

2005 PATUXENT NWR WATERBIRD CENSUS

Dec. 2004- Dec. 2005

Intensive surveys of waterbird use of the Patuxent Research Refuge have been conducted weekly since 1997. Originally surveys covered 53 wetland units encompassing approximately 560 acres, plus segments of the Patuxent and Little Patuxent Rivers. The amount of habitat has varied considerably over the years because of artificial drawdowns and drought. In 2005, all units were full except Knowles one and two that were drained for a shorebird study.. Tables for common waterbird species by Quarter and Tract are attached. Purposes and methodology did not change. (See 1997 Report) The 1998 Report contains characterizations for most of the units surveyed.

Weather

2005 was the second straight year of normal precipitation since 1997. However, there were some substantial deviations from normal. January and February were below normal, but March and April were well above normal. May and June were normal; July, at 7 inches, was twice normal, August was normal, September was a record low, completely dry, whereas October, at nine inches, was a record high. Most units were full at the end of the year. Winter weather fluctuated considerably. The first part of December was mild, but turned very cold in mid-December, warmed up in early January, then turned cold through mid-February. Late February was fairly mild, but March was cold and wet.

Results

General comments

Canada goose numbers for the year reached a record high. Wood ducks, black ducks, hooded mergansers, green-wing teal and ruddy ducks exceeded 2004 populations. There was a steep drop in mallard and ring-neck duck populations. The late summer drawdown of Knowles one resulted in substantial increases in shorebirds. Other waterbirds with increased populations over 2004 included belted kingfisher and great blue heron. Pied-bill grebes and green herons decreased. Both bald eagles and ospreys exhibited substantial increases. Details of the important species follow. Numbers refer to days-use (number of birds seen on weekly a count multiplied by seven to give the total for the week).

Canada Goose

Canada geese continued their spectacular increase in numbers. After a seven year low of 77,600 in 2003, days-use increased to 237,000 in 2005. The nine year average is 154,000. The Winter and Fall Quarter counts were the highest ever; Winter – 120,000, Fall – 71,500. The Spring quarter was average; the Summer Quarter a record low, reflecting the leveling off of the resident population and very low reproduction in 2005. The Winter/Fall increases reflect the rebound of migrants. For the first time in five years, there was no indication of a lead-shot die-off.

Ducks

Total duck use in 2005 was 110,000 use-days. The nine year average is 121,000. The peak for ducks was 138,000 in 1997 and the low was 99,000 in 2003. Details for the more abundant species follow.

Wood Duck

Wood ducks continued their comeback from the record low of 28,800 in 2003 to 43,000 in 2005. The nine year average is 39,000. The high was 48,000 in 2001. The Spring count did not change from 2004. The Summer count declined substantially from last year; however, the fall count of 19,000 days was the second highest on record.

Mallard

Mallards declined to 21,000 use-days, the second lowest on record. The record high was 37,300 in 2002. The nine year average is 30,000. The only increase was during the Winter Quarter; all other quarters were well below normal, almost disappearing during the Summer Quarter due to no reproduction.

Black Duck

The black duck reversed its downhill slide with 8200 days-use, the highest since 2002. This was entirely due to an increase in the wintering population; 6600 days-use compared with a low of 2200 in 1997 and 2004. The nine year average is 8000. It was not present in the Summer Quarter.

Hooded Merganser

After a substantial downturn in 2003, the Hooded returned to its long-term average of 8000 days in 2004 and 2005. For unknown reasons, populations have completely reversed their spring and fall counts. The Spring Quarter had a record high of 3900 use-days, while the Fall Quarter recorded a low of 600 days.

Ring-neck Duck

This species is a migrant and populations depend on fall, winter and spring water conditions and winter weather. Use continued to decline to 25,600 days, the lowest level since 18,400 in 1999. The peak was 38,250 in 2002 and the nine year average is 31,000.

Other Waterfowl

The green-wing teal recorded 2700 use days, the highest since the peak of 3800 in 2000. The ruddy duck recorded 500 use-days, the highest since 1999. Other species of waterfowl included small numbers of gadwall, bufflehead, mallard/black hybrid, tundra swan, blue-wing teal, and one each of a snow goose and a white-winged scoter. A domestic goose has been with the resident Canada goose flock the past two years.

Pied-billed Grebe

Grebe use was 500 use-days, one-half of 2004. The nine year average is 720. The peak was 1600 days in 2000 and the low was 150 in 1997.

Belted Kingfisher

Kingfisher use increased to 1600 use-days, right at the nine year average. The peak was 1920 in 2002 and the low was 800 in 2003.

Shorebirds

The drawdown of Knowles One resulted in a substantial increase in shorebird use to 4650 days, the highest since 2002, but still substantially below the drought year of 16,600 in 1998. The low was 1875 in 2003, a very wet year. The nine year average is 7100 days. Because of the drawdown, the fall count of 2300 days was the second highest on record. The most common species was the killdeer. Other common species were solitary sandpiper, spotted sandpiper, lesser yellowlegs and Wilson's snipe. Three very unusual species were Baird's sandpiper, American golden plover and a red phalarope.

Wading Birds

Great Blue Heron

Great blue heron numbers increased to 7500 days, the second highest on record. This was primarily due to the new breeding colony on Emy's Pond. The peak was 7700 in 1998, the last year of the breeding colony on Millrace Pond. The nine year average is 6300 days.

Green Heron

Green herons crashed to a record low of 1400 use-days. The peak was 2900 in 1999. The nine year average is 2000.

Great Egret

Egret use also crashed to 200 use-days; by far the lowest ever. The record high was 3800 during the 1998 drought year. The nine year average is 1200.

Other Waders

No little blue herons were recorded this year. There were a few records of American bittern in the spring.

Raptors

Bald Eagle

Bald eagles continued to be widely dispersed over time and units of the refuge. In earlier years when they nested on the Refuge, they concentrated on Lake Redington. The increase to 300 days slightly exceeded the nine year average of 250. The low was 130 in 1999 and the high was 360 in 1998.

Osprey

Use continued to climb rapidly to 840 days; by far the highest ever. The long term average is 250. This was primarily due to a nest and successful fledging of young on Cash Lake. However, we also had more records over the rest of the Refuge than in the past. The low was 50 in 1999.

Mammals

Aquatic mammals are recorded as seen or as signs of activity.

Beaver

There are in excess of 50 beaver lodges on the Refuge, about equally divided between North and Central/South Tracts. Based on an average of 10 animals per lodge, the Patuxent population probably exceeds 500 animals. They have returned to Rogue Harbor and impounded new areas on Range 10 and near Millrace Pond. They abandoned Knowles 1 and 2 after the drawdowns.

Muskrat

Numbers continue to be at a very low level. The only record for 2005 was on Rogue Harbor.

Otter

No otter were seen in 2005,

WATERBIRD DAYS USE BY QUARTER 1997-2005
PATUXENT NATIONAL WILDLIFE RESEARCH REFUGE

SPECIES	WINTER								
	97	98	99	00	01	02	03	04	05
CAGO	25571	53837	61516	32165	33166	36890	14168	74028	120015
WODU	581	637	581	1106	1008	364	203	721	420
MALL	6792	11459	13895	15309	11298	19331	7112	7560	10122
ABDU	2237	5838	4823	4788	3927	6664	2884	2226	4585
HOME	3073	4326	4389	4165	4032	5082	1995	3038	3773
RNDU	15875	16149	5880	11060	9625	20580	21196	10752	13895
AGWT	-----	7	280	1736	98	973	77	35	196
RUDU	-----	560	980	364	7	35	175	7	-----
OTHERS	84	336	185	238	70	448	140	469	224
TOTAL WATER FOWL	54214	93156	92529	70931	63231	90367	47950	98836	153,286
AMCO	21	-----	14	-----	56	-----	-----	35	-----
PRBR	49	63	91	168	14	98	-----	7	135
BEKI	196	238	301	126	231	371	56	35	224
KILL	644	3283	1715	602	231	1449	-----	322	42
SOSA	-----	105	-----	-----	-----	-----	-----	-----	-----
COSN	-----	231	532	133	7	511	-----	63	-----
TOTAL SHORE BIRDS	644	3619	2247	735	238	1500	0	385	266
GBHE	252	441	721	399	343	861	294	168	280
BAEA	7	42	63	28	21	98	7	42	42

SPRING

SPECIES	97	98	99	00	01	02	03	04	05
CAGO	40624	39991	53305	31857	33047	31787	29798	36878	36881
WODU	13797	14714	12082	7350	9926	9009	9163	12824	12159
MALL	8988	9395	13895	9394	12047	8547	6245	7980	4424
ABDU	1351	1694	1232	1764	1099	1134	1162	1309	1246
HOME	1855	2870	2926	1939	2989	2611	2394	3031	3920
RNDU	10087	11116	5936	7007	9492	6293	11263	13794	5397
AGWT	42	658	546	945	350	385	294	1869	84
RUDU	-----	7	14	-----	7	-----	14	14	-----
OTHER	560	854	168	322	231	245	483	1393	308
TOTL WATE RFOWL	77266	81320	90104	60578	69762	60011	60810	79088	64419

AMCO	735	21	14	147	161	21	7	105	-----
PBGR	665	112	406	980	483	350	133	469	112
BEKI	210	413	308	385	420	287	287	154	308

KILL	602	1295	1519	812	420	245	56	294	182
S0SA	315	252	588	560	567	238	7	84	105
SPSA	84	140	252	273	91	77	7	21	322
YELE	105	70	385	966	126	21	7	-----	98
WISN	294	553	2170	2450	154	308	14	350	63
OTHER	----	----	105	567	231	140	----	98	70
TOTAL	1407	2310	5019	5628	1589	1029	91	847	840

SPRING (CONT)

SPECIES	97	98	99	00	01	02	03	04	05
GBHE	2324	1281	2170	994	1358	1232	875	1204	2496
GNHE	----	21	343	322	357	217	154	196	210
GREG	----	21	---	42	14	28	54	7	77
LBHE	----	----	14	28	---	7	---	-----	----
OTHER	42	35	35	91	35	7	42	7	49
TOTAL WADER	2590	1631	2632	1477	1764	1491	1125	1414	2832

BAEA	----	7	49	35	70	49	84	84	84
OSPR	63	42	35	49	70	105	168	252	315

SUMMER

SPECIES	97	98	99	00	01	02	03	04	05
CAGO	16002	19103	20895	13188	13636	16891	9072	21954	8449
WODU	17731	13692	9756	13979	14966	11865	10885	17136	11284
MALL	4606	2940	3010	2849	3472	1915	553	2660	581
ABDU	595	826	287	357	196	140	7	42	56
HOME	350	210	21	238	210	7	77	273	147
AGWT	----	14	---	14	---	---		14	---
OTHER	-----	7	-----	---	7	----	60	---	98
TOTAL	39284	36792	33971	30625	32487	30818	20664	42079	20615

AMCO	7	14	-----	-----	----	-----	-----	-----	---
PBGR	119	56	----	14	21	7	7	154	14
BEKI	462	448	504	567	455	693	287	392	322
KILL	1498	4368	2751	1057	1211	434	35	574	735
SOSA	231	567	413	105	63	154	7	14	105
SPSA	21	91	231	35	42	49	42	7	14
YELE	21	154	189	14	7	---	-----	14	14
WISN	7	7	----	---	----	63	-----	-----	7
OTHER	70	1015	511	504	477	7	-----	245	28
TOTAL SHORE	1778	6251	5019	1715	1800	707	84	854	1239

SUMMER – CONT.

SPECIES	97	98	99	00	01	02	03	04	05
GBHE	3108	4025	3185	2310	2786	2671	2324	2534	2828
GNHE	630	1064	2464	1526	1652	1190	965	1323	973
GREG	630	2709	28	490	322	623	231	1442	119
LBHE	14	203	21	70	----	140	----	105	---
OTHER	7	7	---	7	14	28	----	35	---
TOTAL WADER	4998	8932	6356	4403	4774	4652	3520	5439	3920

BAEA	21	35	7	63	63	42	14	7	21
OSPR	14	21	7	42	21	35	147	245	497

FALL

SPECIES	97	98	99	00	01	02	03	04	05
CAGO	57512	57099	58492	53067	56287	50120	24675	32669	71529
WODU	17353	10934	6839	12719	22190	11529	8545	10920	19138
MALL	9331	9142	5320	7980	9121	7497	5761	5019	5729
ABDU	6146	4802	4697	2954	2856	2520	2653	1505	2355
HOME	868	1624	2191	1848	770	1477	1309	1638	588
RNDU	10682	6223	6580	8379	12089	11375	3969	7705	6314
AGWT	553	1981	1680	1104	637	420	84	224	2581
RUDU	1890	406	840	70	91	329	---	70	455
OTHER	2562	616	1120	63	336	280	91	161	238
TOTAL WATER FOWL	105014	92421	86919	88184	104377	85547	47087	59911	106589

AMCO	133	7	133	35	56	—	84	7	77
PBGR	644	273	581	385	252	126	133	322	196
BEKI	679	721	490	791	735	567	161	581	742

KILL	1687	3178	756	658	1029	448	1015	259	1484
SOSA	56	70	7	21	49	63	210	7	98
SPSA	28	14	---	---	39	35	14	----	----
YELE	133	385	21	7	14	70	252	77	231
WISN	21	679	203	105	91	63	210	---	133
OTHER	28	112	14	14	259	7	---	140	357
TOTAL SHORE	1974	4438	1001	805	1481	686	1701	483	2303

FALL (Cont.)

SPECIES	97	98	99	00	01	02	03	04	05
GBHE	1253	1967	1050	1596	1706	1575	1211	1246	1904
GNHE	329	196	112	294	546	203	315	175	210
GREG	203	1064	175	609	308	385	189	315	21
LBHE	7	42	---	112	28	49	---	21	-----
OTHER	---	---	---	14	0	7	---	---	---
TOTAL WADER	1792	3269	1337	2618	2588	2219	1715	1757	2115

BAEA	63	154	14	98	105	84	112	112	154
OSPR	7	42	14	14	14	7	7	---	28

TOTAL WATERBIRD DAYS USE 1997-2005

SPECIES	97	98	99	00	01	02	03	04	05
CAGO	139707	170030	194208	132150	136136	135688	77623	165525	236,874
WODU	49462	39977	29258	35154	48090	32767	28796	41601	43001
MALL	29717	32936	36120	35532	35938	37290	19671	23219	20856
ABDU	10329	13160	11039	9863	8078	10458	6776	5082	8242
HOME	6146	9030	9527	8190	8001	9583	5705	7980	8428
RNDU	36644	33488	18396	26432	31206	38248	36428	32251	25606
AGWT	595	2660	2506	3799	1085	1778	455	2142	2861
RUDU	1890	973	1834	434	105	364	175	91	511
OTHERS	3206	1813	1351	623	644	742	896	2013	868
TOTAL WATER FOWL	277698	304067	304239	252191	269283	267660	176525	279904	347,247

AMCO	896	42	161	182	273	21	91	147	77
PBGR	147	504	1078	1574	770	581	280	952	457
BEKI	1547	1820	1603	1869	1841	1918	791	1162	1596

KILL	4431	12124	6741	3129	2891	2576	1169	1449	2443
SOSA	602	994	1008	686	679	455	28	105	308
SPSA	133	245	483	308	172	161	210	28	336
YELE	259	609	637	987	147	140	259	91	343
WISN	322	1470	2905	2688	252	945	210	350	203
OTHER	56	1176	630	1085	967	147	---	483	455
TOTAL SHORE	5803	16618	12404	8883	5108	5880	1876	2506	4648

TOTAL WATERBIRD DAYS USE 1997-2005 (CONT.)

SPECIES 97 98 99 00 01 02 03 04 05

GBHE	6937	7714	7126	5299	6193	6339	4704	5152	7508
GNHE	1799	2387	2919	2142	2555	1610	1434	1694	1393
GREG	833	3794	889	1141	644	959	474	1764	217
LBHE	21	245	35	210	28	196	---	126	----
OTHER	70	42	35	105	49	35	42	42	49
TOTAL WADER	9660	14182	11004	8897	9469	9139	6644	8778	9147

BAEA	266	364	133	224	259	259	210	245	301
OSPR	84	112	56	105	105	140	322	497	840