Implementing CHJV Forest and Woodland Habitat Objectives:
Recommendations for Illinois

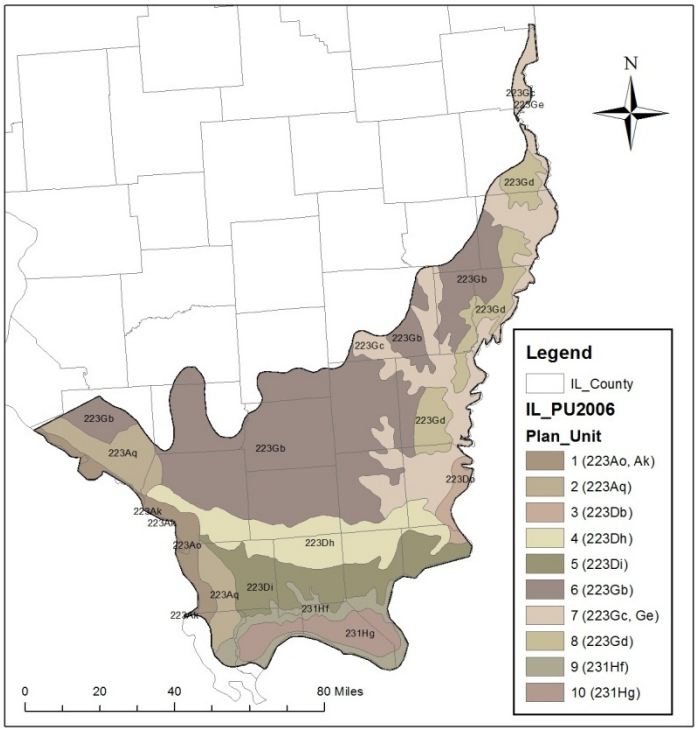
Overview

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 Illinois 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. Illinois is divided into 10 planning units (map at right). Table 1 ranks each unit relative to others within Illinois 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, Illinois is relatively important for the riparian bird group, as well as woodland species that currently do not have validated habitat models (e.g. Northern Bobwhite). Further, it has relatively low urbanization threat and forest loss (2001-2006) overall. Planning Unit 4 (Greater Shawnee Hills, 223 Dh) has high levels of forest, public ownership, natural land cover types, as well as low levels of fragmentation. This unit was identified as a source landscape for Wood Thrush, Worm-eating Warblers, and Prairie Warblers by the CHJV population viability model.

Table 1. The 10 planning units (i.e. landscapes) within the Illinois sub-region and their relative rank based on attributes relevant to conservation planning. Units are ranked from "1" (best) to "10" (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
1	223Ao & Ak	MS River Alluvial	IL	6	5	9	7	5	1	1	8	7	7
2	223Aq	Illinois Ozarks	IL	4	2	3	3	3	7	4	4	4	4
3	223Db	Lower OH Alluvial	IL	8	4	8	5	6	4	2	5	1	1
4	223Dh	Gr. Shawnee Hills	IL	1	1	2	1	1	6	8	2	2	2
5	223Di	Lsr. Shawnee Hills	IL	3	3	4	2	2	2	10	1	3	3
6	223Gb	Mt. Vernon Hill Country	IL	2	8	5	8	8	8	7	6	8	8
7	223Gc & Ge	Lower Wabash Alluvial	IL	9	10	10	10	10	3	3	10	10	10
8	223Gd	Wabash Uplands	IL	10	9	6	9	9	10	5	9	9	9
9	231Hf	OH and Cache River Alluvial	IL	5	6	7	6	7	9	6	7	6	5
10	231Hg	Cretaceous Hills	IL	7	7	1	4	4	5	9	3	5	6

[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
1	Forested/Restorable	43	-	1,979	1,554	3,160	-	8,108	36,785	51,629
	Protected	-	-	1,476	1,109	2,843	-	6,754	24,172	36,355
	Plan Unit Target (10 sp)	19	-	126	28	276	-	571	6,722	7,743
	Plan Unit Target (21 sp)	43	-	282	64	3,863	-	745	19,459	24,456
	Public Target (10 sp)	-	-	126	28	276	-	571	6,722	7,723
	Public Target (21 sp)	-	-	282	64	2,843	-	745	19,459	23,394
	In Character/Restored	6	-	-	634	-	-	3,524	0	4,164
	Public In Character	-	-	-	352	-	-	2,726	-	3,079
2	Forested/Restorable	666	-	15,521	18,628	23,814	-	52,404	31,178	142,210
	Protected	8	-	1,920	3,176	14,773	-	22,991	8,813	51,682
	Plan Unit Target (10 sp)	146	-	2,103	987	2,411	-	4,552	3,681	13,879
	Plan Unit Target (21 sp)	326	-	4,686	2,261	33,743	-	5,939	10,656	57,611
	Public Target (10 sp)	8	-	1,920	987	2,411	-	4,552	3,681	13,559
	Public Target (21 sp)	8	-	1,920	2,261	14,773	-	5,939	8,813	33,715
	In Character/Restored	5	-	-	14,367	-	-	28,190	0	42,562
	Public In Character	-	-	-	949	-	-	10,649	0	11,598
3	Forested/Restorable	-	-	316	3,324	-	-	4,965	10,168	18,773
	Protected	-	-	85	772	-	-	1,030	1,322	3,209
	Plan Unit Target (10 sp)	-	-	31	117	-	-	410	1,866	2,423
	Plan Unit Target (21 sp)	-	-	69	268	-	-	535	5,401	6,272
	Public Target (10 sp)	-	-	31	117	-	-	410	1,322	1,880
	Public Target (21 sp)	-	-	69	268	-	-	535	1,322	2,194
	In Character/Restored	-	-	-	318	-	-	2,114	-	2,432
	Public In Character	-	-	-	49	-	-	484	-	534

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
4	Forested/Restorable	26,619	-	40,975	68,304	-	-	117,004	52,505	305,408
	Protected	12,562	-	14,080	35,435	-	-	54,375	20,320	136,772
	Plan Unit Target (10 sp)	6,284	-	3,688	1,528	-	-	9,818	4,864	26,182
	Plan Unit Target (21 sp)	14,032	-	8,219	3,501	-	-	12,810	14,082	52,645
	Public Target (10 sp)	6,284	-	3,688	1,528	-	-	9,818	4,864	26,182
	Public Target (21 sp)	12,562	-	8,219	3,501	-	-	12,810	14,082	51,174
	In Character/Restored	21,870	-	-	10,943	-	-	54,128	-	86,942
	Public In Character	7,863	-	-	1,802	-	-	23,164	-	32,829
5	Forested/Restorable	17,726	-	28,299	38,378	2,908	-	73,641	54,397	215,349
	Protected	8,536	-	11,508	9,248	-	-	15,602	14,810	59,705
	Plan Unit Target (10 sp)	4,472	-	2,969	1,267	751	-	8,348	5,031	22,838
	Plan Unit Target (21 sp)	9,986	-	6,616	2,903	10,514	-	10,892	14,566	55,476
	Public Target (10 sp)	4,472	-	2,969	1,267	-	-	8,348	5,031	22,087
	Public Target (21 sp)	8,536	-	6,616	2,903	-	-	10,892	14,566	43,513
	In Character/Restored	14,970	-	-	8,911	-	-	35,622	-	59,503
	Public In Character	5,425	-	-	1,199	-	-	7,474	-	14,098
6	Forested/Restorable	39	-	34,040	167,877	-	-	53,517	176,856	432,328
	Protected	-	-	5,599	33,430	-	-	8,370	43,251	90,650
	Plan Unit Target (10 sp)	33	-	4,402	13,945	-	-	10,904	26,600	55,885
	Plan Unit Target (21 sp)	74	-	9,811	31,955	-	-	14,227	77,005	133,072
	Public Target (10 sp)	-	-	4,402	13,945	-	-	8,370	26,600	53,317
	Public Target (21 sp)	-	-	5,599	31,955	-	-	8,370	43,251	89,175
	In Character/Restored	44	-	-	163,542	-	-	28,021	-	191,607
	Public In Character	-	-	-	15,960	-	-	3,533	-	19,492

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
7	Forested/Restorable	31	-	2,771	10,210	-	-	14,482	80,682	108,175
	Protected	-	-	48	416	-	-	791	1,889	3,145
	Plan Unit Target (10 sp)	10	-	433	2,019	-	-	3,139	24,215	29,817
	Plan Unit Target (21 sp)	23	-	965	4,626	-	-	4,096	70,102	79,812
	Public Target (10 sp)	-	-	48	416	-	-	791	1,889	3,145
	Public Target (21 sp)	-	-	48	416	-	-	791	1,889	3,145
	In Character/Restored	31	-	-	8,608	-	-	2,375	-	11,014
	Public In Character	-	-	-	93	-	-	228	-	320
8	Forested/Restorable	-	-	4,048	18,575	-	-	10,929	25,008	58,561
	Protected	-	-	-	5	-	-	8	35	48
	Plan Unit Target (10 sp)	-	-	805	2,021	-	-	3,064	5,730	11,620
	Plan Unit Target (21 sp)	-	-	1,794	4,631	-	-	3,998	16,587	27,010
	Public Target (10 sp)	-	-	-	5	-	-	8	35	48
	Public Target (21 sp)	-	-	-	5	-	-	8	35	48
	In Character/Restored	-	-	-	18,395	-	-	3,013	-	21,409
	Public In Character	-	-	-	4	-	-	1	-	4
9	Forested/Restorable	4,316	-	1,956	7,256	1,040	-	10,459	42,027	67,053
	Protected	588	-	1,101	1,619	227	-	1,945	30,841	36,321
	Plan Unit Target (10 sp)	1,528	-	247	238	112	-	1,501	6,901	10,527
	Plan Unit Target (21 sp)	3,412	-	550	546	1,574	-	1,958	19,979	28,018
	Public Target (10 sp)	588	-	247	238	112	-	1,501	6,901	9,587
	Public Target (21 sp)	588	-	550	546	227	-	1,945	19,979	23,835
	In Character/Restored	4,060	-	-	4,263	-	-	4,908	-	13,231
	Public In Character	473	-	-	972	-	-	746	-	2,191

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
10	Forested/Restorable	16,135	-	199	17,627	-	-	12,050	22,400	68,410
	Protected	5,780	-	147	5,533	-	-	4,164	12,027	27,651
	Plan Unit Target (10 sp)	4,922	-	64	566	-	-	2,696	3,686	11,934
	Plan Unit Target (21 sp)	10,992	-	143	1,297	-	-	3,517	10,671	26,620
	Public Target (10 sp)	4,922	-	64	566	-	-	2,696	3,686	11,934
	Public Target (21 sp)	5,780	-	143	1,297	-	-	3,517	10,671	21,407
	In Character/Restored	14,662	-	-	16,148	-	-	8,365	-	39,175
	Public In Character	4,127	-	-	3,555	-	-	2,260	-	9,942
Total	Forested/Restorable	65,574	-	130,105	351,732	30,921	-	357,558	532,005	1,467,896
	Protected	27,473	-	35,965	90,744	17,844	-	116,030	157,481	445,537
	Plan Unit Target (10 sp)	17,415	-	14,868	22,716	3,551	-	45,003	89,296	192,848
	Plan Unit Target (21 sp)	38,888	-	33,134	52,052	49,693	-	58,718	258,507	490,993
	Public Target (10 sp)	16,274	-	13,496	19,097	2,799	-	37,064	60,732	149,463
	Public Target (21 sp)	27,473	-	23,446	43,216	17,844	-	45,553	134,068	291,600
	In Character/Restored	55,650	-	-	246,129	-	-	170,261	0	472,040
	Public In Character	17,887	-	-	24,936	-	-	51,264	0	94,087

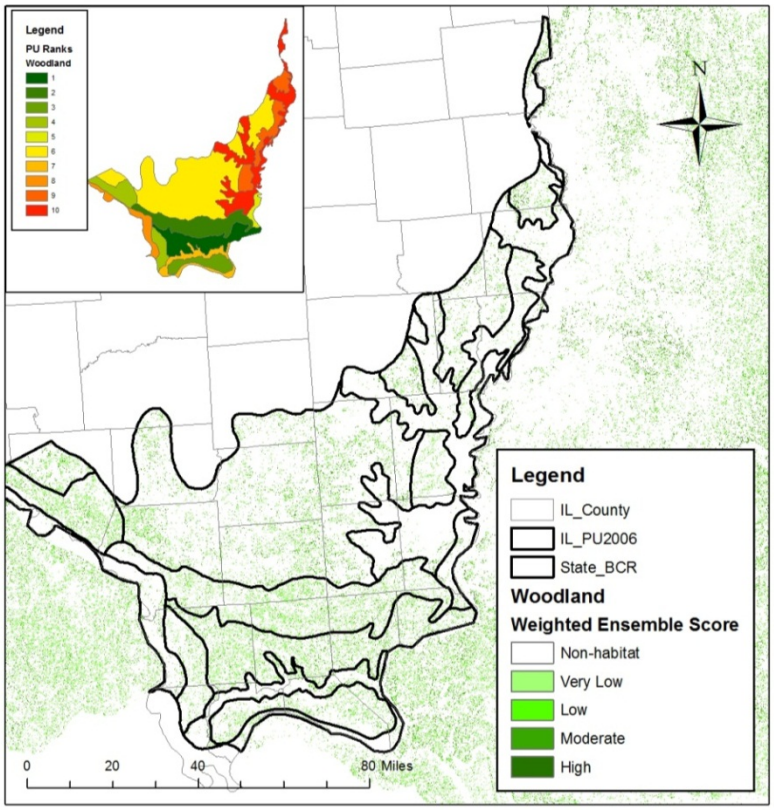


Figure 1. (Q2) Raw scores from the combination of Woodland species habitat models (n=7) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (10).

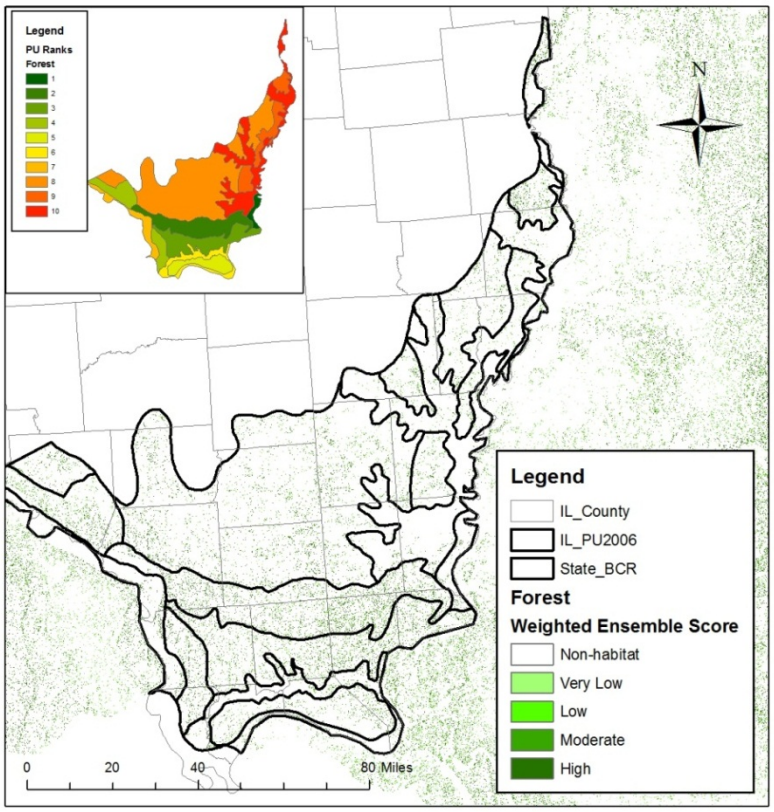


Figure 2. (Q2) Raw scores from the combination of Forest species habitat models (n=7) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (10).

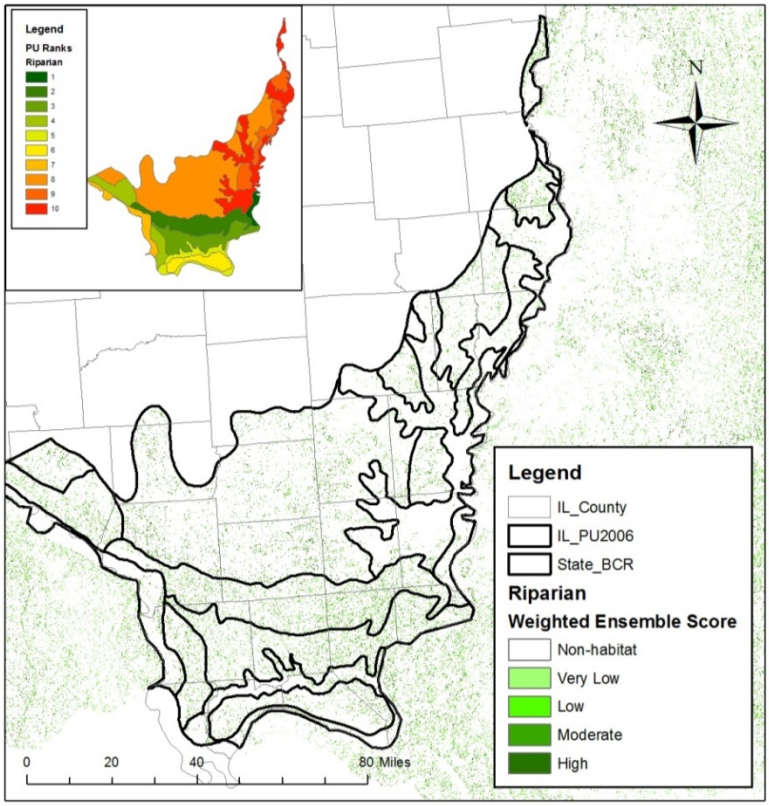


Figure 3. (Q2) Raw scores from the combination of Riparian species habitat models (n=4) weighted by the priority class of each species. Mean scores for each planning unit were used to produce ranks (inset) from high (1) to low (10).

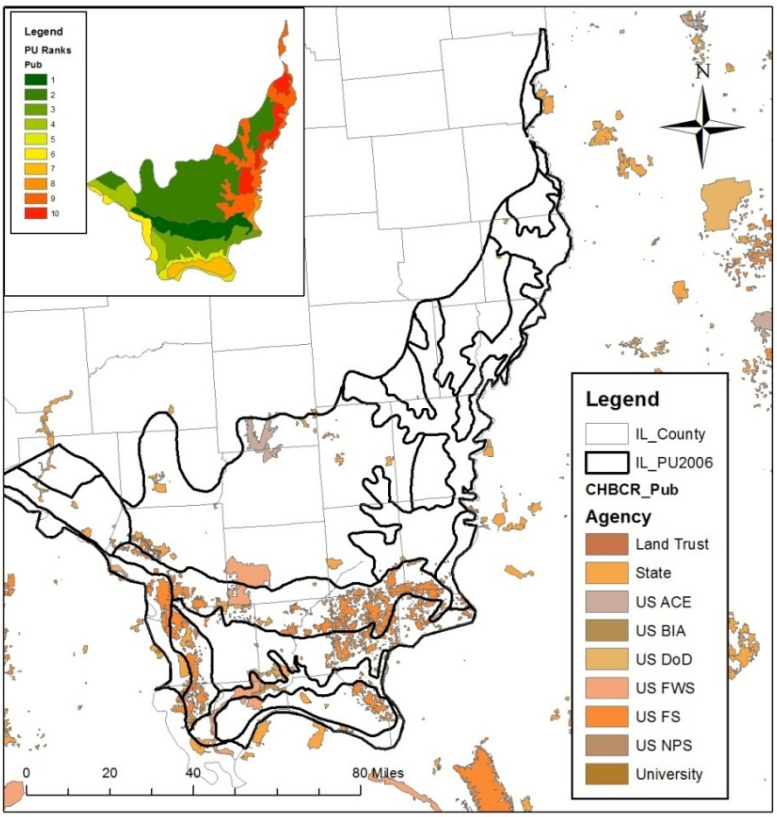


Figure 4. (Q3) Distribution of public lands within the Illinois Sub-region by agency or organization. Total area of public ownership for each planning unit was used to produce ranks (inset) from high (1) to low (10).

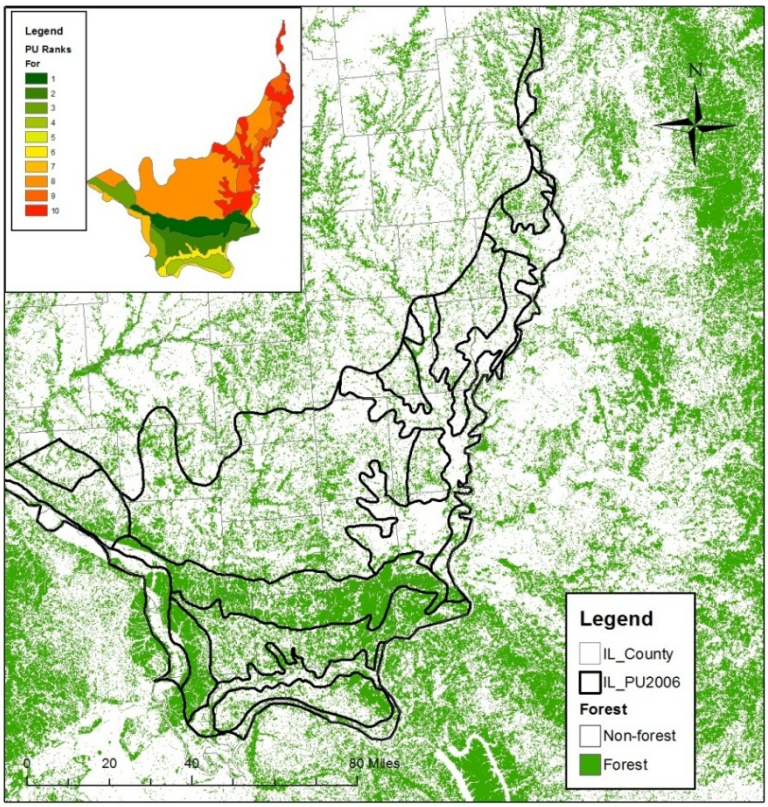


Figure 5. (Q4) Distribution of lands classified as a forested type within the Illinois Sub-region by the 2006 NLCD. Proportion of forested land for each planning unit was used to produce ranks (inset) from high (1) to low (10).

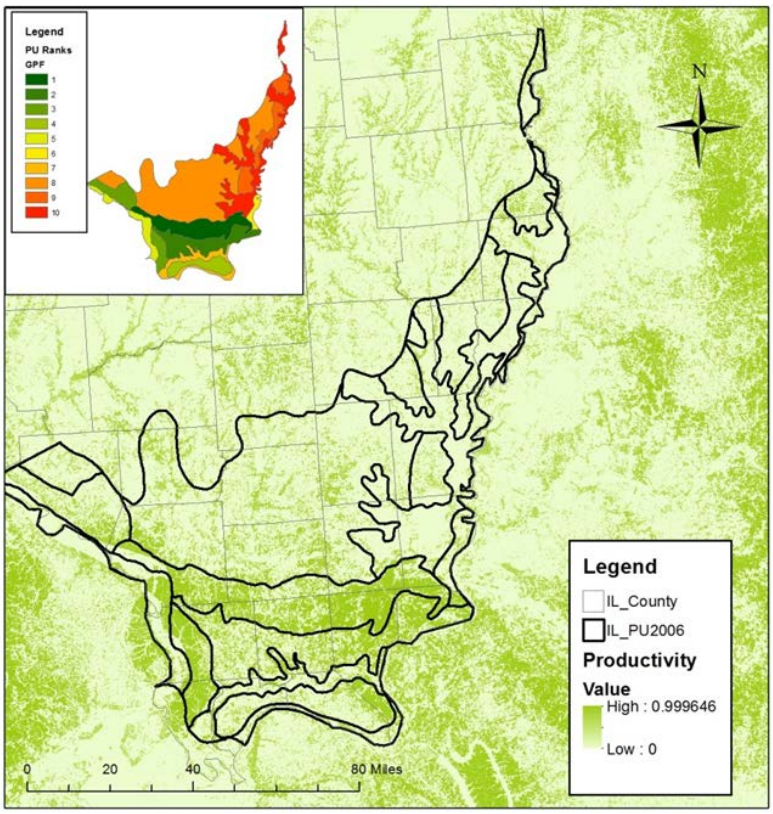


Figure 6. (Q4) Fragmentation of forested lands as measured by the General Productivity Index within the IL Sub-region. Mean index score on forested lands for each planning unit was used to produce ranks (inset) from high (1) to low (10).

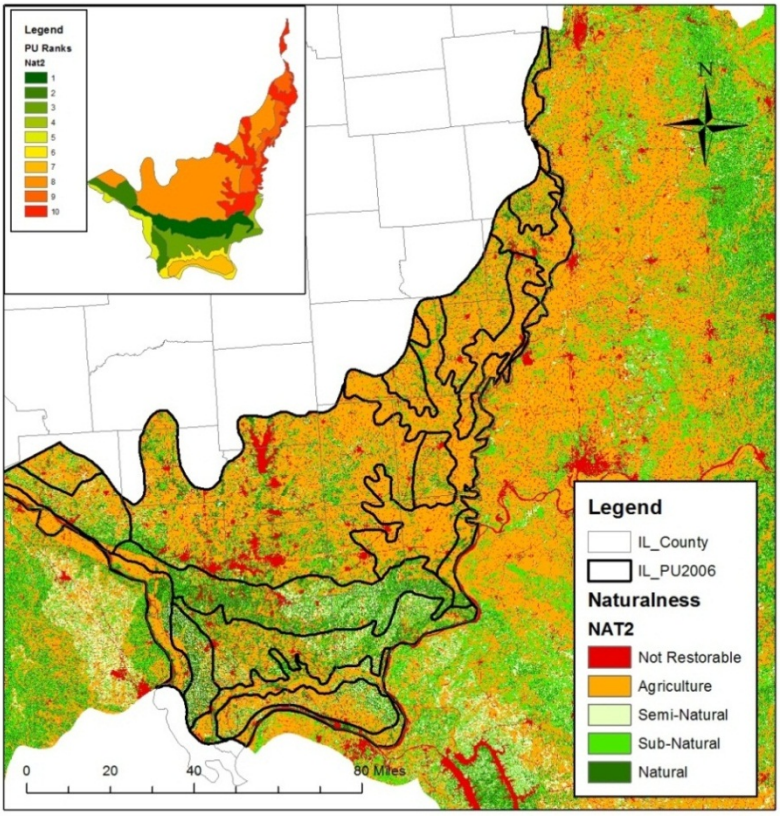


Figure 7. (Q4) Classification of the relative naturalness of lands within the Illinois Sub-region following Ferrari et al. 2008. Proportion of each planning unit in the "Natural" class was used to produce ranks (inset) from high (1) to low (10).

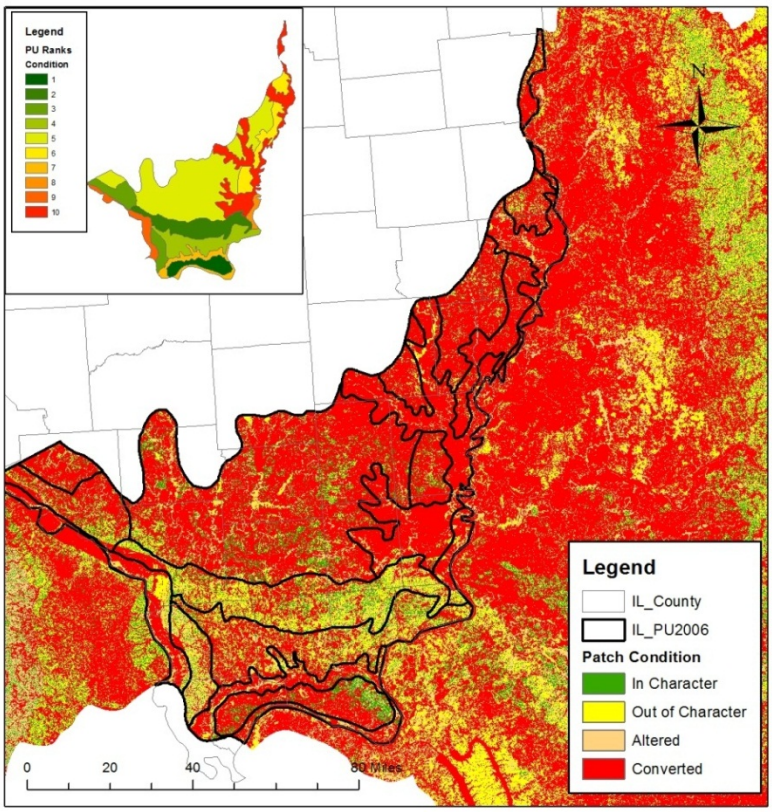


Figure 8. (Q4) Comparison between current and expected landscape patch conditions within the Illinois Sub-region. Proportion of each planning unit in the "In Character" class was used to produce ranks (inset) from high (1) to low (10).

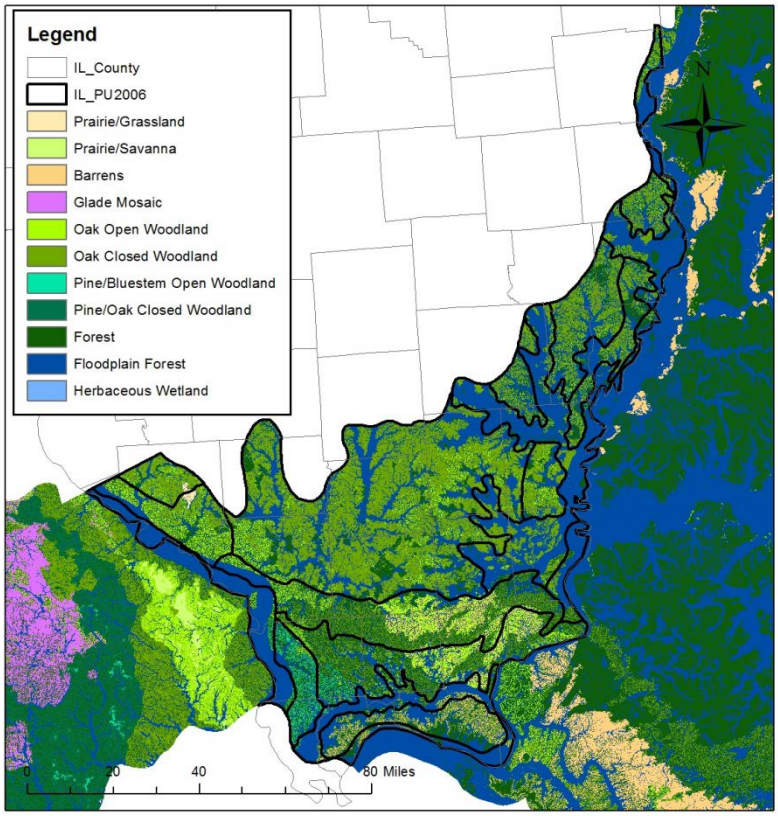


Figure 9. (Q5) The distribution of sites suitable for the restoration of broad natural communities within the IL Sub-region.

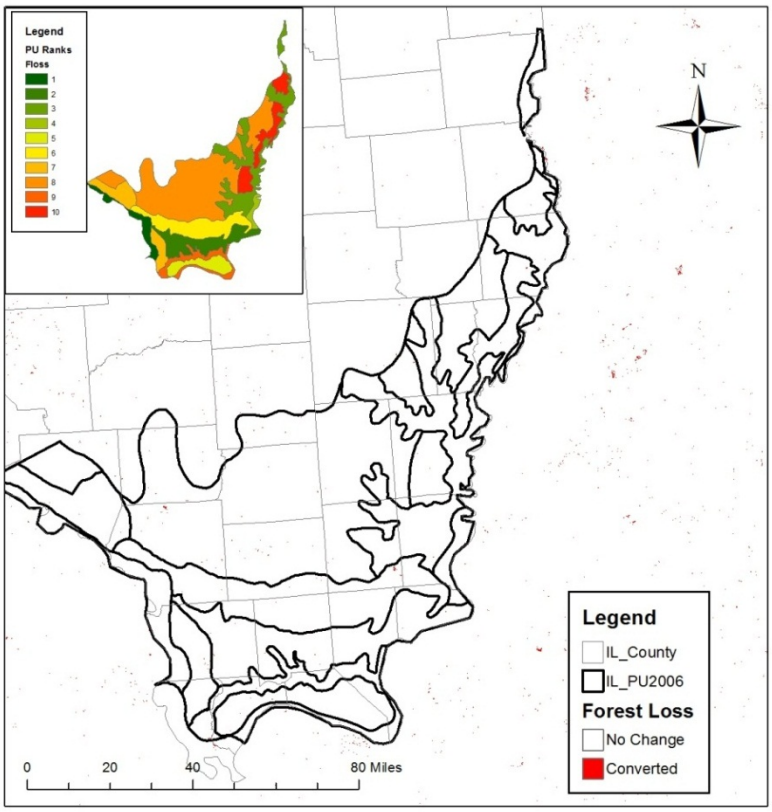


Figure 10. (Q6) Locations where cover class changed from a forest type to a non-forest type in 2006 within the IL Sub-region. Proportion of forest converted in each planning unit was used to produce ranks (inset) from low (1) to high (10).

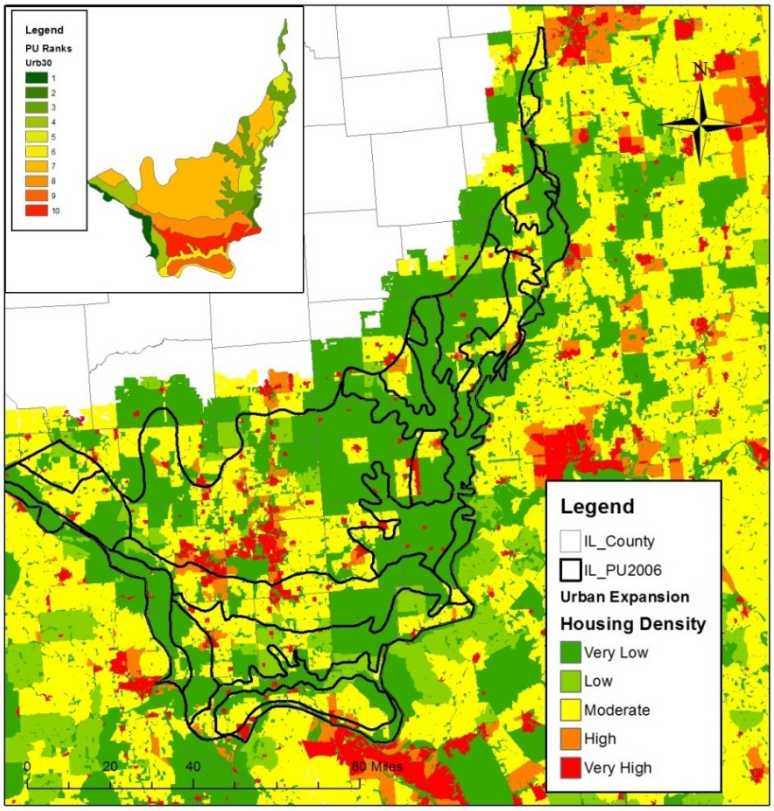


Figure 11. (Q6) The relative impact of current and projected housing density on management actions within the IL Sub-region. Proportion of each planning unit in the "Very Low" class was used to produce ranks (inset) from high (1) to low (10).