

Conservation Estate Portfolio for the Bobolink (*Dolichonyx oryzivorus*)

Bird Conservation Region 23 (Prairie Hardwood Transition)



http://www.birds.cornell.edu/AllAboutBirds/BirdGuide/Bobolink.html

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Preface

Mapped patterns in the distribution and abundance of rare or focal species can be useful in identifying priority areas for conservation. We have modeled and mapped rare bird abundance in the upper midwestern United States for more than a dozen species of conservation concern. Our work has focused on the Prairie Hardwood Transition (Bird Conservation Region 23). This portfolio describes the conservation context of one species in the Prairie Hardwood Transition. We outlined areas of peak predicted abundance relative to federal, tribal, and state managed lands. This juxtaposition of predicted relative abundance and land management authorities is the conservation estate for this focal species. Identifying these land management authorities relative to areas in which the species is most abundant may help to focus conservation resources in those areas in which they may do the most good.

Data References

Major Cities depicted using data acquired from the National Atlas of the United States web site (http://nationalatlas.gov/mld/citiesx.html). Major cities were determined to be those that had a population in 2000 of greater than 5,000 persons.

Major Roads depicted using data acquired from the National Atlas of the United States web site (http://nationalatlas.gov/mld/roadtrl.html). Roads were determined to be Major if they were classified as *Principal Highway* or *Limited Access Highway* according to the data field "Feature".

States data were created by Geographic Data Technology, Inc. This data was published by Environmental Systems Research Institute (ESRI) and made available for distribution.

Counties data were acquired from the National Atlas of the United States web site (http://www.nationalatlas.gov/mld/countyp.html).

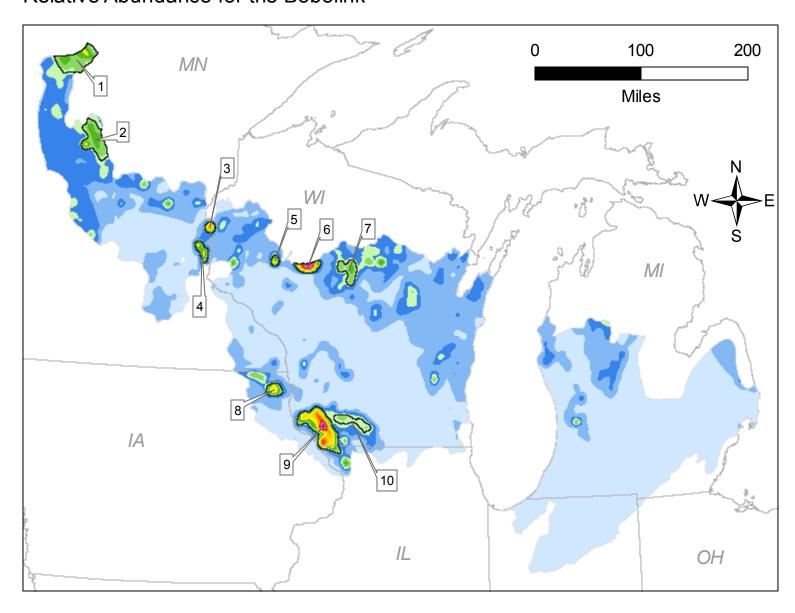
Federal and State lands depicted using Protected Areas Database, version 4: (http://www.consbio.org/cbi/projects/PAD/index.htm). Federal and State lands were identified based upon the data field "Owner".

Tribal lands depicted using data acquired from the National Atlas of the United States web site (http://www.nationalatlas.gov/mld/indlanp.html).

Methodology

For detailed methodology on avian abundance modeling, see: http://www.umesc.er.usgs.gov/terrestrial/migratory_birds/bird_conservation_methods.html

Predicted Relative Abundance and 10-Highest Peaks of Predicted Relative Abundance for the Bobolink



Top 10 Hotspots

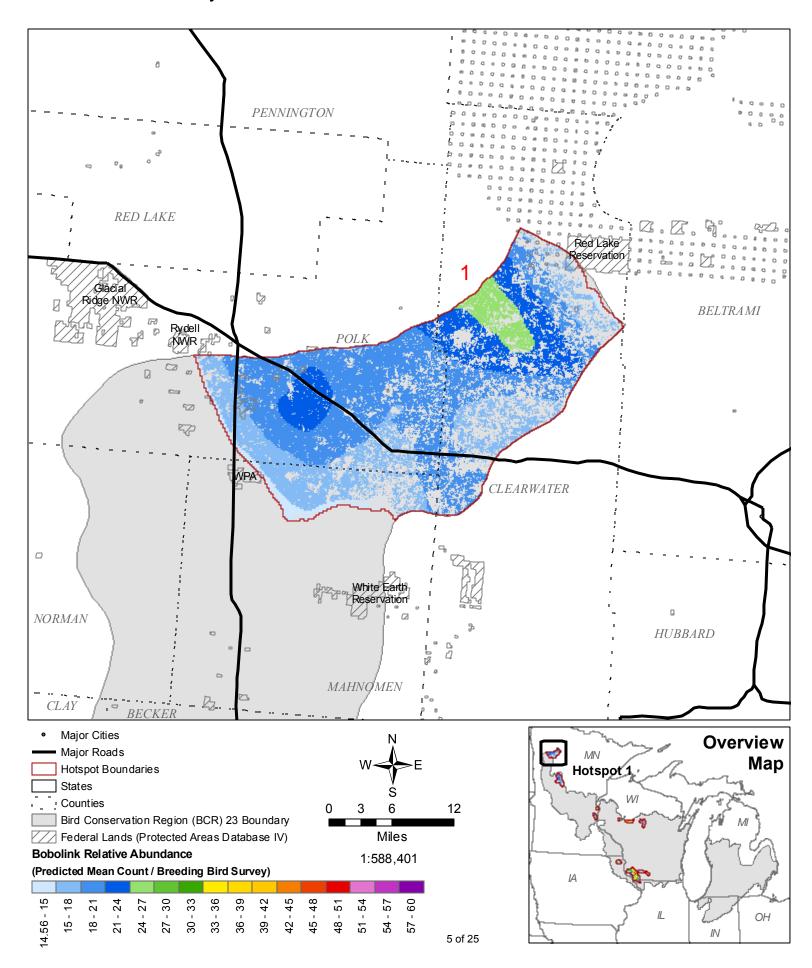
States

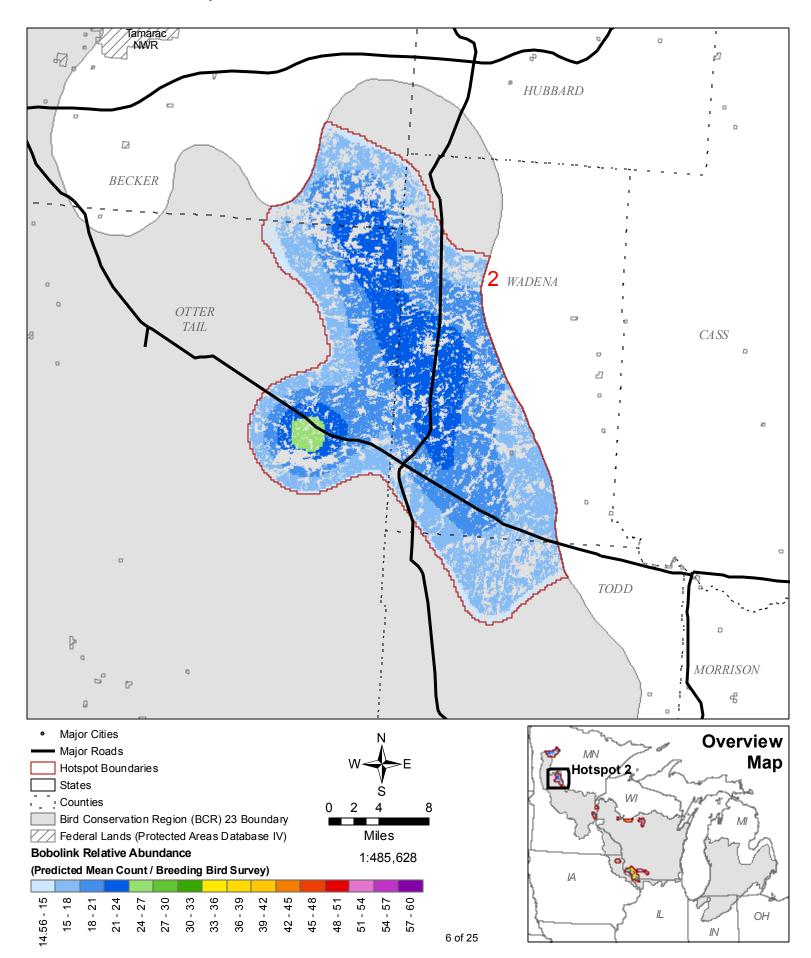
Bird Conservation Region (BCR) 23 Boundary

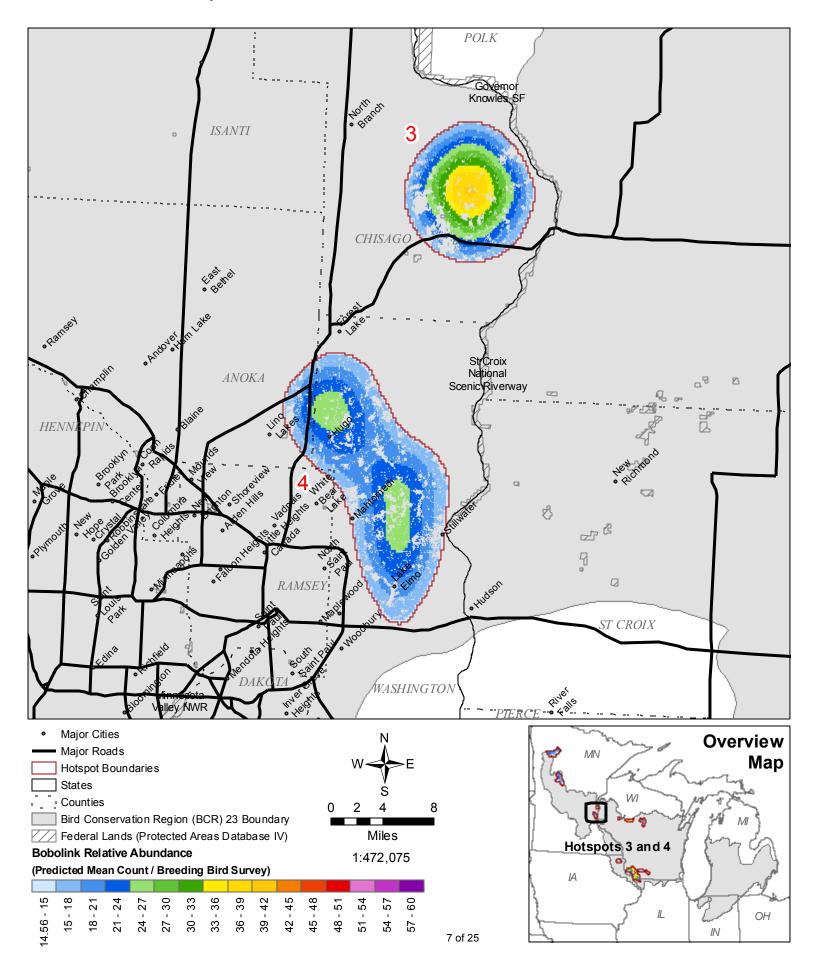
Bobolink Relative Abundance

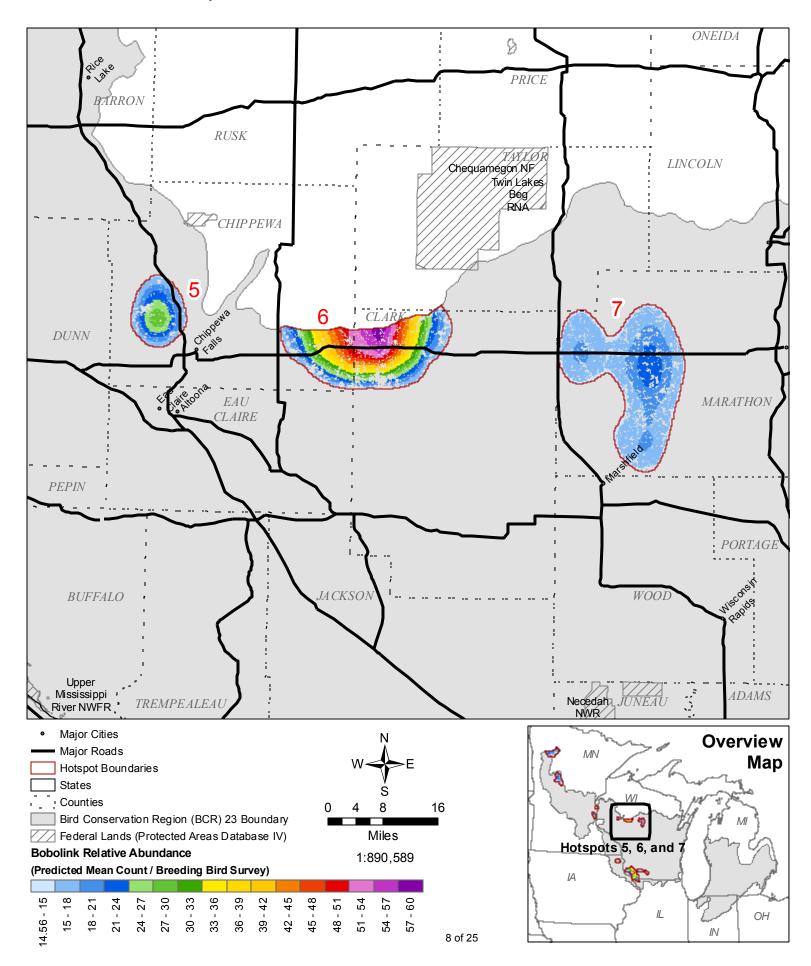
(Predicted Mean Count / Breeding Bird Survey)

0.21 - 4.00	8.01 - 12.00	12.01 - 16.00	16.01 - 20.00	20.01 - 24.00	24.01 - 28.00	28.01 - 32.00	32.01 - 36.00	36.01 - 40.00	40.01 - 44.00	44.01 - 48.00	48.01 - 52.00	52.01 - 56.00	56.01 - 60.00

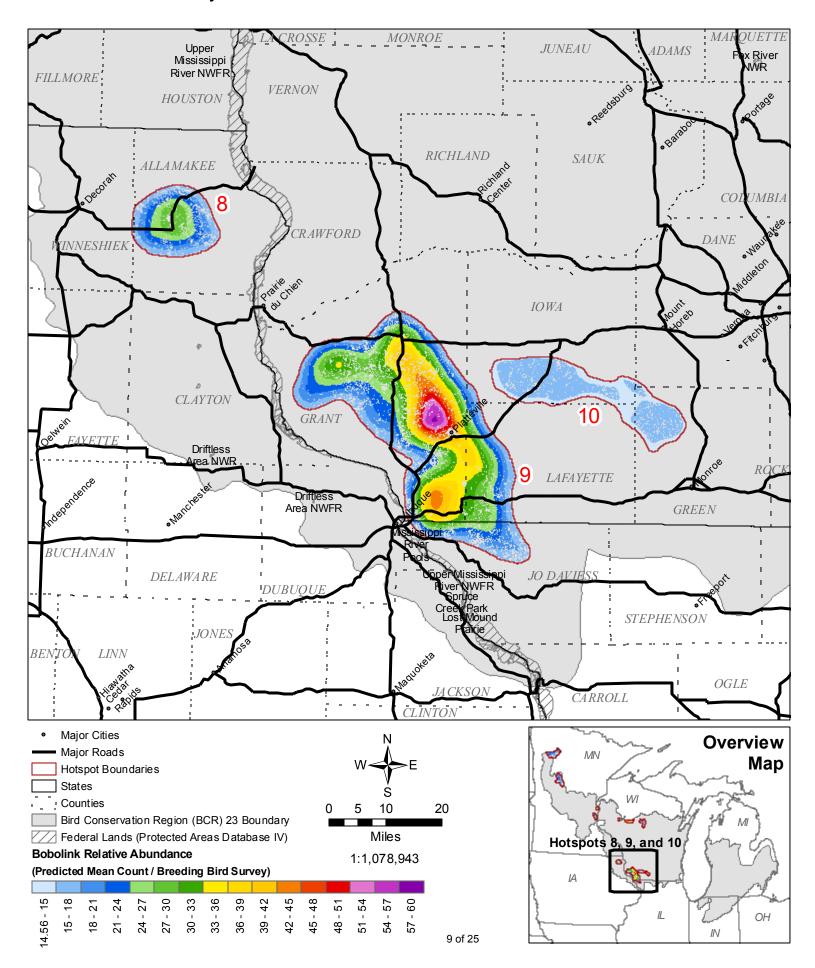


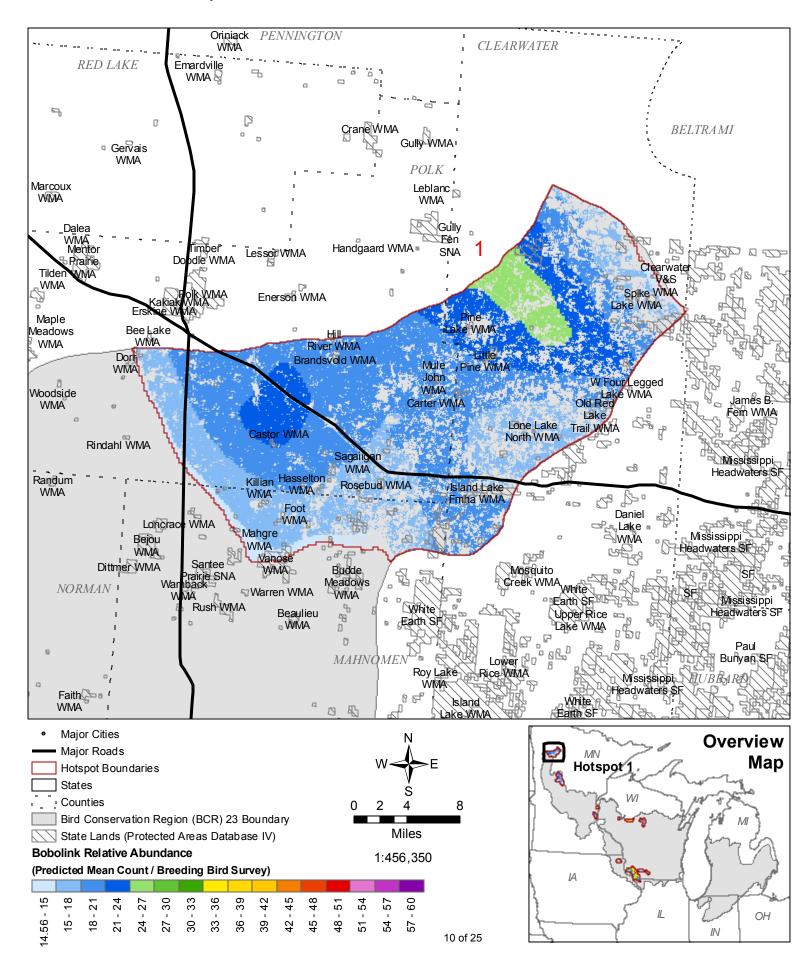


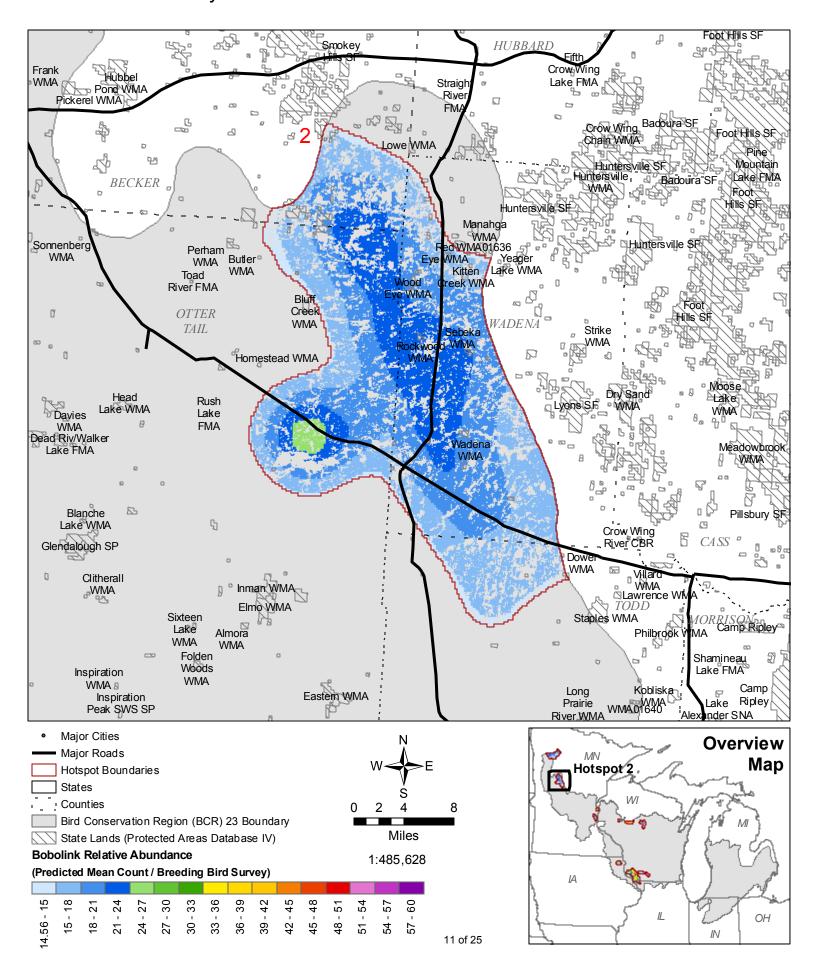




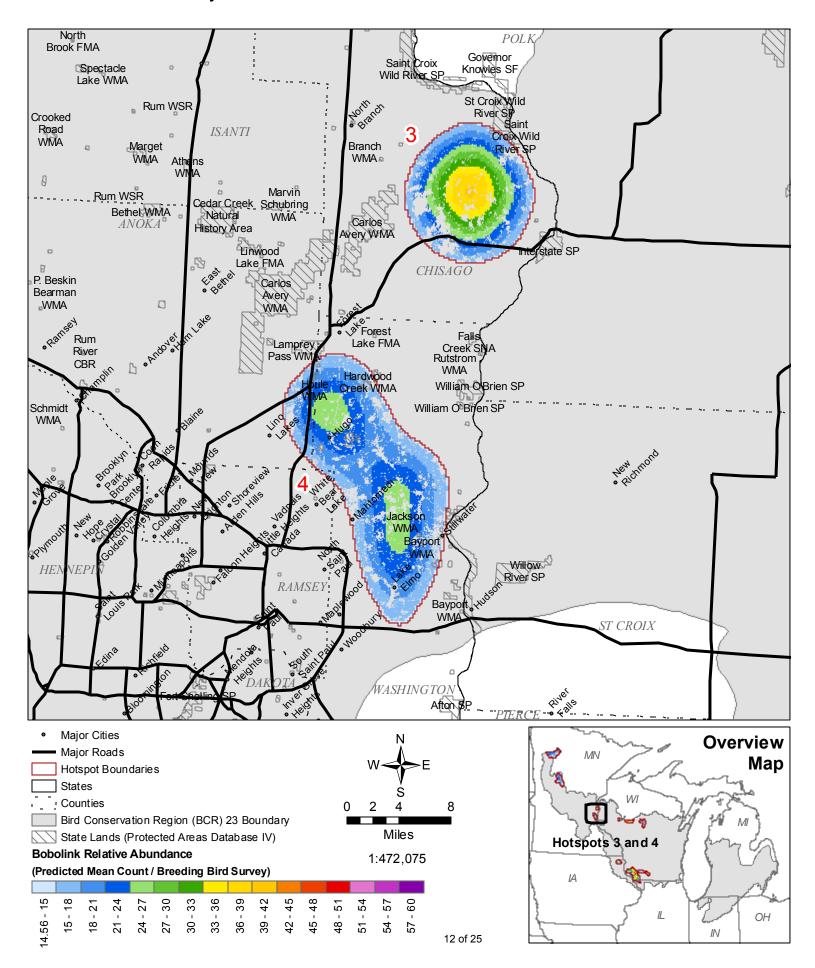
Bobolink (BOBO) Predicted Relative Abundance Overlayed with Federal Lands



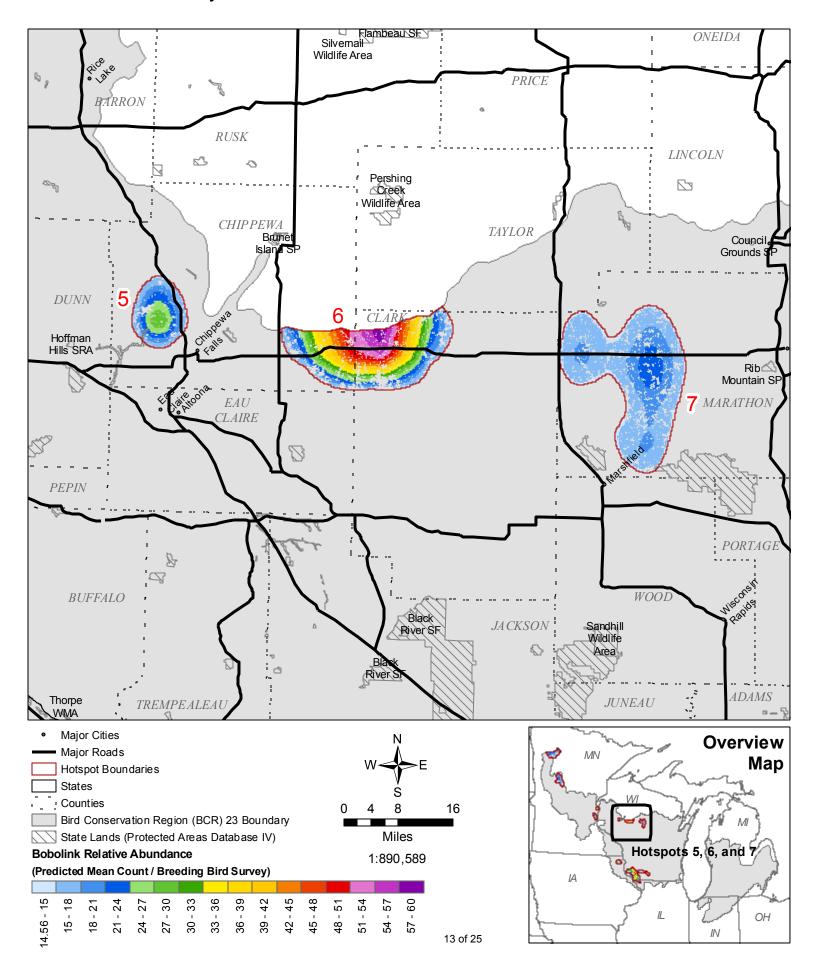




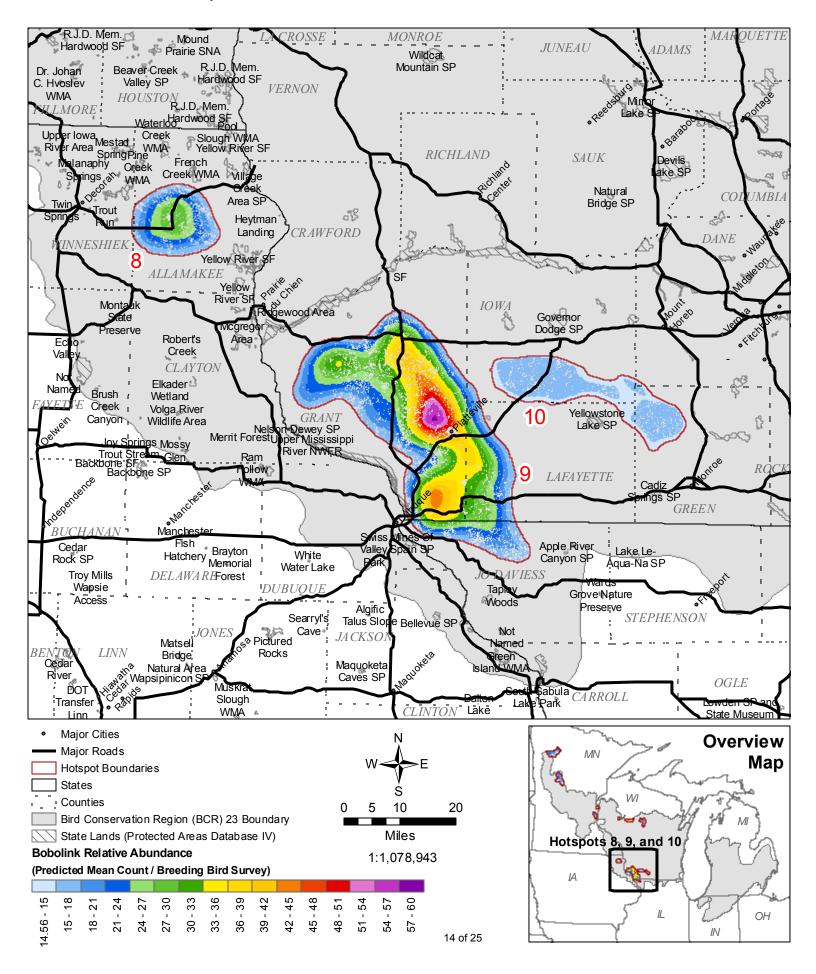
Bobolink (BOBO) Predicted Relative Abundance Overlayed with State Lands

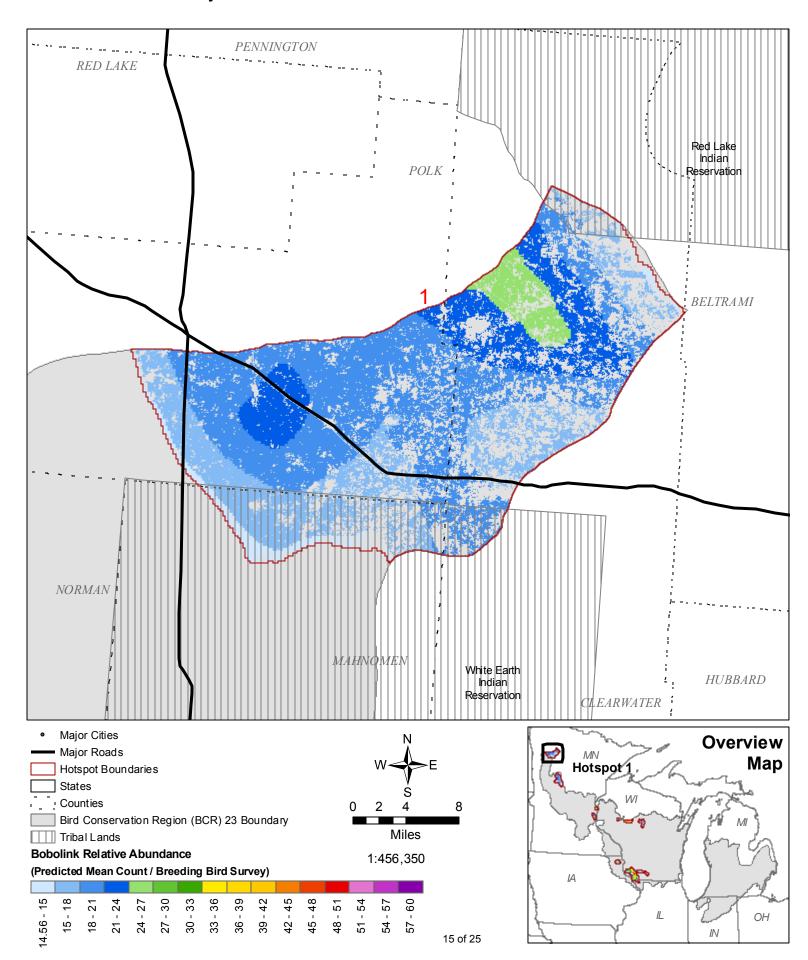


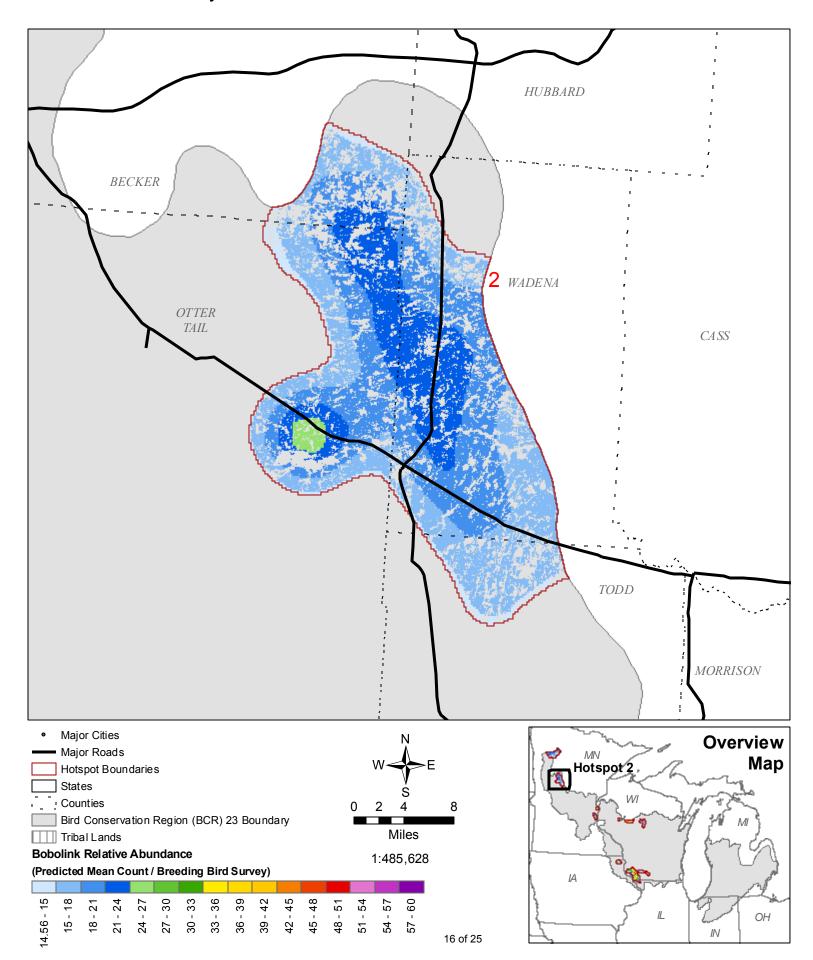
Bobolink (BOBO) Predicted Relative Abundance Overlayed with State Lands

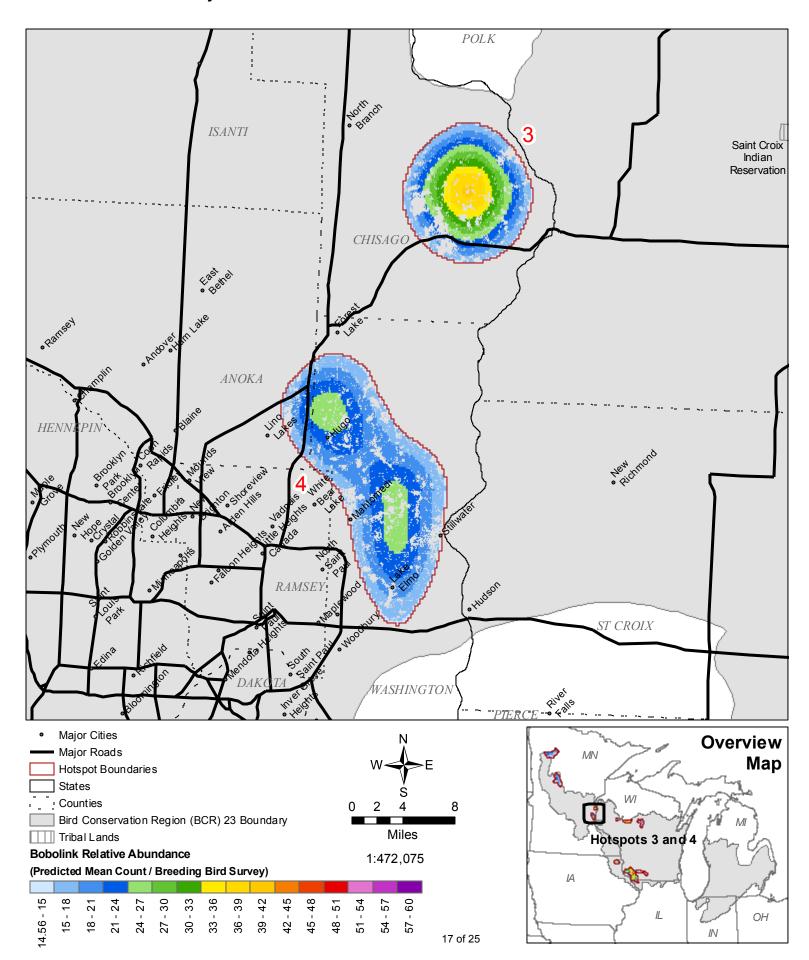


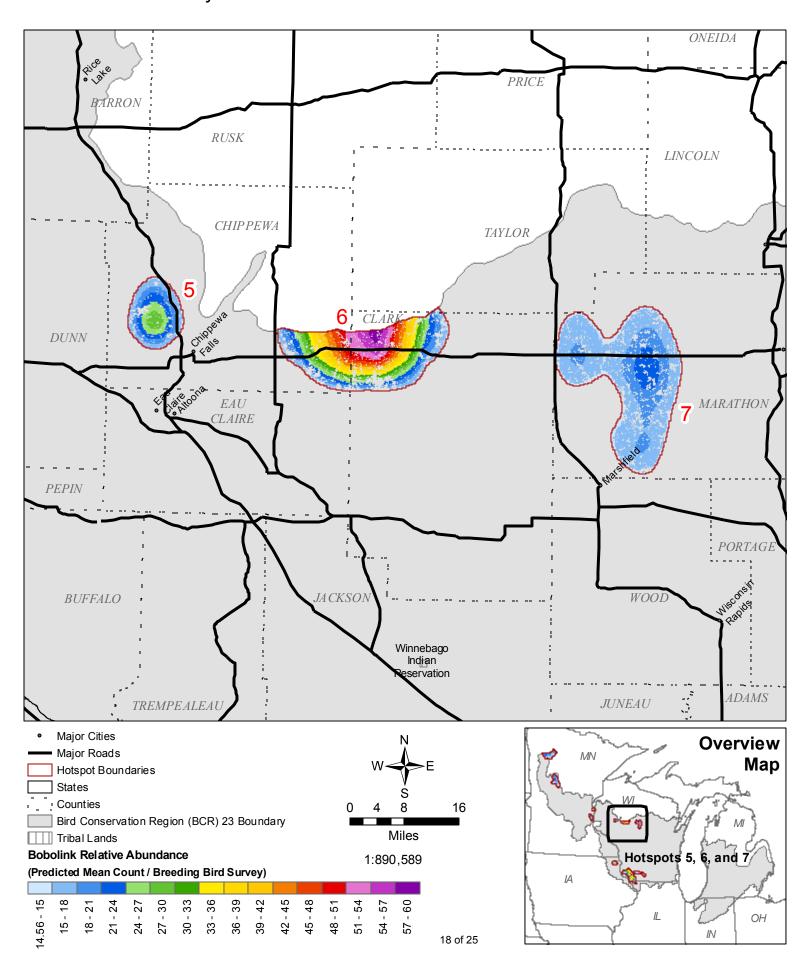
Bobolink (BOBO) Predicted Relative Abundance Overlayed with State Lands

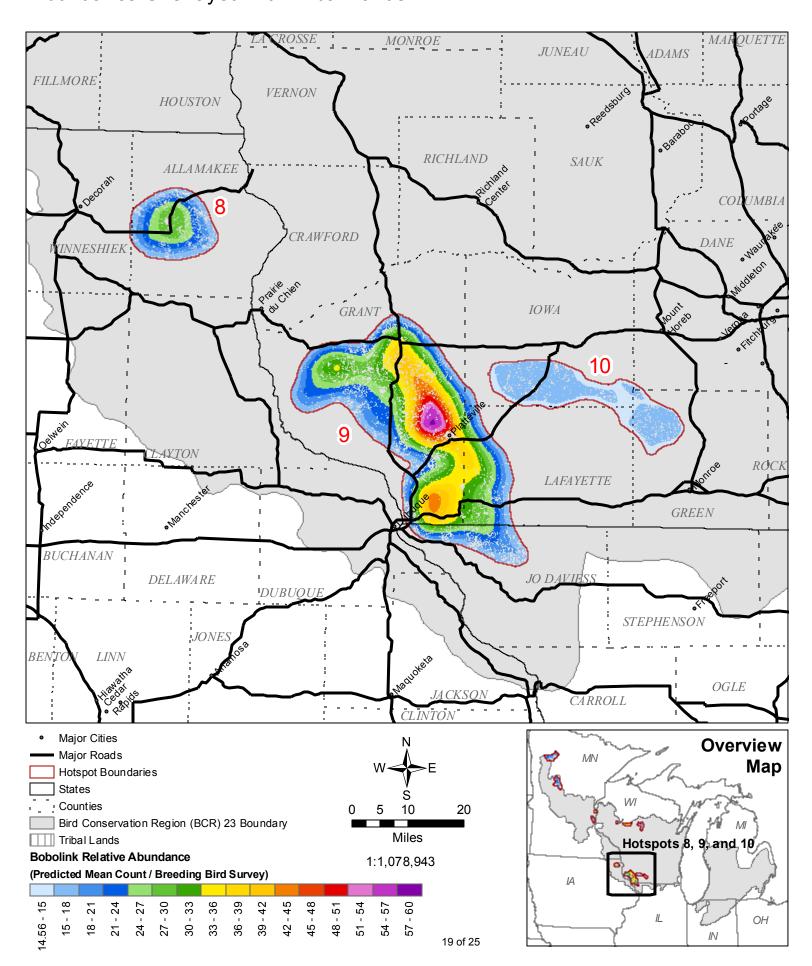












Bobolink Predicted Relative Abundance Summary by Hotspot Federal Managed Lands Versus Lands Not Under Federal Management

			Mean Predicted Count / Breeding Bird Survey				Percent Area Managed/	Percent Sum* Managed/	
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
Hotspot 1 - Unmanaged by Federal	1,515.40	0.00	13.17	24.78	24.78	9.18	22,179,999	98.95	99.04
Hotspot 1 - Managed by Federal	16.05	0.00	12.05	21.02	21.02	8.46	214,843	1.05	0.96
Hotspot 2 - Unmanaged by Federal	1,369.29	0.00	13.08	25.57	25.57	8.89	19,907,900	99.99	99.99
Hotspot 2 - Managed by Federal	0.16	0.00	9.71	17.32	17.32	8.55	1,758	0.01	0.01
Hotspot 3 - Unmanaged by Federal	215.50	0.00	19.56	39.21	39.21	11.81	4,683,010	99.85	99.99
Hotspot 3 - Managed by Federal	0.32	0.00	1.05	22.10	22.10	4.68	372	0.15	0.01
Hotspot 4 - Unmanaged by Federal	376.47	0.00	15.44	26.20	26.20	8.71	6,459,720	100.00	100.00
Hotspot 4 - Managed by Federal	0.00								
Hotspot 5 - Unmanaged by Federal	167.49	0.00	17.39	29.02	29.02	8.18	3,236,830	100.00	100.00
Hotspot 5 - Managed by Federal	0.00								
Hotspot 6 - Unmanaged by Federal	496.73	0.00	26.64	59.30	59.30	18.07	14,705,600	100.00	100.00
Hotspot 6 - Managed by Federal	0.00								
Hotspot 7 - Unmanaged by Federal	665.73	0.00	14.09	23.07	23.07	6.87	10,425,800	100.00	100.00
Hotspot 7 - Managed by Federal	0.00								
Hotspot 8 - Unmanaged by Federal	399.06	0.00	17.13	30.06	30.06	9.41	7,597,190	100.00	100.00
Hotspot 8 - Managed by Federal	0.00								
Hotspot 9 - Unmanaged by Federal	2,245.77	0.00	23.67	57.72	57.72	13.21	59,072,102	100.00	100.00
Hotspot 9 - Managed by Federal	0.00								
Hotspot 10 - Unmanaged by Federal	601.47	0.00	13.24	17.34	17.34	5.37	8,851,400	100.00	100.00
Hotspot 10 - Managed by Federal	0.00								

SUMMARY

Total Area		Sum* Total								
Unmanaged (sq km)	8,052.91	Unmanaged	157,119,550							
Total Area Managed		Sum* Total								
(sq km)	16.53	Managed	216,973							
Total Area (sq km)	8,069.43	Total Sum*	157,336,523							

Total Area		Sum* Total	
Unmanaged %	99.80	Unmanaged %	99.86
Total Area Managed		Sum* Total	
%	0.20	Managed %	0.14

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.

Bobolink Predicted Relative Abundance Summary by Hotspot State Managed Lands Versus Lands Not Under State Management

			Mean Predicted Count / Breeding Bird Survey				Percent Area Managed/	Percent Sum* Managed/	
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
Hotspot 1 - Unmanaged by State	1,470.89	0.00	13.43	24.78	24.78	9.08	21,952,499	96.05	98.02
Hotspot 1 - Managed by State	60.55	0.00	6.57	24.29	24.29	9.04	442,302	3.95	1.98
Hotspot 2 - Unmanaged by State	1,352.62	0.00	13.17	25.57	25.57	8.86	19,787,599	98.77	99.39
Hotspot 2 - Managed by State	16.84	0.00	6.52	22.15	22.15	9.00	122,051	1.23	0.61
Hotspot 3 - Unmanaged by State	215.28	0.00	19.55	39.21	39.21	11.82	4,677,230	99.75	99.87
Hotspot 3 - Managed by State	0.54	0.00	10.32	22.91	22.91	7.81	6,152	0.25	0.13
Hotspot 4 - Unmanaged by State	371.24	0.00	15.51	26.20	26.20	8.69	6,398,130	98.61	99.05
Hotspot 4 - Managed by State	5.23	0.00	10.60	23.61	23.61	9.31	61,593	1.39	0.95
Hotspot 5 - Unmanaged by State	166.69	0.00	17.39	29.02	29.02	8.19	3,220,860	99.52	99.51
Hotspot 5 - Managed by State	0.80	0.00	17.88	22.92	22.92	5.66	15,967	0.48	0.49
Hotspot 6 - Unmanaged by State	496.73	0.00	26.64	59.30	59.30	18.07	14,705,600	100.00	100.00
Hotspot 6 - Managed by State	0.00								
Hotspot 7 - Unmanaged by State	665.40	0.00	14.10	23.07	23.07	6.87	10,425,500	99.95	100.00
Hotspot 7 - Managed by State	0.33	0.00	0.92	15.05	15.05	3.58	341	0.05	0.00
Hotspot 8 - Unmanaged by State	399.06	0.00	17.13	30.06	30.06	9.41	7,597,190	100.00	100.00
Hotspot 8 - Managed by State	0.00								
Hotspot 9 - Unmanaged by State	2,244.31	0.00	23.69	57.72	57.72	13.20	59,067,100	99.94	99.99
Hotspot 9 - Managed by State	1.46	0.00	3.08	17.01	17.01	6.20	4,976	0.06	0.01
Hotspot 10 - Unmanaged by State	601.47	0.00	13.24	17.34	17.34	5.37	8,851,400	100.00	100.00
Hotspot 10 - Managed by State	0.00								

SUMMARY

Total Area		Sum* Total								
Unmanaged (sq km)	7,983.69	Unmanaged	156,683,108							
Total Area Managed		Sum* Total								
(sq km)	85.75	Managed	653,382							
Total Area (sq km)	8,069.44	Total Sum*	157,336,490							

Total Area		Sum* Total	
Unmanaged %	98.94	Unmanaged %	99.58
Total Area Managed		Sum* Total	
%	1.06	Managed %	0.42

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.

Bobolink Predicted Relative Abundance Summary by Hotspot Tribal Lands Versus Lands Not Under Tribal Management

		Mean Predicted Count / Breeding Bird Survey						Percent Area Managed/	Percent Sum* Managed/
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
Hotspot 1 - Unmanaged by Tribal	1,279.26	0.00	13.81	24.78	24.78	9.22	19,631,200	83.53	87.66
Hotspot 1 - Managed by Tribal	252.18	0.00	9.86	19.83	19.83	8.15	2,763,610	16.47	12.34
Hotspot 2 - Unmanaged by Tribal	1,369.46	0.00	13.08	25.57	25.57	8.89	19,909,700	100.00	100.00
Hotspot 2 - Managed by Tribal	0.00								
Hotspot 3 - Unmanaged by Tribal	215.82	0.00	19.53	39.21	39.21	11.82	4,683,380	100.00	100.00
Hotspot 3 - Managed by Tribal	0.00								
Hotspot 4 - Unmanaged by Tribal	376.47	0.00	15.44	26.20	26.20	8.71	6,459,720	100.00	100.00
Hotspot 4 - Managed by Tribal	0.00								
Hotspot 5 - Unmanaged by Tribal	167.49	0.00	17.39	29.02	29.02	8.18	3,236,830	100.00	100.00
Hotspot 5 - Managed by Tribal	0.00								
Hotspot 6 - Unmanaged by Tribal	496.73	0.00	26.64	59.30	59.30	18.07	14,705,600	100.00	100.00
Hotspot 6 - Managed by Tribal	0.00								
Hotspot 7 - Unmanaged by Tribal	665.73	0.00	14.09	23.07	23.07	6.87	10,425,800	100.00	100.00
Hotspot 7 - Managed by Tribal	0.00								
Hotspot 8 - Unmanaged by Tribal	399.06	0.00	17.13	30.06	30.06	9.41	7,597,190	100.00	100.00
Hotspot 8 - Managed by Tribal	0.00								
Hotspot 9 - Unmanaged by Tribal	2,245.77	0.00	23.67	57.72	57.72	13.21	59,072,100	100.00	100.00
Hotspot 9 - Managed by Tribal	0.00								
Hotspot 10 - Unmanaged by Tribal	601.47	0.00	13.24	17.34	17.34	5.37	8,851,400	100.00	100.00
Hotspot 10 - Managed by Tribal	0.00								

SUMMARY

	Sum* Total	
7,817.26	Unmanaged	154,572,920
	Sum* Total	
252.18	Managed	2,763,610
8,069.44	Total Sum*	157,336,530
	7,817.26 252.18	Sum* Total Unmanaged Sum* Total Sum* Total Analysis Managed 8,069.44 Total Sum*

Total Area		Sum* Total	
Unmanaged %	96.87	Unmanaged %	98.24
Total Area		Sum* Total	
Managed %	3.13	Managed %	1.76

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.

Bobolink Predicted Relative Abundance Summary by State Federal Managed Lands Versus Lands Not Under Federal Management

			Mean Predicted Count / Breeding Bird Survey					Percent Area Managed/	Percent Sum* Managed/
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
IA - Unmanaged by Federal	6,982.18	0.00	4.32	30.06	30.06	5.42	33,518,700	96.80	99.58
IA - Managed by Federal	230.67	0.00	0.55	11.11	11.11	1.38	140,443	3.20	0.42
IL - Unmanaged by Federal	3,208.05	0.00	4.62	34.19	34.19	5.94	16,465,300	96.68	99.53
IL - Managed by Federal	110.30	0.00	0.63	9.98	9.98	1.23	77,170	3.32	0.47
IN - Unmanaged by Federal	13,070.80	0.00	0.64	2.38	2.38	0.50	9,275,450	99.68	99.97
IN - Managed by Federal	41.35	0.00	0.06	0.55	0.55	0.13	2,726	0.32	0.03
MI - Unmanaged by Federal	57,537.80	0.00	1.63	18.67	18.67	2.17	104,103,997	98.06	99.73
MI - Managed by Federal	1,139.19	0.00	0.23	10.13	10.13	0.90	286,076	1.94	0.27
MN - Unmanaged by Federal	49,220.50	0.00	5.08	39.21	39.21	5.33	277,625,999	98.73	99.16
MN - Managed by Federal	635.37	0.00	3.32	22.10	22.10	4.81	2,345,700	1.27	0.84
OH - Unmanaged by Federal	110.41	0.00	1.62	2.50	2.50	0.99	198,129	100.00	100.00
OH - Managed by Federal	0.00								
WI - Unmanaged by Federal	96,519.50	0.00	3.82	59.30	59.30	5.69	409,959,997	99.00	99.81
WI - Managed by Federal	976.24	0.00	0.74	12.56	12.56	1.74	799,150	1.00	0.19

SUMMARY

Total Area		Sum* Total	
Unmanaged (sq km)	226,649.24	Unmanaged	851,147,573
Total Area Managed		Sum* Total	
(sq km)	3,133.12	Managed	3,651,264
Total Area (sq km)	229,782.36	Total Sum*	854,798,838

Total Area		Sum* Total	
Unmanaged %	98.64	Unmanaged %	99.57
Total Area Managed		Sum* Total	
%	1.36	Managed %	0.43

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.

Bobolink Predicted Relative Abundance Summary by State State Managed Lands Versus Lands Not Under State Management

		Mean Predicted Count / Breeding Bird Survey				Percent Area Managed/	Percent Sum* Managed/		
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
IA - Unmanaged by State	7,046.34	0.00	4.27	30.06	30.06	5.41	33,411,999	97.69	99.27
IA - Managed by State	166.51	0.00	1.34	16.35	16.35	2.98	247,175	2.31	0.73
IL - Unmanaged by State	3,278.40	0.00	4.53	34.19	34.19	5.91	16,512,200	98.80	99.82
IL - Managed by State	39.95	0.00	0.68	7.97	7.97	1.20	30,253	1.20	0.18
IN - Unmanaged by State	12,948.40	0.00	0.64	2.38	2.38	0.50	9,202,510	98.75	99.18
IN - Managed by State	163.72	0.00	0.42	2.18	2.18	0.63	75,666	1.25	0.82
MI - Unmanaged by State	56,466.40	0.00	1.64	18.67	18.67	2.17	102,633,001	96.23	98.32
MI - Managed by State	2,210.56	0.00	0.72	15.96	15.96	1.63	1,757,380	3.77	1.68
MN - Unmanaged by State	48,427.60	0.00	5.12	39.21	39.21	5.34	275,660,001	97.14	98.46
MN - Managed by State	1,428.22	0.00	2.72	24.29	24.29	4.43	4,312,200	2.86	1.54
OH - Unmanaged by State	101.07	0.00	1.69	2.50	2.50	0.96	190,142	91.54	95.97
OH - Managed by State	9.34	0.00	0.77	2.30	2.30	0.94	7,987	8.46	4.03
WI - Unmanaged by State	94,536.00	0.00	3.88	59.30	59.30	5.73	407,232,020	96.96	99.14
WI - Managed by State	2,959.68	0.00	1.07	22.92	22.92	2.07	3,526,320	3.04	0.86

SUMMARY

COMMAN							
Total Area		Sum* Total					
Unmanaged (sq km)	222,804.21	Unmanaged	844,841,873				
Total Area Managed		Sum* Total					
(sq km)	6,977.98	Managed	9,956,981				
Total Area (sq km)	229,782.19	Total Sum*	854,798,854				

Total Area		Sum* Total	
Unmanaged %	96.96	Unmanaged %	98.84
Total Area Managed		Sum* Total	
%	3.04	Managed %	1.16

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.

Bobolink Predicted Relative Abundance Summary by State Tribal Lands Versus Lands Not Under Tribal Management

		Mean Predicted Count / Breeding Bird Survey						Percent Area Managed/	Percent Sum* Managed/
Description	Area (sq km)	Min	Mean	Max	Range	SD	Sum*	Unmanaged	Unmanaged
IA - Unmanaged by Tribal	7,212.85	0.00	4.20	30.06	30.06	5.38	33,659,200	100.00	100.00
IA - Managed by Tribal	0.00								
IL - Unmanaged by Tribal	3,318.35	0.00	4.49	34.19	34.19	5.89	16,542,500	100.00	100.00
IL - Managed by Tribal	0.00								
IN - Unmanaged by Tribal	13,112.10	0.00	0.64	2.38	2.38	0.50	9,278,180	100.00	100.00
IN - Managed by Tribal	0.00								
MI - Unmanaged by Tribal	58,154.70	0.00	1.58	18.67	18.67	2.14	102,380,001	99.11	98.07
MI - Managed by Tribal	522.27	0.00	3.46	9.63	9.63	2.90	2,010,580	0.89	1.93
MN - Unmanaged by Tribal	47,959.20	0.00	4.92	39.21	39.21	5.26	262,023,004	96.20	93.59
MN - Managed by Tribal	1,896.59	0.00	8.52	19.83	19.83	5.82	17,948,401	3.80	6.41
OH - Unmanaged by Tribal	110.41	0.00	1.62	2.50	2.50	0.99	198,129	100.00	100.00
OH - Managed by Tribal	0.00								
WI - Unmanaged by Tribal	96,268.00	0.00	3.83	59.30	59.30	5.70	409,167,995	98.74	99.61
WI - Managed by Tribal	1,227.65	0.00	1.17	8.39	8.39	2.26	1,590,710	1.26	0.39

SUMMARY

Total Area		Sum* Total	
Unmanaged (sq km)	226,135.61	Unmanaged	833,249,009
Total Area Managed		Sum* Total	
(sq km)	3,646.51	Managed	21,549,691
Total Area (sq km)	229,782.12	Total Sum*	854,798,700

Total Area		Sum* Total	
Unmanaged %	98.41	Unmanaged %	97.48
Total Area Managed		Sum* Total	
%	1.59	Managed %	2.52

^{*} Sum refers to the cumulative predicted relative abundance values for each cell (900 sq meters) in each managed category.