

2006 PATUXENT NWR WATERBIRD CENSUS

Dec. 2005- Dec. 2006

Intensive surveys of waterbird use of the Patuxent Research Refuge have been conducted weekly since 1997. Surveys cover about 50 wetland areas 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 2006 wide variations in precipitation caused considerable change in water levels. This will be discussed in more detail under Weather. Rogue Harbor was kept drained to prevent beaver obstruction of the outlet structure. Knowles 1 and 2 were drawn down for much of the summer and fall to encourage shorebird use. Tables for common waterbird species by Quarter are attached. The 1998 Report contains characterizations for most of the units surveyed.

Weather

2006 was the third straight year of normal precipitation since 1997. However, there were considerable deviations from normal. Winter quarter – Precipitation was normal. There was six inches of snow in December and 12 inches in mid-February. Impoundments were iced-over the first three weeks of December. There was no ice in January or February. The spring quarter was dry. There was no precipitation in March. April had normal precipitation, but May and most of June were well below normal. Summer quarter – There was very heavy rain at the end of June and into early July and then the rest of July and August were well below normal. The Fall quarter brought heavy rain with a tropical storm in early September and the rest of the quarter was well above normal.

Results

General comments

Canada goose-use declined drastically from last year's record high to the second lowest count on record. Ring-neck ducks had a record high. Belted kingfishers reached the highest count since 2002. Hooded mergansers recorded a substantial decline. Other ducks were near normal. Great blue herons were near normal, but green herons had a substantial decline. Shorebirds were near normal for the last five years. Bald eagles were near normal. Osprey counts declined substantially due to failed nesting. Details of the important species follow. Numbers refer to days-use (number of birds seen on weekly counts multiplied by seven to give the total for the week).

Canada Goose

After a spectacular increase in numbers last year, Canada goose counts declined to the second lowest count on record. There were steep declines from last year in all quarters but Summer. Total counts fell from 237,000 to 126,000 days-use. The ten year average is 150,000 days-use. There does not seem to be any logical reason as to why the counts fell so

drastically. Weather and water levels were basically the same in both years.

Ducks

Total duck use in 2006 was 126,000 use-days, up 15,000 from 2005. 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 duck counts declined from 43,000 days-use in 2005 to 36,000 this year. Almost all of the decline was during the Fall Quarter which, although near normal for the ten year average, was one-half of the 2005 count. All the other quarters were comparable to last year. The ten year average is 38,500. The high was 48,000 in 2001.

Mallard

After a three year decline, mallards increased from the second lowest count on record last year of 21,000 days to 27,000 in 2006. The record high was 37,300 in 2002. The ten year average is 30,000. The Winter Quarter count was the highest since 2002 and the third highest on record. Spring and Summer counts were up from 2005 but the lowest on record during the Fall Quarter.

Black Duck

Counts were slightly below the 8,000 days-use recorded in 2005. The Winter Quarter count is the most significant for the black duck. The ten year average is a little over 9100. The peak was 13,000 in 1998 and the low was 5,000 in 2004.. It has almost disappeared during the Summer Quarter.

Hooded Merganser

After a substantial upturn last year, hooded merganser-use continued to decline to 6200 days in 2006, the third lowest on record. This was entirely due to a steep decline in the Spring Quarter from 4,000 days last year to 1500. The ten year average is 7800.

Ring-neck Duck

This species is a migrant and populations depend on fall, winter and spring water conditions and winter weather. Counts reached a record high of 47,000 days, up from 25,000 in 2005. The previous peak was 38,250 in 2002 and the low was 18,000 in 1999. The ten year average is 32,000.

Other Waterfowl

After a record high of 2660 days last year, green-winged teal use fell to 400 days in 2006. There were small numbers of other species.

Pied-billed Grebe

Grebe use was 550 use-days, about the same as last year and one-half of 2004. The ten year average is 800. The peak was 1600 days in 2000 and the low was 150 in 1997.

Belted Kingfisher

Kingfisher use continued to increase from 1600 use-days last year to 1800 in 2006, the highest since 2002. The ten year average 1600. The peak was 1920 in 2002 and the low was 800 in 2003.

Shorebirds

This was the second year of a study of shorebird use of Knowles one and two when drawn down in late Summer and Fall. Shorebird counts were substantially the same as the last three years. Counts were substantially above the low of 2003, but still substantially below the drought year of 16,600 in 1998 when many water areas on the Refuge were dry or nearly so. The low was 1875 in 2003, a very wet year. The ten year average is 8700 days. The most common species was the killdeer which comprised 2,000 of the 2006 total of 5600 days-use. Other common species were solitary sandpiper, spotted sandpiper, yellowlegs and Wilson's snipe.

Wading Birds

Great Blue Heron

Numbers declined from the near record of 7500 days last year to 6900 in 2006. The decline was mainly due to the failure of the nesting colony. The peak was 7700 in 1998, the last year of the breeding colony on Millrace Pond. The ten year average is 6400 days.

Green Heron

Green herons continued to decline to a near record low of 1200 days. The peak was 2900 in 1999. The ten average is 1700.

Great Egret

Egret use rebounded from the low of 200 use-days last year to 1100 days. The record high was 3800 during the 1998 drought year. The ten year average is 1100.

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. Eagle numbers were about average at 238 days. The ten year average is 200. The low was 130 in 1999 and the high was 360 in 1998.

Osprey

Use declined substantially from 830 days last year to 175 in 2006. This was mainly due to the failed nesting attempt. The long term average is 240. The low was 50 in 1999.

TOTAL WATERBIRD DAYS USE 1997-2006
PATUXENT NATIONAL WILDLIFE RESEARCH REFUGE

YEARS → SPECIES ↓	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
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WATER FOWL

CAGO	139,709	170,030	194,208	130,277	136,136	135,688	77,713	165,529	236,874	126,156
WODU	49,462	39,977	29,258	35,154	48,090	32,767	30,629	41,601	43,001	36,302
MALL	29,717	32,936	36,120	35,532	35,938	37,290	19,671	23,219	20,856	26,928
ABDU	10,329	13,160	11,039	9,863	8,078	10,458	6,706	5,082	8,242	8,071
HOME	6,146	9,030	9,527	8,190	8,001	9,177	5,775	7,980	8,428	6,205
RNDU	36,644	33,488	18,396	26,446	31,206	38,248	36,428	32,251	25,606	47,369
AGWT	595	2,653	2,226	2,063	987	805	378	2,107	2,665	434
RUDU	1,890	420	887	70	105	329	74	84	553	112
OTHERS	3,206	1,561	1,372	469	658	609	718	1,638	728	504
TOTAL WATER FOWL	277,698	303,255	303,033	248,064	269,199	265,371	178,092	279,491	346,953	252,081

AMCO	896	42	161	182	273	21	91	147	77	546
PBGR	1,477	504	1,078	1,547	770	581	273	952	457	553
BEKI	1,547	1,820	1,603	1,869	1,841	1,918	791	1,162	1,596	1,781

SHORE BIRDS

KILL	4,431	12,124	6,741	3,129	2,891	2,576	1,106	1,449	2,443	1,974
SOSA	602	994	1,008	686	679	455	224	105	308	266
SPSA	133	255	483	308	172	161	63	28	336	49
YELE	259	609	595	987	147	91	259	91	343	119
WISN	322	1,239	2,373	2,555	245	434	224	350	203	315
OTHER	98	1,358	1,162	1,218	974	665	0	546	455	56
TOTAL SHORE BIRDS	5,845	18,945	15,204	12,481	7,992	6,902	3,031	4,830	6,218	5,659

WADER BIRDS

GBHE	6,937	7,714	7,126	5,299	6,193	6,339	4,704	5,152	7,508	6,875
GNHE	959	1,281	2,919	2,142	2,555	1,610	1,434	1,694	1,393	1,232
GREG	833	3,794	203	1,141	644	1,036	474	1,764	217	1,092
LBHE	21	245	35	210	28	196	0	126	0	35
OTHER	49	42	35	112	49	42	42	42	49	28
TOTAL WADER BIRDS	8,799	13,076	10,318	8,904	9,469	9,223	6,654	8,778	9,167	9,262

OTHER BIRDS

BAEA	91	238	133	224	196	273	217	245	301	238
OSPR	84	105	56	106	105	147	322	497	830	175

WATERBIRD DAYS USE BY QUARTER 1997-2006
PATUXENT NATIONAL WILDLIFE RESEARCH REFUGE

YEARS → SPECIES ↓	1997	1998	1999	WINTER 2000	2001	2002	2003	2004	2005	2006
WATER FOWL										
CAGO	25,571	53,837	61,516	32,165	33,166	36,890	14,168	74,028	120,015	49,163
WODU	581	637	581	1,106	1,008	364	2,036	721	420	105
MALL	6,792	11,459	13,895	15,309	11,298	19,331	7,112	7,560	10,122	14,294
ABDU	2,237	5,838	4,823	4,788	3,927	6,664	2,884	2,226	4,585	4,718
HOME	3,073	4,326	4,389	4,165	4,032	5,082	1,995	3,038	3,773	3,955
RNDU	15,875	16,149	5,880	11,060	9,625	20,580	21,196	10,752	13,895	21,469
AGWT	0	7	280	1,736	98	973	77	35	196	56
RUDU	0	560	980	364	7	35	175	7	0	371
OTHERS	84	336	185	238	70	448	140	469	224	532
TOTAL WATER FOWL	54,213	93,149	92,529	70,931	63,231	90,367	49,783	98,836	153,230	94,663
WINTER BIRDS										
AMCO	21	0	14	0	56	0	0	35	0	28
PBGR	49	63	91	168	14	98	0	7	135	63
BEKI	196	238	301	126	231	371	56	35	224	189
SHORE BIRDS										
KILL	644	3,283	1,715	602	231	1,449	0	322	42	0
SOSA	0	105	0	0	0	0	0	0	0	0
WISN	0	231	532	133	7	511	0	63	0	0
TOTAL SHORE BIRDS	644	3,619	2,247	735	238	1,960	0	385	42	0
WINTER BIRDS										
GBHE	252	441	721	399	343	861	294	168	280	609
BAEA	7	42	63	28	21	98	7	42	42	63

WATERBIRD DAYS USE BY QUARTER 1997-2006
PATUXENT NATIONAL WILDLIFE RESEARCH REFUGE

YEARS → SPECIES ↓	SPRING									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	WATER FOWL									
CAGO	40,624	39,991	53,305	31,857	33,047	31,787	29,798	36,878	36,881	28,448
WODU	13,797	14,714	12,082	7,350	9,926	9,009	9,163	12,824	12,159	13,006
MALL	8,988	9,395	13,895	9,394	12,047	8,547	6,245	7,980	4,424	7,262
ABDU	1,351	1,694	1,232	1,764	1,099	1,134	1,162	1,309	1,246	973
HOME	1,855	2,870	2,926	1,939	2,989	2,611	2,394	3,031	3,920	1,493
RNDU	10,087	11,116	5,936	7,007	9,492	6,293	11,263	13,794	5,397	12,230
AGWT	42	658	546	945	350	385	294	1,869	84	126
RUDU	0	7	47	0	7	0	14	14	0	7
OTHERS	560	854	168	322	231	245	483	1,393	308	322
TOTAL WATER FOWL	77,304	81,299	90,137	60,578	69,188	60,011	60,816	79,092	64,419	63,867

AMCO	735	21	14	147	161	21	7	105	0	399
PBGR	665	112	406	980	483	350	133	469	112	329
BEKI	210	413	308	385	420	287	287	154	308	574

SHORE BIRDS										
KILL	602	1,295	1,519	812	420	245	56	294	182	91
SOSA	315	252	588	560	567	238	7	84	105	224
SPSA	84	140	252	273	91	77	7	21	322	49
YELE	105	70	385	966	126	21	7	0	98	63
WISN	294	553	2,170	2,450	154	308	14	350	63	252
OTHER	0	0	105	567	231	140	0	98	70	21
TOTAL SHORE BIRDS	1,400	2,310	5,019	5,628	1,589	1,029	91	847	840	700

WADER BIRDS										
GBHE	2,324	1,281	2,170	994	3,158	1,232	875	1,204	2,496	2,352
GNHE	0	21	343	322	357	217	154	196	210	182
GREG	0	21	0	42	14	28	54	7	77	21
LBHE	0	0	14	28	0	7	0	0	0	7
OTHER	42	35	35	91	35	7	42	7	49	28
TOTAL WADER BIRDS	2,366	1,358	2,562	1,477	3,564	1,491	1,125	1,414	2,832	2,590

OTHER BIRDS										
BAEA	0	7	49	35	7	49	84	84	84	105
OSPR	63	42	35	49	70	105	168	252	305	140

WATERBIRD DAYS USE BY QUARTER 1997-2006
PATUXENT NATIONAL WILDLIFE RESEARCH REFUGE

YEARS → SPECIES ↓	1997	1998	1999	FALL 2000	2001	2002	2003	2004	2005	2006
WATER FOWL										
CAGO	57,512	57,099	58,492	53,067	56,287	50,120	24,675	32,669	71,529	36,841
WODU	17,353	10,934	6,839	12,719	22,190	11,529	8,545	10,920	19,138	11,347
MALL	9,331	9,142	5,320	7,980	9,121	7,497	5,761	5,019	5,729	4,567
ABDU	6,146	4,802	4,697	2,954	2,856	2,520	2,653	1,505	2,355	2,373
HOME	868	1,624	2,191	1,848	770	1,477	1,309	1,638	588	554
RNDU	10,682	6,223	6,580	8,379	12,089	11,375	3,969	7,705	6,314	13,670
AGWT	553	1,981	1,680	1,104	637	420	84	224	2,581	308
RUDU	1,890	406	840	70	91	329	0	70	455	42
OTHERS	2,562	616	1,120	63	336	280	91	161	238	35
TOTAL WATER FOWL	106,897	92,827	87,759	88,184	104,377	85,547	47,087	59,911	108,927	69,737

AMCO	133	7	133	35	56	0	84	7	77	119
PBGR	644	273	581	385	252	126	133	322	196	154
BEKI	679	721	490	791	735	567	161	581	742	829

SHORE BIRDS										
KILL	1,687	3,178	756	658	1,029	448	1,015	259	1,484	868
SOSA	56	70	7	21	49	63	210	7	98	28
SPSA	28	24	0	0	39	35	14	0	0	0
YELE	133	385	21	7	14	70	252	77	231	56
WISN	21	679	203	105	91	63	210	0	133	63
OTHER	28	112	14	14	259	7	0	140	357	0
TOTAL SHORE BIRDS	1,953	4,448	1,001	805	1,481	686	1,701	483	2,303	1,015

WADER BIRDS										
GBHE	1,253	1,967	1,050	1,596	1,706	1,575	1,211	1,246	1,904	1,100
GNHE	329	196	112	294	546	203	315	175	210	154
GREG	203	1,064	175	609	308	385	189	315	21	406
LBHE	7	42	0	112	28	49	0	21	0	0
OTHER	0	0	0	14	0	7	0	0	0	0
TOTAL WADER BIRDS	1,792	3,269	1,337	2,625	2,588	2,219	1,715	1,757	2,135	1,660

OTHER BIRDS										
BAEA	63	154	14	98	105	84	112	112	154	49
OSPR	7	42	14	14	14	7	7	0	28	7