Implementing CHJV Forest and Woodland Habitat Objectives:
Recommendations for Oklahoma and Kansas

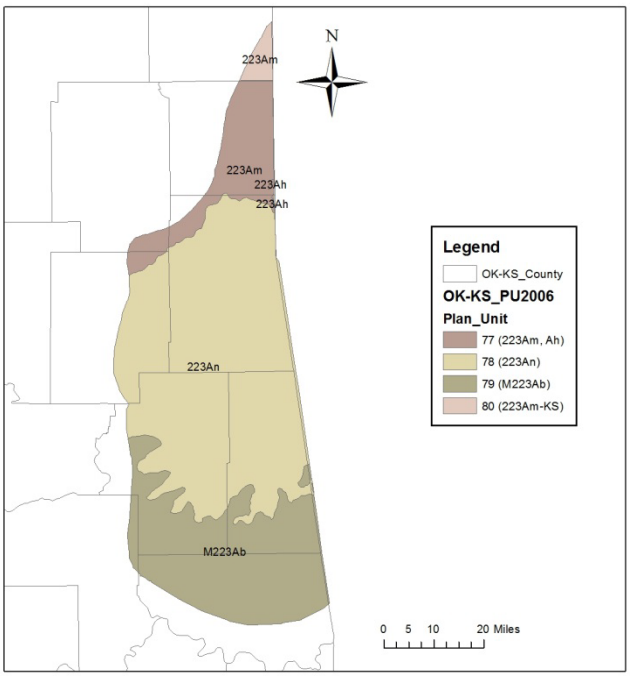
Overview

The Central Hardwoods Joint Venture (CHJV) is a partnership of state and federal government agencies and non-governmental organizations who work together to ensure the long-term viability of native bird populations within the Central Hardwoods Bird Conservation Region (CHBCR). The CHJV pursues this mission by striving towards 2 primary goals: (1) implement conservation actions based on sound science and principals of adaptive management, and (2) target landscapes with the greatest ecological and socioeconomic potential to support viable populations of priority birds. In pursuit of these goals the CHJV Staff and cooperators have developed a suite of decision support tools (DSTs) aimed at assessing habitat conditions, linking bird populations to habitat condition, forecasting potential future habitat conditions, and simulating population impacts of conservation scenarios.

CHJV partners have produced population objectives for priority forest and woodland associated bird species. CHJV staff have used the DSTs to estimate the amount of habitat restoration needed to support those populations and allocated the habitat objectives to State sub-regions and the conservation actors (i.e. agencies) within them. Uncertainty in the allocation process requires an iterative and adaptive approach to translating CHBCR objectives into an implementation plan (i.e. on-the-ground projects). This document builds off the Implementation Framework document by summarizing DST and other information to help partners within the Oklahoma-Kansas sub-region develop the strategic (where to work) and tactical (what work to do) components of their implementation plan.

Planning Units

The CHJV uses Bailey's ecological subsections as planning units. Oklahoma is divided into 3 planning units and Kansas has 1 (map at right). Table 1 ranks each unit relative to others within Oklahoma and Kansas on attributes relevant to conservation planning, and each attribute is mapped in Figures 1-10. Table 2 lists the calculated habitat objectives by natural community type, along with information on forested area, proportion of public ownership and an estimate of area in condition for each community.



From a CHBCR perspective, Oklahoma has some relatively important areas for the woodland, forest, and riparian bird groups. Planning Unit 79 (Boston Mountains – M223Ab) was identified as a source landscape for Wood Thrush, Worm-eating Warblers, and Prairie Warblers by the CHJV population viability model. This unit has moderate-to-high levels of forest and other natural land cover types, though much of it is out of character and in need of management. The Oklahoma-Kansas sub-region in general has moderate levels of fragmentation, urbanization pressure, and forest loss.

Table 1. The 4 planning units (i.e. landscapes) within the Oklahoma sub-region and their relative rank based on attributes relevant to conservation planning. Units are ranked from “1” (best) to “4” (worst) relative to conservation perspective. A composite rank will not be calculated until partners determine which attributes are most important.

Plan Unit	Subsection	Short Name	ST	Public [a]	Natural-ness [a]	In Condition [a]	Forest Proportion [a]	GPI [a]	Forest Loss ('01-'06) [a]	Urban 2030 [a]	Ensemble Model Scores [a]		
											Woodland	Forest	Riparian
77	223Am & Ah	Springfield Plain	OK	3	3	2	4	4	3	4	3	4	4
78	223An	Springfield Plateau	OK	2	2	1	2	2	4	2	4	2	3
79	M223Ab	Boston Hills	OK	1	1	3	1	1	2	1	1	1	1
80	223Am	Springfield Plain	KS	4	4	4	3	3	1	3	2	3	2

[a] Attributes are defined as the quantity of protected lands (Public), overall landscape conditions (Naturalness), extant forest community conditions (In Condition), quantity of forested (i.e. restorable) lands (Forest Proportion), forest fragmentation / avian productivity (GPI), forest loss from 2001-2006 (Loss), urbanization threat (Urban 2030), and current capacity-productivity weighted ensemble model scores for suites of birds. Full definitions are available in the companion Framework document.

Table 2. CHJV Habitat Objectives (targets) by planning unit and natural community type for public lands and for the entire units, along with information on forested area, proportion of public ownership and an estimate of area in condition for each community.

Plan Unit	Acreage Estimate Class	Savanna / Barrens	Glade / Savanna Mosaic (< 20% canopy)	Oak Open Woodland (20-50% canopy)	Oak Closed Woodland (50-80% canopy)	Pine / Bluestem Open Woodland (20-50% canopy)	Pine / Oak Closed Woodland (50-80% canopy)	Forest (> 80% canopy)	Floodplain Forests	Total Area
77	Forested/Restorable	10,169	-	30,158	29,999	-	-	-	303	70,629
	Protected	23	-	11	35	-	-	-	-	70
	Plan Unit Target (10 sp)	4,585	-	3,569	3,256	-	-	-	59	11,469
	Plan Unit Target (21 sp)	10,028	-	7,428	7,462	-	-	-	170	25,088
	Public Target (10 sp)	23	-	11	35	-	-	-	-	70
	Public Target (21 sp)	23	-	11	35	-	-	-	-	70
	In Character/Restored	487	-	5,658	1,263	-	-	-	-	7,408
	Public In Character	1	-	-	0	-	-	-	-	1
78	Forested/Restorable	16,486	-	256,119	170,125	-	0	79,300	4,817	526,847
	Protected	1,326	-	37,020	31,684	-	-	9,597	754	80,382
	Plan Unit Target (10 sp)	8,309	-	32,009	11,634	-	0	10,354	731	63,037
	Plan Unit Target (21 sp)	18,174	-	66,617	26,658	-	0	13,509	2,117	127,075
	Public Target (10 sp)	1,326	-	32,009	11,634	-	-	9,597	731	55,297
	Public Target (21 sp)	1,326	-	37,020	26,658	-	-	9,597	754	75,356
	In Character/Restored	1,582	-	94,888	22,279	-	-	-	-	118,749
	Public In Character	13	-	14,500	3,389	-	-	-	-	17,901
79	Forested/Restorable	1,308	-	16,934	202,572	-	14,602	93,239	15,503	344,158
	Protected	1,436	-	8,778	51,305	-	25	16,836	4,798	83,177
	Plan Unit Target (10 sp)	327	-	1,795	11,088	-	1,202	11,402	2,643	28,456
	Plan Unit Target (21 sp)	714	-	3,735	25,406	-	3,949	14,876	7,653	56,334
	Public Target (10 sp)	327	-	1,795	11,088	-	25	11,402	2,643	27,279
	Public Target (21 sp)	714	-	3,735	25,406	-	25	14,876	4,798	49,554
	In Character/Restored	227	-	205	4,577	-	174	-	-	5,184
	Public In Character	218	-	33	1,166	-	1	-	-	1,419

Plan Unit	Acreage Estimate Class	Savanna / Barrens	Glade / Savanna Mosaic (< 20% canopy)	Oak Open Woodland (20-50% canopy)	Oak Closed Woodland (50-80% canopy)	Pine / Bluestem Open Woodland (20-50% canopy)	Pine / Oak Closed Woodland (50-80% canopy)	Forest (> 80% canopy)	Floodplain Forests	Total Area
OK Total	Forested/Restorable	27,962	-	303,211	402,696	-	14,602	172,539	20,623	941,634
	Protected	2,785	-	45,810	83,024	-	25	26,433	5,552	163,629
	Plan Unit Target (10 sp)	13,220	-	37,373	25,978	-	1,202	21,755	3,434	102,962
	Plan Unit Target (21 sp)	28,916	-	77,780	59,526	-	3,950	28,385	9,940	208,497
	Public Target (10 sp)	1,676	-	33,815	22,757	-	25	20,999	3,375	82,646
	Public Target (21 sp)	2,064	-	40,767	52,099	-	25	24,474	5,552	124,980
	In Character/Restored	2,297	-	100,751	28,119	-	174	-	-	131,341
	Public In Character	232	-	14,533	4,555	-	1	-	-	19,321
80 (KS)	Forested/Restorable	589	-	3,262	4,703	-	-	-	12	8,567
	Protected	-	-	-	-	-	-	-	-	-
	Plan Unit Target (10 sp)	282	-	405	306	-	-	-	2	994
	Plan Unit Target (21 sp)	616	-	842	701	-	-	-	6	2,165
	Public Target (10 sp)	-	-	-	-	-	-	-	-	-
	Public Target (21 sp)	-	-	-	-	-	-	-	-	-
	In Character/Restored	49	-	-	127	-	-	-	-	176
	Public In Character	-	-	-	-	-	-	-	-	-

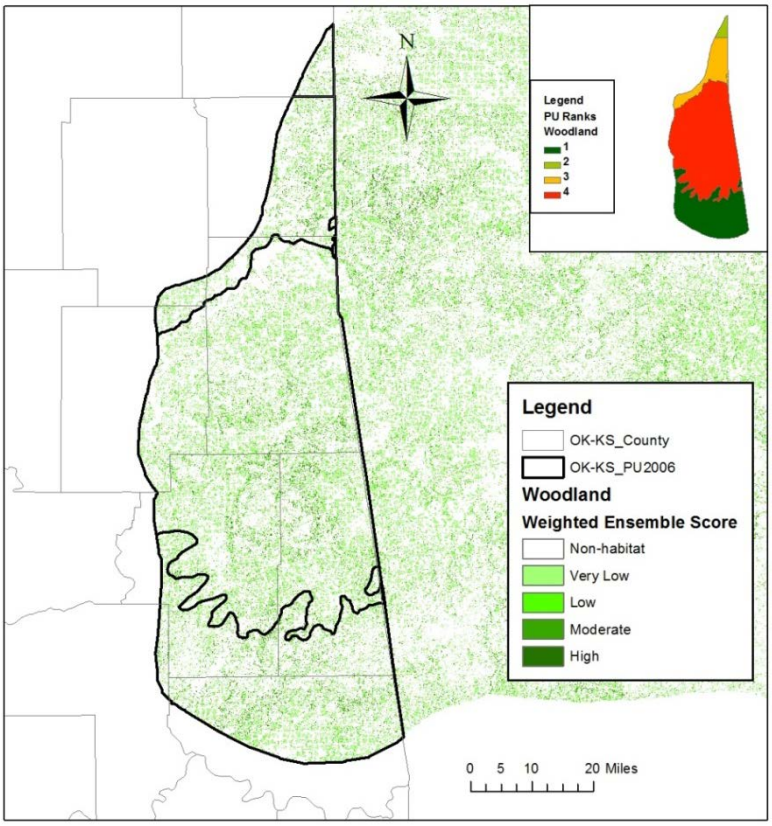


Figure 1. (Q2) Raw scores from the combination of Woodland species habitat models (n=7) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (4).

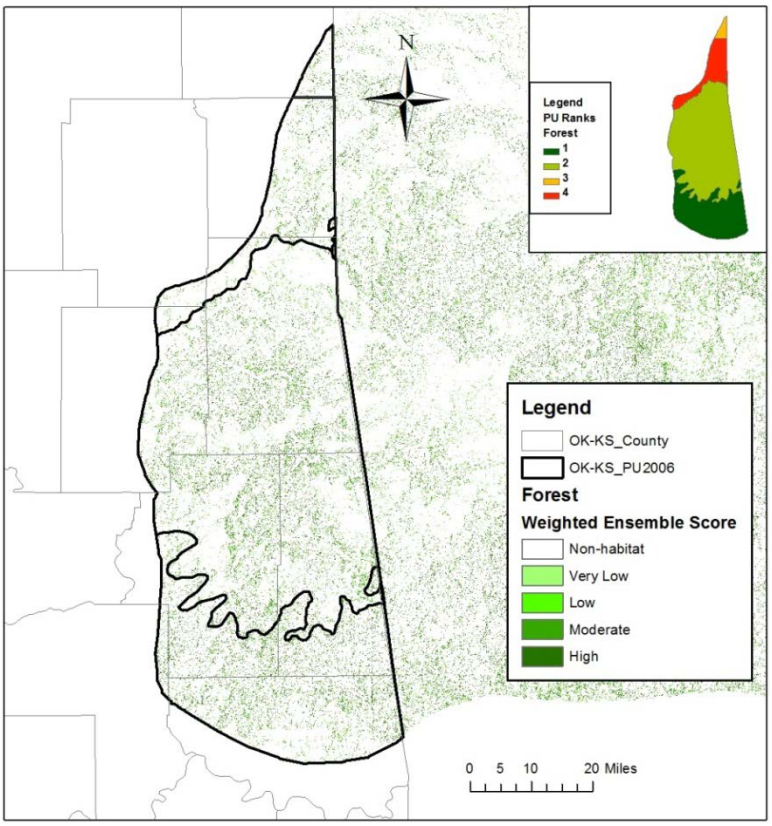


Figure 2. (Q2) Raw scores from the combination of Forest species habitat models (n=7) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (4).

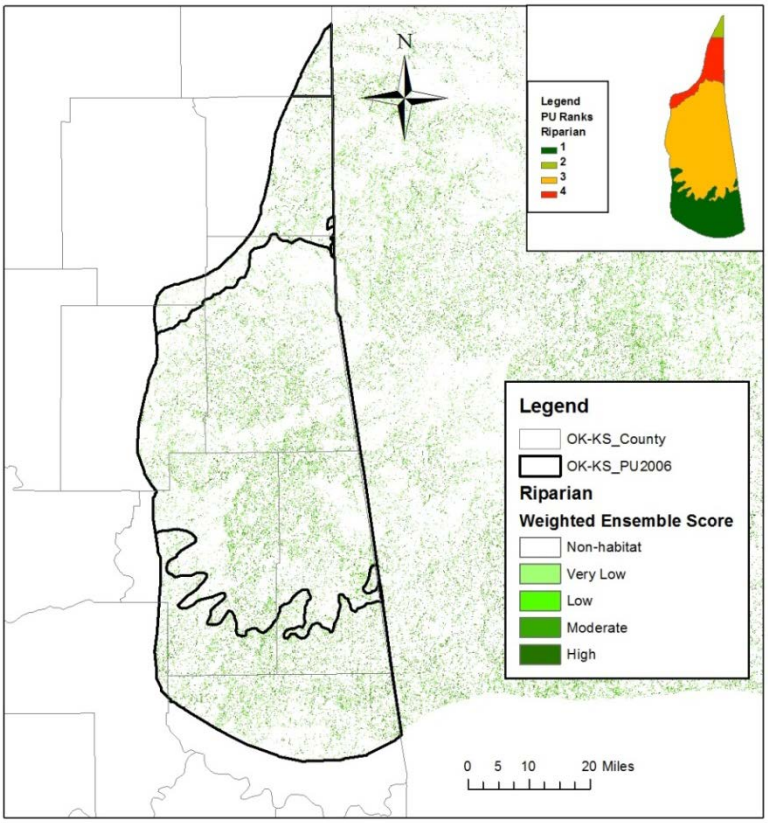


Figure 3. (Q2) Raw scores from the combination of Riparian species habitat models (n=4) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (4).

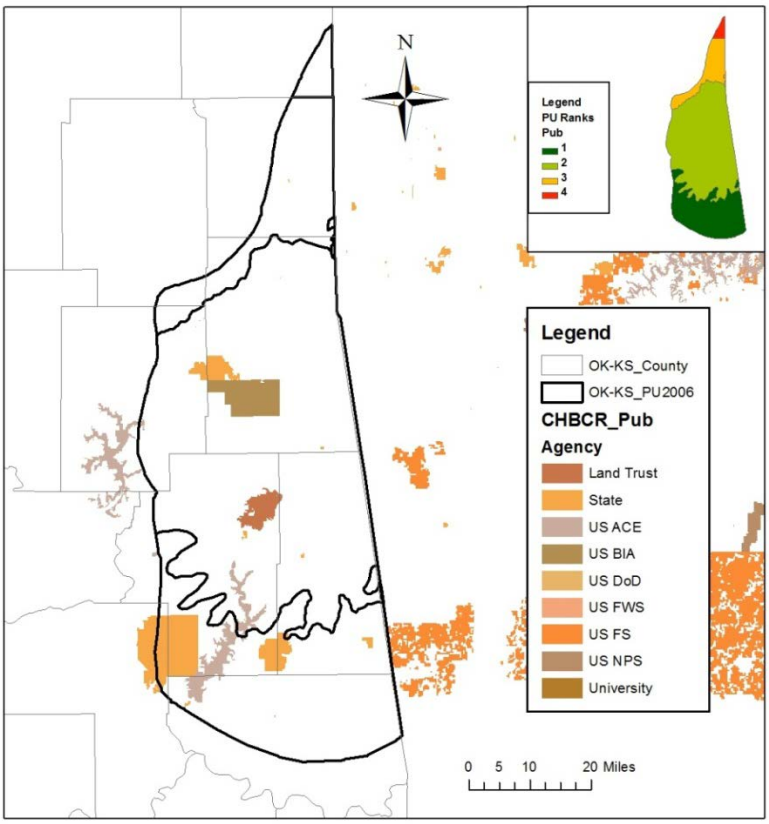


Figure 4. (Q3) Distribution of public lands within the Oklahoma-Kansas Sub-region by agency or organization. Total area of public ownership for each planning unit was used to produce ranks (inset) from high (1) to low (4).

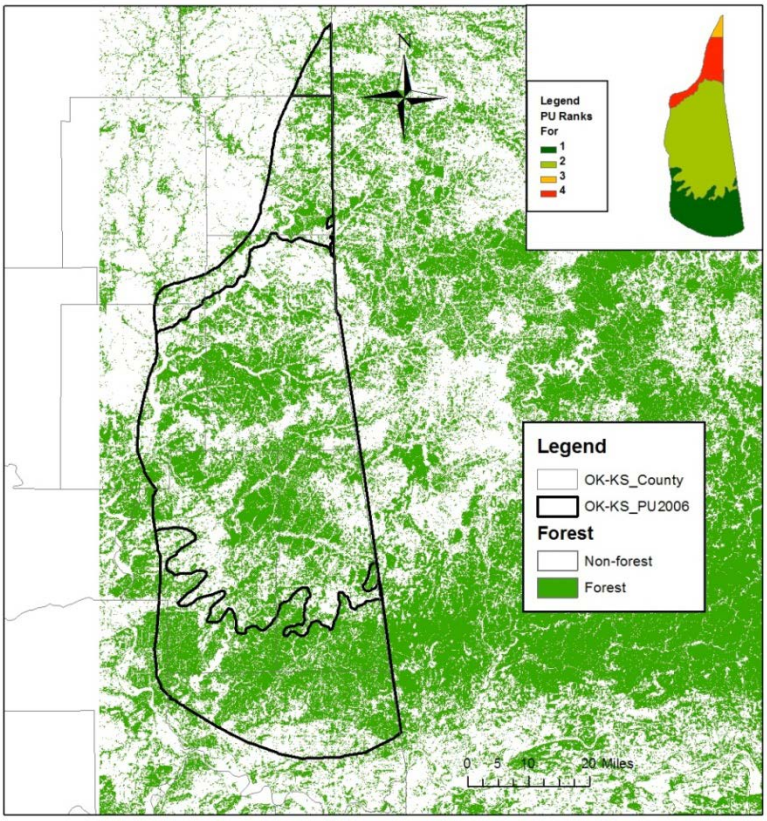


Figure 5. (Q4) Distribution of lands classified as a forested type within the Oklahoma-Kansas Sub-region by the 2006 NLCD. Proportion of forested land for each planning unit was used to produce ranks (inset) from high (1) to low (4).

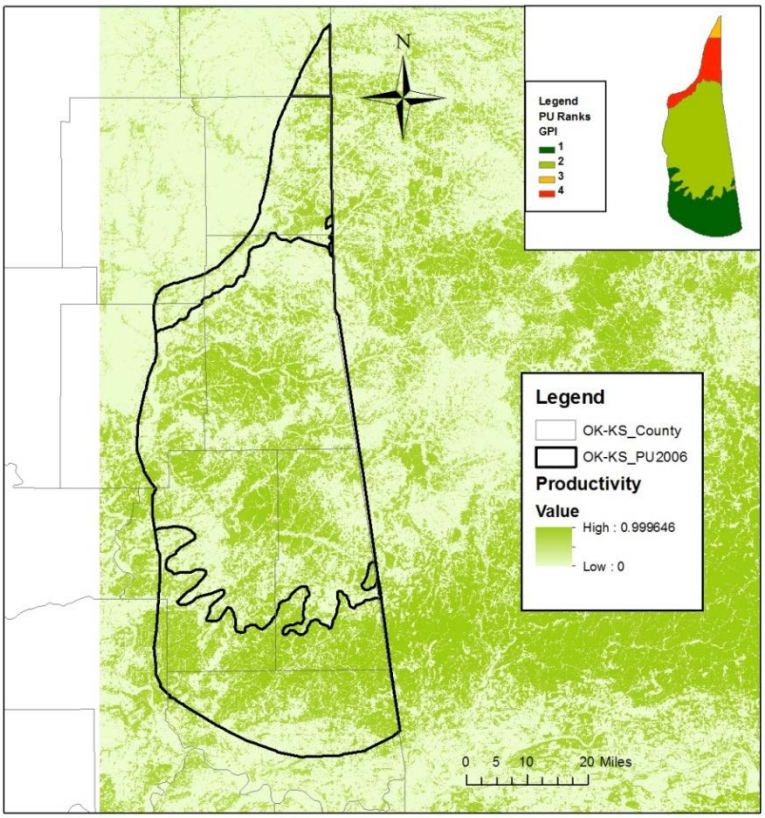


Figure 6. (Q4) Fragmentation of forested lands as measured by the General Productivity Index within the OK-KS Sub-region. Mean score on forested lands for each planning unit was used to produce ranks (inset) from high (1) to low (4).

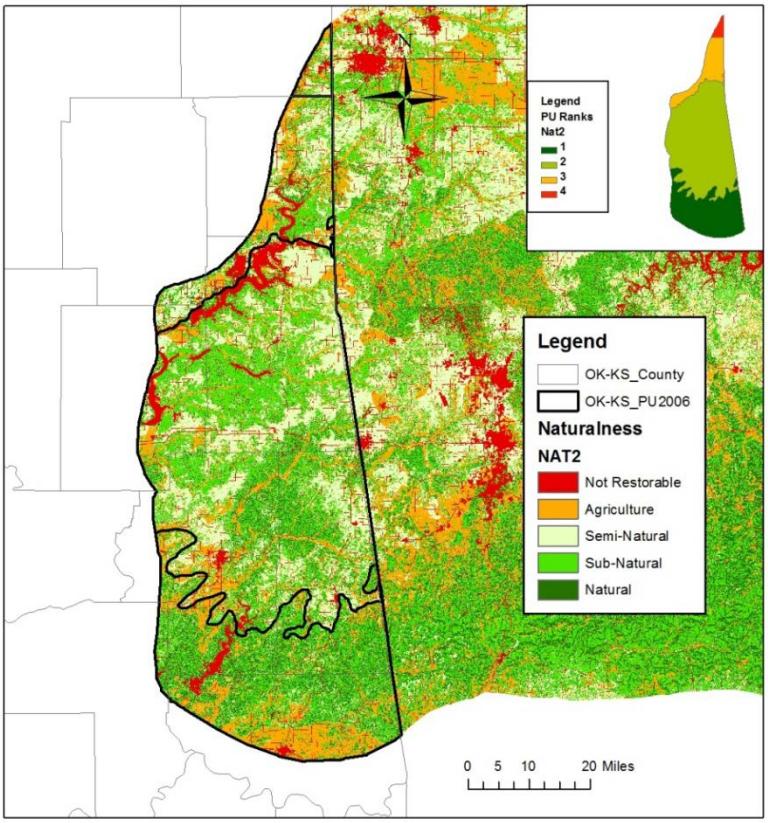


Figure 7. (Q4) Classification of the relative naturalness of lands within the OK-KS Sub-region following Ferrari et al. 2008. Proportion of each planning unit in the "Natural" class was used to produce ranks (inset) from high (1) to low (4).

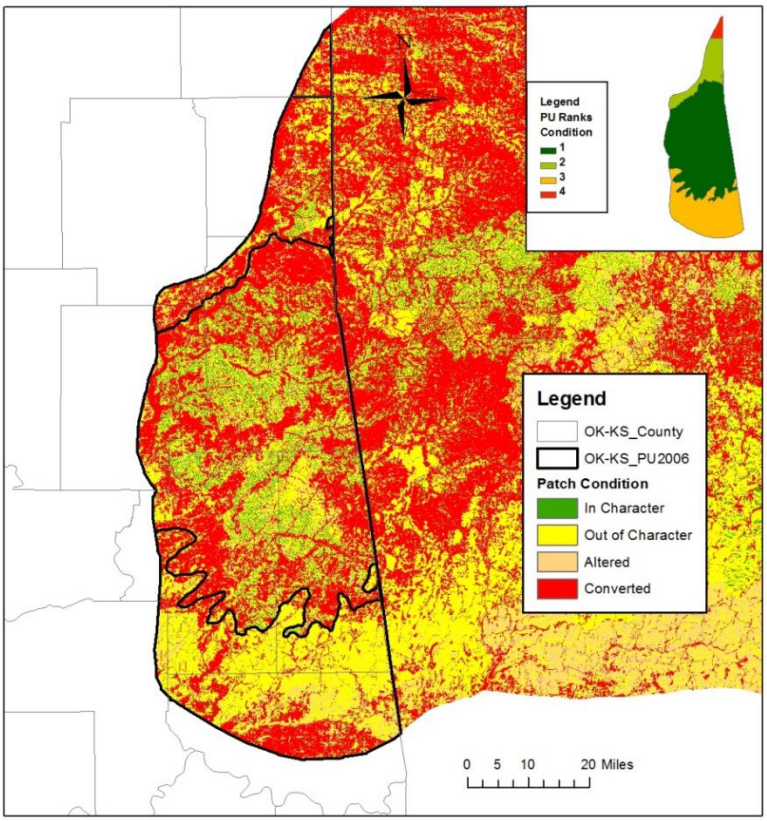


Figure 8. (Q4) Comparison between current and expected landscape patch conditions within the OK-KS Sub-region. Proportion of each planning unit in the "In Character" class was used to produce ranks (inset) from high (1) to low (4).

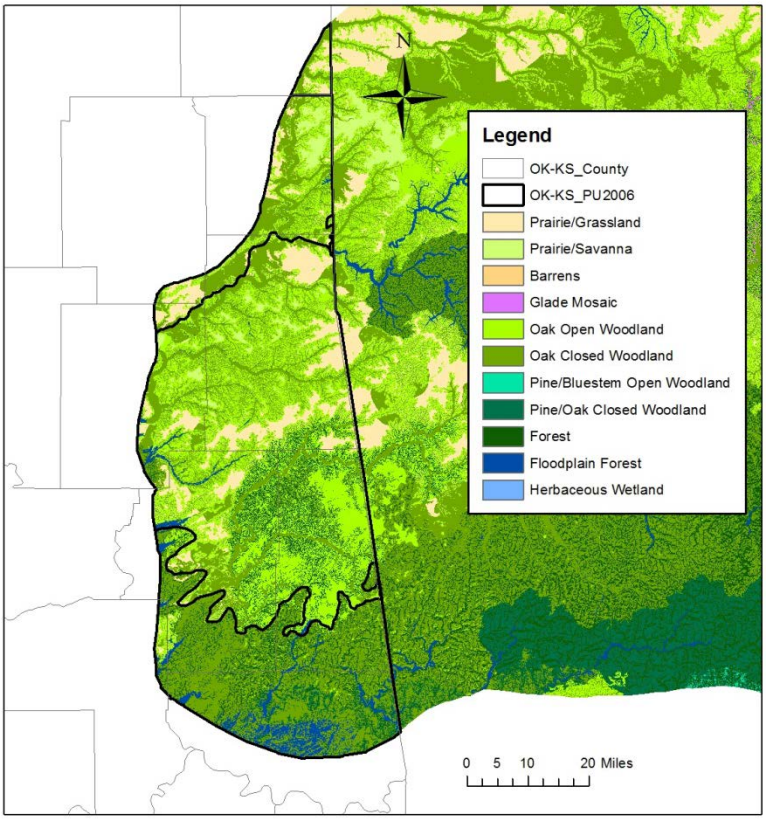


Figure 9. (Q5) The distribution of sites suitable for the restoration of broad natural communities within the OK-KS Sub-region.

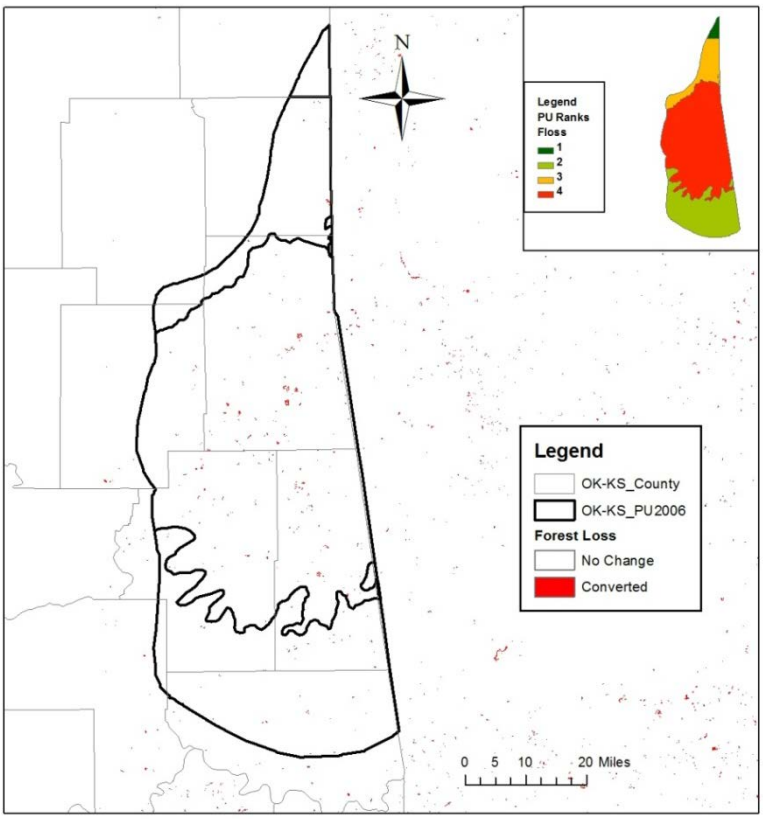


Figure 10. (Q6) Locations of cover class change from a forest type (2001) to a non-forest type (2006) within the OK-KS Sub-region. Proportion of forest converted was used to produce ranks (inset) from low (1) to high (4).

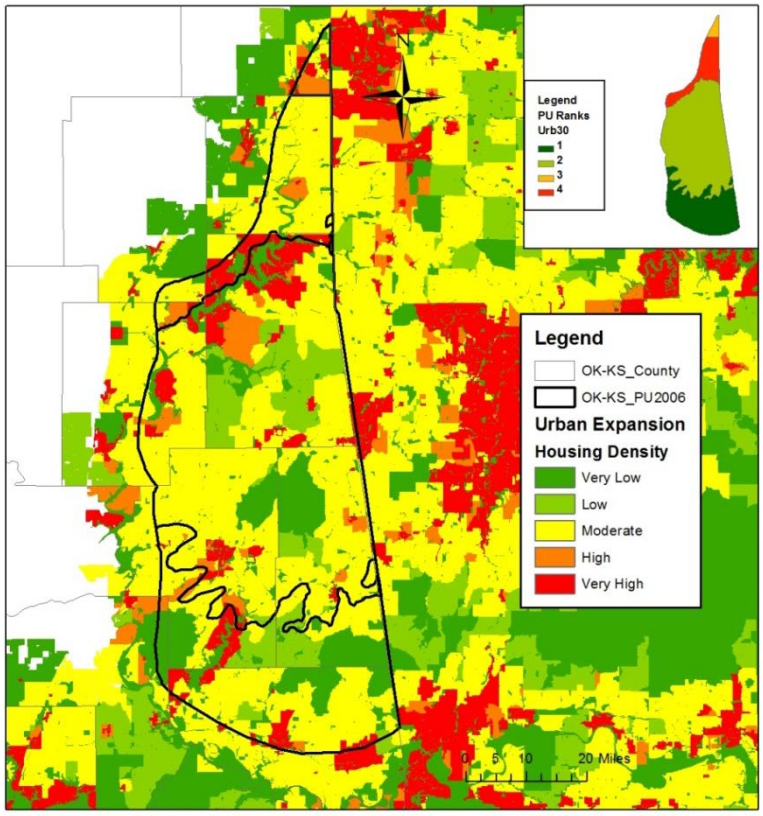


Figure 11. (Q6) The relative impact of current and projected housing density on management actions within the Ok-KS Sub-region. Proportion of each planning unit in the "Very Low" class was used to produce ranks (inset) from high (1) to low (4).