

1999 PATUXENT NWR WATERBIRD CENSUS

Dec. 1998 - Dec. 1999

This was the third full year of intensive surveys of most of the wetland areas on the Refuge. No new areas were added to the census in 1999. The inventory now covers 53 units encompassing approximately 575 acres, plus segments of the Patuxent and Little Patuxent Rivers. Cash Lake was drained in early January to replace the dike and outlet structures. This eliminated about one-half of the South Tract habitat. The 1998 report included an in-depth discussion of the units. This report compares results for the past three years. Tables for the three tracts (North, Central, and South) plus totals are attached. Purposes and methodology did not change.

Weather

The worst drought in 30 years continued through the first half of 1999. January was the only month to record above average precipitation prior to hurricane rainfall in August and September.

The rest of the year was again below normal. However, rainfall from Hurricane Floyd was sufficient to refill most of the units for the first time since the spring of 1998.

This was the third "open" winter in a row. There was some ice in early and mid-January, and again in mid-February. Snowfall was negligible.

Results

Waterfowl

Total waterfowl days use was comparable to 1998 at about 302,000 compared to 303,000 in 1998. (See tables). The drought continued to affect refuge and unit distribution, with the greatest impact on the small manmade and beaver impoundments, particularly on North Tract. The most dramatic occurrence has been the precipitous drop in wood duck numbers. It was replaced by the mallard as the most abundant duck on the refuge.

Canada Goose

The open winter and early spring held both residents and migrants on the refuge. Annual overall days use increased from 139,000 in 1997 to 170,000 in 1998 and 194,000 in 1999. Most of the increase was during the winter and spring quarters. The South Tract, where almost all migrants are located, had an increase in use from 46,300 in 1997 to 64,700 in 1998 and 78,800 in 1999. The level population during the summer quarter indicates a stable breeding population.

Wood Duck

The steep decline in population continued, from 50,000 in 1997 to 40,000 in 1998 and 30,000 days use in 1999. There was a decline in every quarter, but especially in summer and fall. The drought probably affected the spring and summer counts, but the decline in the fall from 11,000 days use in 1998 to 6800 in 1999 cannot be blamed on the drought since most units had comparable water levels in both years. At least some of this decrease was probably due to Cash Lake being drained.

Mallard

Use continued to increase from 30,000 in 1997 to 33,000 in 1998 and 36,000 in 1999. In 1999, it was the most common duck on the refuge. The spring quarter of 1999 recorded a substantial

increase over 1998, from 9400 to 14,000 days use. This was partially offset by a substantial decrease in the fall quarter, from 9100 to 5300 days use. Even though water levels were substantially higher in the fall of 1999 compared to 1998, the mallards were elsewhere. Use during the winter quarter continued to increase with the long periods of open water.

Black Duck

Black duck use fell back to the level of use in 1997; from a little over 10,000 in 1997 to 13,000 in 1998 and back down to 11,000 in 1999. Use declined about equally in all four quarters.

Hooded Merganser

Use by hooded mergansers continued to increase, from 6100 in 1997 to over 9000 in 1998 and 9500 in 1999. The greatest increases have been during the fall quarter, from 800 in 1997 to 1600 in 1998 and 2200 in 1999.

Ring-neck Duck

Ring-necks took a nose-dive in 1999; from over 36,000 in 1997 to 33,000 in 1998 and only 18,000 in 1999. In spite of the open winter, use on the South Tract declined from 16,000 days use to 5900. This was probably due to the draining of Cash Lake. Spring use was also down substantially, from 11,000 to 5900.

Ruddy Duck

Ruddy duck use bounced back up to the 1997 level at over 1800 days use. They are almost entirely confined to Lake Redington in the fall and early winter.

American Green-wing Teal

After taking a big jump between 1997 and 1998, use leveled off in 1999. There were 600 days use recorded in 1997, 2660 in 1998 and 2500 in 1999. There was some shift in use from Central Tract to South Tract.

Other ducks

These included gadwall, American widgeon, northern pintail, blue-wing teal, common goldeneye, bufflehead, canvasback, red-breasted merganser, and hybrid mallard-black ducks. This group totaled over 3000 days use in 1997 and then declined to 1800 in 1998 and 1350 in 1999.

Other Waterbirds

American coot - Days use by coots rose somewhat from 1998 (42 to 161), but was still far below 1997 (almost 900), as Knowles 1, their favorite unit continued to be below full pool.

Pied-billed Grebe - Use doubled between 1998 and 1999, from 500 to almost 1100, but was still below 1997 (1500). Use on North Tract rose from 100 to 360, and on Central Tract from 120 to 630, while falling on South Tract from 500 to 80. The decline was due to draining Cash Lake.

Belted Kingfisher - After reaching over 1800 days in 1998, use dropped back to 1600, close to the 1997 level of 1500. There was some decline on North Tract, a substantial increase on Central Tract and a steep drop on South Tract.

Shore Birds - The ideal drought conditions during the 1998 fall migration exposed substantial

bare shoreline areas which led to shorebird use reaching an all time peak of 16,600 in 1998. The less ideal conditions of 1999 (Sept. hurricane rains) saw use decline to 12,400 days-use and a substantial drop in unusual species recorded in 1998.

Killdeer - The killdeer remained by far the most abundant shorebird. Use between 1998 and 1999 fell by one-half, from 12,000 to 6700, although still considerably higher than 1997 when the count was 4400. The timing of low water and exposed mud flats was less favorable in 1999 than in 1998. There were very steep declines in both North Tract (4600 to 1200) and Central Tract (6200 to 2300). The Cash Lake drawdown caused the South Tract count to rise from 1200 to 3200 use-days.

Solitary Sandpiper - After increasing substantially between 1997 and 1998 (600 to 1000), use leveled off to remain at 1000 use days.

Spotted Sandpiper - Use continued to increase substantially, from 130 days in 1997 to 245 in 1998 and 480 in 1999.

Yellow-legs (Greater and Lesser) - After doubling between 1997 and 1998 (260 to 600), these two species leveled off at a little over 600 days of use.

Common Snipe - The drought and drawdown of Knowles I and Cash Lake brought about a substantial increase in use from 1470 days use in 1998 to 2900 in 1999.

Other shore-birds (Least Sandpiper, Semipalmated Sandpiper and Pectoral Sandpiper)

These were the only other shorebirds recorded in 1999. Use fell from almost 1200 to 630 days.

Wading Birds

Great Blue Heron - Use remained fairly constant between all three years (6900 to 7700 to 7100). The severe drought caused some shift of use from North Tract to Central Tract between 1998 and 1999 and a substantial drop on South Tract due to drainage of Cash Lake.

Green Heron - Use by this species saw a rather large increase in each of the last three years, from 1800 in 1997 to 2400 in 1998 and 2900 in 1999. Use fell by 200 on North Tract, tripled on Central Tract from 500 to 1300 and declined somewhat on South Tract. Whether there was an actual increase in population or the drought made it easier to see them may or may not have been a factor.

Great Egret - This is primarily a species that visits the refuge in the fall. As with the shorebirds, the fall rains eliminated much of the low water area and use fell from 3800 to 900 days use from 1998 to 1999, to about where it was in 1997.

Other Wading Birds

There were 5 records of little blue herons, three for American bitterns, and one each for Black-crowned and Yellow-crowned night-herons.

Gulls and Terns

Use by gulls continued to be confined to the South Tract lakes during winter and early spring. Overall use increased dramatically from over 48,000 use days in 1998 to over 89,000 in 1999. By far the most abundant species was the ring-billed gull, at over 67,000 days. Four new and very unusual species were recorded on Lake Redington in January. They were lesser black-back, Iceland, glaucous, and Thayer's gulls. There was also one record of a Bonapart's gull. The only tern record was one Least Tern.

Raptors

Bald Eagle - The resident pair did not nest in 1999, so recorded use fell; from 266 days in 1997 to 364 in 1998 and only 133 in 1999.

Osprey - There were 8 records of this species.

Northern Harrier - This species was recorded 5 times, all on North Tract.

Red-shouldered Hawk - This continues to be the most abundant species in the vicinity of water areas. An estimated 20 pairs are found in the vicinity of impoundments, particularly the wooded units throughout the refuge.

Red-tailed Hawk - This is a common species, but requires much larger territories than the Red-shoulder so is considerably less common. There are an estimated 9 pairs in the vicinity of impoundments. This includes one pair on South Tract, four pairs on Central Tract, and four pairs on North Tract.

Woodpeckers

Pileated and redheaded woodpeckers were recorded during censuses.

Pileated woodpecker - They are evenly distributed over almost all wooded units and the rivers throughout the Refuge. Generally only individual birds are seen; rarely pairs in the spring.

Redheaded woodpecker - Records of several pairs on Millrace and Hance 1 raised our hopes that a breeding population may have become reestablished. Unfortunately this did not happen. Birds were seen on Millrace as late as early May, but none thereafter.

Mammals

Mammals recorded included beaver, muskrat and otter

Beaver - The record drought drove most beaver out of the impoundments by early summer. Heavy rains in September allowed them to start returning. Beaver activity was very high at the end of November, with many previously occupied units active. These units included Lake Redington, Snowden Pond, Duval 1, Hobbs Pond, Schafer Lake, Lake Allen, Rogue Harbor, Midway Marsh, Kingfisher Pond and Powerline Swamp. First time activity was recorded on Bluegill Pond and Merganser Pond. Beaver had not returned to Shangri-la, Beaver Valley, Wood Duck Pond, New Marsh, K Swamp, Millrace, Hance ponds, Uhler ponds, Knowles 2 or Mabbott Pond. Cash Lake, Knowles 1 and Knowles 3 were drawn down and beaver made no effort to return.

Muskrat - Muskrat sightings reached an all time low. They were seen only three times during the year. Single animals were seen on Lake Redington, Knowles 1, and Patuxent Marsh.

Otter - A pair of otters were seen on Knowles 1 and 2 several times in late November. They were very tame and fished and fed within a 100 feet of the vehicle. Tracks continue to be seen in a number of places on the refuge, including Millrace, Bailey Bridge Pond and Schafer Tract.

WATERBIRD DAYS USE 1997-99
PATUXENT NATIONAL WILDLIFE REFUGE

Species	Winter			Spring			Summer		
	97	98	99	97	98	99	97	98	99
CAGO	25571	53837	61516	40264	39991	53305	16002	19103	20895
WODU	581	637	581	13797	14714	12082	17731	13692	9758
MALL	6792	11459	13895	8988	9395	13895	4606	2940	3010
ABDU	2237	5838	4823	1351	1694	1232	595	826	287
HOME	3073	4326	4389	1855	2870	2926	350	210	21
RNDU	15875	16149	5880	10087	11116	5936	----	----	-----
AGWT	----	7	280	42	658	546	----	14	----
RUDU	----	560	980	----	7	14	----	----	----
OTHER DUCKS	84	336	185	560	854	168	----	7	---
TOTAL WATER FOWL	54214	93156	92529	77266	81320	90104	39284	36792	33971
AMCO	21	---	14	735	21	14	7	14	---
PBGR	49	63	91	665	112	406	119	56	-----
BEKI	196	238	301	210	413	308	462	448	504
KILL	644	3283	1715	602	1295	1519	1498	4368	2751
SOSA	-----	105	----	315	252	588	231	567	413
SPSA	----	----	----	84	140	252	21	91	231
YELE	----	----	42	105	70	385	21	154	189
COSN	-----	231	532	294	553	2170	7	7	-
OTHER SHOREB	----	7	----	----	----	105	70	1015	511
TOTAL	644	3619	2289	1407	2310	5019	1778	6251	5019

Species	Winter			Spring			Summer		
	97	98	99	97	98	99	97	98	99
GTBH	252	441	721	2324	1281	2170	3108	4025	3185
GRHE	-----	-----	-----	-----	21	343	630	1064	2464
LBHE	-----	-----	-----	-----	-----	14	14	203	21
BCNH	-----	-----	-----	14	7	7	7	7	-----
YCNH	-----	-----	-----	-----	-----	7	-----	-----	-----
AMBI	-----	-----	-----	28	28	21	-----	-----	-----
GREG	-----	-----	-----	---	21	---	630	2709	29
TOTAL WADER	259	469	721	2590	1631	2632	4998	8932	6356
BAEA	7	42	63	-----	7	49	21	35	7
GULLS	7553	18585	55993	7329	8295	19628	-----	-----	-----

WATERBIRD DAYS USE 1997-99

Species	97	Fall 98	99	97	Total 98	99
CAGO	57512	57099	58492	139,349	170,030	194,208
WODU	17353	10934	6839	49462	39977	29260
MALL	9331	9142	5320	29717	32936	36477
ABDU	6146	4802	4697	10329	13160	11039
HOME	868	1624	2191	6146	9039	9527
RNDU	10682	6223	6580	36645	33488	18396
AGWT	553	1981	1680	595	2660	2506
RUDU	1890	406	840	1890	973	1834
DUCKS*	2562	616	1120	3206	1813	1351
TOTAL WATER FOWL	105,014	92421	86919	275,771	303,689	302,764
AMCO	133	7	133	896	42	161
PBGR	644	273	581	1477	504	1078
BEKI	679	721	490	1547	1820	1603
KILL	1687	3178	756	4431	12124	6741
SOSA	56	70	7	602	994	1008
SPSA	28	14	--	133	245	483
YELE	133	385	21	259	609	637
COSN	21	679	203	322	1470	2905
OTHER SHOREB	28	112	14	56	1176	630
TOTAL	1974	4438	1001	5803	16618	12404

Species	Fall			Total		
	97	98	99	97	98	99
GTBH	1253	1967	1050	6937	7714	7126
GRHE	329	196	112	1799	2387	2919
GREG	203	1064	175	833	3794	889
LBHE	7	42	--	21	245	35
BCNH	--	--	--	21	14	7
YCNH	---	---	---	---	---	7
AMBI	--	---	---	28	28	21
TOTAL WADERS	1792	3269	1337	9639	14301	10423
BAEA	63	154	14	266	364	133
GULLS	30688	21504	14007	47467	48489	89628

WATERBIRD DAYS USE BY TRACT 1997-99

Species	North Tract			Central Tract			South Tract		
	97	98	99	97	98	99	97	98	99
CAGO	19551	23400	31857	73437	81928	83559	46361	64694	78792
WODU	19432	14623	12061	17976	13867	12600	12054	11487	4599
MALL	15444	14518	13783	12173	21168	19362	2100	2031	3062
ABDU	1099	1694	1232	7165	9212	8351	2065	2254	1456
HOME	2072	2296	784	3570	6167	8386	504	567	175
RNDU	3738	4109	4676	6545	7112	4858	26362	22267	5369
AGWT	35	161	21	560	2345	1344	--	--	700
RUDU	--	--	7	---	---	63	1890	966	882
DUCKS*	133	14	168	616	868	350	---	---	77
TOTAL WATER FOWL	61602	60843	64589	122210	142807	138873	91910	104749	95112
PBGR	560	112	364	637	119	630	1477	504	84
BEKI	812	784	602	532	924	966	140	133	49
KILL	847	4669	1225	3059	6202	2310	525	1253	3206
GTBH	3843	3885	2926	2233	2765	3283	861	1064	959
GRHE	973	1743	1582	770	497	1329	70	147	98