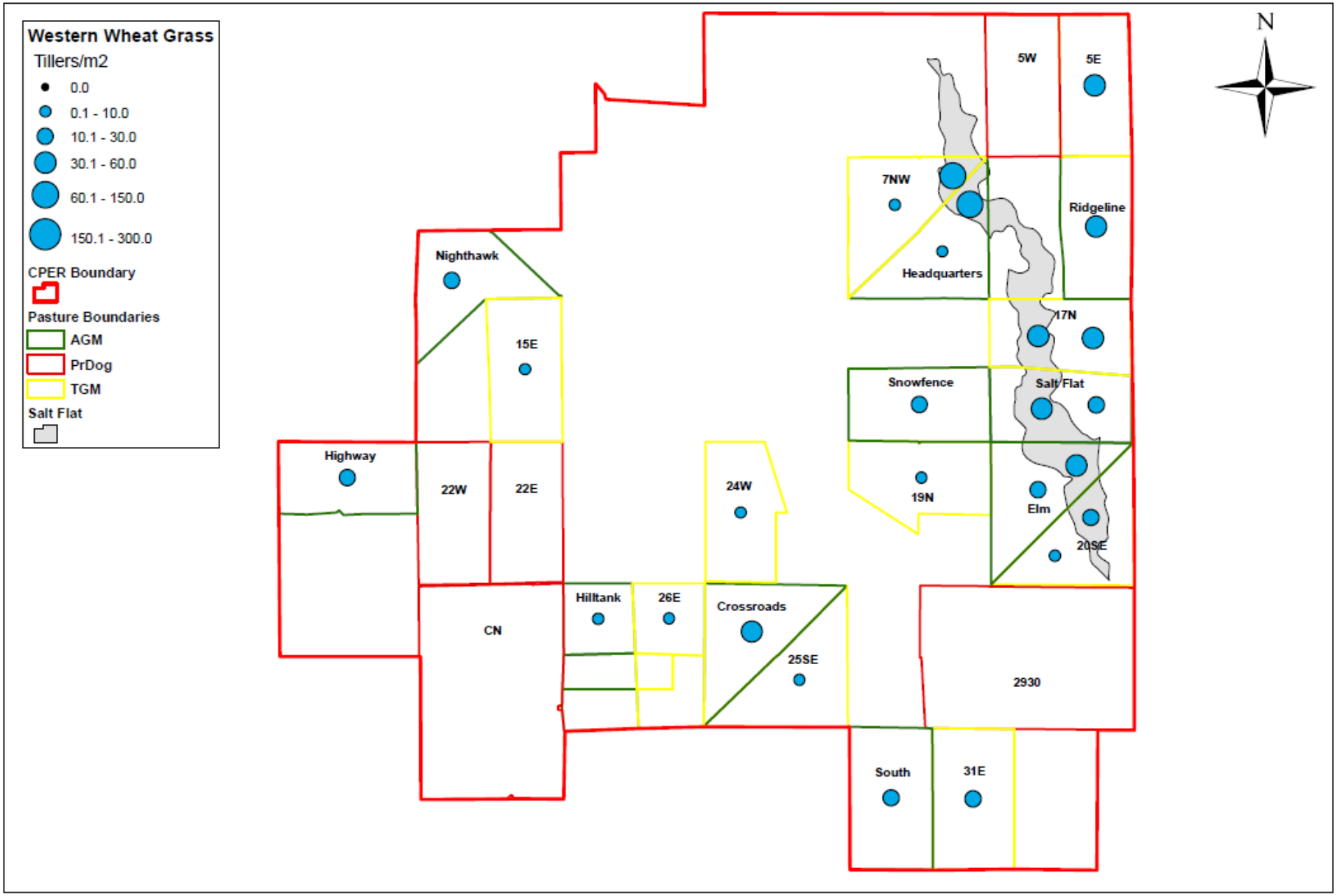
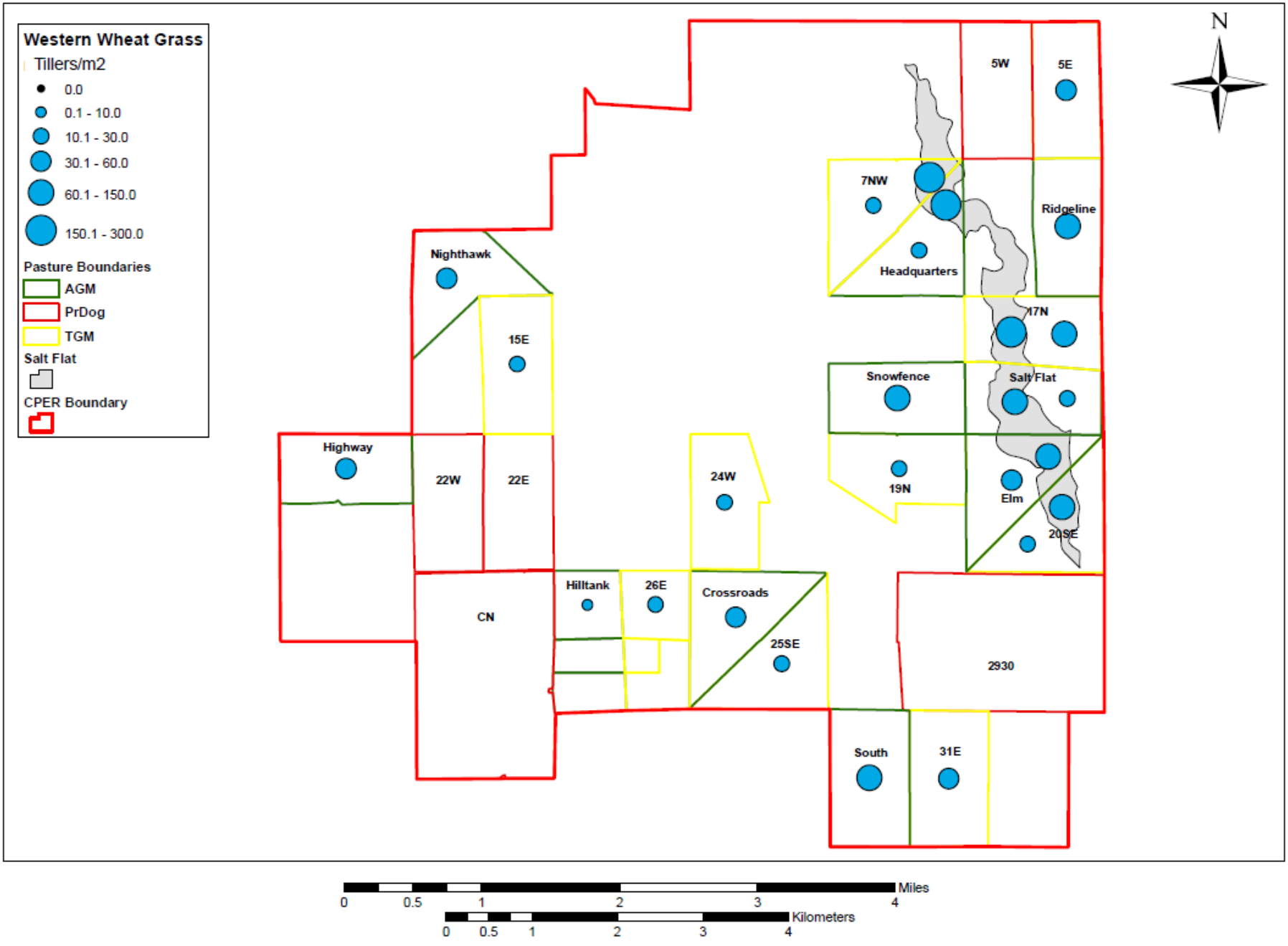
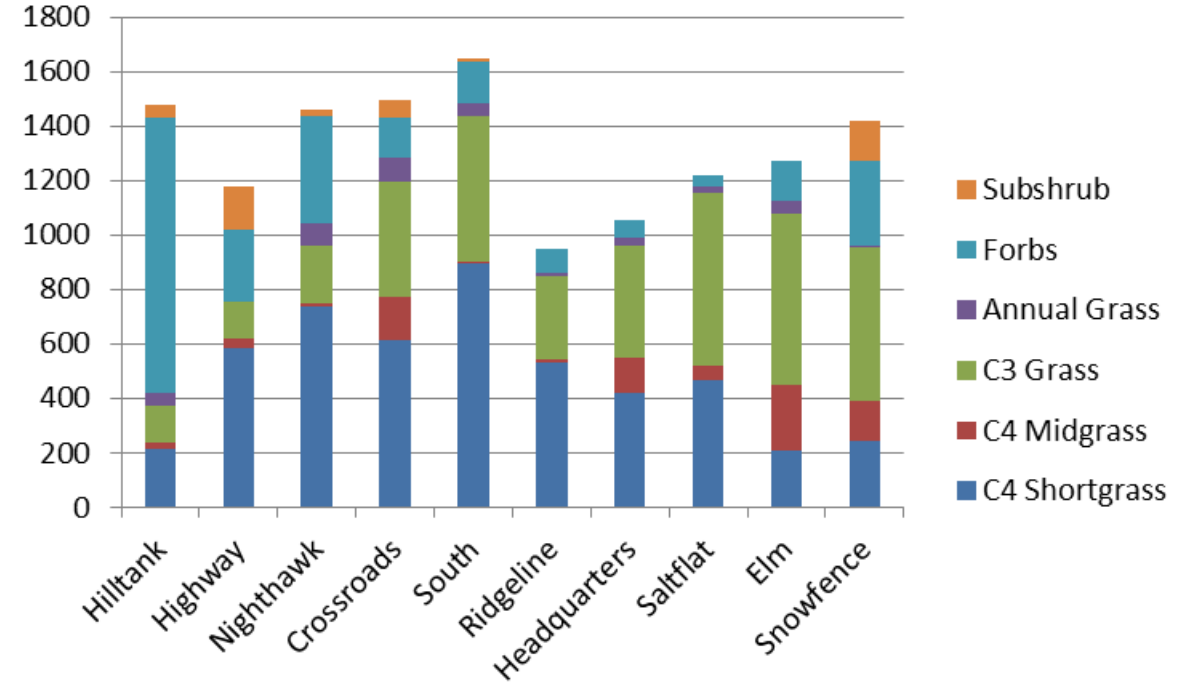
Western Wheat Grass 2013

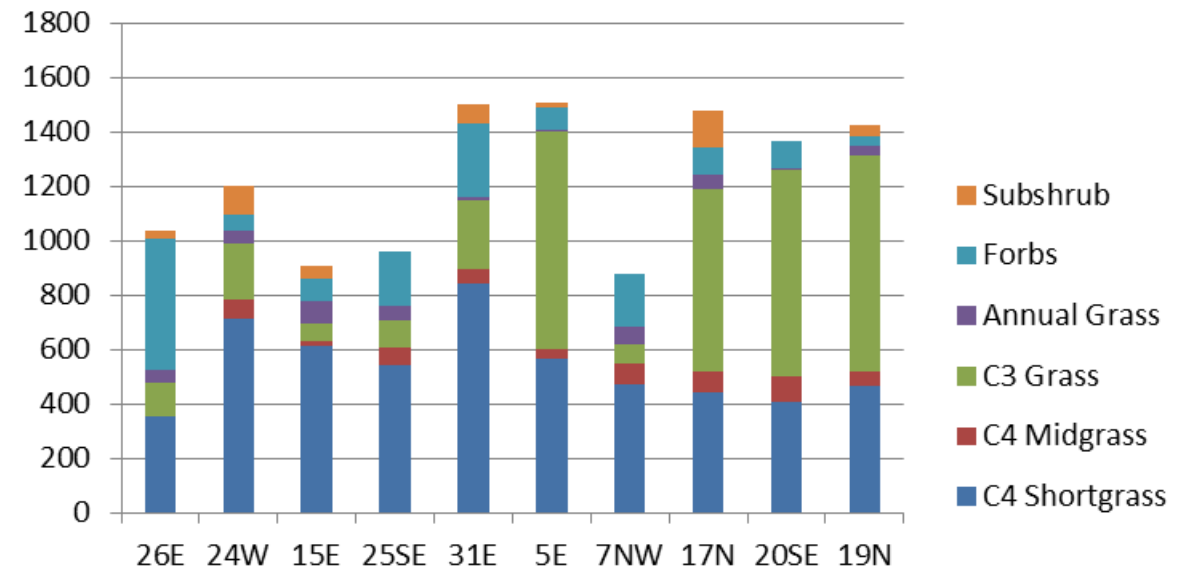


Western Wheat Grass 2015



2015 Peak Standing Biomass (lbs/ac)





Forage lb/ac	
AGM	Paired TGM
1239	**1145**

GOALS

Vegetation

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October Residual (Lbs/ac)

Upland Ecosites

Name	AGM	TGM	Notes on AGM
Snowfence	1628	1081	Grazed (early)
Nighthawk	537	807	Grazed
Saltflat	792	931	Grazed
Highway	754	987	Grazed
Crossroads	744	574	Rested
South	1057	953	Rested
Hilltank	781	966	Rested
Ridgeline	1286	1019	Rested
Headquarters	1036	913	Rested
Elm	1061	1121	Rested

	AGM	TGM
Mean Biomass	968	935

Saltflat Ecosite

Name	AGM	TGM	Notes on AGM
Saltflat	1071	2743	Grazed
Elm	2156	1859	Rested
Headquarters	2576	1291	Rested

Residual (October) Biomass of All Plant Species			
	AGM	TGM	Ratio (AGM/TGM)
Mean Residual Biomass (lbs/ac)	**968**	**935**	
Heterogeneity at the scale of all 10 pastures			
Variance Among Pastures	100674	23831	4.2
Variance Among All Plots	150716	75480	2.0
Variance Among All Transects	198991	135397	1.5
Heterogeneity within any given pasture			
Per Pasture Variance Among Transects	114283	120643	0.95
Per Pasture Variance Among Plots	75122	69527	1.08

	Variation Among Plots Within Each Pasture (Analysis excludes Salt Flats)		
	Pasture	AGM	TGM
Grazed heavy in 2015	Nighthawk	6997	35456
Grazed heavy in 2015	Saltflat	168174	203813
	Snowfence	63947	86282
	Elm	12545	47437
Grazed heavy in 2015	Highway	3716	48567
	Crossroads	34707	7938
	Hilltank	209225	141624
	South	162915	47882
	Headquarters	30566	54686
	Ridgeline	58428	21579
	Mean	75122	69527

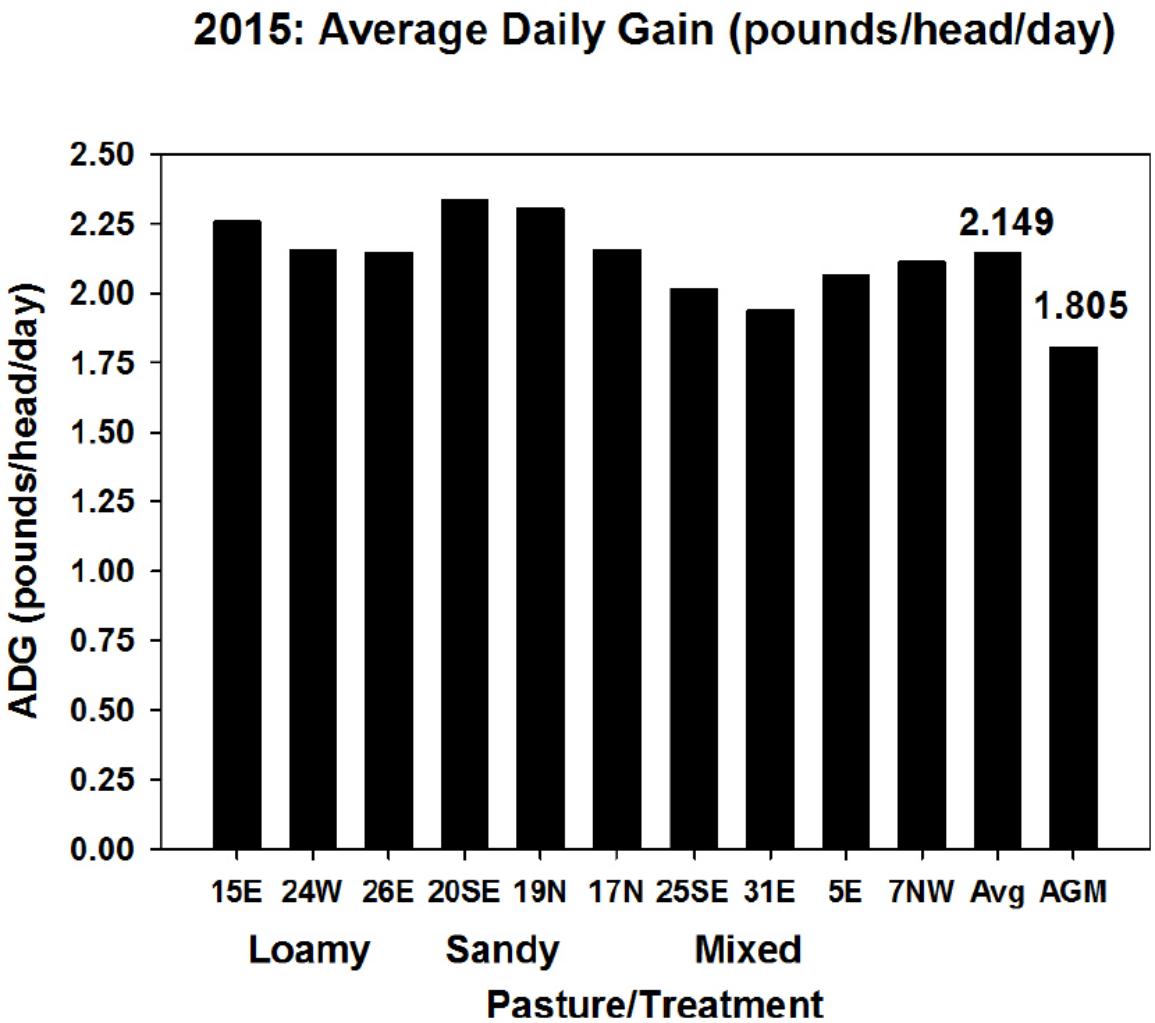
Profitable Ranching Operations

A: Maintain or increase livestock weight gain

B: Reduce economic impact of drought

C: Maintain or reduce operating costs

2015 Cattle Weight Gains



Profitable Ranching Operations

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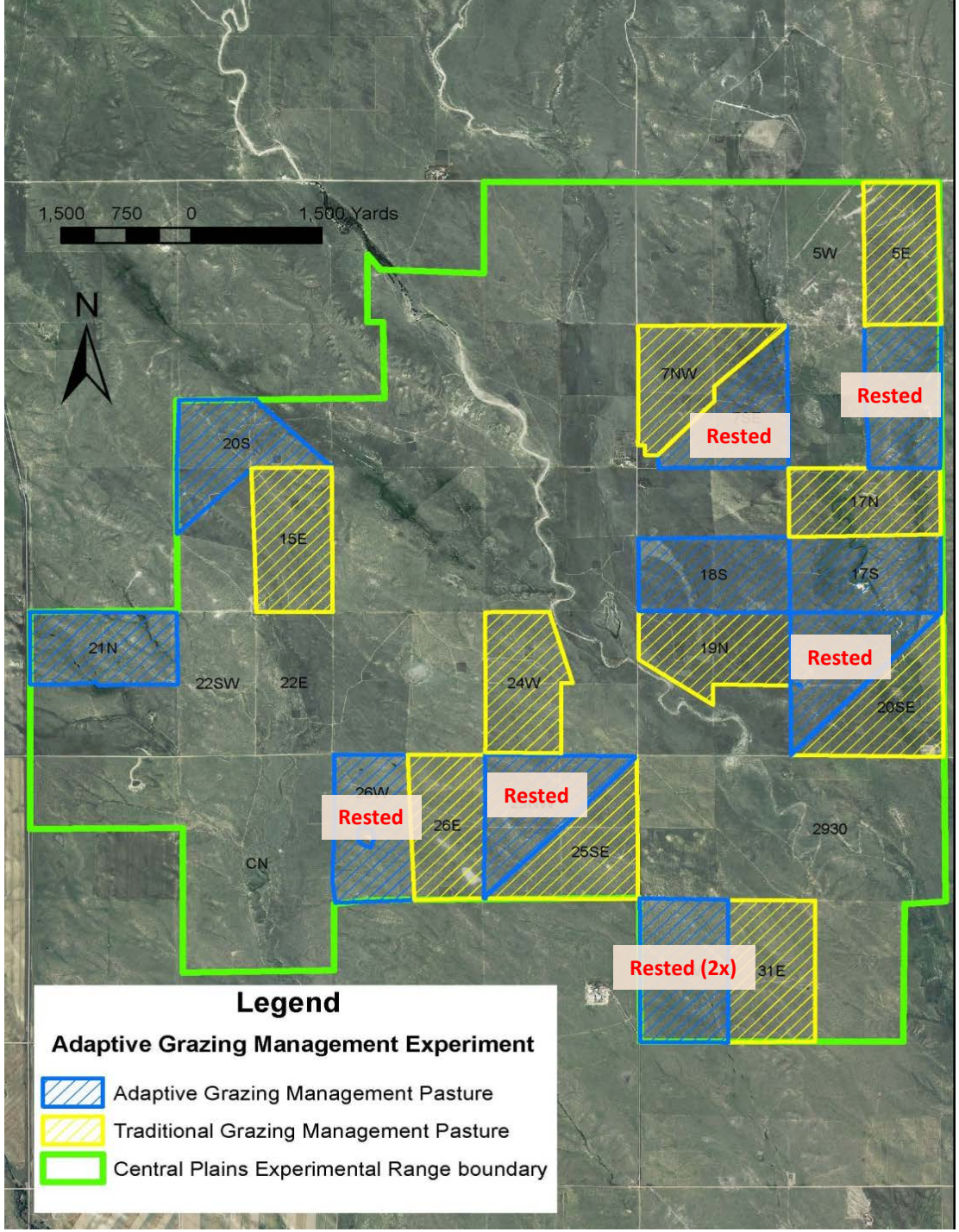

1,500 750 0 1,500 Yards
N
5W
5E
7NW
Rested
Rested
20S
17N
15E
18S
17S
21N
19N
Rested
22SW
22E
24W
20SE
26W
Rested
Rested
26E
2930
25SE
CN
Rested (2x)
31E
Legend
Adaptive Grazing Management Experiment
Adaptive Grazing Management Pasture
Traditional Grazing Management Pasture
Central Plains Experimental Range boundary

Wildlife

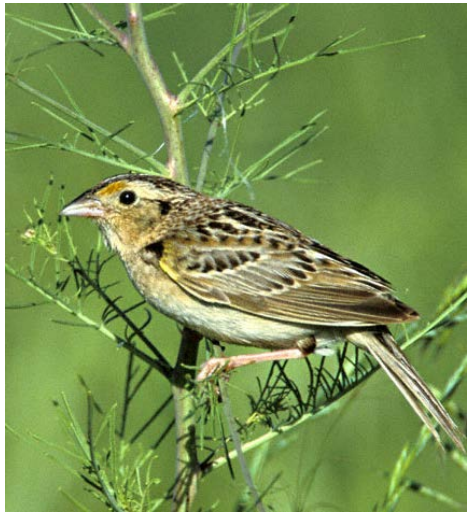
A: Increase populations of mountain plover**

B: Maintain populations of McCowns longspur, Western meadowlark, and horned lark

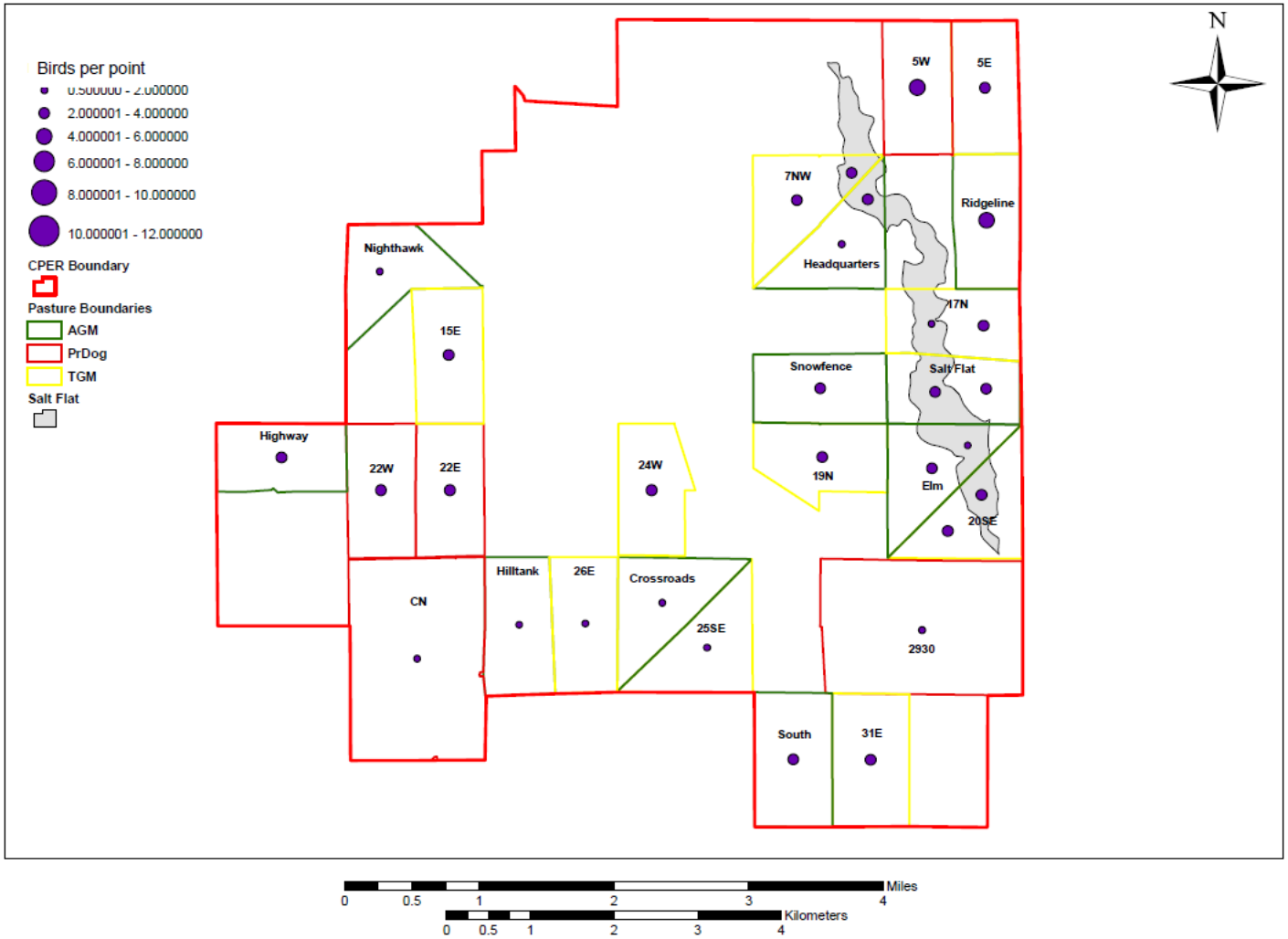
C: Increase populations of grasshopper sparrow, Cassin's sparrow, Brewers sparrow, and lark bunting

D: Maintain control of prairie dog populations (no prairie dogs)

Quick and non-statistical summary of CPER bird abundance trends, 2013-2015



LARB 2013


Birds per point
0.500000 - 2.000000
2.000001 - 4.000000
4.000001 - 6.000000
6.000001 - 8.000000
8.000001 - 10.000000
10.000001 - 12.000000
CPER Boundary
Pasture Boundaries
AGM
PrDog
TGM
Salt Flat
N
5W
5E
7NW
Ridgeline
Nighthawk
Headquarters
17N
15E
Snowfence
Salt Flat
Highway
22W
22E
24W
19N
Elm
20SE
Hilltank
26E
Crossroads
CN
25SE
2930
South
31E
Miles
0
0.5
1
2
3
4
Kilometers
0
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1
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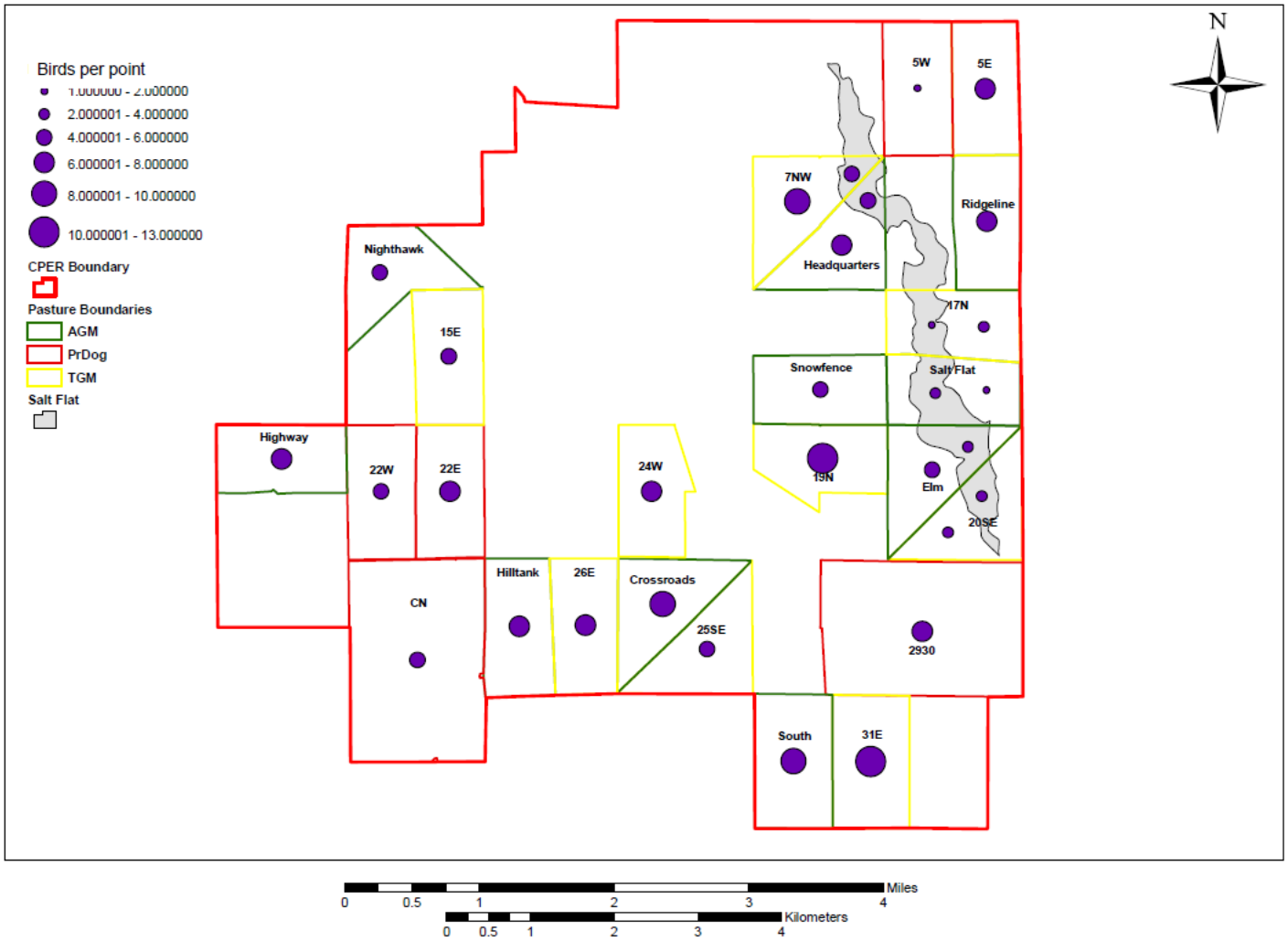
3
4

LARB 2015


Birds per point
1.000000 - 2.000000
2.000001 - 4.000000
4.000001 - 6.000000
6.000001 - 8.000000
8.000001 - 10.000000
10.000001 - 13.000000
CPER Boundary
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2930
South
31E
Miles
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Kilometers
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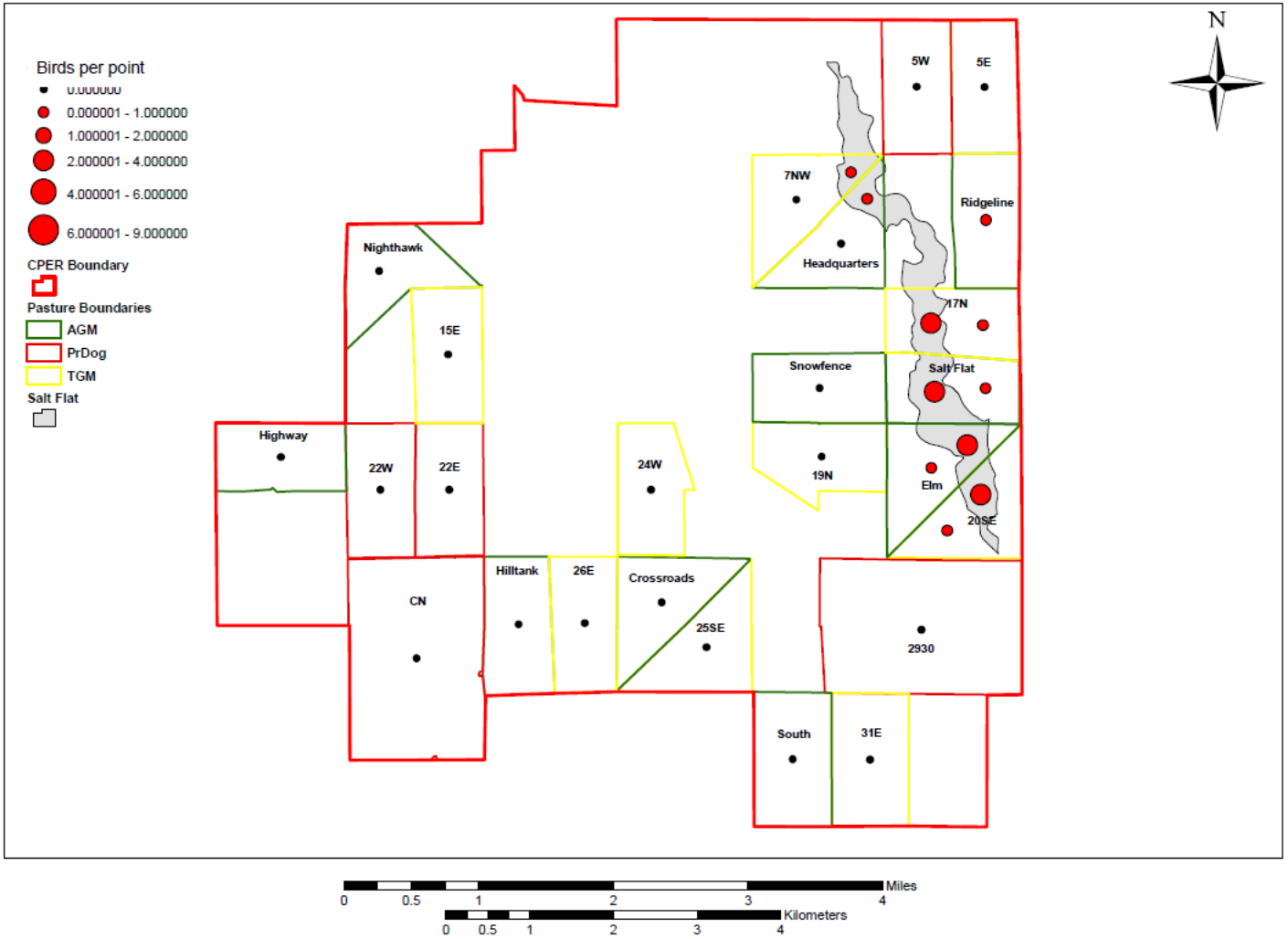
3
4

GRSP 2013


Birds per point
0.000000
0.000001 - 1.000000
1.000001 - 2.000000
2.000001 - 4.000000
4.000001 - 6.000000
6.000001 - 9.000000
CPER Boundary
Pasture Boundaries
AGM
PrDog
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Salt Flat
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5W
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7NW
Ridgeline
Headquarters
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Hilltank
26E
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25SE
2930
South
31E
Miles
0
0.5
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3
4
Kilometers
0
0.5
1
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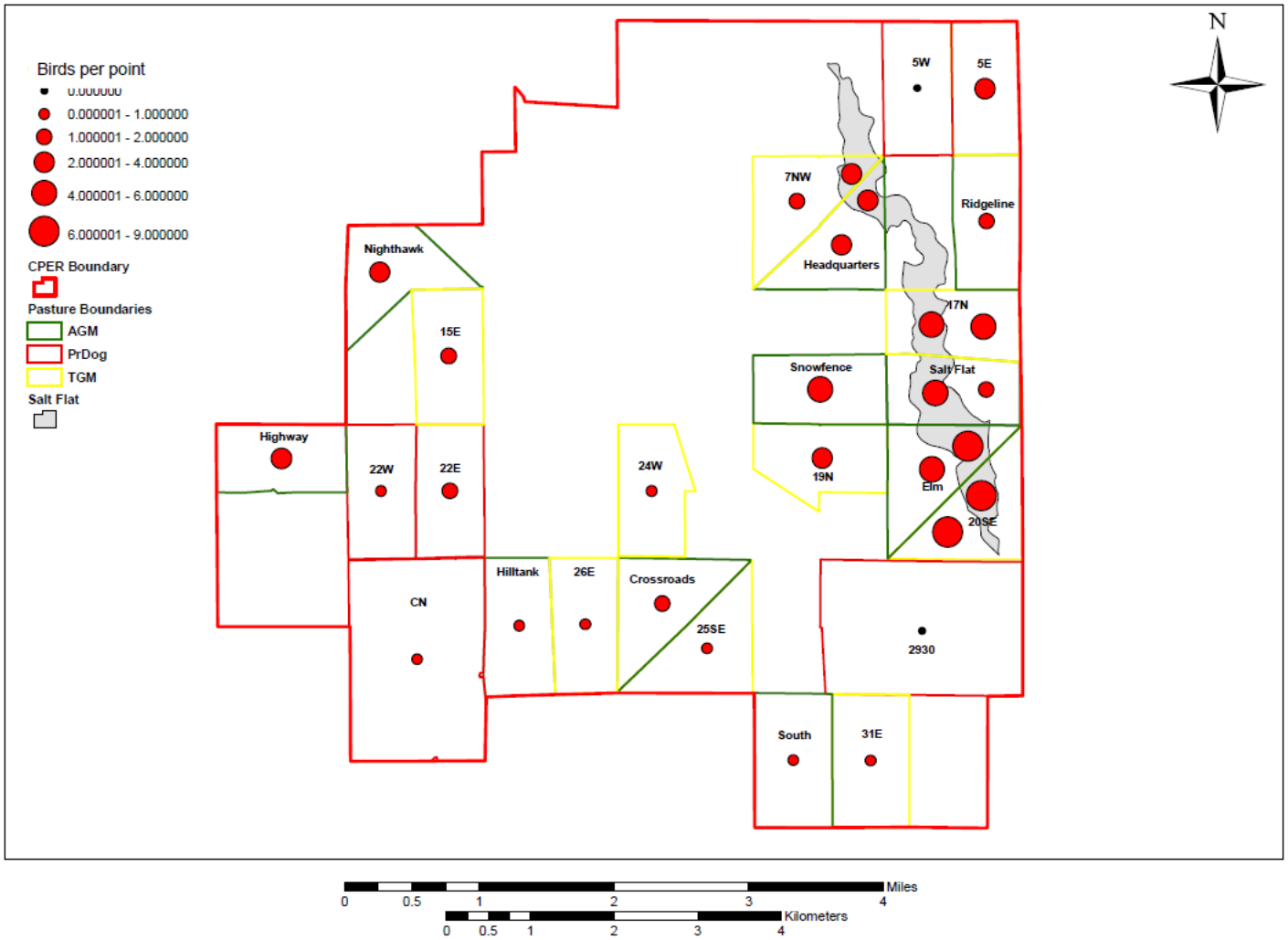
3
4

GRSP 2015


Birds per point
0.000000
0.000001 - 1.000000
1.000001 - 2.000000
2.000001 - 4.000000
4.000001 - 6.000000
6.000001 - 9.000000
CPER Boundary
Pasture Boundaries
AGM
PrDog
TGM
Salt Flat
N
5W
5E
7NW
Ridgeline
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Hilltank
26E
Crossroads
CN
25SE
2930
South
31E
Miles
0
0.5
1
2
3
4
Kilometers
0
0.5
1
2
3
4

MCLO 2013

Birds per point
MCLO2013
0.000000
0.000001 - 0.500000
0.500001 - 1.000000
1.000001 - 2.000000
2.000001 - 6.000000
CPER Boundary
Pasture Boundaries
AGM
PrDog
TGM
Salt Flat
N
5W
5E
7NW
Ridgeline
Headquarters
Nighthawk
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15E
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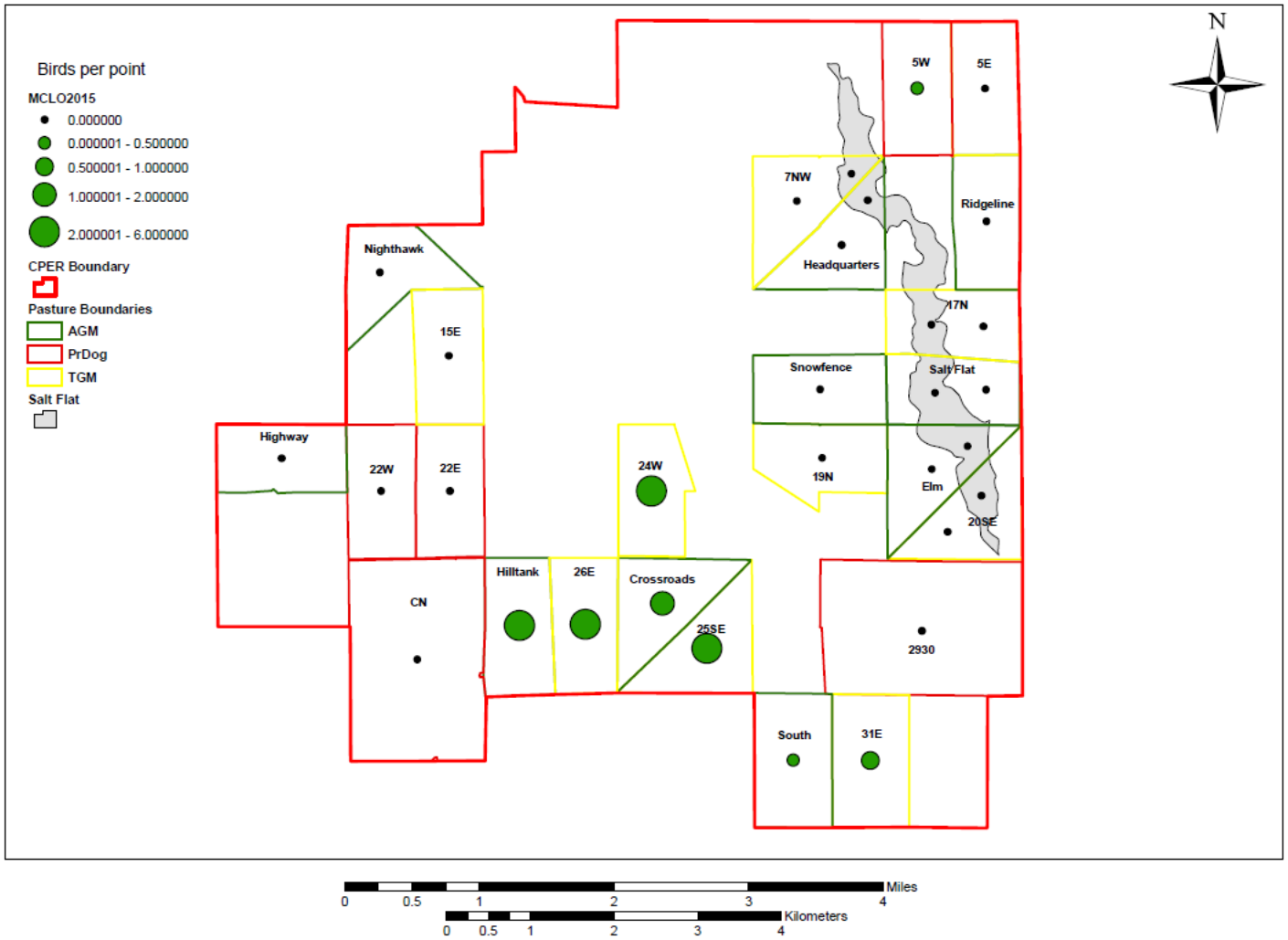
Highway
22W
22E
24W
19N
Elm
20SE
Hilltank
26E
Crossroads
CN
25SE
2930
South
31E
Miles
0
0.5
1
2
3
4
Kilometers
0
0.5
1
2
3
4

MCLO 2015


Birds per point
MCLO2015
0.000000
0.000001 - 0.500000
0.500001 - 1.000000
1.000001 - 2.000000
2.000001 - 6.000000
CPER Boundary
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South
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Miles
0
0.5
1
2
3
4
Kilometers
0
0.5
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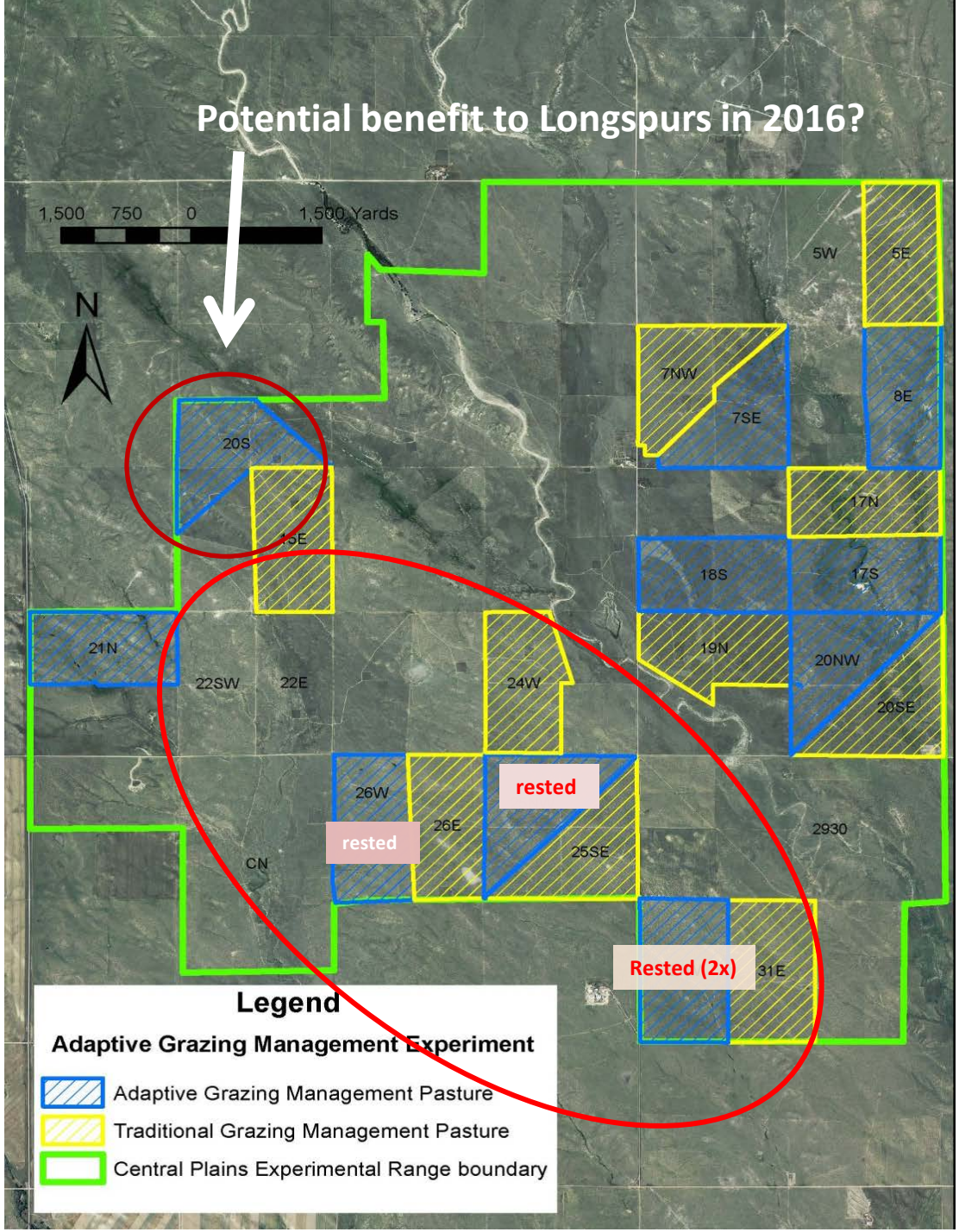
2
3
4


Potential benefit to Longspurs in 2016?
1,500 750 0 1,500 Yards
N
5W
5E
7NW
7SE
8E
20S
17N
18S
17S
21N
22SW
22E
24W
19N
20NW
20SE
26W
26E
rested
rested
25SE
2930
CN
Rested (2x)
31E
Legend
Adaptive Grazing Management Experiment
Adaptive Grazing Management Pasture
Traditional Grazing Management Pasture
Central Plains Experimental Range boundary

Grassland Bird Objectives

Increased abundance and distribution over the past 2 years; nesting habitat widespread on the landscape due to 6 pastures rested in 2015

October Residual (Lbs/ac)

Upland Ecosites

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Headquarters	2576	1291	Rested

The Story So Far

AGM Achievements, 2014-2015:

++Grassbanking for 2016 (60% of acres not grazed in 2015 despite increased stocking!!)

+Western Wheatgrass

+Fourwing Saltbush

++Cactus removal in patch burns

++Among-pasture heterogeneity

++Grasshopper Sparrow habitat

+Plover habitat

AGM Tradeoffs, 2014-2015:

-- Cattle weight gains

-- McCown's Longspur habitat