

Setting Targets and Metrics

RAINWATER BASIN JOINT VENTURE

Setting Population Objectives

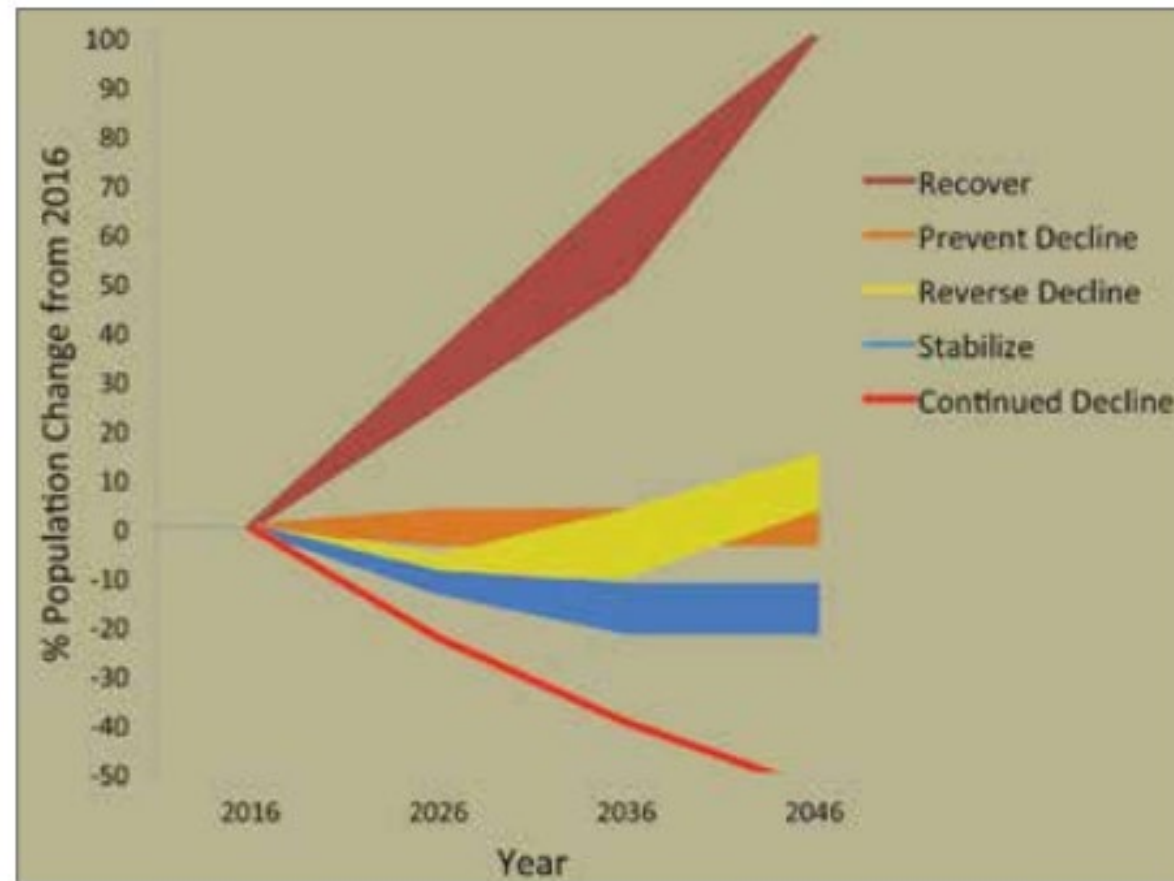


Figure 8. Potential scenarios of percent population change over 30 years that would achieve population objectives for the different population goal categories. Reverse Declines and Stabilize scenarios represent species with a long-term trend of -2.5% per year. The red line indicates the population trajectory if a trend of -2.5% per year continues unimpeded.

Partners in Flight Landbird Conservation Plan (2016 Revision)

Population Goal ¹	Continental Concern Group	Goal Rationale	Population Objectives ¹	
			By 2026	By 2046
Reverse Decline	"D" Yellow Watch List species	Ensure declining, vulnerable species remain above the level requiring special protection by restoring populations above current levels: reduce the rate of decline within 10 years, then stabilize and ultimately increase populations by the end of the 30-year period.	Slow rate of decline by 60% to 75% Rate of decline for 2016-2026 is 60% to 75% less than long-term decline (equivalent to allowing between 2% - 22% loss of 2016 populations, depending on long-term trends – see Appendix B for species-specific objectives).	Increase 2016 population by 5% to 15%.
Stabilize	Common Birds in Steep Decline	Ensure steeply declining species not on the Watch List reach a stable population trend in 30 years, while still abundant enough to prevent future Watch List status or federal listing.	Slow rate of decline by 45% to 60% Rate of decline for 2016-2026 is 45% to 60% less than long-term decline (equivalent to allowing between 5% - 25% loss of 2016 populations, depending on long-term trends – see Appendix B for species-specific objectives).	Achieve Stable Population at 10% to 25% below 2016 Population has stabilized with no more than 10%-25% loss of 2016 population.

Strategy	Trend Objectives	Population Objectives	Planning Species
Reverse Decline (Yellow)	10-Year: Slow rate of decline by 75% 30-Year: achieve or maintain >0% trends	30-Year: Increase current population by 15%	-Greater Prairie Chicken -Red-headed Woodpecker -Dickcissel* -Ring-necked Pheasant*
Stabilize (CBSD)	10-Year: Slow rate of decline by 60% 30-Year: achieve or maintain ≥0% trends	30-Year: Lose no more than 33% of current population	-Eastern Meadowlark -Western Meadowlark* -Grasshopper Sparrow -Northern Bobwhite

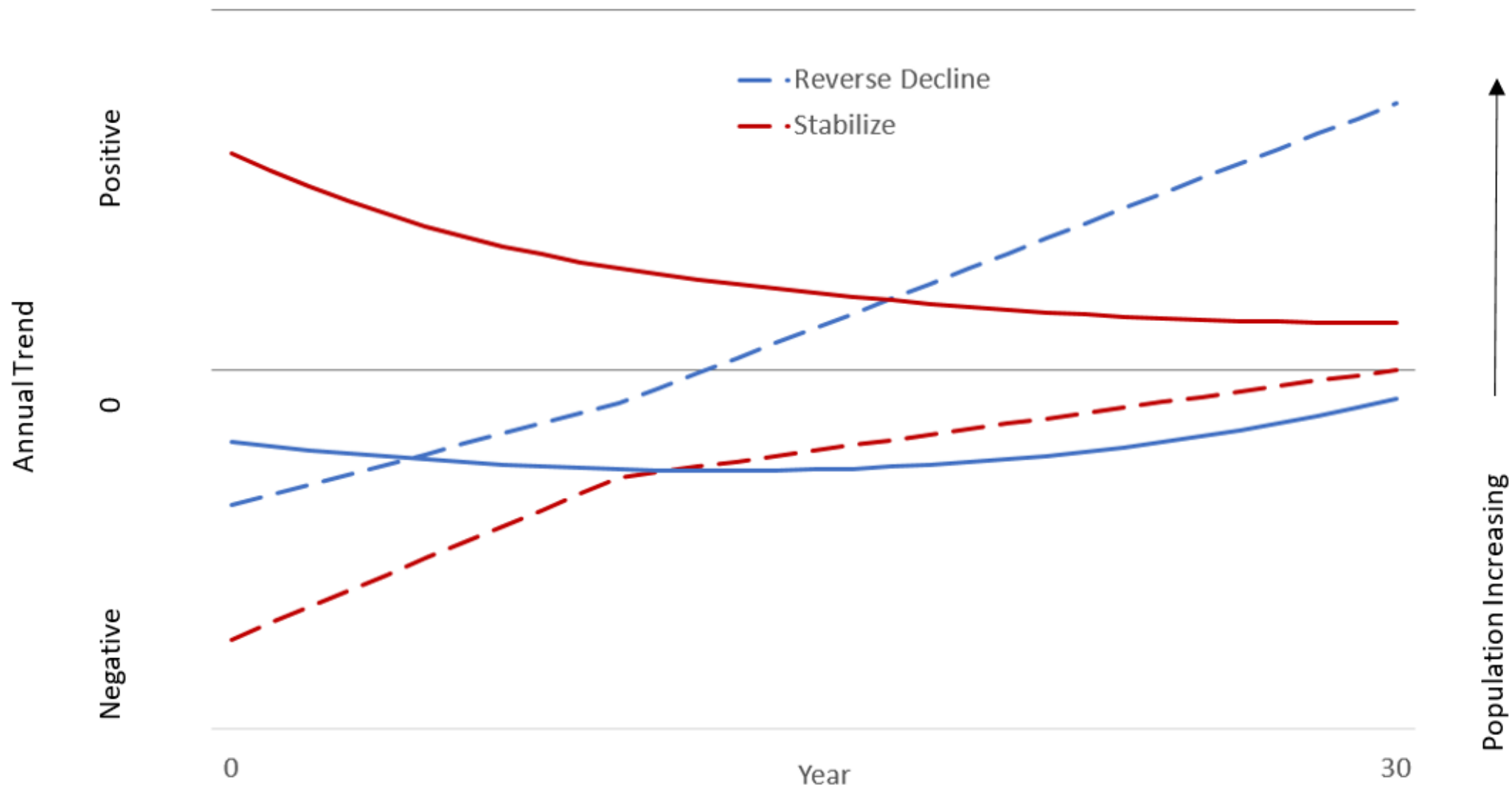


Figure 5. Examples of projected changes in annual trend (dashed lines) and population (solid lines) over a 30-year time period based on two different conservation strategies. The reverse decline strategy will result in a 15% increase in total population size over 30 years. The stabilize strategy aims to achieve a zero trend after 30 years while allowing a drop in total population size of no more than 33%.

Determine current trends and population estimates



Bird Conservancy of the Rockies

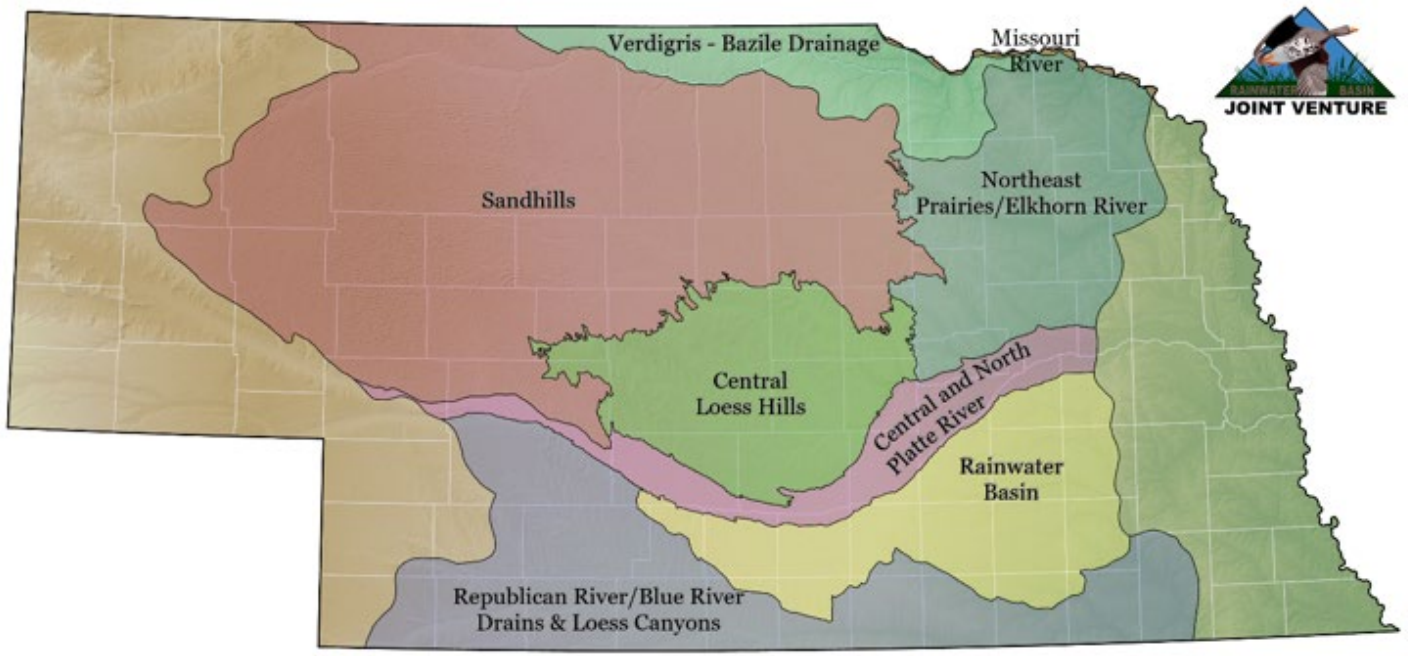
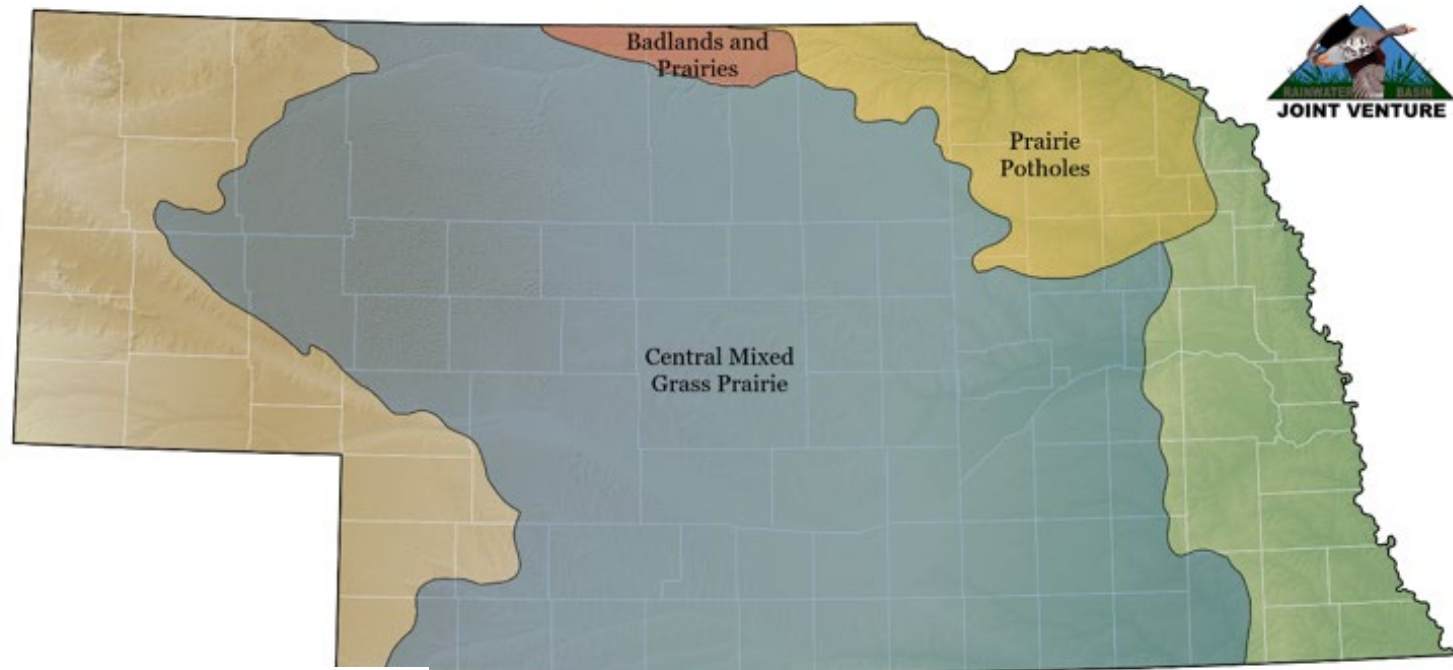
Partners in Flight Databases

[Home](#) [Population Estimates Database](#) [Avian C](#)

Avian Conservation Assessment and Population Estimates Databases

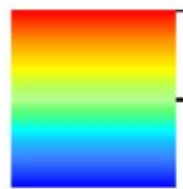
Population Estimates

Continental/Global	BCR	State/Province	BCR x State/Province	Common Names	Scientific Names	Copy URL	Clear filters	Download as filtered	Download all	Help	Search
AOS 60 ▲	Common Name ▼	BCR ▲	Province/State/Territory ▲	Country ▲	Population Estimate ▲	Lower 95% bound ▲	Upper 95% bound ▲	Data Source ▲	% of Global Pop ▲	% of USA/CAN Pop ▲	
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1900	Western Meadowlark	19	NE	USA	5,900,000	3,200,000	10,000,000	bbs	5.93	6.21	
1900	Western Meadowlark	11	NE	USA	640,000	370,000	1,100,000	bbs	0.65	0.68	
1900	Western Meadowlark	17	NE	USA	230,000	120,000	370,000	bbs,rng	0.23	0.24	
1899	Eastern Meadowlark	19	NE	USA	160,000	36,000	370,000	bbs	0.43	0.65	
1899	Eastern Meadowlark	17	NE	USA	620	0	2,300	bbs,rng	0.00	0.00	



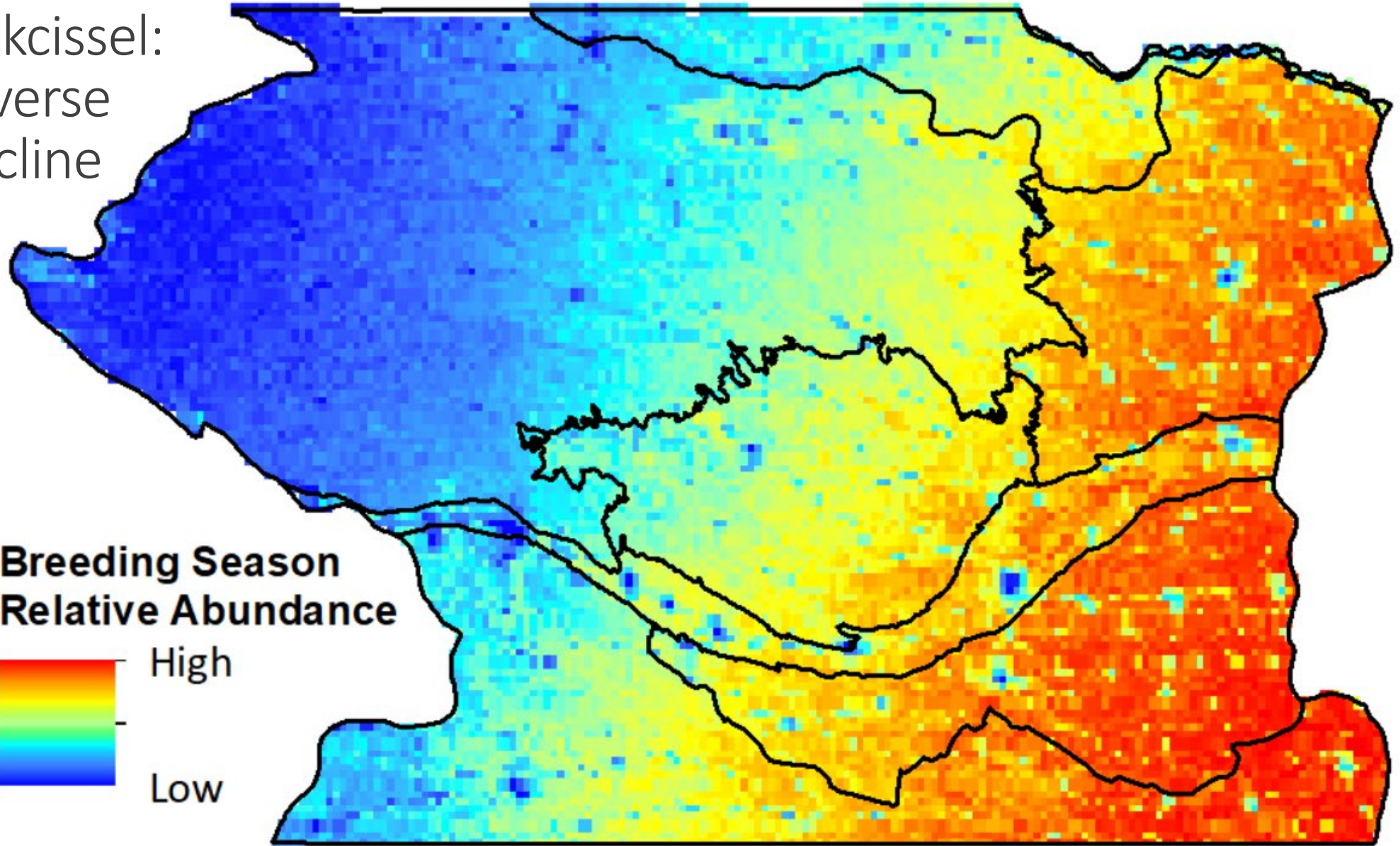
Dickcissel:
Reverse
Decline

**Breeding Season
Relative Abundance**



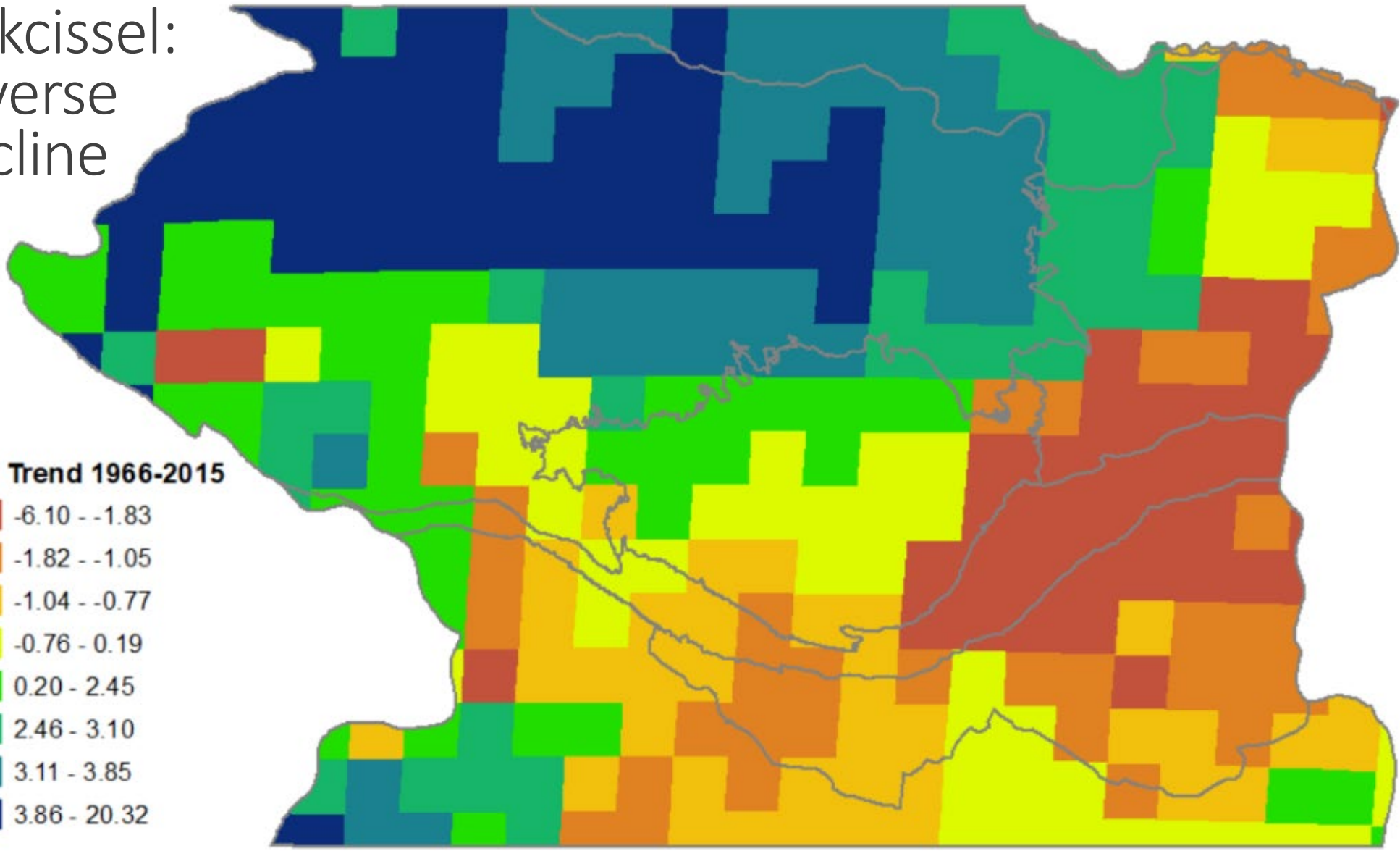
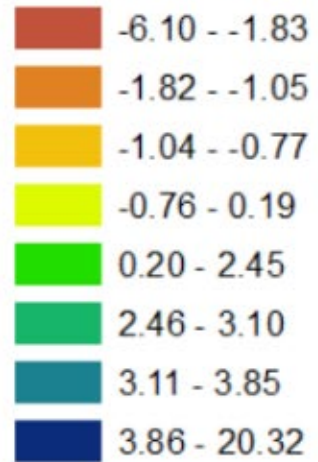
High

Low



Dickcissel: Reverse Decline

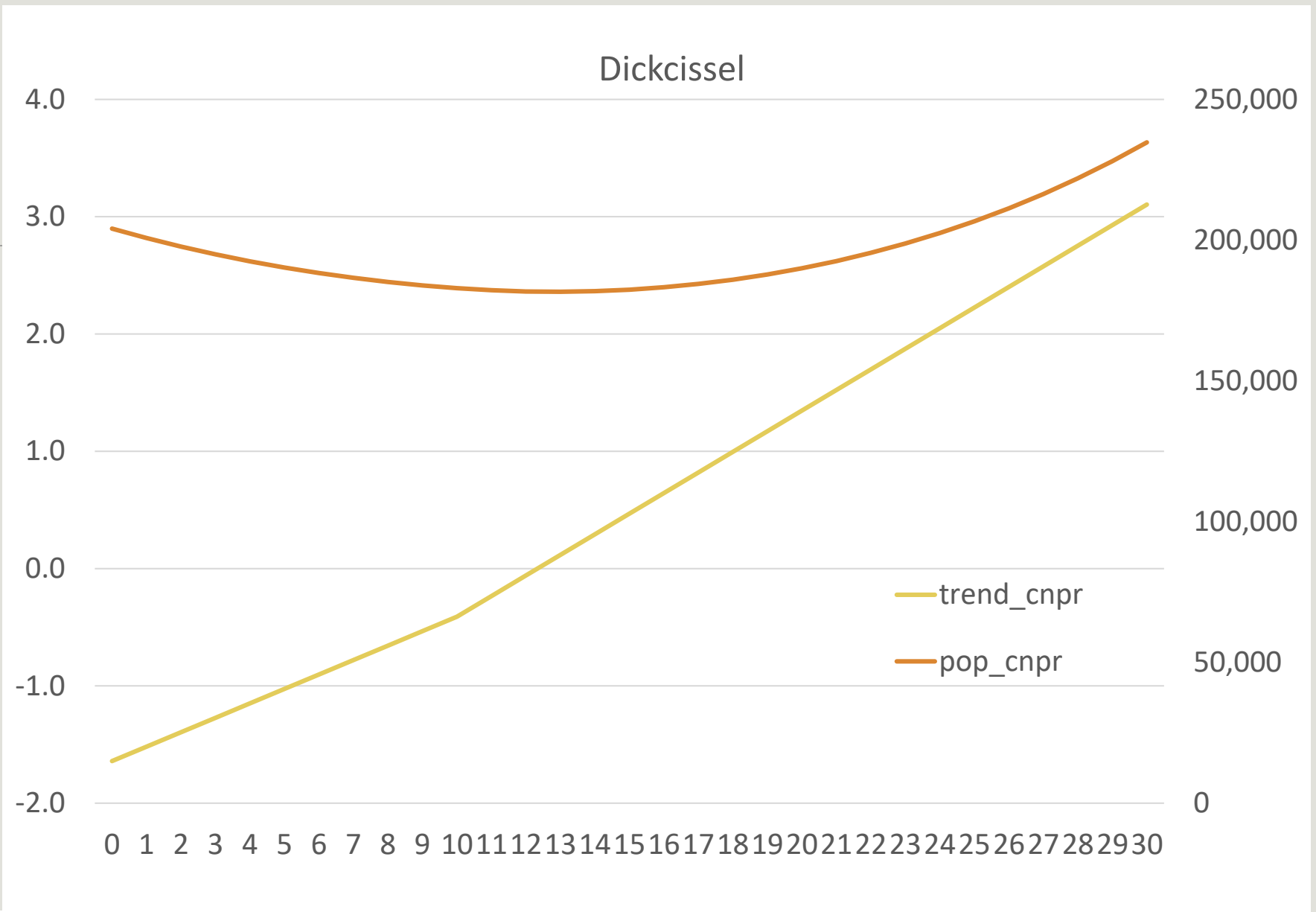
BBS Trend 1966-2015



DICKCISSEL: Reverse Decline	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-1.64			75,615	
Central Loess Hills	-0.06			116,141	
Missouri River	-0.16			1,824	
Northeast Prairies/Elkhorn River	-0.32			199,166	
Rainwater Basin	-1.47			209,411	
Republican River/Blue River Drains & Loess Canyons	0.06			221,713	
Sandhills	3.30			246,501	
Verdigris - Bazile Drainage	3.18			53,628	

DICKCISSEL: Reverse Decline	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-1.64	-0.41		75,615	86,957
Central Loess Hills	-0.06	-0.01		116,141	133,562
Missouri River	-0.16	-0.04		1,824	2,098
Northeast Prairies/Elkhorn River	-0.32	-0.08		199,166	229,041
Rainwater Basin	-1.47	-0.37		209,411	240,823
Republican River/Blue River Drains & Loess Canyons	0.06	> 0	> 0	221,713	254,970
Sandhills	3.30	> 0	> 0	246,501	283,476
Verdigris - Bazile Drainage	3.18	> 0	> 0	53,628	61,672

year	pop_cnpr	trend_cnpr
0	204,106	-1.6413
1	200,730	-1.5182
2	Initial population and trend	
3	194,950	-1.2720
4	192,470	-1.1489
5	190,259	-1.0258
6	188,307	-0.9027
7	186,608	-0.7796
8	185,153	-0.6565
9	10-year trend drops by 75%	
10		-0.5334
11		-0.4103
12	181,778	-0.2872
13	181,671	-0.1641
14	181,883	0.0590
15	182,415	0.2839
16	183,268	0.5088
17	184,448	0.7337
18	185,960	0.9586
19	Trends change by equal increments each year.	
20		1.1835
21		1.4084
22	195,499	1.6333
23	198,818	1.8582
24	202,543	2.0831
25	206,694	2.3080
26	211,293	2.5329
27	216,365	2.7578

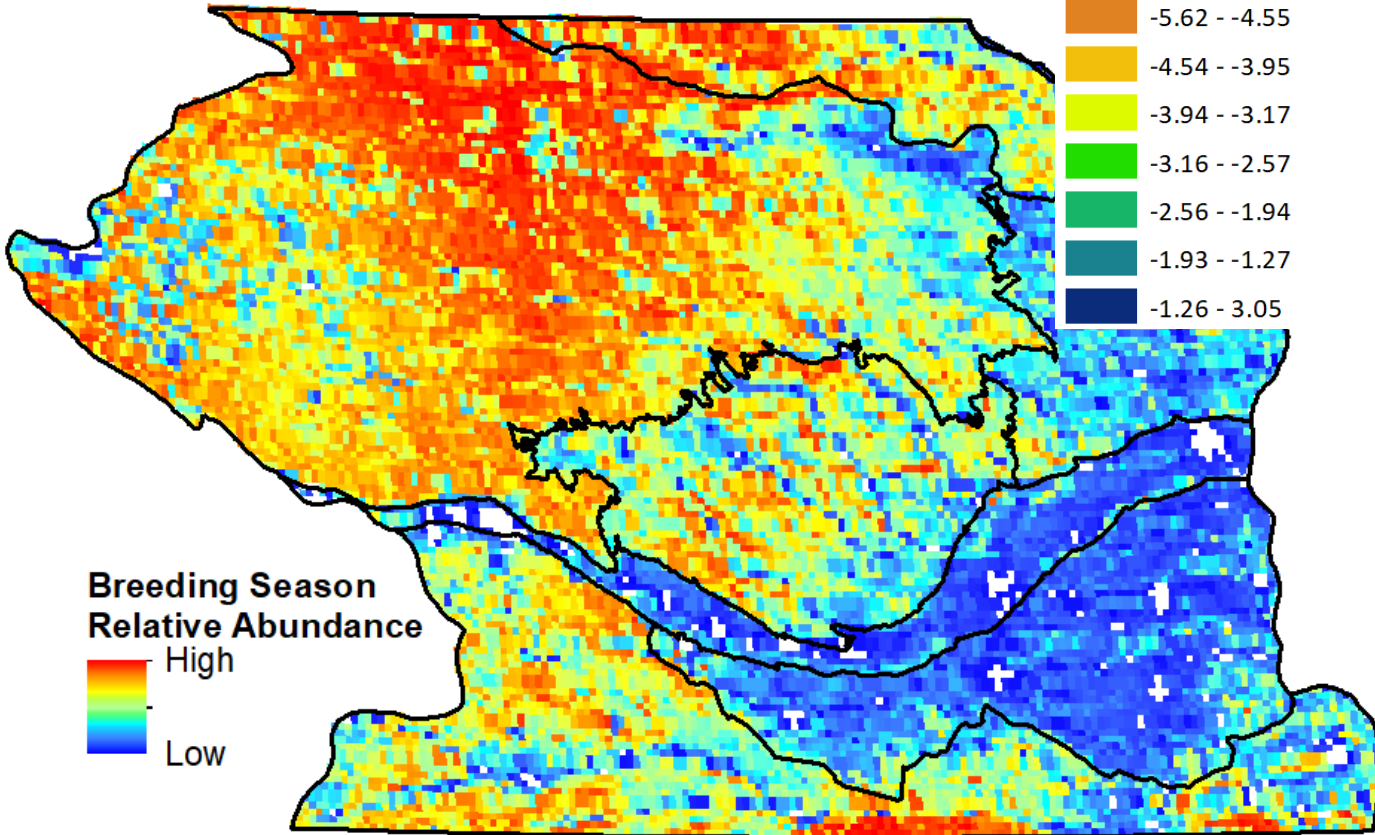


Population increases by 15% at 30 years

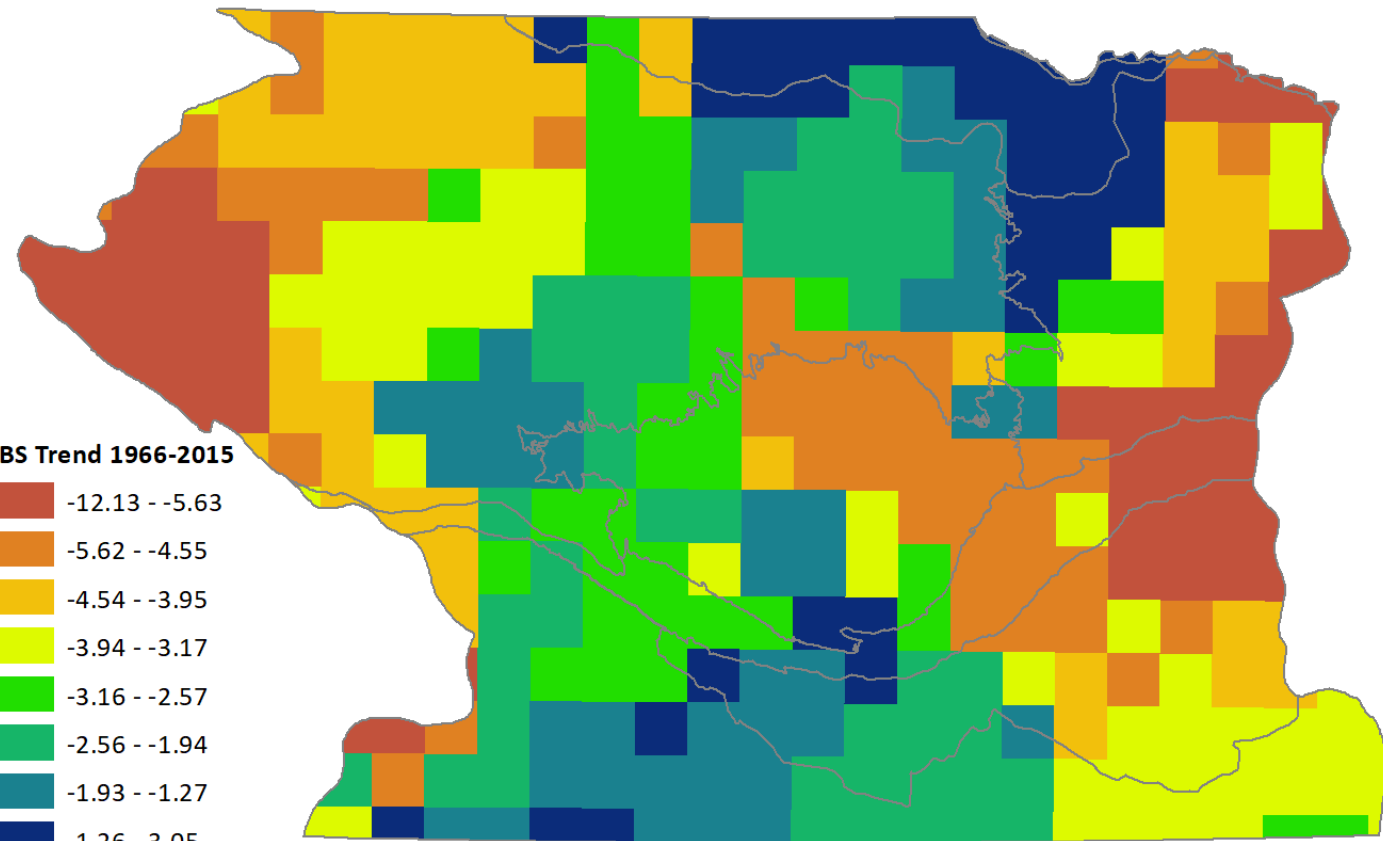
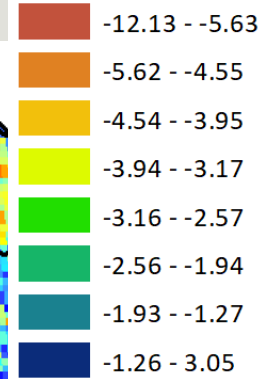
30	234,723	3.1033
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DICKCISSEL: Reverse Decline	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-1.64	-0.41	3.10	75,615	86,957
Central Loess Hills	-0.06	-0.01	1.53	116,141	133,562
Missouri River	-0.16	-0.04	1.62	1,824	2,098
Northeast Prairies/Elkhorn River	-0.32	-0.08	1.80	199,166	229,041
Rainwater Basin	-1.47	-0.37	2.93	209,411	240,823
Republican River/Blue River Drains & Loess Canyons	0.06	> 0	> 0	221,713	254,970
Sandhills	3.30	> 0	> 0	246,501	283,476
Verdigris - Bazile Drainage	3.18	> 0	> 0	53,628	61,672

Grasshopper Sparrow: Stabilize



BBS Trend 1966-2015



Grasshopper Sparrow: Stabilize	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-4.43			118,013	
Central Loess Hills	-3.36			483,360	
Missouri River	-2.93			2,722	
Northeast Prairies/Elkhorn River	-4.00			372,053	
Rainwater Basin	-4.18			272,166	
Republican River/Blue River Drains & Loess Canyons	-2.54			783,414	
Sandhills	-3.67			2,301,688	
Verdigris - Bazile Drainage	-0.73			306,584	

Grasshopper Sparrow: Stabilize	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-4.43	-1.77	0	118,013	
Central Loess Hills	-3.36	-1.34	0	483,360	
Missouri River	-2.93	-1.17	0	2,722	
Northeast Prairies/Elkhorn River	-4.00	-1.60	0	372,053	
Rainwater Basin	-4.18	-1.67	0	272,166	
Republican River/Blue River Drains & Loess Canyons	-2.54	-1.01	0	783,414	
Sandhills	-3.67	-1.47	0	2,301,688	
Verdigris - Bazile Drainage	-0.73	-0.29	0	306,584	

year	pop_cnpr	trend_cnpr
0	118,013	-4.4310
1	117,727	-4.1651

Initial population and trend

3	103,872	-3.6334
4	100,098	-3.3675
5	96,727	-3.1017
6	93,727	-2.8358
7	91,069	-2.5700
8	88,728	-2.3041
9	86,684	-2.0383
10	84,917	-1.7724

10-year trend drops by 60%

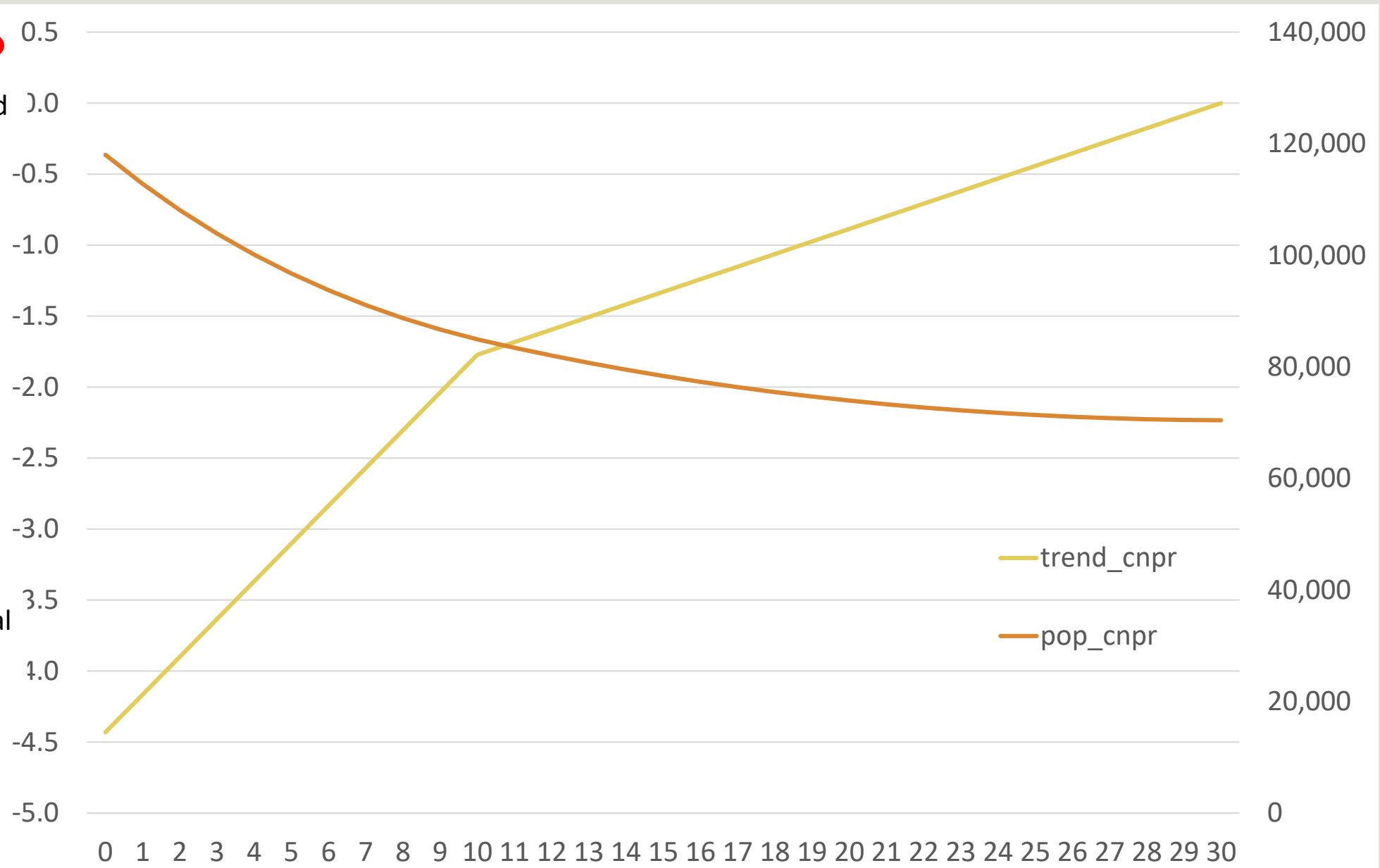
11	83,333	-1.5065
12	81,938	-1.2407
13	80,727	-1.0634
14	79,484	-1.4179
15	78,357	-1.3293
16	77,315	-1.2407
17	76,356	-1.1521
18	75,476	-1.0634

Trends change by equal increments each year.

22	72,706	-0.7090
23	72,190	-0.6203
24	71,742	-0.5317
25	71,361	-0.4431
26	71,045	-0.3545
27	70,793	-0.2659

Stable trend at 30 years

30	70,417	0.0000
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Grasshopper Sparrow: Stabilize	current trend	10-year trend objective	30-year trend objective	current population	30-year population objective
Central and North Platte River	-4.43	-1.77	0	118,013	70,417
Central Loess Hills	-3.36	-1.34	0	483,360	327,208
Missouri River	-2.93	-1.17	0	2,722	1,937
Northeast Prairies/Elkhorn River	-4.00	-1.60	0	372,053	233,673
Rainwater Basin	-4.18	-1.67	0	272,166	167,353
Republican River/Blue River Drains & Loess Canyons	-2.54	-1.01	0	783,414	583,880
Sandhills	-3.67	-1.47	0	2,301,688	1,501,400
Verdigris - Bazile Drainage	-0.73	-0.29	0	306,584	281,949

Translating our population objectives to grassland habitat objectives

Grasshopper Sparrow	current population	current grassland (ha)	current density (birds/ha grassland)	population in 30 years if objectives are met	grassland needed to meet 30 year objective (ha)
Central and North Platte River	118,013	160,574	0.7349	70,417	95,813
Central Loess Hills	483,360	791,182	0.6109	327,208	535,587
Missouri River	2,722	1,947	1.3980	1,937	1,386
Northeast Prairies/Elkhorn River	372,053	279,585	1.3307	233,673	175,597
Rainwater Basin	272,166	149,775	1.8172	167,353	92,095
Republican River/Blue River Drains & Loess Canyons	783,414	1,028,995	0.7613	583,880	766,912
Sandhills	2,301,688	4,908,067	0.4690	1,501,400	3,201,551
Verdigris - Bazile Drainage	306,584	497,533	0.6162	281,949	457,554