

## 2008 PATUXENT NWR WATERBIRD CENSUS

Dec. 2007 – Dec. 2008

Surveys of waterbird species use of the Patuxent Research Refuge have been conducted weekly since 1997. Surveys cover about 50 wetland areas encompassing approximately 560 acres, plus approximately  $\frac{3}{4}$  mile segments of the Patuxent and Little Patuxent Rivers. The amount and location of habitat have varied considerably over the years because of droughts and artificial drawdowns.

### Weather

Precipitation in 2008 was about three inches above normal, with no prolonged periods of drought.

#### Winter Quarter

This was a mild winter, with no prolonged periods of ice. Precipitation was normal with very little snow. All units except Wood Duck Pond were full by the end of the quarter. January 7 recorded a record high of 71 degrees,

#### Spring Quarter

Spring began warm and dry. The last  $\frac{1}{2}$  of March was chilly, but the rest of the quarter had normal temperatures. April was wet and May very wet, with six inches of rain the first week. This resulted in a collapse of a sewage treatment plant and spillage of 113,000 gallons of sewage into Lake Allen.

#### Summer Quarter

June and July were wet, followed by a dry August and falling water levels on some impoundments.

#### Fall Quarter

September was wet, October very dry, with only a limited amount of rain at the end of the month, and November was  $\frac{3}{4}$  of an inch below normal. November was unusually cold with ice on all impoundments during the third week of the month.

### Impoundment Management

Manipulation of water levels included:

April 8 – Knowles 2 boards pulled

July 1 – Patuxent Marsh drained

8 - Boards pulled from Duval 1, Mallard, Uhler 1, Hance 2, and Mabbott

Sept – Hance 2 reflooded by beaver dam. Cash Lake partially drawn down to reduce risk of storm-flooding.

November – Boards replaced in Mallard, Knowles 2 and Patuxent Marsh. Uhler 2 nearly dry due to lack of runoff from Uhler 1.

### Summary

Canada geese, wood ducks, mallards, hooded mergansers, pied-billed grebes, belted kingfishers, killdeer and great blue herons were below the ten year average. Black ducks, ring-neck ducks, green herons and bald eagles were near average and ospreys well above average. Details are depicted in the accompanying tables.

### Species Accounts

#### Total Waterfowl

This includes geese, ducks and swans. Use by all waterfowl in 2008 was 242,000 day-use. This was

somewhat below 2007 and well below the ten year average. Peak use was 347,000 days in 2005 and the low was 178,000 in 2003. The ten year average was 272,000 days.

#### Canada goose

Total days use for 2008 was 134,000, which was somewhat below 2007 and the ten year average. Winter and Spring Quarter counts were up slightly from 2007, but well below the ten year average. The continued collapse of the breeding population resulted in a record low of 6200 days in the Summer Quarter. The previous low was 8450 days in 2005 and the ten year average was 15,000. A substantial influx of migrants during the Fall Quarter pushed the count well above the ten year average, but below 2007 and the record high.

#### Wood Duck

Total days use fell from almost 40,000 in 2007 to 37,000 in 2008, which was somewhat below the ten year average. The mild winter resulted in a record high of over 1500 days-use. The previous high was 1100 in 2000. Spring and Fall Quarters were average. Summer counts were well below last year and near the 1999 record low.

#### Mallard

Mallards rebounded slightly from last year's record low of 17,000 days to 20,000 days, still well below the ten year average of 30,000. Numbers were below the ten year average in all four quarters, but small increases in Spring and Fall raised the count above 2007. The collapse of the breeding population has the Summer counts nearing the vanishing point. In the late 1990s, summer counts were near 5,000 days; this year it didn't reach 500.

#### Black Duck

Use declined from almost 10,000 days in 2007 to 9600 in 2008. This was still above the ten year average of 9100 days, but well below the peak of 13,000 in 1998. The ten year average is only about one-half of that of mallards, but they were outnumbered on Central Tract in 2008. Blacks are rarely recorded on North Tract. They are rare during the Summer Quarter.

#### Hooded Merganser

Hoodeds bounced back from a record low of 5700 days in 2007 to 6500 in 2008, but still well below the ten year average of 8000. This was entirely due to a substantial increase during the Winter Quarter from 2000 in 2007 to 5000 in 2008. The Spring count was one-half of last year and a record low. They disappeared altogether during the Summer and fell to a record low in the Fall.

#### Ring-neck Duck

After two years of record high counts, numbers in 2008 fell back to the ten year average of 32,000 days. It was an open winter, so there is no accounting for the decrease. The decrease was particularly sharp in the Spring Quarter, from 16,000 days to 12,000.

#### Other Species of Waterfowl

Totals of all other waterfowl were near the ten year average. These included small numbers of green-wing and blue-wing teals, gadwall, northern pintail, American widgeon, ruddy duck, bufflehead, common goldeneye, redhead, canvasback, northern shoveler, lesser scaup, mallard/black duck hybrid, and tundra swan. A hand-reared trumpeter swan that had been released in New England has taken up residence in the area and was recorded on the Refuge three times during the year.



### Pied-billed Grebe

Counts remained unchanged from 2007, and one-half the ten year average. There was a record Fall low of only 70 days, compared to the ten year average of 300.

### Belted Kingfisher

There was a substantial increase over the record 2007 low, but still below the ten year average. All four quarters were below average.

### Shorebirds

All species together recorded a record low of less than 3000 days. Killdeer was the only common species. There were small numbers of greater and lesser yellowlegs, Wilson's snipe, solitary and spotted sandpipers.

### Waders

Total days use for all wading bird species was about 8,000, down 2000 from 2007 and a bit below the ten year average. Waders included great blue, little blue, and green herons, great and snowy egrets, and American bittern.

#### Great Blue Heron

Great blues comprise 70% of wading birds. Counts fell from 7200 in 2007 to 5700 in 2008, which is somewhat below the ten year average. The gradual expansion of the new nesting colony is resulting in an increase in the Spring count. Fall counts were less than 1000 days, a record low.

#### Green Heron

Green heron counts increased slightly over 2007 from 1600 to 1800 days, which is somewhat above the ten year average. They have never been recorded during the Winter Quarter.

#### Great Egret

Use fell to a low level of only 500 days, down from 1000 in 2007 which is near normal.

### Raptors

In addition to bald eagles and ospreys, we recorded one northern harrier. We also record red-shouldered and red-tailed hawks when seen in the vicinity of the census areas.

#### Bald Eagle

Counts declined from last year's record high, but were still above the ten year average.

#### Osprey

This species also recorded a slight decline from 2007, but was still well above the ten year average.

### Aquatic Mammals

Beaver - Although trapping has removed a number of animals from problem areas, they continue to be abundant and create problems in man-made impoundments with their determination to raise water-levels.

Otter - Sightings were still well above average, but somewhat below last year's record. We had eight sightings this year, compared to 12 in 2007. There has only been one sighting on South Tract in 13 years.

Muskrat – There were only two records this year. Very few lodges are seen and numbers appear very low. It appears they began a steep decline with the arrival of beaver.

WATERBIRD DAYS USE BY QUARTER  
 Patuxent National Wildlife Research Refuge  
 Winter

10 yr avg 97-06							
Species	avg	high (YR)	low (YR)	2007	2008	2009	2010
CAGO	50,052	120,015 (05)	14,168 (03)	37, 926	39,174		
WODU	756	1,526 (08)	105 (06)	462	1,526		
MALL	11,717	19,331 (02)	6,792 (97)	9, 205	7,609		
ABDU	4,269	6,664 (02)	2,226 (04,97)	5, 026	5,537		
HOME	3,783	5,082 (02)	1,995 (03)	1, 953	4,858		
RNDU	14,648	24,410 (07)	5,880 (99)	24, 410	16,527		
AGWT	346	1,736 (00)	0 (97)	42	21		
OTHERS	522	1,165 (99)	77 (01)	126	189		
Total Waterfowl	86, 093	153, 230 (05)	49, 783 (03)	80, 150	75,441		
KILL	829	3,282 (98)	0 (03,06)	392	140		
WISN	148	532 (99)	0 (97,03,05,06)	126	42		
Total Shorebirds	987	3,619 (98)	0 (04, 06)	518	182		
AMCO	15	56 (01)	0 (98,00,02,03,05)	49	0		
GBHE	437	861	168 (04)	413	385		
PBGR	70	168 (01)	0 (03)	70	70		
BEKI	197	371 (02)	35 (04)	147	147		
BAEA	41	98 (02)	7 (97, 03)	42	70		

WATERBIRD DAYS USE BY QUARTER  
Patuxent National Wildlife Research Refuge  
Spring

10 yr avg 97-06				2007	2008	2009
Species	avg	high (YR)	low (YR)			
CAGO	36,262	53,305 (99)	25942 (07)	25942	28882	
WODU	11,403	14,714 (98)	7,350 (00)	10521	11179	
MALL	8,818	13,895 (99)	3990 (07)	3990	6104	
ABDU	1,296	1,764 (00)	735 (07)	735	1386	
HOME	2,603	3,920 (05)	1283 (08)	2660	1283	
RNDU	9,262	13,792 (04)	5,397 (05)	16415	11900	
AGWT	530	1,869 (04)	42 (97)	203	154	
OTHERS	498	1,407 (04)	215 (99)	357	875	
Total Waterfowl	70,671	90,137 (99)	60,000 (02)	60823	61763	
AMCO	161	735 (97)	0 (05)	224	189	
PBGR	404	980 (00)	112 (98, 05)	210	280	
BEKI	335	574 (06)	154 (04)	175	217	
KILL	552	1,519 (99)	56 (03)	280	133	
SOSA	294	588 (99)	7 (03)	196	56	
SPSA	132	322 (05)	7 (03)	70	35	
YELE	184	966 (00)	0 (04)	235	7	
WISN	661	2,450 (00)	14 (03)	161	133	
OTHERS	123	567 (00)	0 (97,99,08)	224	0	
Total Shorebirds	1,945	5,628 (00)	91 (03)	696	364	
GBHE	1,809	3,158 (01)	875 (03)	1414	1764	
GNHE	200	357 (01)	0 (97)	132	105	
GREG	26	54 (03)	0 (97,99,08)	14	0	
LBHE	6	28 (00)	0 (97,98, 01, 03, 04, 05)	21	0	
OTHERS	37	91 (00)	7 (02, 04)	56	28	
Total Wader	2,078	3,564 (01)	1,125 (03)	1637	1897	
BAEA	50	105 (06)	0 (97)	56	91	
OSPR	123	305 (05)	35 (99)	196	259	



WATERBIRD DAYS USE BY QUARTER  
 Patuxent National Wildlife Research Refuge  
 Summer

Species	10 yr avg 97-06			2007	2008	2009	2010
	avg	high	low				
CAGO	15,089	21,954 (04)	6244 (08)	11,508	6244		
WODU	13,314	17,731 (97, 04)	9,756 (99)	12,628	10,227		
MALL	2,339	4,606 (97)	406 (08)	469	406		
ABDU	251	826 (98)	7 (03, 06)	266	56		
HOME	174	350 (97)	0 (08)	91	0		
AGWT	4	14 (98, 00, 04)	0 (ALL OTHERS)	0	0		
OTHERS	23	98 (05)	0 (5 YRS)	7	0		
Total Waterfowl	31,195	42,079 (04)	20,600 (03,05)	24,969	16,933		
AMCO	21	14 (98)	0 (8 YRS)	14	0		
PBGR	40	154 (04)	0 (07)	0	28		
BEKI	432	693 (02)	189 (06)	266	189		
KILL	1,368	4,368 (99)	35 (03)	1,015	728		
SOSA	167	567 (98)	7 (03)	56	35		
WISN	8	63 (02)	0 (6 YRS)	0	0		
OTHERS	289	1015 (98)	0 (03)	182	52		
Total Shorebirds	1,927	6,202 (98)	84 (03)	1252	815		
GBHE	2,858	4,025 (98)	2,310 (00, 03)	3801	2597		
GNHE	1,268	2,464 (99)	630 (97)	1267	1463		
GREG	726	2,709 (98)	28 (99)	721	252		
LBHE	58	203 (98)	0 (01, 03, 05)	28	14		
OTHERS	10	35 (04)	0 (4 YRS)	21	7		
Total Wader	4,921	8000 (98)	3,520 (03)	5838	4333		
BAEA	29	63 (00, 01)	7 (99,04)	56	21		
OSPR	106	7 (99)	497 (05)	364	245		

WATERBIRD DAYS USE BY QUARTER  
 Patuxent National Wildlife Research Refuge  
 Fall

Species	10 yr avg 97-06			2007	2008	2009	2010
	avg	high	low				
CAGO	49,829	71,529 (05)	24,675 (03)	63.322	60,108		
WODU	13,151	22,190 (01)	6,839 (99)	15.967	13,657		
MALL	6,947	9,331 (97)	3,919 (07)	3.919	6495		
ABDU	3,286	6,146 (97)	1,505 (04)	3.967	2702		
HOME	1,287	2,191 (99)	413 (08)	959	413		
RNDU	8,699	13,670 (06)	3,969 (03)	2.884	4151		
AGWT	957	2,581 (05)	84 (03)	525	294		
OTHERS	970	4,452 (97)	77 (06)	644	476		
Total Waterfowl	85,125	109,000 (05)	47,000 (03)	92.187	88,296		
AMCO	65	119 (06)	0 (02)	21	0		
PBGR	307	644 (97)	70 (08)	161	70		
BEKI	630	829 (06)	160 (03)	273	609		
KILL	1,138	3,178 (98)	259 (04)	994	945		
SOSA	61	210 (03)	7 (99, 04)	91	21		
SPSA	14	39 (01)	0 (5 YRS)	7	0		
YELE	125	385 (98)	7 (00)	105	224		
WISN	157	679 (98)	0 (04)	77	203		
OTHERS	93	357 (05)	0 (03)	77	0		
Total Shorebirds	1,588	4,448 (98)	483 (04)	1351	1393		
GBHE	1,461	1,967 (98,05)	973 (08)	1.596	973		
GNHE	253	546 (01)	112 (99)	238	246		
GREG	367	1,064 (98)	21 (05)	322	259		
LBHE	26	112 (00)	0 (99, 03, 05, 06)	126	63		
OTHERS	2	14 (00)	0 (8 YRS)	0	14		
Total Wader	2,110	3,269 (98)	1,337 (99)	2.282	1555		
BAEA	95	154 (98, 05)	14 (99)	189	133		
OSPR	14	42 (98)	0 (04)	0	0		



WATERBIRD DAYS USE  
Patuxent National Wildlife Research Refuge  
Total for the Year

Species	10 yr avg 97-06			2007	2008	2009	2010
	avg	high	low				
CAGO	151,232	236,874 (05)	77,736 (03)	138,698	134,408		
WODU	38,624	49,462 (97)	29,258 (99)	39,578	36,589		
MALL	29,821	37,290 (02)	17,578 (07)	17,578	20,614		
ABDU	9,103	13,160 (98)	5,082 (04)	9,994	9681		
HOME	7,846	9,527 (99)	5,663 (07)	5,663	6554		
RNDU	32,608	47,369 (06)	18,396 (99)	43,709	32,578		
AGWT	1,491	2,650 (98, 05)	378 (03)	770	469		
OTHERS	1,599	5,100 (97)	539 (00)	1,134	1540		
Total Waterfowl	272,324	347,000 (05)	178,000 (03)	257,129	242,433		
AMCO	244	896 (97)	21 (02)	308	189		
PBGR	819	1,547 (00)	273 (03)	441	448		
BEKI	1,593	1,918 (02)	791 (03)	861	1162		
KILL	3,886	12,124 (98)	1,106 (03)	2,680	1946		
SOSA	533	1,008 (99)	105 (04)	343	112		
SPSA	199	483 (99)	28 (04)	77	35		
YELE	350	987 (00)	91 (02, 04)	340	231		
WISN	826	2,555 (00)	203 (05)	364	378		
OTHERS	653	1,358 (98)	0 (03)	483	52		
Total Shorebirds	8,711	18,945 (98)	2,754 (08)	4,287	2754		
GBHE	6,385	7,714 (98)	4,704 (03)	7,224	5719		
GNHE	1,722	2,919 (99)	959 (97)	1,637	1814		
GREG	1,120	3,794 (98)	203 (99)	1,057	511		
LBHE	90	245 (98)	0 (03, 05)	175	77		
OTHERS	49	112 (00)	28 (06)	77	49		
Total Wader	9,365	13,076 (98)	6,654 (03)	10,170	8170		
BAEA	216		91 (97)	343	315		
OSPR	243	830 (05)	56 (99)	560	504		