

Table 1. Potential American White Pelican and Double-crested Cormorant sites and survey status in MN in 2010.

Oc #	Colony	County	Ownership ¹	Latitude	Longitude	Status ²
973	Barry Lake WPA	Big Stone	USFWS	45.5728	-96.5778	1
471	BLM 80 - Knife Island	Lake	BLM	46.9469	-91.7741	1
813	Bolland Slough	Lac Qui Parle	DNR Wildlife	44.8959	-96.3583	1
425	Butterwort Cliffs	Cook	DNR Parks	47.7164	-90.4833	1
68	Chautauqua Lake	Otter Tail	BLM	46.2383	-96.0202	1
1041	Clifford Lake	Douglas	Private	45.8372	-95.1570	1
10	Egret Island	Grant	TNC	46.0511	-95.8039	1
881	Gooseberry Island	Crow wing	Private	46.5825	-94.1847	1
NA	Hanska Lake	Brown	DNR Wildlife	44.1402	-94.6124	1
1054	Hawks Nest Lake	Lincoln	State of MN (Sec of Wildlife)	44.4755	-96.2017	1
103	Hennepin Island	Mille Lacs	USFWS	46.1792	-93.5311	1
1004	Lake Alice	Otter Tail	City of Fergus Falls	46.2886	-96.0761	1
47	Lake Hassel	Swift	Swift Co.	45.3925	-95.5667	1
117	Lake Johanna	Pope	DNR (SNA)	45.4633	-95.2231	1
162	Leech Lk - Gull Island	Cass	BIA – Leech Lake Band of Ojibwe	47.1019	-94.3750	1
916	Leech Lk - Little Pelican Island	Cass	BIA – Leech Lake Ojibwe	47.1061	-94.3719	1
1042	Lindquist WMA	Big Stone	DNR Wildlife	45.3430	-96.3157	1
656	Little Pine Island, Voyageurs NP	St. Louis	USNPS	48.4534	-92.9212	1
379	Lk Vermilion - Potato Is	St. Louis	BLM	47.8567	-92.3076	1
206	Long Lake	Kandiyohi	Private	45.2000	-95.0417	1
229	LOW - Crowduck Island	Lake of the Woods	BIA – Red Lake Band Ojibwe	49.2539	-94.8856	1
112	LOW - Gull Rock	Lake of the Woods	Unknown	48.9847	-95.0592	1
319	LOW - Little Massacre Island	Lake of the Woods	BIA – Red Lake Band Ojibwe	49.1864	-94.8106	1
230	LOW - Red Lake Rock	Lake of the Woods	Private	49.2636	-94.8686	1
235	LOW - Techout Island	Lake of the Woods	DNR	49.2661	-94.8714	1
633	Marsh Lake - Banding Island	Big Stone	DNR Wildlife	45.1934	-96.1278	1
890	Marsh Lake - Big Island	Lac Qui Parle	DNR Wildlife	45.1884	-96.1311	1
NA	Marsh Lake - Curry Island	Big Stone	DNR Wildlife	45.1894	-96.1194	1
353	Marsh Lake - Peninsula	Big Stone	DNR Wildlife	45.1945	-96.1312	1
39	Marsh Lake - Rock Island	Big Stone	DNR Wildlife	45.1980	-96.1525	1
NA	Marsh Lake - Small Island	Big Stone	DNR Wildlife	45.1890	-96.1354	1
NA	Mink Lake	Wright	The Courage Center	45.2695	-94.0427	1
69	Minnesota Lake	Faribault	MNDNR	43.8347	-93.8764	1

Table 1 (cont). Potential American White Pelican and Double-crested Cormorant sites and survey status in MN in 2010.

Oc #	Colony	County	Ownership	Latitude	Longitude	Status
NA	Minnesota Lake - Ag Field	Faribault	MNDNR	43.8271	-93.8747	1
422	MNDNR 36 - Guano Rock	Cook	MNDNR	47.7635	-90.2369	1
897	O'Brian Lake	Itasca	Blandin Paper	47.3228	-93.1353	1
1031	Pigeon Lake	Meeker	DNR Wildlife	45.0347	-94.3472	1
90	Pigs Eye Lake	Ramsey	Ramsey Co.	44.9000	-93.0258	1
1040	Preston Lake	Renville	Private	44.7885	-94.5398	1
102	Spirit Island	Mille Lacs	USFWS	46.1519	-93.6444	1
879	Swartout Lake	Wright	Private – Larry Hoffman	45.2300	-94.0800	1
972	Swenson Lake	Big Stone	Maurice Swenson	45.3997	-96.4189	1
832	Upper Sakatah Lake	Rice	Unknown	44.2302	-93.5194	1
NA	Vinge Lake	Otter Tail	Private	46.1615	-95.8801	1
863	Waconia Lake (Coney Is)	Carver	Private - Norm Hoffman	44.8612	-93.7842	1
1002	Wells Lake	Rice	Private - Elmer and Alice Fuchs	44.2892	-93.3484	1
325	West Two Rivers Reservoir	St. Louis	US Steel	47.4990	-92.6472	1
152	Artichoke Lake	Big Stone		45.3553	-96.1403	2
153	Big Stone NWR	Lac Qui Parle	USFWS	45.2375	-96.3125	2
1043	Big Twin Lake	Martin		43.7290	-94.7505	2
52	Blue Lake - MN Valley NWR	Scott	USFWS	44.8056	-93.4403	2
NA	Crystal Lake	Hennepin		45.0270	-93.3271	2
326	Dark River Tailings Pond	St. Louis	US Steel - MN Tac	47.6141	-92.6209	2
NA	E Chain Lake	Martin		43.5248	-94.3676	2
522	Elysian Lake	Waseca	Private (Several) – Kent Barbknecht	44.1575	-93.7028	2
NA	Geneva Lake	Freeborn		43.8083	-93.2393	2
NA	Grove	Otter Tail	Private(several) – Wayne Augustus	46.6333	-96.1585	2
648	Haldorsen Lake	Otter Tail	Private	46.4170	-96.1828	2
NA	Iverson Lake	Otter Tail		46.2246	-96.0605	2
636	Ladyslipper Lake	Lyon		44.5717	-95.6313	2
520	Lake Benton	Lincoln		44.2726	-96.2589	2
805	Little Elk WMA	Morrison	DNR Wildlife	46.0595	-94.6174	2
231	LOW - O'Dell Island	Lake of the Woods	BIA – Red Lake Band Ojibwe	49.2608	-94.8633	2
749	Lk Vermilion - Vermilion Rocks #1	St. Louis	BLM	47.8678	-92.2368	2
757	Lk Vermilion - Vermilion Rocks #2	St. Louis	BLM	47.8689	-92.2710	2
NA	Lk Vermilion - Vermilion Rocks #3	St. Louis	BLM	47.8716	-92.2632	2

Table 1 (cont). Potential American White Pelican and Double-crested Cormorant sites and survey status in MN in 2010.

Oc #	Colony	County	Ownership	Latitude	Longitude	Status
242	Lyseng Lake	Big Stone	Private – C. Fletcher	45.4177	-96.4215	2
378	Manganika Lake South	St. Louis	US Steel	47.4906	92.5728	2
883	Maplewood	Otter Tail	DNR Parks	46.5192	-95.9772	2
423	MNDNR 37 - Rock Island, Terrace Point Rk	Cook	MNDNR	47.7269	-90.4103	2
340	MNDNR 79 - Encampment Island	Lake	MNDNR	46.9469	-91.7741	2
620	N Heron Lake	Jackson	Private – A. Thompson	43.7626	-95.2625	2
1051	Norway Lake	Otter Tail		46.3159	-95.8972	2
NA	Pelican Lake	St. Louis		48.0639	-92.9471	2
33	Pelican Lake	Wright	MNDNR	45.2278	-93.7722	2
590	Pelican Lake South	Wright	MNDNR	45.2139	-93.7544	2
NA	Prairie Farms Marsh	Lac Qui Parle		44.9196	-96.3651	2
NA	Ramsey Lake	Wright		45.2082	-93.9965	2
850	Red Lake	Beltrami	BIA – Red Lake Band Ojibwe	48.0897	-95.0075	2
NA	Rothi WPA	Big Stone		45.3256	-96.2889	2
177	S Heron Lake	Jackson	Private - W. Pohlman	43.7486	-95.2533	2
185	Shield's Lake	Rice	Rice Co.	44.3708	-93.4500	2
NA	Swede's Bay	Le Sueur		44.2638	-93.7658	2
155	Thielke Lake	Big Stone	MNDNR	45.3889	-96.3917	2
481	Titlow Lake	Sibley	Town of Gaylord	44.5656	-94.2128	1
638	W Toqua	Big Stone	Big Stone Hutterian Brethern Inc	45.5519	-96.4614	2
195	Big Cormorant Lake	Becker		46.7719	-96.0536	3
NA	Big Sandy	Aitkin		46.7641	93.2730	3
251	Boyer Lake	Becker	BLM	46.8711	-96.0467	3
320	Bridges Island	Lake of the Woods		49.1250	-94.7769	3
164	Campbell Lake	McLeod		44.9408	-94.0151	3
44	Cedar Lake	McLeod	Private - C. Stone and R. & G. Mills	44.9819	-94.4583	3
121	Clear Lake	Stevens		45.5578	-96.0722	3
110	Clearwater R	Clearwater	BIA – Red Lake Band Ojibwe	47.8528	-95.4508	3
36	Dassel Marsh	Meeker	Private – D. Arnlend	45.0883	-94.2711	3
811	Diamond Lake	Hennepin	Minneapolis Park Board	45.2033	-93.5089	3
30	E Black Cinder Swamp	Sherburne	USFWS	45.4792	-93.7056	3
720	Goose Lake	Pope	Goose Lake Gun Club Inc.	45.4428	-95.3300	3

Table 1 (cont). Potential American White Pelican and Double-crested Cormorant sites and survey status in MN in 2010.

Oc #	Colony	County	Ownership	Latitude	Longitude	Status
597	Gull Lake	Beltrami		47.6618	-94.7185	3
37	Lake Jefferson	Le Sueur	Private – O. Schickling	44.2653	-93.7764	3
43	Lake Monongalia	Kandiyohi	Private	45.3342	-94.9444	3
751	Lake Oliver	Swift	Private - H. & L. Heinecke	45.3281	-96.0097	3
634	Lake Reno South	Pope	Private - L. & H. Landa	45.7256	-95.4361	3
616	Little Kandiyohi Lake	Kandiyohi		45.0717	-94.9467	3
589	Lk Minnetonka - Crane Island	Hennepin	Crane Island Association	44.9008	-93.6619	3
341	Lura Lake	Faribault		43.8458	-94.0453	3
54	Mission Creek	Crow Wing	MN Lung Association, DNR Forestry	46.5127	-94.0774	3
764	N School Section L	Washington	Lutz?	45.1442	-92.9150	3
478	Nest Lake	Kandiyohi		45.2592	-94.9636	3
839	New Germany	Carver	Private - R. & J. Anderson	44.8800	-94.0019	3
523	North Spellman Lake	Yellow Medicine		44.6716	-95.7735	3
240	Otrey Lake	Big Stone	Hanson-Otrey Hunting Club	45.3553	-96.3300	3
788	Otter Lake	McLeod	Private – F. & A. Wendroth	44.8650	-94.4172	3
734	Pelican Lake Island	Pope		45.6527	-95.4490	3
321	Red Lake River	Clearwater	BIA – Red Lake Band Ojibwe	47.9606	-95.2972	3
14	Rice River	Aitkin	DNR Wildlife	46.5558	-93.3940	3
224	Rocky Point	Lake of the Woods	DNR Wildlife	48.9600	-95.0340	3
64	Root River Delta (Hokah #2)	Houston	USFWS	43.7675	-91.2528	3
215	Roseau WMA Pool 1	Roseau	DNR Wildlife	48.9601	-96.5400	3
101	Rush Lake	Chisago	DNR Wildlife	45.6733	-93.0958	3
216	Sand Lake	Becker	Private – J. & M. Rian	46.8708	-96.1742	3
548	Schible Lake	Swift		45.2539	-96.0508	3
59	Schilling Lake	Sibley		44.6981	-94.2119	3
86	Sioux Lake	Meeke	Private – G. Wolfe	45.0250	-94.4653	3
806	Staples WMA	Todd	DNR Wildlife	46.2881	-94.7922	3
582	Sugar Impoundment	Itasca	DNR	47.4561	-94.3492	3
516	Sunburg Lk Peninsulas	Kandiyohi		45.3297	-95.2506	3
685	Upper Lightening Lake East	Otter Tail		46.1380	-96.1583	3
848	Cormorant Island	Winona	USFWS	43.8919	-91.2933	4
849	Cormorant Island 2	Winona	USFWS	43.8919	-91.2933	4
210	Dog Lake	Kandiyohi		44.9556	-94.8375	4

Table 1 (cont). Potential American White Pelican and Double-crested Cormorant sites and survey status in MN in 2010.

Oc #	Colony	County	Ownership	Latitude	Longitude	Status
241	Eli Lake	Big Stone		45.4661	-96.4306	4
151	Gorder Lake	Stevens		45.5180	-96.0204	4
1023	Hanson Slough (Lake)	Big Stone		45.3793	-96.3015	4
NA	Harstad Slough North	Stevens		45.6967	-96.0006	4
95	Howard Lake	Anoka	DNR Wildlife	45.2661	-93.0361	4
8	Kabekona Lake	Hubbard	DNR Wildlife	47.1664	-94.7703	4
211	Lake Lillian	Kandiyohi		44.9436	-94.8797	4
733	Lk Charlotte Mainland	Stevens		45.6178	-95.7744	4
570	Lone Pine - 1 (Pond 2 North)	Itasca	US Steel, Kee Tac	47.3592	-93.0803	4
NA	Lone Pine - 2 (Pond 6)	Itasca	US Steel, Kee Tac	47.3751	-93.0846	4
NA	Lone Pine - 3 (Pond 2)	Itasca	US Steel, Kee Tac	47.3583	-93.1018	4
542	Moonan WMA	Waseca	DNR Wildlife	44.1167	-93.4314	4
531	Mud Lake	Traverse		45.8617	-96.5728	4
5	Agassiz NWR - Cormorant Is	Marshall	USFWS	48.3300	-95.9739	5
601	Agassiz NWR - Ditch 11 Ban	Marshall	USFWS	48.3178	-95.9950	5
602	Agassiz NWR - Madsen Pool	Marshall	USFWS	48.3203	-96.0267	5
NA	Albert Lea Lake	Freeborn	Private – Al Batt	43.6231	-93.3255	5
940	Anderson Lake WMA	Lincoln	DNR	44.4458	-96.3208	5
NA	Blackduck Lake	St. Louis				5
506	Blackduck Lake Is	Beltrami	DNR	47.7342	-94.6211	5
941	Coon Creek WMA	Lyon	DNR Wildlife	44.3403	-96.0486	5
89	Durgin Slough	Sherburne	USFWS	45.4758	-93.7600	5
62	Gun Club Lake	Dakota	DNR Parks	44.8536	-93.1952	5
122	Rice Lake Island	Aitkin	USFWS	46.5097	-93.3881	5
194	Rice Lake Ridge	Aitkin	USFWS	46.5275	-93.3167	5
611	Stuntz	St. Louis	US Steel, Hubb Tac	47.5200	-92.9772	5
71	Taconite Pond	St. Louis	US Steel, Utac	47.3442	-92.5533	5
329	Burlington	Winona				6
714	Smith Slough	in Wisc.				6
491	Trempealeau NWR	Winona	USFWS	44.0500	-91.5875	6
716	Leech Lk - Little Pelican Spit	Cass	BIA – Leech Lake Band of Ojibwe	47.1088	-94.3725	7

¹ For all active cormorant and pelican breeding sites ownership information was provided with the exception of Gull Rock/Lake of the Woods and Upper Sakatah Lake, where ownership could not be obtained. Additionally, for a few active sites ownership category was determined to be private, but individual owner could not be identified. For all other sites ownership information was provided when available

² Site Status: 1 = site visited, cormorants and / or pelicans nesting; 2 = site visited, no cormorant or pelican nesting; 3 = site not visited, assumed inactive due to various factors (e.g., time since last active, predators); 4 = site not visited due to inappropriate habitat; 5 = site reported inactive; 6 = site outside study area; 7 = site no longer exists.

Table 2. Species composition, nest numbers & survey methodology at American White Pelican & Double-crested Cormorant colonies, 2010 (Species codes¹).

Occ #	Colony Name	DATE	AWPE	DCCO	BCNH	GBHE	GREG	RBGU	HERG	COTE	CATE	Count Method ²
973	Barry Lake WPA	5/25	0	42	0	0	0	0	0	0	0	ATC
471	BLM 80- Knife Is.	5/19	0	103	0	0	0	0	729	0	0	GTC(DCCO), GPC(HERG)
813	Bolland Slough	5/24	P	19	0	1	0	0	0	0	0	GTC
68	Chautauqua Lake	6/01	0	414	0	0	0	0	0	0	0	GTC(AWPE), GNA(AWPE)
1041	Clifford Lake	6/04	0	30	0	26	0	0	0	0	0	GTC
10	Egret Is.	6/03	0	1653	46	292	1734	0	0	0	0	GVE(AWPE), GTC(All Others)
881	Gooseberry Is.	6/11	0	50	0	25	0	1000-2000	4	0	0	GVE(RBGU), GTC(All Others)
NA	Hanska Lake	5/19	3	38	0	0	0	0	0	0	0	GTC
1054	Hawks Nest Lake	5/27	0	408	0	0	69	0	0	0	0	GTC
103	Hennepin Is.	6/16	0	16	0	0	0	236	3	216	0	GTC
1004	Lake Alice	6/01	0	88	0	0	55	0	0	0	0	GTC
47	Lake Hassel	4/20	0	264	0	28	35	0	0	0	0	ATC
117	Lake Johanna	5/25	735	782	0	23	449	0	0	0	0	ATC
379	Lake Vermilion: Potato Is.	5/24	P	307	0	0	0	0	287	0	0	GTC
1042	Lindquist WMA	6/11	0	3	0	0	0	0	0	0	0	GTC
916	Little Pelican Is., Leech Lake ³	NA	174	688	0	0	0	~5000	23	127	46	ATC(RBGU), GTC(All Others)
656	Little Pine Is., Voyageurs NP	NA	0	123	0	0	0	0	0	0	0	ATC
206	Long Lake	5/20	0	747	7	243	233	0	0	0	0	GTC
229	LOW: Crowduck Is.	6/15	408	73	0	0	0	0	0	195	0	GTC
112	LOW: Gull Rock	6/01	0	65	0	0	0	0	NC	0	0	BUK(DCCO)
319	LOW: Little Massacre Is.	6/15	185	918	0	0	0	~500	P	0	0	GTC(DCCO, AWPE), GVE(RBGU), GNA(HERG)
230	LOW: Red Lake Rock	6/15	292	159	0	0	0	~2000	P	0	0	GTC(DCCO, AWPE), GVE(RBGU), GNA(HERG)
235	LOW: Techout Is.	6/15	143	477	0	0	0	~500	0	87	0	GVE(RBGU), GTC(All Others)
633	Marsh Lake: Banding Is.	5/25	684	0	0	0	0	P, not nest	0	0	0	ATC
890	Marsh Lake: Big Is.	5/25	1082	303	0	0	35	~2000	0	0	0	APC(RBGU), ATC(All Others)

Occ #	Colony Name	DATE	AWPE	DCCO	BCNH	GBHE	GREG	RBGU	HERG	COTE	CATE	Count Method
NA	Marsh Lake: Currie Is.	5/25	4813 ⁴	0	0	0	0	0	0	0	0	ATC w/extrapolation
353	Marsh Lake: Peninsula	5/25	4650 ⁵	103	0	0	0	0	0	0	0	ATC w/extrapolation
39	Marsh Lake: Rock Is.	5/25	0	504	0	0	0	~600	0	0	0	APC(RBGU), ATC(All Others)
NA	Marsh Lake: Small Is.	5/25	4	0	0	0	0	0	0	0	0	ATC
NA	Mink Lake	5/17	0	43	0	96	0	0	0	0	0	GTC
69	Minnesota Lake	5/17	622	1252	0	16	37	0	0	0	0	ATC
NA	Minnesota Lake Ag Field	6/15	748	0	0	0	0	0	0	0	0	GTC
422	MNDNR 36 - Guano Rock	6/24	0	14	0	0	0	0	32	0	0	ATC
897	O'Brian Lake	6/23	0	43	0	0	0	0	0	0	0	TC
1031	Pigeon Lake: Bare Is.	5/17	24	1846	NC	36	11	P	0	0	0	ATC
1031	Pigeon Lake: Vegetated Is.	5/17	NC	299	NC	15	18	0	0	0	0	ATC
1031	Pigeon Lake: Vegetated Is.	5/21	519	NC	NC	NC	NC	0	0	0	0	GTC
90	Pigs Eye Lake	5/26	0	169	13	154	203	0	0	0	0	GTC
1040	Preston Lake	4/20	P	253	0	43	17	0	0	0	0	ATC
102	Spirit Island	6/16	0	201	0	0	0	0	2	0	0	GTC(DCCO,AWPE), GPC(RBGU)
879	Swartout Lake	6/02	913	703	0	17	103	0	0	0	0	ATC
972	Swenson Lake	5/28	P	230	0	40	0	0	0	0	0	GTC(DCCO,GBHE), GUK(AWPE)
832	Upper Sakatah Lake	5/20	P	259	0	9	19	0	0	0	0	ATC
NA	Vinge Lake	6/02	0	12	0	0	0	0	0	0	0	GTC
863	Waconia Lake	5/16	0	425	11	156	169	0	0	0	0	GTC
1002	Wells Lake	5/18	0	1197	0	138	201	0	0	0	0	GTC
325	W. Two Rivers Res	6/09	0	102	0	0	0	0	0	0	0	GTC
Total			15999	15425	77	1358	3388	12336	1080	625	46	

¹Species Codes: AWPE = American White Pelican, DCCO = Double-crested Cormorant, BCNH = Black-crowned Night-Heron, GBHE = Great Blue Heron, GREG = Great Egret, RBGU = Ring-billed Gull, HERG = Herring Gull, COTE = Common Tern, CATE = Caspian Tern.

²NA = Not applicable, no use by DCCO/AWPE; ATC = Aerial Photo, Total Count; APC = Aerial Partial Count w/ Extrapolation; BUK =Boat, Unknown/Not recorded
P = Present, Not Nesting; GTC = Ground, Total Count; GPC = Ground, Partial Count with extrapolation; GUK =Ground, Unknown/Not recorded

³Combines numbers for Little Pelican and Gull islands. Small numbers of DCCO (~200), RBGU (~100) and HERG (12-20) nests on Gull but numbers not reported separately.

⁴Initial estimate for Currie Island was 4,332 but increased by 10% to correct for potential birds missed in vegetation.

⁵Initial estimate for Peninsula was 4,185 but increased by 10% to correct for potential birds missed in vegetation.

Table 3: American White Pelican Sites & Nests, 2004 & 2010.

Site	2004	2010
Big Twin Lk	16	0
Hanska Lk	0	3
Lk Hassel	19	0
Lk Johanna	97	735
Little Pelican Is, Leech Lk	11	174
Red Lk	340	0
Swartout Lk	49	913
LOW - Crowduck Island	242	408
LOW - Little Massacre Island	277	185
LOW - O'Dell Island	25	0
LOW - Red Lk Rock	0	292
LOW - Techout Island	25	143
LOW-Total	569	1028
Marsh Lk - Banding Island	4160 ¹	684
Marsh Lk - Big Island	5292 ¹	1082
Marsh Lk - Currie Island	0 ¹	4813 ²
Marsh Lk - Peninsula	2706 ¹	4650 ²
Marsh Lk - Small Island	1020 ¹	4
Marsh Lk - Total	13178	11233
Minnesota Lk	974	622
Minnesota Lk - Ag Field	0	748
MN Lk - Total	974	1370
Pigeon Lk – Bare Island	357	24
Pigeon Lk Vegetated Island	0	519
Pigeon Lk - Total	357	543
Total	15610	15999

¹ Counts for these sites were conducted in 2005

² Based on total count and extrapolation, see Table 2.

Table 4. Nest estimates for each colonial waterbird species in 2004 and 2010 at Double-crested Cormorant colonies.

Oc. #	Site Name	AWPE		DCCO		BCNH		GBHE		GREG		RBGU		HERG		COTE		CATE	
		2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
973	Barry Lk WPA	0	0	79	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
471	BLM 80-Knife Is	0	0	26	103	0	0	0	0	0	0	0	0	225	729	0	0	0	0
813	Bolland Slough	0	P	50	19	0	0	16	1	0	0	0	0	0	0	0	0	0	0
68	Chautauqua Lk	0	0	401	414	0	0	0	0	0	0	0	0	1	0	0	0	0	0
NA	Clifford Lk (Swim Lk)	0	0	48	30	0	0	47	26	0	0	0	0	0	0	0	0	0	0
326	Dark River Tailings Pond	0	NA	70	0	NC	NA	17	NA	0	NA	0	NA	0	NA	0	NA	0	NA
10	Egret Is	0	0	1,385	1653	47	46	170	292	271	1734	0	0	0	0	0	0	0	0
522	Elysian Lk	0	NA	205	NA	0	NA	48	NA	0	NA	0	NA	0	NA	0	NA	0	NA
881	Gooseberry Is	NA	0	NA	50	NA	0	NA	25	NA	0	NA	1500	NA	4	NA	0	NA	0
NA	Haldorsen Lk	0	NA	20	NA	?	NA	?	NA	?	NA	?	NA	?	NA	0	NA	0	NA
NA	Hanska Lk	NA	3	NA	38	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
1054	Hawks Nest Lk	NA	0	NA	408	NA	0	NA	0	NA	69	NA	0	NA	0	NA	0	NA	0
103	Hennepin Is	0	0	5	16	0	0	0	0	0	0	nesting	236	0	3	138	216	0	0
1004	Lk Alice	0	0	49	88	0	0	0	0	117	55	0	0	0	0	0	0	0	0
47	Lk Hassel	19	0	54	264	0	0	36	28	4	35	0	0	0	0	0	0	0	0
117	Lk Johanna	97	735	580	782	15	NC	20	23	500	449	0	0	0	0	0	0	0	0
NA	Lindquist WMA	0	0	32	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
805	Little Elk WMA	0	0	49	0	P	0	P	0	P	0	0	0	0	0	0	0	0	0
916	Little Pelican Is, Leech Lk ¹	11	174	2,524	688	0	0	0	0	0	0	1277	5000	0	23	186	127	0	46

Table 4 (cont). Nest estimates for each colonial waterbird species in 2004 and 2010 at Double-crested Cormorant colonies.

Oc. #	Site Name	AWPE		DCCO		BCNH		GBHE		GREG		RBGU		HERG		COTE		CATE	
		2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
NA	Little Pine Is, Voyageurs NP	0	0	173	123	0	0	0	0	0	0	N-NC	0	0	0	0	0	0	0
206	Long Lk	0	0	1,363	747	207	7	140	243	427	233	0	0	0	0	0	0	0	0
NA	Mink Lk	NA	0	NA	43	NA	0	NA	96	NA	0	NA	0	NA	0	NA	0	NA	0
69	Minnesota Lk	974	622	725	1252	0	0	25	16	22	37	0	0	0	0	0	0	0	0
422	MNDNR 36 - Guano Rock	0	0	24	14	0	0	0	0	0	0	0	0	P	32	0	0	0	0
897	O'Brian Lk	NA	0	NA	43	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
90	Pigs Eye Lk	0	0	150 ²	169	NC	13	450	154	550	203	0	0	0	0	0	0	0	0
NA	Preston Lk	0	P	186	253	0	0	30	43	0	17		0	0	0	0	0	0	0
102	Spirit Is	0	0	95	201	0	0	0	0	0	0	8	0	1	2	0	0	0	0
879	Swartout Lk	49	913	86	703	14	NC	65	17	45	103	0	0	0	0	0	0	0	0
972	Swenson Lk	0	P	271	230	0	0	5	40	0	0	0	0	0	0	0	0	0	0
832	Upper Sakatah Lk	NA	P	NA	259	NA	0	NA	9	NA	19	NA	0	NA	0	NA	0	NA	0
NA	Vinge Lk	NA	0	NA	12	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
863	Coney Is, Waconia Lk	0	0	250 ³	425	0	11	350	156	350	169	0	0	0	0	0	0	0	0
NA	Wells Lk	0	0	472	1197	0	0	87	138	144	201	0	0	0	0	0	0	0	0
325	W Two Rivers Reservoir	0	0	47	102	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Lake Vermilion																			
379	Potato Is	NA	P	NA	307	NA	0	NA	0	NA	0	NA	0	NA	287	NA	0	NA	0
749	Vermilion Rks #1	0	NA	32	NA	0	NA	0	NA	0	NA	NC	NA	chicks	NA	0	NA	0	NA
	LV Total	0	0	32	307	0	0	0	0	0	0	0	0	0	287	0	0	0	0

Table 4 (cont). Nest estimates for each colonial waterbird species in 2004 and 2010 at Double-crested Cormorant colonies.

Oc. #	Site Name	AWPE		DCCO		BCNH		GBHE		GREG		RBGU		HERG		COTE		CATE	
		2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
Lake of the Woods																			
229	Crowduck Is	242	408	447	73	0	0	0	0	0	0	2	0	27	0	0	195	0	0
112	Gull Rk	0	0	66	65	0	0	0	0	0	0	0	0	4	N-NC	0	0	0	0
319	Little Massacre Is	277	185	1,363	918	0	0	0	0	0	0	0	500	8 chks	N-NC	0	0	0	0
231	O'Dell Is	25	0	1,889	0	0	0	0	0	0	0	7	0	18	0	250	0	0	0
230	Red Lk Rk	NA	292	NA	159	NA	0	NA	0	NA	0	NA	2000	NA	P	NA	0	NA	0
235	Techout Is	25	143	605	477	0	0	0	0	0	0	177	500	0	0	0	87	0	0
	LOW - Total	569	1028	4304	1627	0	0	0	0	0	0	186	3000	45	0	250	282	0	0
Marsh Lake																			
890	Big Is	5292 ⁴	1082 ⁵	264	303	0	0	10	0	30	35	0	2000	0	0	0	0	0	0
353	Peninsula	2706 ⁴	4650 ⁵	NA	103	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
39	Rock Is	0	0	414	504	0	0	0	0	0	0	0	600	0	0	0	0	0	0
	ML - Total	7,998	5,732	678	910	0	0	10	0	30	35	0	2,600	0	0	0	0	0	0
Pigeon Lake																			
1031	Bare Is	357	24	1,450	1846	0	0	91	36	84	11	0	P	0	0	0	0	0	0
1031	Vegetated Is	0	519	53	299	22	NC	32	15	29	18	0	0	0	0	0	0	0	0
	PL - Total	357	543	1503	2145	22	0	123	51	113	29	0	0	0	0	0	0	0	0
Summary Totals																			
	Total Nests	8,644	9,285	16,002	15,425	305	77	1,645	1,358	2,573	3,388	1,471	12,336	276	1,080	574	625	0	46
	Total Sites	12	13	38	42	5+	4+	19	18	13	16	7	8	9	9	3	4	0	1

NA=Not applicable, no cormorants present at site.

NC=Species was not censused.

¹ Estimates for DCCO, HERG and RBGU combine numbers on Little Pelican and Gull islands.

² Estimate was obtained based on weekly counts; number of nests estimated ranged between 150-200. Used minimum number in this report.

³ Estimate was obtained based on weekly counts; number of nests estimated ranged between 250-400. Used minimum number in this report.

⁴ Pelican counts for these sites were conducted in 2005.

⁵ Based on total count and extrapolation.

Table 5. Estimates of nesting cormorants, herons and egrets before and after cormorant management, 2010.

Cormorant sites (unmanaged)	1st estimate date (pre-control)	DCCO	GBHE	GREG	2nd estimate date (post-control)	DCCO	GBHE	GREG
Lake Johanna	20-Apr-10	613	NA ¹	NA	25-May-10	782	23	449
Minnesota Lake	20-Apr-10	1033	NA	NA	17-May-10	1252	16	37
Pigeon Lake	20-Apr-10	2103	NA	NA	17-May-10	2145	51	29
Hanska Lake	20-Apr-10	~40	0	0	19-May-10	38	0	0
Cormorant sites (managed)								
Wells Lake	20-Apr-10	1518	72	144	18-May-10	1197	138	201
Lake Waconia	20-Apr-10	467	NA	180	16-May-10	425	156	169
Leech Lake	NA	2,000-2,300	None	None	NA	688	0	0

¹NA = data not available.

Figure 2: Minnesota AWPE colony distribution by size class (sites starred and labeled identify location of six most important sites for AWPE).

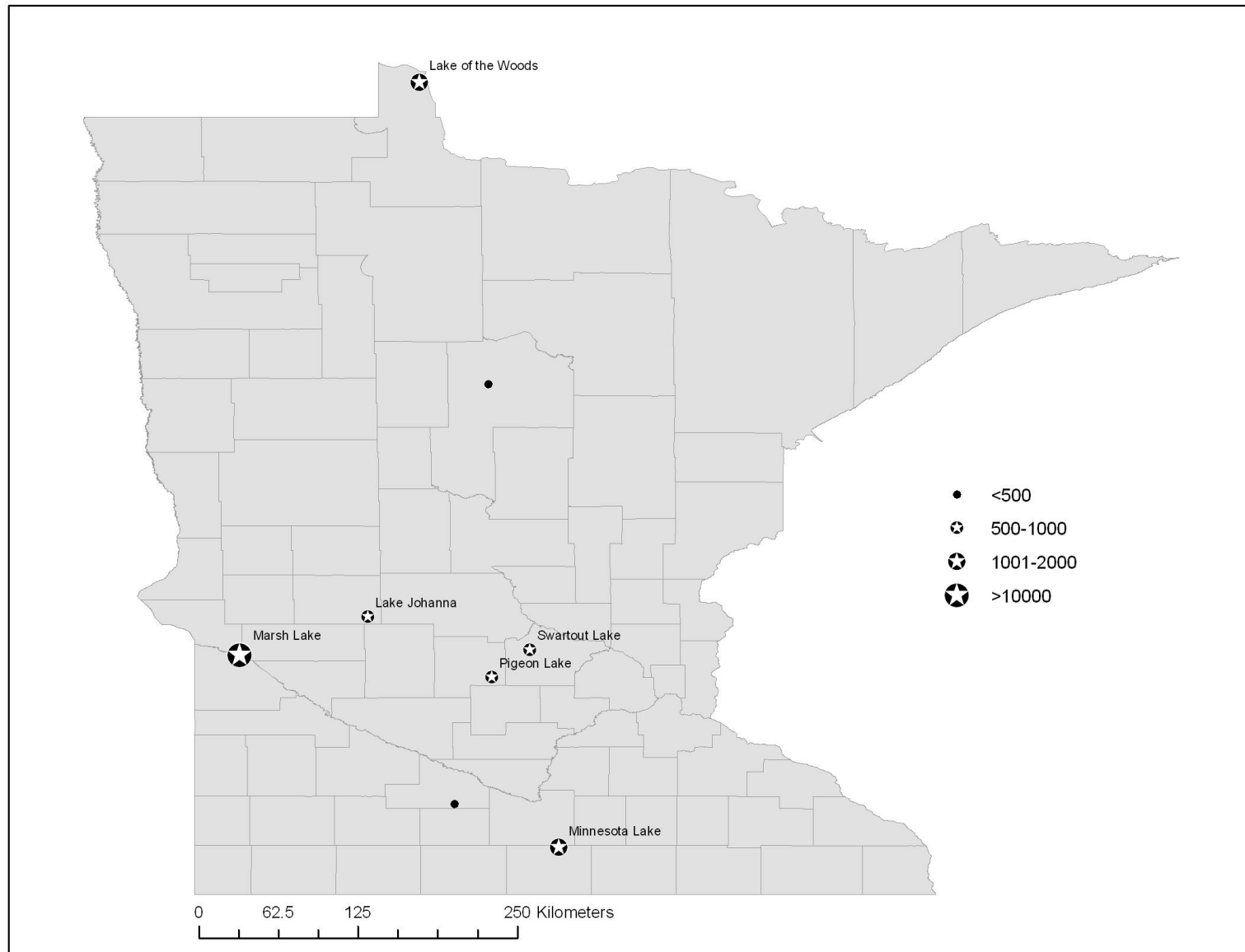


Figure 3. Numbers of AWPE on the six most important lakes in Minnesota for this species, 2004 and 2010.

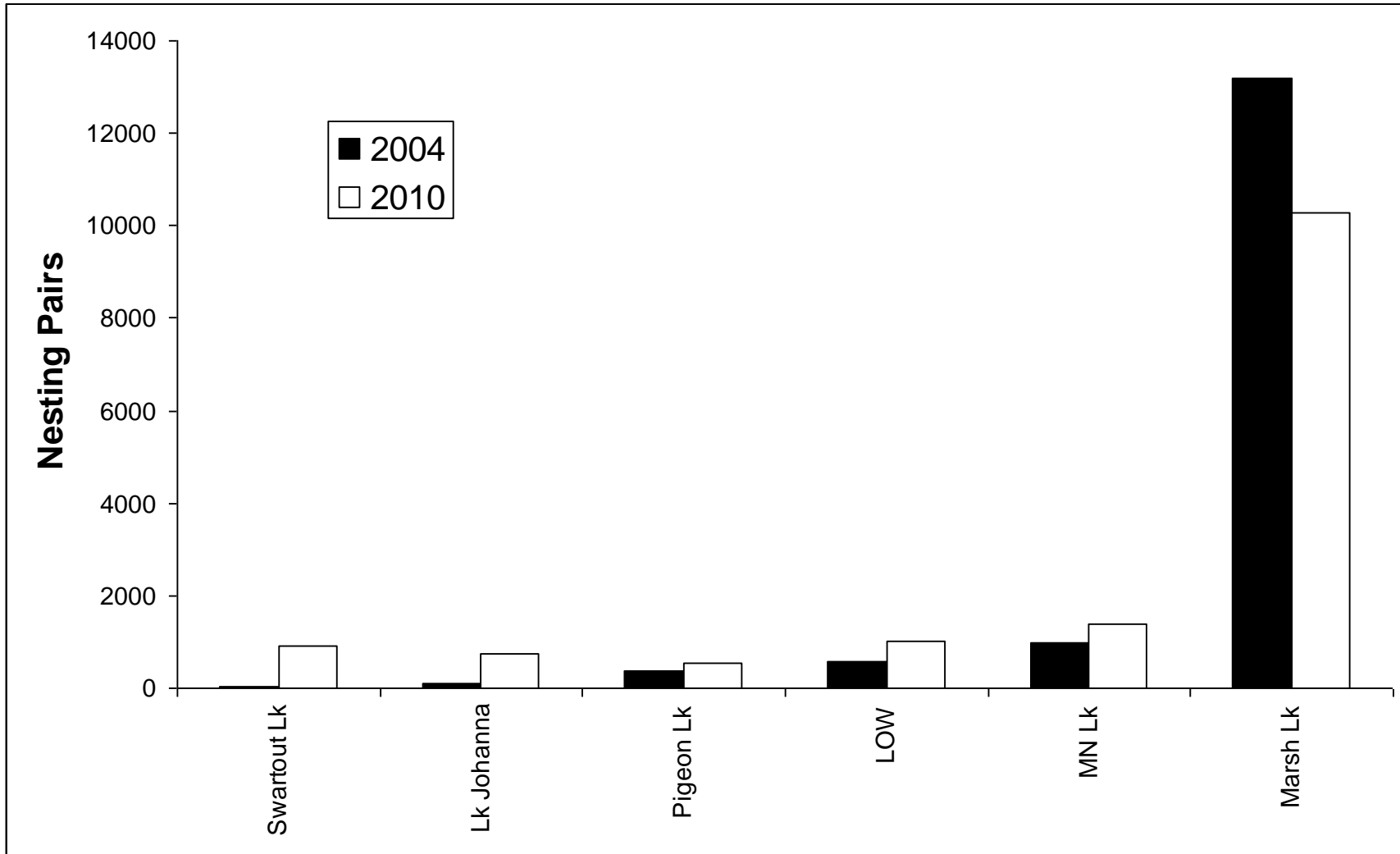


Figure 4: Minnesota DCCO colony distribution by size class (lakes and islands starred and labeled identify ten most important sites for DCCO).

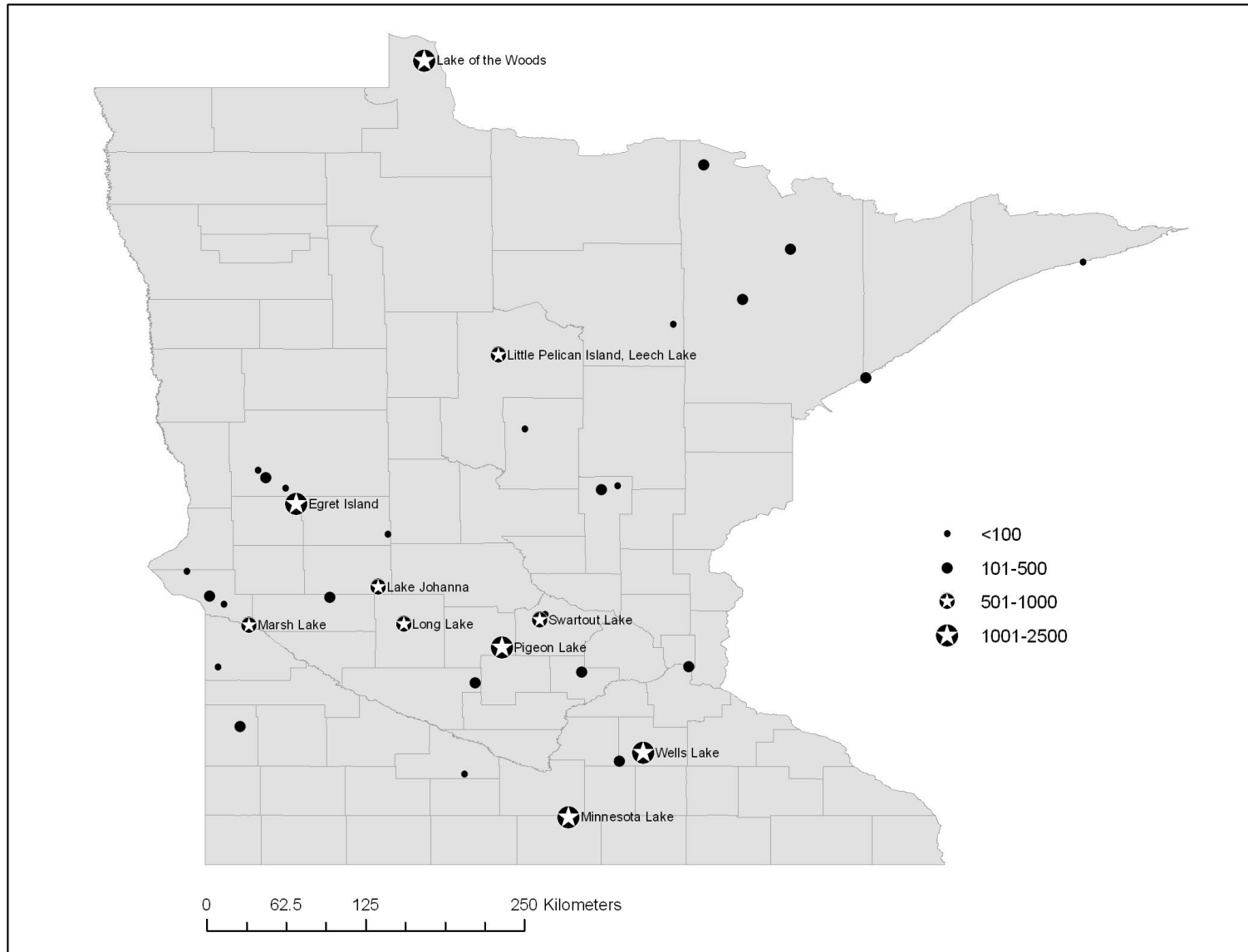


Figure 5: Numbers of DCCO on the ten most important lakes or islands in Minnesota for this species, 2004 and 2010.

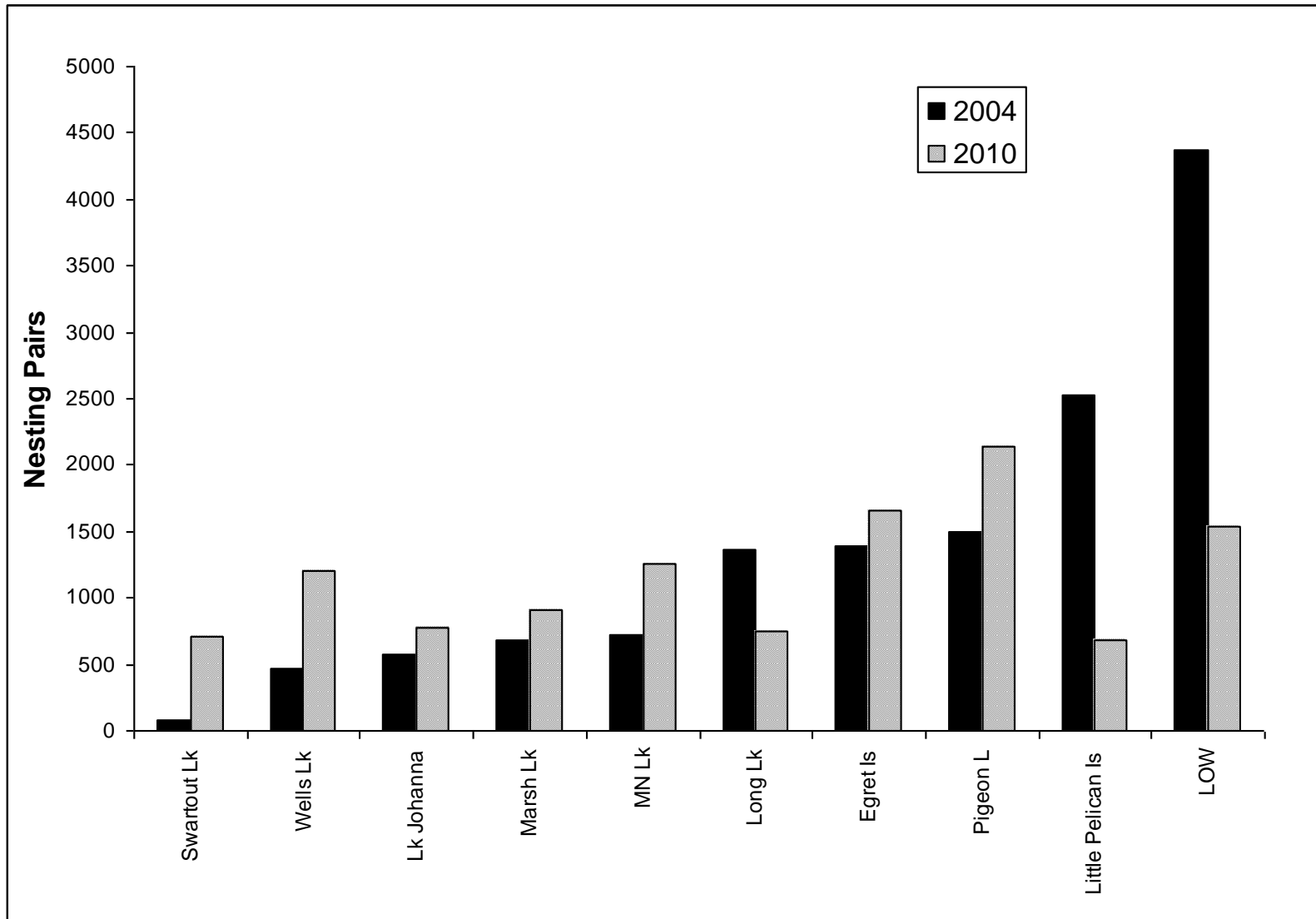
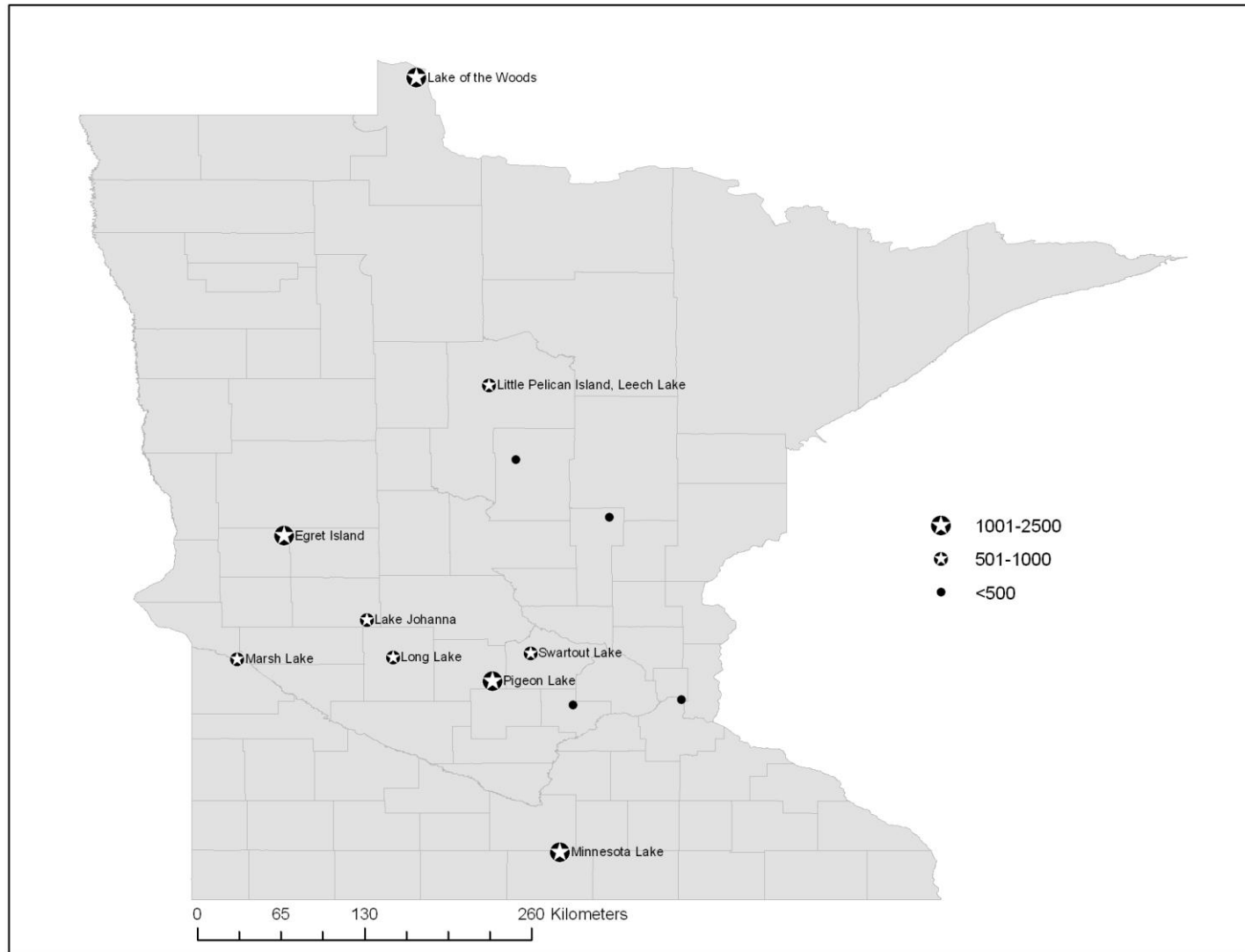


Figure 6: DCCO sites with four or more colonial waterbird species (lakes and islands starred and labeled identify one of ten most important sites for DCCO).



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Figure 7: DCCO sites shared with wading birds (GBHE, GREG, and or BCNH) (lakes and islands starred and labeled identify one of ten most important sites for DCCO).

