

Upper Mississippi River and Great Lakes Region Joint Venture Bird Habitat Conservation Accomplishments (2007 – 2017)

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Introduction

Partners within the Upper Mississippi River and Great Lakes Region Joint Venture (JV) submit bird habitat accomplishments to the Joint Venture Coordination Office each year. Tracking these conservation actions provides information regarding land area influenced by the partnership, as well as a measure of funding expended to accomplish JV Implementation Plan objectives.

In 2009, the accomplishment reporting form was simplified from the previous version. The 2007–2008 report form mirrored the level of cover type description in the 2007 JV Implementation Plan. Although this level of detail was considered most valuable to measure progress, several partner agencies struggled with reporting which resulted in inconsistent responses. To overcome this issue, partners were surveyed by JV staff to identify reporting impediments, and the new form was developed. Since then, reports have been completed more consistently and we continue to use the simplified accomplishment reporting format. Our understanding of bird-habitat relationships and regional carrying capacity for focal species used in planning continues to improve with consistent tracking of partner accomplishments and monitoring of landscape changes. However, estimates of JV partner influence on bird populations is an unrealized monitoring goal.

2017 Accomplishments

JV partners reported 407,267 acres of bird-habitat conservation activity, expending about \$37 million. Similar to previous years, bird habitat enhancement was the primary conservation action (82.4% of activity by area), followed by restoration (13.0%), and protection (4.4%).

Enhancement highlights

- 8,935 acres of wetlands enhanced across the region
- Majority of emergent marsh enhancement occurred in Bird Conservation Region (BCR) 23
- Mudflat and shallow water enhancement was a primary focus in BCR 22
- 326,621 acres of uplands enhanced across the JV region
- 7,701 acres of grassland enhanced, with 3,012 acres reported for BCR 22
- 318,919 acres of woodland enhanced, with 298,518 acres in BCR 22

Restoration highlights

- 3,503 acres of wetlands restored across the JV region; including 1,884 acres in BCR 12 and 1,247 acres in BCR 23
- 50,491 acres of upland cover restored
- 81% of upland restoration was grasslands
- Greatest amounts of grassland were restored in BCR 22, and woodland in BCR 12

Protection highlights (FWS acres not included because habitat type was not identified)

- 4,884 acres of wetland protected across the JV region
- 1,940 acres of emergent marsh were protected in BCR 22, and 1,074 acres in BCR 23
- 11,484 acres of uplands protected
- Majority of upland acres were forest cover in BCR 12

JV cumulative accomplishments since Implementation Plan completion (2007 – 2017)

Cumulative accomplishments are compiled for two categories: protection and restoration / enhancement. Protection (habitat retention) accomplishments represent existing bird habitats now under management by a conservation organization through acquisition or long-term agreements (easements). Restoration / enhancement accomplishments represent additional new area available for JV focal species by increasing habitat area (quantity and or quality) through cover type manipulation. Since 2007, JV partners have restored or enhanced 2,135,700 acres across the region. Also during this time, 263,266 acres of bird habitat were protected. Comparing cumulative total accomplishments against 2007 JV Implementation Plan objectives, we can calculate the apparent percent of JV Plan objectives achieved. These percentages were determined for restoration / enhancement objectives and are presented in Tables 1 (wetlands) and 2 (uplands). Percentages were not calculated for habitat retention objectives because a complete assessment of protected area of various cover types before 2007 has not been completed.

Bird habitat losses (e.g., conversion due to development) during the assessment period were not determined, and the actual habitat value from restoration / enhancement could not be calculated due to lack of population monitoring before and after conservation actions. An accounting process that includes both habitat gains and losses (via measures of both cover types and populations) is necessary to better estimate *net change* in regional carrying capacity for JV focal species and associated guilds. JV science staff estimated net change in primary cover types important to wetland birds in recently completed JV Waterfowl and Waterbird Habitat Conservation Strategies. These cover type (habitat) estimates and trends important to priority bird species will be refined as new spatial data become available.

Table 1. Percent of wetland objectives accomplished (%) and cumulative acres restored and enhanced (2007—2017) by the Upper Mississippi River and Great Lakes Region Joint Venture compared to habitat objectives identified in the 2007 Joint Venture Implementation Plan. Cumulative totals for BCRs represent data from 2009—2017 partner accomplishment reports; data from 2007—2008 were reported by state and are included in the "unknown" category. Percent (%) = the cumulative total / objective * 100.

State	BCR	Marsh ^a			Mudflat / Shallows ^b			Open water / Beach ^c			Total Wetland		
		Objective	Cumulative total	%	Objective	Cumulative total	%	Objective	Cumulative total	%	Objective	Cumulative total	%
Iowa	22	23,356	24,322	104.1	55,117	7,478	13.6	2,974	84	2.8	81,447	31,884	39.1
	23	2,471	1,244	50.3	3,184	399	12.5	796	0	0.0	6,451	1,643	25.5
	Unknown		5,384			410						5,794	
	Total	25,827	30,950	119.8	58,301	8,287	14.2	3,770	84	2.2	87,898	39,321	44.7
Illinois	22	22,542	22,491	99.8	63,163	20,091	31.8	3,584	745	20.8	89,289	43,327	48.5
	23	1,649	0	0.0	1,487	0	0.0	376	18	4.8	3,512	18	0.5
	24	1,995	2,011	100.8	2,484	0	0.0	230	0	0.0	4,709	2,011	42.7
	Unknown		174			212			22			408	
Total	26,186	24,672	94.2	67,134	20,303	30.2	4,190	785	18.7	97,510	45,760	46.9	
Indiana	22	14,781	2,399	16.2	22,852	2,197	9.6	1,242	127	10.2	38,875	4,723	12.1
	23	9,086	1,270	14.0	5,795	6	0.1	1,445	2	0.1	16,326	1,278	7.8
	24	4,337	4,505	103.9	4,612	1,658	35.9	388	74	19.0	9,337	6,237	66.8
	Unknown		1,381			387			40			1,808	
Total	28,204	9,558	33.9	33,259	4,247	12.8	3,075	243	7.9	64,538	14,048	21.8	
Kansas	22/Total	4,344	2,726	62.8	33,705	270	0.8	2,018	84	4.2	40,067	3,080	7.7
Michigan	12	66,795	12,734	19.1	4,945	6,711	135.7	8,882	1,772	20.0	80,622	21,217	26.3
	23	58,321	40,742	69.9	27,993	5,728	20.5	7,464	184	2.5	93,778	46,654	49.7
	Unknown		4,817			12						4,829	
Total	125,116	58,292	46.6	32,938	12,451	37.8	16,346	1,956	12.0	174,400	72,700	41.7	
Minnesota	12	75,321	12,396	16.5	4,668	na ^d	na ^d	7,128	533	7.5	87,117	12,929	14.8
	22	5,412	na ^d	na ^d	3,959	na ^d	na ^d	207	na ^d	na ^d	9,578	na ^d	na ^d
	23	86,643	3,555	4.1	11,473	na ^d	na ^d	2,835	na ^d	na ^d	100,951	3,555	3.5
Unknown		1,155									1,155		
Total	167,376	17,106	10.2	20,100	0	0.0	10,170	533	5.2	197,646	17,639	8.9	
Missouri	22/Total	5,167	33,009	638.8	42,304	154,503	365.2	2,440	2,078	85.2	49,911	189,590	379.9
Nebraska	22/Total	5,985	380	6.3	11,323	760	6.7	649	92	14.2	17,957	1,232	6.9
Ohio ^e	13	8,784	3,495	39.8	7,057	1,196	16.9	7,457	604	8.1	23,298	5,295	22.7
	22 ^f	12,517	5,627	45.0	26,758	83	0.3	4,515	24	0.5	43,790	5,734	13.1
	24	170	0	0.0	4,895	0	0.0	524	0	0.0	5,589	0	0.0
	Unknown		943			274						1,217	
Total	21,471	7,864	36.6	38,710	1,303	3.4	12,496	483	3.9	72,677	9,650	13.3	
Wisconsin	12	31,652	14,645	46.3	2,617	15	0.6	12,503	274	2.2	46,772	14,934	31.9
	22	1,428	102	7.1	760	0	0.0	311	2	0.5	2,499	103	4.1
	23	159,326	14,607	9.2	42,882	659	1.5	28,543	246	0.9	230,751	15,512	6.7
	Unknown		5,466			20			99			5,585	
Total	192,406	34,820	18.1	46,259	694	1.5	41,357	620	1.5	280,022	36,135	12.9	
All states	12	173,768	39,774	22.9	12,230	6,727	55.0	28,513	2,579	9.0	214,511	49,080	22.9
	13	8,784	3,495	39.8	7,057	1,196	16.9	7,457	604	8.1	23,298	5,295	22.7
	22	95,532	91,055	95.3	259,941	185,382	71.3	17,940	3,235	18.0	373,413	279,672	74.9
	23	317,496	61,418	19.3	92,814	6,792	7.3	41,459	450	1.1	451,769	68,659	15.2
	24	6,502	6,516	100.2	11,991	1,658	13.8	1,142	74	6.5	19,635	8,248	42.0
	Unknown		19,320			1,315			161			20,796	
Total	602,082	221,578	36.8	384,033	203,069	52.9	96,511	7,103	7.4	1,082,626	431,750	39.9	

^aMarsh category includes wet meadow with open water, shallow semi-permanent marsh, hemi-marsh, deep-water marsh, and marsh with associated shrub / forest. The larger value for shallow semi-permanent marsh, hemi-marsh between breeding and non-breeding season objectives at the state/BCR level was used. Deep water marsh values for the breeding season were used because objectives were greater than the non-breeding season.

^bMudflat/shallows category includes dry mudflat/agriculture, wet meadow/moist soil plants, shallow-depth water, and moderate-depth water. Dry mudflat/agriculture values for the breeding season were used because objectives were greater than the non-breeding season.

^cOpen water/beach category includes extensive open water and beach. The larger value for beach between breeding and non-breeding season objectives at the state/BCR level was used.

^dNot available.

^eOhio totals from 2010—2017.

^fIncludes accomplishments reported in BCR23, formerly designated BCR 22, for which no habitat objectives were developed.

Table 2. Percent of upland objectives accomplished (%) and cumulative acres restored and enhanced (2007–2017) by the Upper Mississippi River and Great Lakes Region Joint Venture compared to habitat objectives identified in the 2007 Joint Venture Implementation Plan. Cumulative totals for BCRs represent data from 2009–2017 partner accomplishment reports; data from 2007–2008 were reported by state and are included in the “unknown” category. Percent (%) = the cumulative total / objective * 100.

State	BCR	Grassland ^a			Woodland ^b			Total Upland ^c		
		Objective	Cumulative total ^d	%	Objective	Cumulative total	%	Objective	Cumulative total	%
Iowa	22	4,250,376	434,476	10.2	2,717	19,418	714.7	4,253,093	453,894	10.7
	23	216,619	34,922	16.1	0	4,406	0.0	216,619	39,328	18.2
	Unknown									
	Total	4,466,995	469,408	10.5	2,717	23,824	876.8	4,469,712	493,232	11.0
Illinois	22	3,777,124	136,614	3.6	26,676	315,954	1184.4	3,803,800	452,567	11.9
	23	86,944	128	0.1	4,940	3,104	62.8	91,884	3,232	3.5
	24	829,426	110	0.0	59,527	14,017	23.5	888,953	14,127	1.6
	Unknown									
	Total	4,693,494	136,882	2.9	91,143	333,075	365.4	4,784,637	469,956	9.8
Indiana	22	952,185	18,235	1.9	270,218	3,296	1.2	1,222,403	21,530	1.8
	23	223,535	7,088	3.2	75,829	945	1.2	299,364	8,033	2.7
	24	1,080,625	15,885	1.5	656,032	10,478	1.6	1,736,657	26,363	1.5
	Unknown									
	Total	2,256,345	41,208	1.8	1,002,079	14,718	1.5	3,258,424	55,926	1.7
Kansas	22/Total	2,782,949	33,898	1.2	6,422	1,486	23.1	2,789,371	35,384	1.3
Michigan	12	206,986	37,063	17.9	395,200	91,847	23.2	602,186	128,911	21.4
	23	404,586	57,872	14.3	735,566	18,819	2.6	1,140,152	76,691	6.7
	Unknown		1,309			25			1,334	
	Total	611,572	96,244	15.7	1,130,766	110,691	9.8	1,742,338	206,935	11.9
Minnesota	12	242,060	15,232	6.3	800,280	64,639	8.1	1,042,340	79,871	7.7
	22	222,300	0	0.0	0	0	0.0	222,300	0	0.0
	23	736,060	1,413	0.2	191,919	199	0.1	927,979	1,612	0.2
	Unknown									
	Total	1,200,420	16,645	1.4	992,199	64,838	6.5	2,192,619	81,483	3.7
Missouri	22/Total	5,536,999	209,520	3.8	79,040	33,423	42.3	5,616,039	242,943	4.3
Nebraska	22/Total	1,247,597	3,612	0.3	0	265	0.0	1,247,597	3,877	0.3
Ohio	13	277,875	1,823	0.7	244,283	260	0.1	522,158	2,083	0.4
	22 ^e	762,736	3,982	0.5	406,068	472	0.1	1,168,804	4,454	0.4
	24	6,422	0	0.0	8,892	0	0.0	15,314	0	0.0
	Unknown		20					20		
	Total	1,047,033	5,408	0.5	659,243	732	0.1	1,706,276	6,140	0.4
Wisconsin	12	69,901	4,053	5.8	518,700	50,183	9.7	588,601	54,236	9.2
	22	14,079	342	2.4	988	17	1.7	15,067	359	2.4
	23	1,831,999	16,781	0.9	716,300	36,340	5.1	2,548,299	53,122	2.1
	Unknown									
	Total	1,915,979	21,177	1.1	1,235,988	86,560	7.0	3,151,967	107,737	3.4
All states	12	518,947	56,349	10.9	1,714,180	206,669	12.1	2,233,127	263,018	11.8
	13	277,875	1,823	0.7	244,283	260	0.1	522,158	2,083	0.4
	22	19,546,345	840,679	4.3	792,129	374,330	47.3	20,338,474	1,215,008	6.0
	23	3,499,743	118,204	3.4	1,724,554	63,812	3.7	5,224,297	182,016	3.5
	24	1,916,473	15,995	0.8	724,451	24,495	3.4	2,640,924	40,490	1.5
	Unknown		1,329			25			1,354	
	Total	25,759,383	1,034,378	4.0	5,199,597	669,591	12.9	30,958,980	1,703,969	5.5

^aGrassland category includes grassland and mixed wooded openland.

^bWoodland category includes deciduous forest, evergreen forest, forested wetland, and other forest.

^cTotal upland includes both grassland and woodland totals; reports from 2007–2008 grouped woodland and grassland objectives. These data were identified by states and are included in the “unknown” category.

^dCumulative totals for BCRs are separated out by woodland and grassland categories only represent data from 2009 partner accomplishment reports.

^eIncludes accomplishments reported in BCR23, formerly designated BCR 22, for which no habitat objectives were developed.

There are portions of 5 Bird Conservation Regions (BCRs) within the UMRGL JV region: Boreal Hardwood Transition (BCR 12), Lower Great Lakes/ St. Lawrence Plain (BCR13), Eastern Tallgrass Prairie (BCR 22), Prairie Hardwood Transition (BCR 23), and Central Hardwoods (BCR 24). Cumulative restoration and enhancement (2007 – 2017) for wetland birds (Marsh, Mudflat/Shallow, and Open water/Beach habitats) and upland birds (Grassland and Woodland habitats) were summarized within these BCRs within the UMRGL JV region (Tables 1 and 2; Figure 1). In general, habitat restoration and enhancement for wetland birds in each BCR were higher than habitat restoration and enhancement for upland birds (Figure 1A, B, and C). The greatest amount (by area) of all restoration and enhancement activity (wetland and upland) occurred in BCR12, followed by BCR 22 then 23; lowest area of reported accomplishments occurred in BCR 13 and 24 (Figure 1A) which includes relatively small areas of the JV region. The high cumulative accomplishment in BCR12 was driven by the reported restoration and enhancement of wetlands, especially mudflat/shallow and marsh habitats. In fact, these two accomplishments were the dominant in all BCRs followed by restoring and enhancing woodlands and open water/beach habitats (Figure 1A).

For restoration and enhancement in wetlands only (Table 1; Figure 1B), most accomplishments were completed in BCR 22 followed by BCR 24, while the least were completed in BCR 23. In general, the lower accomplishments occurred in open water/beach habitat category, while marsh restoration and enhancement was a prominent accomplishment in all BCRs, especially BCR 22 (~95%). BCR 22 also has the highest accomplishments for mudflat/shallow and open water/beach habitats compared to other BCRs. For BCR 24, although the objective for marsh habitats has been achieved (>100%), overall wetland accomplishment was lower than BCR 22 due to very low accomplishments for mudflat/shallow and open water/beach habitats. Restoration and enhancement of mudflat/shallow habitats has reached > 50% in BCR12 and >70% in BCR22, while the accomplishments were <20% in BCR 13, 23, and 24. However, lacking population and habitat monitoring pre- and post-delivery, we have no measure of the quality of these habitats for focal species. Objectives in the JV Implementation Plan are based on only quality habitats, resulting in high productivity and or survival for focal species.

For uplands only (Table 2; Figure 1C), most accomplishments occurred in BCR 12 and BCR 22, while lower amounts of conservation activity occurred in BCR 13. The highest cumulative accomplishments for grassland conservation were in BCR 12 followed by BCR 22 then 23. The highest cumulative accomplishments for woodlands occurred in BCR 22 followed by BCR 12.

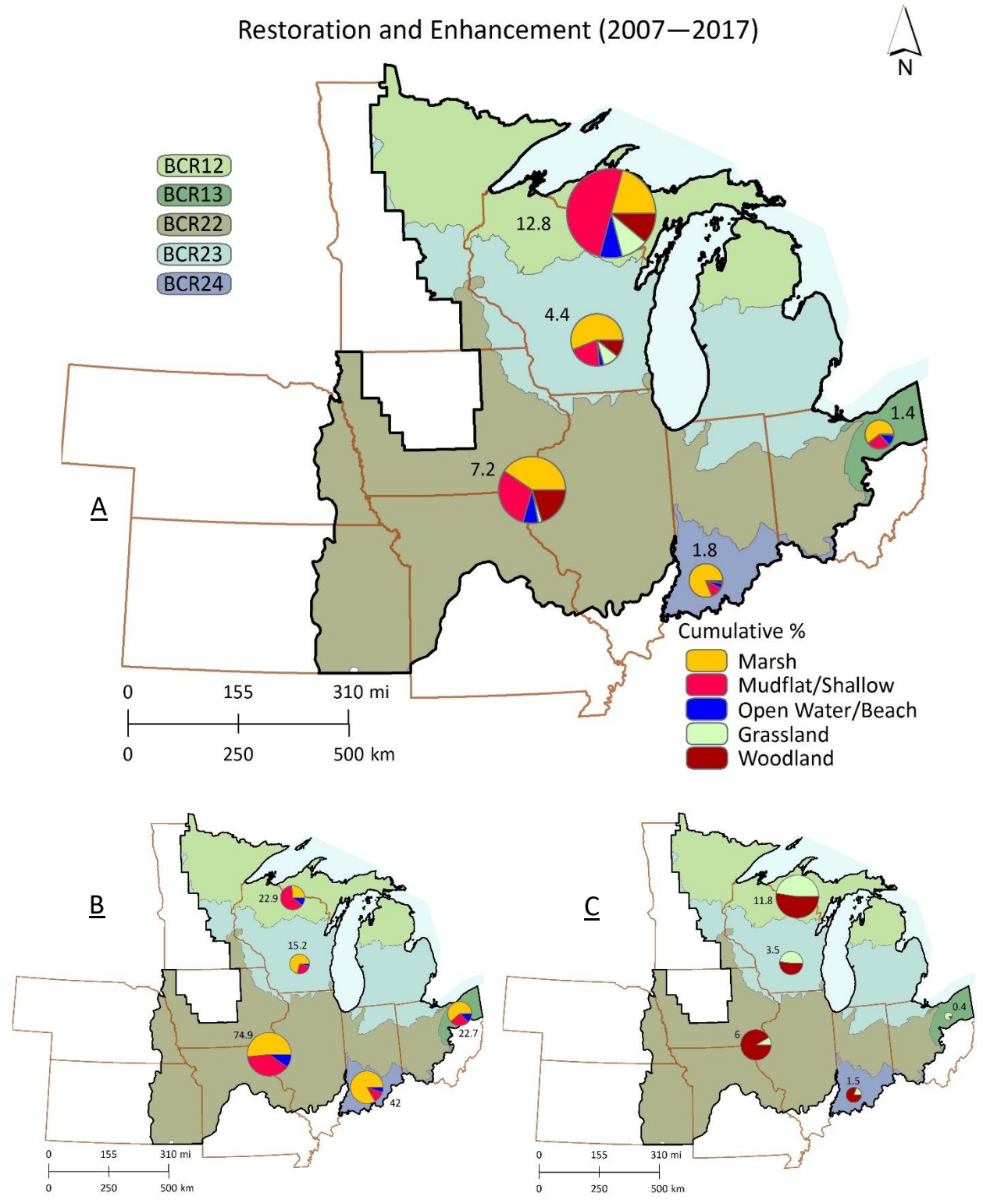


Figure 1. Cumulative restoration and enhancement (2007 – 2017) for wetlands and uplands combined (A), wetlands only (B), and uplands only (C) within five Bird Conservation Regions of the Upper Mississippi River and Great Lakes Region Joint Venture.

Acknowledgements

Joint Venture partners in the Upper Mississippi River and Great Lakes region are transitioning from largely opportunistic conservation to science-based and targeted actions following the 2007 JV Implementation Plan and recently revised Waterfowl (2017) and Waterbird (2018) Habitat Conservation Strategies. Bird habitat objectives and decision-support maps were developed by the JV Science Team to increase JV efficiency and effectiveness. However, the engine for bird conservation in the JV region remains in habitat delivery, and partner accomplishments since 2007 have been impressive. We thank the following partners who in coordination with countless private and public partner agencies, land conservancies, and foundations, contributed information from which this report was created:

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