

PHEASANT CROWING SURVEY - 2024

PERFORMANCE REPORT STATEWIDE WILDLIFE RESEARCH AND SURVEYS

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KANSAS PHEASANT CROWING SURVEY – 2024

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Prepared by: Jeff Prendergast

INTRODUCTION

The Kansas Department of Wildlife, Parks, and Tourism (KDWP) collects breeding population data for pheasant (*Phasianus colchicus*) by conducting crow counts throughout the pheasant range in the state. Measurable wild pheasant populations do not occur in south-east Kansas (Osage Cuestas Region). Pheasants are an extremely important wildlife resource for Kansas, and these indices help monitor population change through time.

METHODS

The survey period was from April 25 through May 15, 2023. Pheasant routes are ~20 mile transects, with at least 2 miles between each of the 11 stops. At stops, observers listen for 2 minutes and count all the audible 2-note (syllable) crows heard from male pheasants. The Pheasant Crow Survey Index (PCSI) is the mean number of crows per 2-minute stop for each route. The first stop begins 45 minutes before sunrise and continues through the last stop. Noise interference is taken into consideration, and data are censored if the observer feels noise is severely inhibiting their ability to count crows.

The results of the 2024 survey and comparisons to the 2023 data are presented in Table 1. All 65 established routes were assigned for 2024 and 64 of the 65 were successfully completed. Range wide and regional trends since the survey's 1997 initiation are shown in Figure 1. Location of routes within the state are shown in Figure 2.

Data Analysis

Given that samples are taken on permanently established routes, samples are not independent and thus a paired-sample t-test is used to draw inter-annual comparisons. A two-tailed test with an alpha level 0.10 was used to identify statistically significant differences between years at regional and statewide scales. Routes that do not have consistent observers are removed from analysis of inter-annual comparisons to remove observer bias in analysis.

Inverse Distance Weighting is a mapping technique that can be used to interpolate data between survey points, providing estimates to areas not surveyed. This technique has limitations at smaller scales (e.g., within counties and townships) because no habitat variables are included (only count data) but is useful for large-scale interpretation of statewide data for regional comparisons. Inverse Distance Weighting was used by assigning the route-specific PCSI to the centroid of each route. All sampled routes were used to extrapolate data throughout Kansas' pheasant range (Figure 3). For comparison, the interpolated percent change of the PCSI the previous year's survey is also included where observers are consistent (Figure 4).

RESULTS

Range-wide

The 2024 PCSI was 7.32 crows per stop across all 64 surveyed routes. Among the 54 comparable routes (sampled both years by same observer), there was a significant increase ($P = 0.019$) in the statewide mean from 2023 (25%). The PCSI decreased on 24 of the comparable routes and increased or remained the same on the remaining 36 comparable routes relative to 2023 (Table 1).

Flint Hills: All 7 of the established routes were completed. The regional PCSI was 2.31, indicating no significant change from 2023 ($P = 0.910$). **Glaciated Plains:** All 6 of the established routes were completed. The regional PCSI was 0.97, indicating no significant change from 2023 ($P = 0.422$). **Northern High Plains:** All 12 established routes were completed. The regional PCSI was 12.21, indicating a significant increase from 2023 ($P = 0.018$). **Smoky Hills:** All 21 of the established routes

were completed, the regional PCSI was 7.04, indicating no significant change from 2023 ($P = 0.543$).

Southern High Plains: All 7 of the established survey routes were completed in this region. The regional PCSI was 11.02, indicating a significant increase from 2023 ($P = 0.066$). **South-Central Prairies:** Of the 12 established routes 11 were completed this year. The regional PCSI was 5.17 indicating no significant change from 2023 ($P = 0.872$).

DISCUSSION

The spring pheasant survey results can represent two important life stages for pheasant populations. Spring surveys can indicate over-winter survival for a population. During extended harsh conditions, winter can be a bottleneck for some upland game populations. However, unlike states in the northern portion of the pheasant range, Kansas rarely has winter weather that is extreme enough to have significant impacts on survival. When overwinter survival is high, spring surveys also reflect the previous breeding season success (i.e., production) for the population. Spring crow counts usually do not predict fall populations well, but rather indicate breeding population potential and habitat suitability over time.

Drought conditions lingered into the early months of 2023. This greatly reduced the available nesting habitat as most of the wheat fields were in poor condition and emergency haying and grazing of CRP was prolific across most of the state in 2022. Precipitation in late spring of 2023 greatly improved conditions last summer however much of this precipitation was too late to have significant impacts to nesting cover. The brood rearing cover was greatly improved for birds that did manage to produce a successful nest. Brood survey in 2023 indicated that densities were slightly better across the state most likely as a result of increased brood survival from these late storms. Despite much improved precipitation in spring/summer of 2023 the early dry conditions were enough to trigger emergency use allowance of CRP again in 2023, which has impacted the availability of nesting habitat again this year. As agriculture has continued to intensify, CRP habitat has become more important to maintaining pheasant populations in Kansas. CRP enrollments continue to decline. CRP enrollment in the state is now less than half of what it was at its peak and many of the enrolled acres are shifting to less pheasant friendly practices (i.e. grassland CRP). There are a few practices, such as cover crops, that have a positive impact on populations, but loss of existing habitat is largely outpacing any minimal gains. Negotiations for the 2024 Farm Bill are ongoing and conservation agencies and organizations are making a push for improved policies to make CRP and other conservation programs more effective, although early indications are there will not be major changes. While Kansas pheasant populations remain viable across the primary range and are likely to persist into the foreseeable future, populations density and stability in the near term are likely to be greatly impacted by this legislation. Pheasant populations can have major impacts on rural economics and conservation funding and thus remains a priority of KDWP.

Fall pheasant populations are highly dependent on production and survival of young of the year. While habitat conditions were poor coming into this breeding season, recent precipitation was too late to have dramatic impact on the available nesting cover but will improve the survival of chicks that are hatched where nesting cover did exist. Brood survey data will be collected in late July and August and summarized in early September. Fall population estimates will be much more accurate once this data is available.

Table 1. Pheasant crow survey routes and observers in Kansas, 2024.

Route	Observer	Route	Observer
Barton	Gene Schneweis	Norton	Seasonal~
Brown-Nemaha	Tyler Warner	Osborne	Chris Lecuyer
Butler-Marion	Charles Cope	Ottawa	Pat Riese
Cheyenne	Abigal McGuire	Pawnee	Kyle Abrahamson~
Clark	Jeff Sutton+B7	Pawnee (Irrig)	Tom Bidrowski
Cloud	Brandon Tritsch	Perry WA	Andrew Page
Comanche	Matt Harvey	Phillips	Mark Shaw
Cowley-Sumner	Vickie Cikanek	Pratt	Kyle Abrahamson~
Decatur	Daniel Howard	Rawlins-Thomas	Kevin Klag
Dickinson-Clay	Clint Thornton	Reno	Keith Murrow
Edwards	Kyle Abrahamson~	Republic	Rob Unruh
Ellis	Megan Rohweder	Rice	Steve Adams
Ellsworth	James Svaty	Riley	Corey Alderson
Finney	Kurtis Meier	Rooks	Cale Hedges
Ford	Aaron Baugh	Rush	Jason Wagner
Gove SW	Jeff Prendergast~	Russell	James Svaty~
Graham	Eric Wiens	Scott	Scott Kluge~
Gray	Jared King	Sedgwick-Harvey	Charles Cope
Harper	Jon Beckman	Seward-Haskell	Lazar Kelly
Hodgeman	Aaron Baugh	Shawnee	Lindsey Buhler~
Jackson-Jefferson	Tyler Warner	Sheridan	Abigal McGuire
Kearny-Hamilton	Kurtis Meier	Sherman	Abigal McGuire
Kingman-Reno	Keith Murrow	Smith	Brandon Tritsch
Kiowa	Zac Eddy	Stafford-Barton	Brian Hanzlick
Lincoln	James Svaty	Stevens	Kraig Schultz
Logan SE	Kevin Klag~	Thomas	Kevin Klag
Marshall	Megan Smith	Trego	Luke Kramer
McPherson	Jeff Rue~	Tuttle Creek WA	Nathan Henry
McPherson-Marion	Jeff Rue	Wabaunsee	Lindsey Buhler~
Mitchell	Conner Rolen	Washington	Megan Smith
Morris	Brent Konen	Wichita-Greeley	Jared King
Morton-Stanton	Kraig Schultz	Wilson WA	Scott Thomason
Ness-Lane	Andy Nelson		

Note: ~ new observer for route;

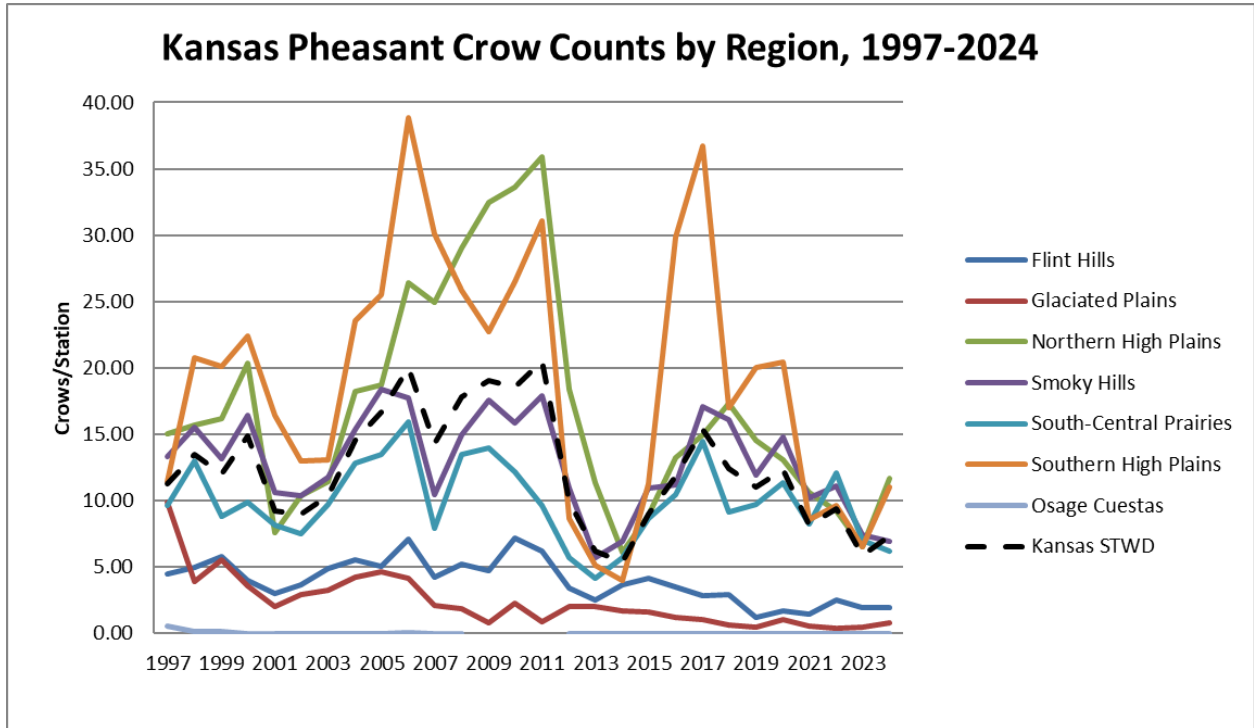
Table 2. Regional changes in pheasant crow counts in Kansas from 2023 to 2024.

Flint Hills				Smoky Hills			
Route	2023 C/S	2024 C/S	% Δ	Route	2023 C/S	2024 C/S	% Δ
Butler-Marion	0.60	0.18	NA	Barton	5.00	5.73	15
Cowley-Sumner	6.73	6.55	-3	Cloud	1.70	0.27	-84
Dickinson-Clay	4.00	5.82	45	Ellis	10.18	12.00	18
McPherson-Marion	1.18	0.73	-38	Ellsworth	1.82	2.40	32
Morris	0.27	0.00	-100	Hodgeman	5.73	8.10	41
Riley	0.82	0.58	-29	Lincoln	7.09	3.82	-46
Wabaunsee	0.00	0.00	0	McPherson	10.55	2.64	-75
Region Mean	2.27	2.31	2	Mitchell**	9.27	6.82	-26
				Ness-Lane	3.64	5.91	63
				Osborne	12.20	7.36	-40
Glaciated Plains				Ottawa	5.55	4.36	-21
Route	2023 C/S	2024 C/S	% Δ	Phillips	6.18	6.73	9
Brown-Nemaha	0.18	0.40	120	Republic	10.36	9.55	-8
Jackson-Jefferson	0.09	0.40	340	Rice	7.27	10.73	48
Marshall	1.27	0.27	-79	Rooks**	10.70	12.22	14
Perry WA	0.73	1.09	50	Rush	12.45	16.82	35
Shawnee**	0.00	0.00	0	Russell	NA	4.82	NA
Tuttle Creek WA	0.55	2.70	395	Smith	6.45	4.82	-25
Region Mean	0.45	0.97	114	Trego	11.91	6.27	-47
				Washington	0.73	10.09	1288
				Wilson WA	10.00	1.18	-88
Northern High Plains				Region Mean	7.44	7.04	-5
Route	2023 C/S	2024 C/S	% Δ				
Cheyenne	7.00	10.09	44	South-Central Prairies			
Decatur	5.73	20.64	260	Route	2023 C/S	2024 C/S	% Δ
Gove SW**	0.91	5.90	549	Clark	0.09	0.27	200
Graham	6.27	15.55	148	Comanche	NA	0.55	NA
Logan SE**	NA	2.00	NA	Edwards**	14.27	14.55	2
Norton**	17.18	41.36	141	Harper	0.45	3.45	660
Rawlins-Thomas	5.91	13.09	122	Kingman-Reno	3.09	1.91	-38
Scott**	6.09	13.73	125	Kiowa	7.09	13.82	95
Sheridan	5.09	9.36	84	Pawnee**	17.82	13.55	-24
Sherman	7.00	6.18	-12	Pawnee (Irrig.)	15.73	8.82	-44
Thomas	2.55	10.36	307	Pratt**	4.73	3.00	-37
Wichita-Greeley	14.64	10.91	-25	Reno	7.73	7.67	-1
Region Mean	6.70	12.21	82*	Sedgwick-Harvey	0.18	0.27	50
				Stafford-Barton**	5.64	NA	NA
Southern High Plains				Region Mean	4.91	5.17	5
Route	2023 C/S	2024 C/S	% Δ				
Finney	10.36	9.67	-7	Statewide			
Ford	14.70	16.25	11		5.66	7.09	25*
Gray	7.90	15.44	95				
Kearny-Hamilton	4.45	19.00	327				
Morton-Stanton	1.55	4.73	206				
Seward-Haskell	2.82	2.77	-2				
Stevens	3.90	9.30	138				
Region Mean	6.53	11.02	69*				

Note: C/S = Mean Crows per Station; % Δ = percent change; * = significant change ($P \leq 0.10$), NA = Not available, NE = Not estimable

**Route not included in regional or state means, info. is presented for descriptive purposes only

Figure 1. Regional trends for pheasant crow survey index in Kansas, 1997-2024.



Kansas Crow survey Routes

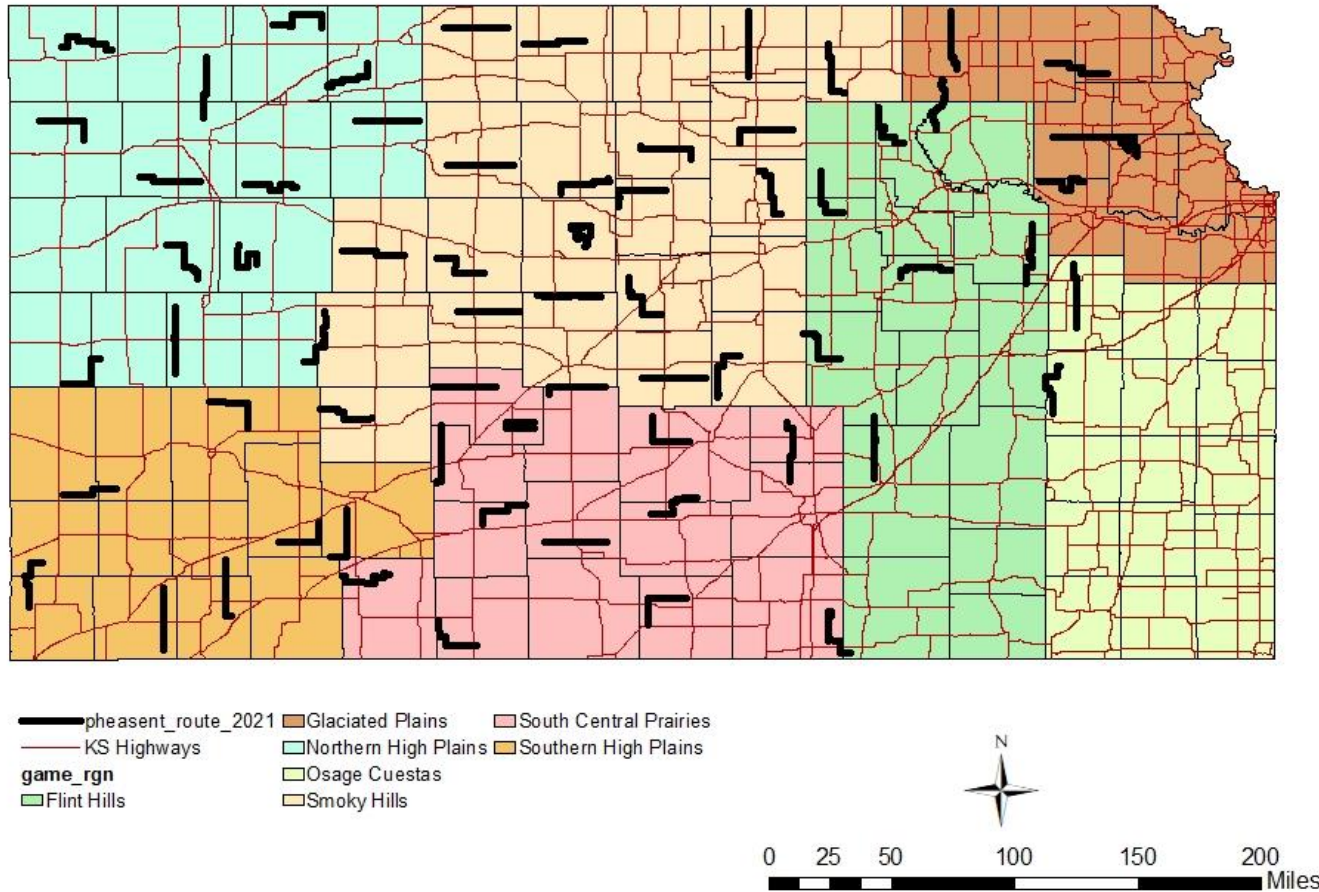


Figure 2. Current pheasant crow survey routes and management region boundaries.

2024 Pheasant Crow Survey Results

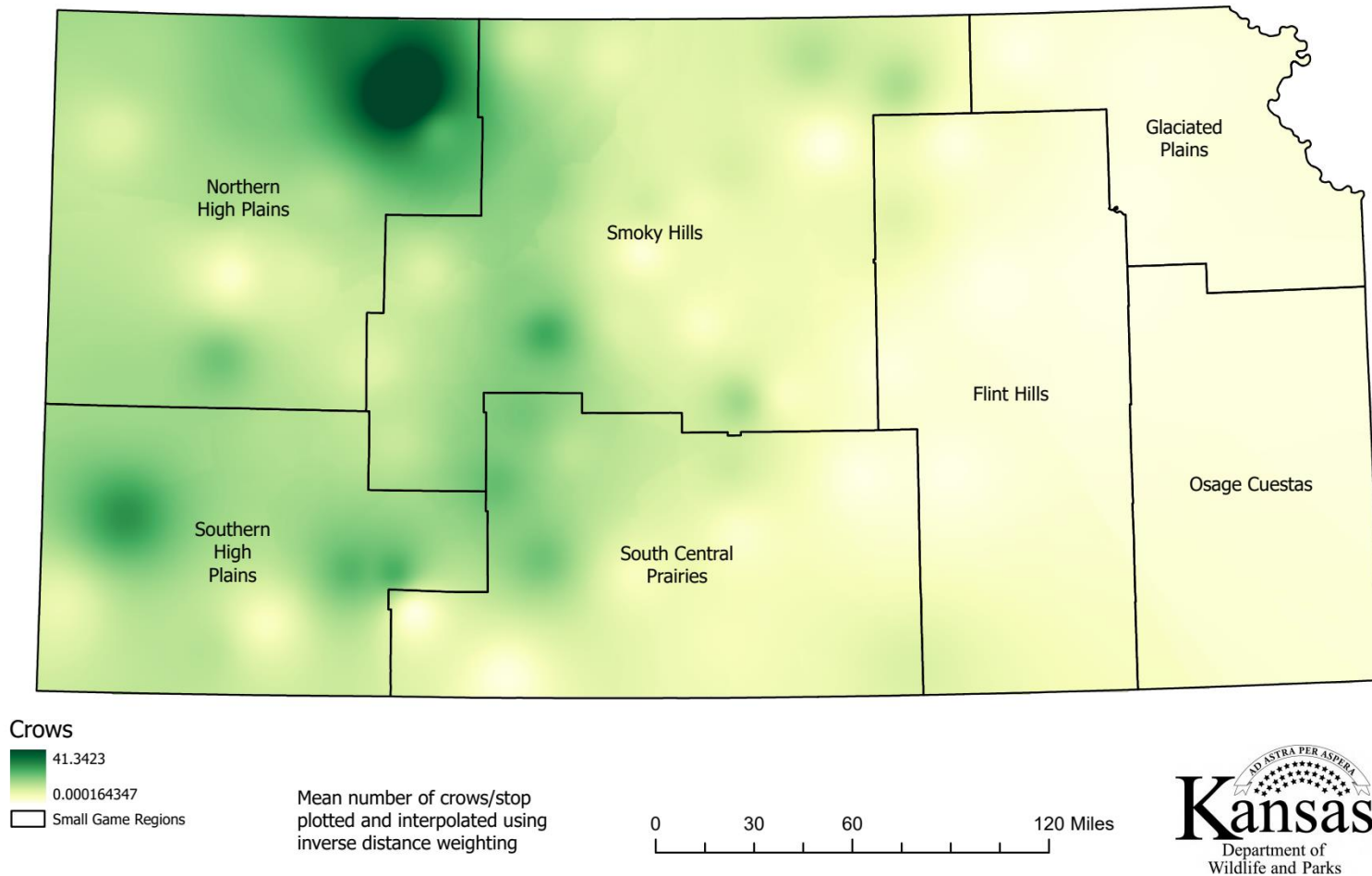


Figure 3. Pheasant breeding population index (crows per station) interpolated from route-specific indices across pheasant range in Kansas, using Inverse Distance Weighting technique, 2024.

2023-2024 Crow Survey Change

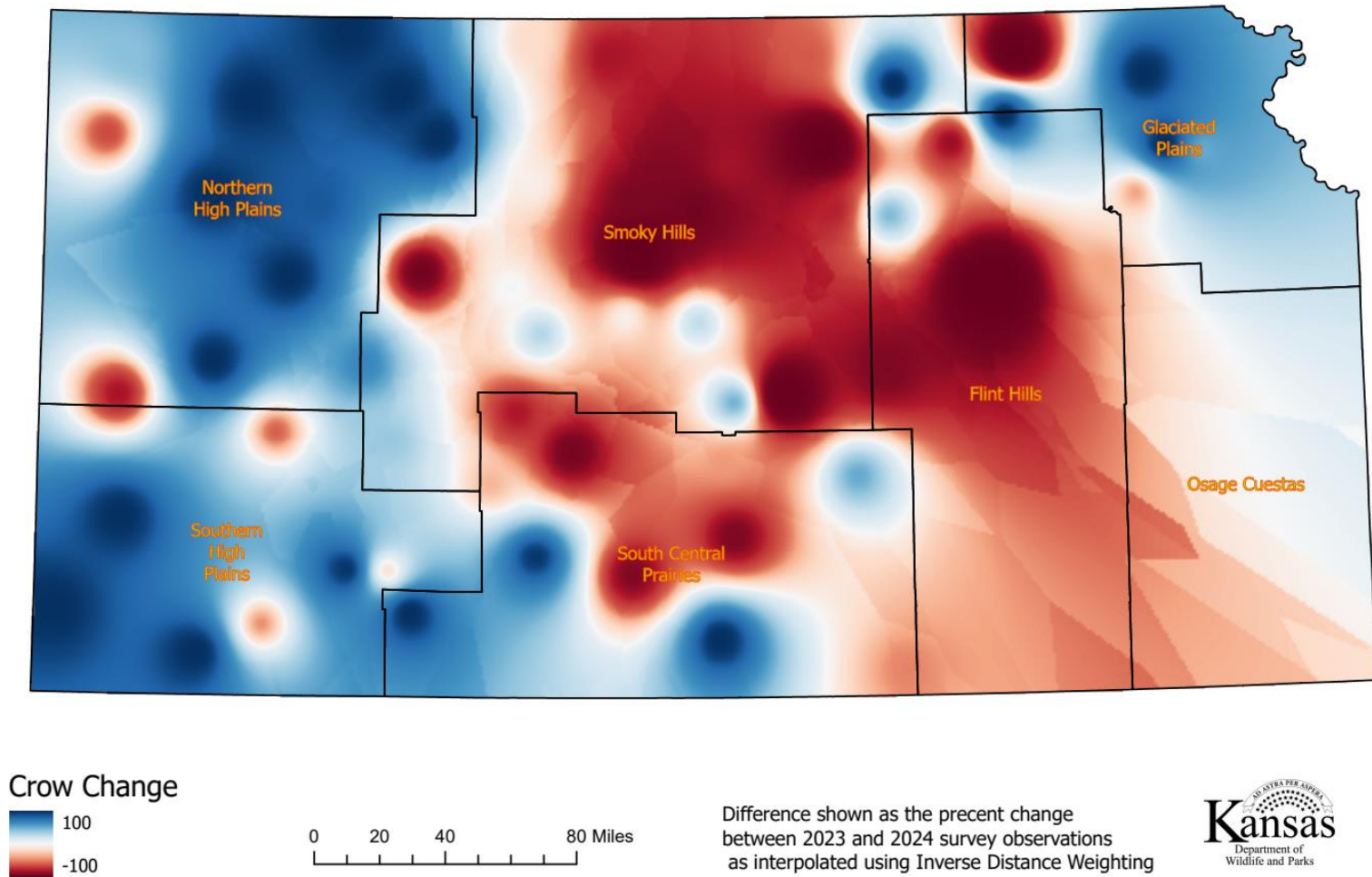


Figure 4. Percent change (2023 to 2024) in pheasant breeding index (crows per station) interpolated across pheasant range in Kansas.