

RAPTORS AND WATERBIRDS

ON THE MAURICE RIVER

CUMBERLAND COUNTY, NJ

The Seventeenth Year of an Ongoing and Long-term Study

**Seasonal Summary: July, 2003 through June, 2004
including WINTER, 2003-2004**

Submitted to:
Citizens United to Protect the Maurice River and its Tributaries, Inc.

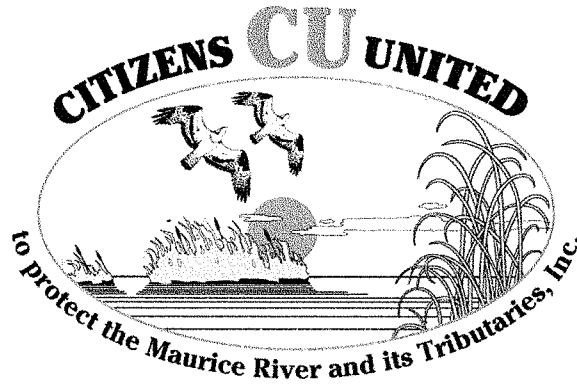


Northern Harrier hunting low over a Maurice marsh. Photo by Clay Sutton.

By Clay Sutton and James Dowdell

June 20, 2004

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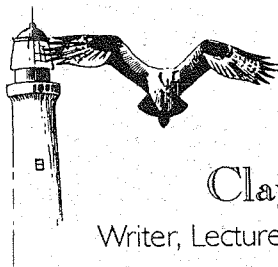


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INTRODUCTION AND OVERVIEW:

The winter of 2003-2004 marked the seventeenth consecutive season for the Citizens United-sponsored raptor and waterfowl project on the Maurice River. As in previous years, Clay Sutton and Jim Dowdell conducted all counts. Methodology was the same as used during the previous sixteen years of the survey: eight points on the fourteen mile long tidal stretch of the Maurice River between Millville and East Point sites were sampled (observed) for approximately 45 minutes each. As we have done since 1998, Bivalve waterfowl and waterbirds are also now counted and are shown in overall totals.

A core program of ten full winter surveys was carried out between December 3, 2003 and March 23, 2004 - a rate of approximately one sampling every ten days. These dates span the full winter season as it relates to winter bird-use of the Maurice River. As in the past two years, full waterbird and shorebird counts were carried out in conjunction with the targeted winter raptor and waterfowl studies. In addition to the core winter surveys, this report details additional survey work carried out in autumn, 2003 and spring, 2004. For the first time, the winter studies were expanded to include counts done in the all-important "shoulder seasons" of peak waterfowl and raptor-use. In 2003-2004, the Maurice River avian surveys became a true year-round effort.

For a number of significant reasons, including declining winter duck populations, the recent emergence of Bivalve as a major waterbird/shorebird use area, and both known findings and suspected wildlife values in the pre and post seasons of the winter survey (i.e., spring and fall), we felt there was real value in stretching the survey efforts over the entire year. A more protracted study allowed us to better assess fall shorebird use of the Maurice (July through October), fall raptor migration, late spring duck numbers (teal, Wood Ducks, etc.), and spring/early summer shorebird and waterbird use and staging. In these expanded studies, we also gained valuable information on nesting raptors, such as Cooper's Hawk and Norther Harrier.

Because fall migration season dynamics and numbers have a known impact on winter bird populations, and because both spring and fall migrations are so protracted, the assessment of Maurice River bird populations throughout the seasons brings important new elements and aspects to our understanding of avian ecovalues of the Maurice. Simply put, a better understanding of spring, summer, and fall bird use can only complement our extensive database of winter bird use. The Maurice River and its tributaries are exceptional at all seasons, and 2003-2004 studies made a major step in documenting such key bird-use, status, and distribution.

The winter of 2003-2004 was protracted, and the coldest in over a decade. January, 2004 was the coldest since 1985 in Atlantic City, the coldest since 1982 in Philadelphia, and the coldest since 1977 in New York City. Accordingly, the Maurice River was frozen to a greater extent, and longer, than most recent winters. Even Maurice River Cove was largely ice-bound during a number of the winter surveys. Ice conditions not only drive waterfowl to the Delaware Bay from farther north, but also function to concentrate birds in ice-free reaches on the swifter portions of the Maurice River. In the past, our top waterfowl counts have occurred during winters with major "ice events" on the river. Unfortunately, winter 2003-2004 was mostly an exception to this well-known pattern.

In addition, the best winters for Bald Eagles occur in the harshest years -- when ice, snow, and cold weather to the north drive eagles south to the Delaware Bay region. 2003-2004 was an excellent winter for Bald Eagles, with a new peak record daily count and a near record average for eagle sightings.

Because a full analysis and extensive discussion of status and trends were offered in the recent fifteen year summary (2002), this year's report is a comparatively short-form summary of observed avian-use of the Maurice River, broken into separate analyses for fall, winter, and spring. We begin with the core winter raptor and waterfowl studies carried out in winter 2003-2004.

FINDINGS - Winter Raptors:

Maurice River winter raptor survey results for 2003-2004 are contained within **Table 1**. Peak counts are **bold-faced**, and averages are shown for key species.

Turkey Vulture

With an average winter 2003-2004 count of 95.1, Turkey Vultures were above the recent average (1997-2002) of 85.8. This mirrors a known continuing rising trend in southern New Jersey. Of note is the continuing emergence of a new vulture roost area behind Bayside State Prison, with fewer vultures using the long-traditional upper river Laurel Lake roost in recent winters. TV's peaked at 142 on December 3, a number which probably includes some late migrants.

Black Vulture

Black Vultures averaged 22.5 birds per survey in 2003-2004, second only to 1993-1994's average of 25. The peak of 75 is just short of the all time high of 76, but of interest, on Dec. 21, an amazing 72 Black Vultures were in sight *at once* at Heislerville WMA, heading for the Bayside roost.

Bald Eagle

A new peak high count of 28 Bald Eagles was tallied on January 29. This is a conservative estimate - the final seven eagles seen were not counted due to fear of potential double-counting. That week saw a major incursion of eagles from the north - driven south by ice conditions to the north. The average of 13.7 Balds is just shy of last season's record 14.2.

Northern Harrier

It was an excellent year for Northern Harrier. A regional good fall migration was followed by high wintering numbers throughout the Delaware Bayshore. The average of 29.3 is the highest ever and the peak of 40 on December 3 is the best ever. This total no doubt reflects some late migrants recorded in the total.

Sharp-shinned Hawk

At an average of 2.3 per survey, sharp-shins were below recent averages, and the peak of 5 (two dates) was, for unknown reasons, modest by recent standards.

Cooper's Hawk

Cooper's also peaked at 5 on two dates, and this led to a higher average than in recent years; 2.4 Cooper's per survey ties 1999-2000 as our highest ever winter averages.

Northern Goshawk

Although tallied on one autumn count, no Goshawks were recorded during winter survey efforts. Goshawks are only seen on average about once every two winters on the Maurice River.

Red-shouldered Hawk

It was an excellent year for Red-shoulders. The average of 1.5 per survey is the highest ever-augmented by the record eight seen on December 3. While some of the eight were late migrants, probably six plus Red-shoulders wintered along the river in 2003-2004.

Red-tailed Hawk

Red-tail numbers continue to climb on the Maurice. Our average of 50.4 easily bests last year's record of 45.4 per survey. Once again, like last year, "no bad days" occurred to lower the average, and the amazing total of 87 on December 3 (a new winter peak) skewed the average a bit too. About half this number of Red-tails were late migrants - seen migrating west up the Delaware Bayshore.

Rough-legged Hawk

Only three individuals were seen in winter 2003-2004, driven to the region by snow cover to the north. All were different individuals - 2 light morph and one dark morph were recorded. The average of .3 is actually good for recent years for this declining winter visitor from the far north.

Golden Eagle

Goldens also weighed in at an above average .3 per survey - a good year. Goldens were seen on three dates, with at least two individuals recorded - both immatures. Of interest, twice Goldens were seen hunting "The Triangle" grasslands west of the upper tidal Maurice River. At least one non-survey sighting of Golden Eagle occurred, when Pat Sutton saw an immature at East Point on January 31.

American Kestrel

At .3 per survey, 2003-2004 was the worst year ever for Kestrel on the Maurice. In fact *none* actually wintered - the three recorded were all spring migrants seen on the final two survey dates. American Kestrel is virtually gone, extirpated both as a wintering bird and also as a breeder. Why the Kestrel has not yet been listed as threatened or endangered by the ENSP is inexplicable and unfathomable.

Merlin

One of the few below average species, no Merlin were recorded during winter 2003-2004 surveys. One non-survey record was reported to us however, a bird seen at East Point on Dec. 12 by Sandra Keller.

Peregrine

Three sightings are slightly below recent averages. Winter Peregrines are probably more frequent, particularly at Bivalve, than survey results indicate.

TABLE 1
MAURICE RIVER WINTER RAPTOR AND WATERBIRD SURVEY
WINTER 2003-2004

	12/3/03	12/12/03	12/21/03	1/6/04	1/11/04	1/29/04	2/11/04	2/25/04	3/9/04	3/23/04	Avg.
Red-throated Loon			2						9		
Common Loon			1								
Pied-billed Grebe		1									
Horned Grebe									11		
Red-necked Grebe										1	
Double-cr Cormorant	1								4	29	
Great Cormorant				1							
Great Blue Heron	9	13	24	16	16	8	8	2	5	7	
Great Egret		3							2	2	
Snowy Egret										25	
Black-cr Nt-Heron	9	4	5								
Black Vulture	17	29	75	56	2	11	11	6	3	15	22.5
Turkey Vulture	142	81	120	114	83	66	81	62	94	108	95.1
Ross' Goose	1	1									
Snow Goose	347	970	1111	1400	950	30	4000	3280	1231	100	1342
Canada Goose	566	346	583	132	90	1520	1048	365	158	160	497
Brant							11	2			
Mute Swan	9	6	18	10	5	11	2	28	21	39	
Tundra Swan	2	3	4							3	
Wood Duck	22										
Gadwall	5	13	4	10				13	43	50	
American Wigeon								10	9	3	
American Black Duck	761	1498	836	905	1075	743	1044	1950	792	741	1035
Mallard	722	329	124	472	616	203	994	845	385	348	504
Northern Pintail	71	479	107	579	181	171	525	1495	1161	512	528
Green-winged Teal	40	121	60	94	37			1151	1714	1793	501
Common Teal										1	
Canvasback			5	1		5	6	27	40	26	
Ring-necked Duck	360	330	680	378			155	370	310	175	
Greater Scaup	1	850	135	1		29	10	4	1	3	
Lesser Scaup		62	79			3				20	
scaup (sp.)		60	250	105					14	15	
Surf Scoter	80	100	38	2							
White-winged Scoter	3		25 sp.								
Black Scoter	100	30	17								
Long-tailed Duck	8	16	18	4	2				1	2	
Bufflehead	85	91	190	134	40	326	135	166	155	40	136
Common Goldeneye	3	16	235	6	220	143	24	9	42		
Hooded Merganser	3		8	2	2		2		1		
Common Merganser			8		11	52	27		1		
Red-br Merganser	34	19	104	35	17	331	49	39	83	19	73
Ruddy Duck		6	1	2	4						

TABLE 1 (continued)
MAURICE RIVER WINTER RAPTOR AND WATERBIRD SURVEY
WINTER 2003-2004

	12/3/03	12/12/03	12/21/03	1/6/04	1/11/04	1/29/04	2/11/04	2/25/04	3/9/04	3/23/04	Avg.
Osprey									5	34	
Bald Eagle	14	7	9	12	7	28	20	12	16	12	13.7
Northern Harrier	40	38	24	23	21	26	33	29	26	33	29.3
Sharp-shinned Hawk	2	1	5	2	1	3	5	1	2	1	2.3
Cooper's Hawk	1	3	5	2	1	5	1	1	3	2	2.4
Red-shouldered Hawk	8	1	2		2			2			1.5
Red-tailed Hawk	87	62	42	51	28	38	41	44	62	49	50.4
Rough-legged Hawk						1	1	1			0.3
Golden Eagle			1				1			1	0.3
American Kestrel									1	2	0.3
Peregrine Falcon		1							2		0.3
Ring-nk Pheasant	1										
Wild Turkey			16			36			10		
Black-bellied Plover	1	18	1							5	
Killdeer	11	15	23					7	2	5	
Greater Yellowlegs	12	4	8	3					19	47	
Lesser Yellowlegs	18	8							31	79	
Sanderling	6		1								
Dunlin	767	1700	509		400	41	38	14		406	
Wilson's Snipe			2	2	1				6	7	
Bonaparte's Gull								4	25	1	
Ring-billed Gull	x	x	350	200	200	50	x	x	x	x	
Herring Gull	x	x	340	1000	750	1000	x	x	x	x	
Lesser Black-bk Gull					1			1			
Gt Black-backed Gull	x	x	69	200	125	250	x	x	x	x	
Great Horned Owl						1					
Belted Kingfisher	2	4	4	6	2	1	4	2	4	2	
NOTES:											
(1) Peak HIGH COUNTS are bold faced											
(2) Average counts are shown for key species.											

FINDINGS - Winter Waterfowl:

Maurice River waterfowl results for winter 2003-2004 are also shown in **Table 1** (also shown here are all waterbird/shorebird survey results for the winter season). Peak counts are **bold-faced** and average counts are shown for key species.

Despite high expectations based on the cold winter and resultant ice conditions, waterfowl numbers were at best only average during winter 2003-2004. They were average by recent standards, and well below average when compared to earlier segments of this seventeen year study.

Snow Goose

Snow Geese peaked at a fair 4,000 birds on February 11, but the average of 1,342 is quite low by recent standards. Most Delaware Bayshore area Snow Geese were in the Cohansey River region for much of winter 2003-2004.

Canada Goose

In contrast, the 497 average for Canada Geese is the highest recorded in the seventeen years of study, in part due to a major incursion of weather-driven (snow/ice) geese in late January and early February. The peak of 1,520 (January 29) is also an all-time high, and included many late "migrants" fleeing the north.

As in past years, Bayside State Prison Canada Goose populations were counted in 2003-2004. Numbers estimated are as follows (and there is thought to be very little overlap with goose numbers counted on the mainstem river):

Bayside State Prison - Canada Geese - 2003-2004

7/25	8/7	8/15	9/24	11/14	12/3	12/12	1/6
50	150	200	400	1,000	875	1,050	1,400
1/11	1/29	2/11	3/9	4/6	4/20	5/5	6/3
200	400	700	450	225	225	105	45

American Black Duck

The average of 1,035 is quite low when compared to the most recent five year segment of the seventeen year study, and the peak of 1,950 (February 25) is the lowest in the past six years, in spite of conditions that normally create far higher counts.

Mallard

Mallard continue their significant low numbers trend. The peak of 994 on February 11 is better than in recent years; the average of 504 is also better than recent years but still abysmal when compared to the "early years" of the Maurice River studies.

Northern Pintail

The peak of 1,495 (February 25) is respectable - the best in six years - but the average of 528 remains well below that of previous segments of the study. Pintails were fairly evenly distributed between the upper river and Bivalve in winter 2003-2004.

Other Waterfowl

As always, there were a number of highlights to the winter waterfowl studies. **Green-winged Teal** peaked at a very good 1,793 on March 23, and a **Common Teal** (Eurasian Green-winged Teal) was found at Bivalve on March 23. Common Teal are now annual on the Maurice River in spring. A **Ross' Goose** was seen at Bayside Prison on December 3 and 12 for the fourth Maurice River region record of this rare western stray. Inexplicably, Northern Shoveler were completely absent from the study area in winter 2003-2004.

Diving duck numbers were exceptional in Maurice River Cove during icy conditions in winter 2003-2004. High counts of 850 **Greater Scaup**, 18 **Long-tailed Duck** (a new record by far), 326 **Bufflehead**, 235 **Common Goldeneye**, and 331 **Red-breasted Merganser** (new record high) are all judged as regionally excellent and significant. The 680 **Ring-necked Ducks** counted on December 21 on the Mauricetown sand plant pond are the second highest total ever reported for anywhere in New Jersey - a significant Maurice River region record indeed!

It remains curious why Maurice River waterfowl numbers remained depressed in comparison to the early years of this seventeen year study. As widely reported by the US Fish and Wildlife Service in various newspapers, newsletters, and journals, "A wet spring produced more ducks in North America this year, according to official USFWS estimates. The number of breeding ducks jumped from 31.2 million in 2002 to 36.2 million this year. Northern Shovelers and Northern Pintails showed the largest percentage gains (56 and 43 percent, respectively), but each of the 10 most common duck species boosted their populations this year. The Mallard, the most common species, jumped 6 percent to 7.95 million birds, and the number-two duck, Blue-winged Teal, increased 31 percent to 5.5 million birds. However, despite the pintail's gains, biologists say the species remains 39 percent below its long-term average and 54 percent below managers' goal."

The fact that Maurice River populations remain lower than historical numbers despite good duck productions in spring/summer 2003 may be related to local conditions. It is expected that, despite control efforts, Canada Goose herbivory on wild rice on the upper river continues to play a major role in duck status and distribution on the river and in the region. As is noted, Canada Goose populations, both on the river and regionally (Bayside State Prison) remain at all-time high levels. Continued monitoring of waterfowl populations on the Maurice is warranted.

COHANSEY RIVER RAPTOR AND WATERBIRD SURVEYS:

As in past years, in an effort to gain regional perspective on Maurice River avian ecovalues, several surveys were conducted on Cumberland County's Cohansey River in winter 2003-2004. Four surveys were run on the "similar" Cohansey in order to compare and contrast raptor and waterbird use of these two prime Cumberland County tributaries to Delaware Bay.

Table 2 shows raptor and waterbird findings for the Cohansey River, along with averages for key species. Just four surveys do not allow an in-depth comparison, yet the Cohansey, in general, shows similar wildlife usage. Repeating past trends, vultures are fewer on the Cohansey but most raptor species are found in similar concentrations. For the first time ever, the Cohansey's Bald Eagle average was higher than the Maurice, with numbers strongly augmented by the eight plus breeding pairs now located on the Cohansey (versus four on the Maurice).

Also, as in past comparisons, goose concentrations along the Cohansey are far greater than on the Maurice. An astounding 54,000 Snow Geese were estimated in the Cohansey region on December 28, and 3,250 Canada Geese on February 8. On the other hand (as in the past), Black Duck, Mallard and N. Pintail numbers were far fewer on the Cohansey. The Cohansey River, important in its own right, remains an excellent barometer by which to measure Maurice River significance, and offers additional insight in regards to regional trends.

TABLE 2
COHANSEY RIVER RAPTOR AND WATERBIRD SURVEY
WINTER 2003-2004

	12/28/03	1/10/04	2/8/04	3/13/04	Avg.
Pied-billed Grebe	3				
Double-cr Cormorant				2	
Great Blue Heron	23	4	1	10	
Great Egret		1			
Black Vulture			12	3	3.75
Turkey Vulture	23	39	60	76	49.5
Snow Goose	54288	34100	2800	1600	23197
Canada Goose	1666	2750	3250	312	1995
Mute Swan	15	22	21	30	
Gadwall	1			2	
American Wigeon				1	
American Black Duck	68	495	108	120	198
Mallard	91	210	112	70	121
Northern Pintail			1	20	5
Green-winged Teal	27	20		100	37
Canvasback			110		
Ring-necked Duck	18				
Greater Scaup	12		1	2	
Lesser Scaup	2				
scaup (sp.)	40		50		
Surf Scoter	2				
White-winged Scoter	1	90 sp.			
Black Scoter	5				
Bufflehead	7		3	2	
Common Goldeneye	45		6	1	
Common Merganser		8	11	2	
Red-br Merganser	6		1	1	
Bald Eagle	17	20	19	17	18.25
Northern Harrier	32	32	22	19	26.25
Sharp-shinned Hawk	6	2	1	2	2.75
Cooper's Hawk	5		1		1.5
Red-shouldered Hawk	1	1	3	1	1.5
Red-tailed Hawk	28	36	48	37	37.25
Rough-legged Hawk		1	2		0.75
American Kestrel	1			1	0.5
Ring-nk Pheasant	1				
Wild Turkey	52	10		40	
Sandhill Crane	5				
Killdeer	2	2		12	
Greater Yellowlegs	3			2	
Lesser Yellowlegs				10	
Dunlin	185	6		50	
Sh-billed Dowitcher				1	
Wilson's Snipe	3	4		15	
American Woodcock	2				
Ring-billed Gull	136	100	X	X	
Herring Gull	150	100	X	X	
Gt Black-backed Gull	24	20	X	X	
Great Horned Owl		2		1	
Short-eared Owl	3				
Belted Kingfisher	3	1	1	2	

FINDINGS - Fall 2003 Raptor, Waterfowl, Waterbird and Shorebird Studies:

For the first time, raptor and waterbird studies in 2003-2004 were expanded to a full season, year-round effort. Migratory patterns and conditions during autumn are a key causal influence on wintering bird populations, but more importantly (for conservation reasons), migratory concentrations, status, and distribution are a major component of the significant wildlife values of the Maurice River Region. Because migration is a crucial component of a bird's life cycle, and because of the inestimable importance of stopover habitat to a bird's ultimate survival, fall raptor and waterbird findings are of as great or greater importance than winter bird use of the Maurice River.

Maurice River raptor and waterbird survey results for fall, 2003 are shown in **Table 3**. Dates surveyed span from July 25 to November 14, 2003. Findings were significant, confirming and corroborating both previous anecdotal and targeted findings regarding autumn bird use of the region and particularly the lower Maurice River area. Large numbers of wading birds (herons, egrets, and ibis) were found on the lower river in summer and early fall. Waterfowl numbers were unexpected and surprising. The post-breeding, pre-migration staging of American Black Ducks was highly significant; 915 Black Ducks were counted at Bivalve on August 15. In addition, late fall numbers of Blacks, Mallards, Pintails and Green-winged Teal were often as high (and significant) as numbers found in winter.

As expected, fall raptor migration on the Maurice River in fall was substantial. Findings confirmed and corroborated previous efforts at East Point and elsewhere on the Maurice River. On October 13, 585 raptors of 13 species were tallied migrating west (going around Delaware Bay) along the Maurice River, including 17 Bald Eagles and 61 Cooper's Hawks.

One significant finding of the targeted summer ("early fall") studies was the number of breeding raptors documented. As an important reference for wintering Red-tailed Hawk populations, an interesting 27 Red-tails were recorded on July 25, proof that not only do high numbers of raptors use the river year round, but also that fully half of the "winter" Red-tails are probably actually resident birds. Also, two Northern Harriers on July 25 were clear proof of local breeding, and a freshly-fledged juvenile Red-shouldered Hawk at Bivalve on August 15 was proof of regional, nearby, south Jersey breeding success.

Year-round studies have proven that a minimum of four to five pairs of Cooper's Hawk currently nest along the mainstem Maurice River. Cooper's Hawk display flights were observed at "Burcham's" on October 13, over Heislerville WMA on January 29, over Mauricetown on April 6, and also at Leesburg on April 6. Northern Harrier were seen performing their unique "skydancing" courtship flight at Heislerville WMA on March 23, 2004, and Red-tails were noted courting at "Sweet Meadows" on the very early date of Dec. 3, 2003. Heavy raptor use of the Maurice River is now proven and documented to occur at all seasons.

In addition to the breeding raptor use noted above, two new Bald Eagle nests were located on or near the Maurice in 2003-2004. A new nest was found north of Glades Road, near Thompson's Beach by Dowdell on December 21, 2003. This nest is technically outside the Maurice drainage yet these birds hunt the lower river daily. Also, Bob Carlough, Captain of the "Skimmer" ecotour boat, found an active eagle nest on the west bank of the Maurice across from Fowser Landing in Millville in late winter. Both nests are welcome new additions to the river's resident eagle populations. (Nesting success was not known at "press time" for this report).

Twenty species of shorebirds were recorded during fall surveys on the Maurice River, primarily at lower river sites including East Point, Heislerville WMA, and the Bivalve Estuary Enhancement Project Site managed by PSE&G. Fall migrant shorebird numbers were deemed substantial and significant for the region and in the Delaware Estuary. High counts included 291 Black-bellied Plover, 750 Semipalmated Plover, over 6,200 Semipalmated Sandpiper, 300 Least Sandpiper and 624 Short-billed Dowitcher. In short, the lower river mudflats and tidal impoundments represent a major shorebird migration staging area, both in the spring and in the fall.

TABLE 3
MAURICE RIVER RAPTOR and WATERBIRD SURVEY
FALL 2003

	7/25/03	8/7/03	8/15/03	9/5/03	9/24/03	10/13/03	11/14/03
Northern Gannet							2
Brown Pelican	3						
Double-cr Cormorant	62	52	320	355	245	231	8
Least Bittern	3	1					
Great Blue Heron	6	8	7	1	16	9	19
Great Egret	176	60	135	255	60	37	1
Snowy Egret	262	115	730	255	96	88	
Little Blue Heron	1		1				
Cattle Egret							1
Green Heron	6	4	2		1		
Black-cr Nt-Heron	9	4	10			5	2
Yellow-cr Nt-Heron			1				
Glossy Ibis	251	42	540	100	2		
Black Vulture	3			3	3	7	8
Turkey Vulture	81	2	18	24	38	122	126
Snow Goose						1	3
Canada Goose	24	45	44	4	2	414	221
Mute Swan	32	16	22	18	50	40	29
Gadwall		2	1	2		16	
American Black Duck	85	59	915	355	129	1181	717
Mallard	35		75	30	11	22	447
Blue-winged Teal						1	
Northern Pintail				8	8	1057	154
Green-winged Teal					22	292	258
Ring-necked Duck							1
Greater Scaup							50
Surf Scoter						1	15
Black Scoter							7
Bufflehead							54
Red-br Merganser							1
Ruddy Duck							1
Osprey	69	19	22	4	6	7	1
Bald Eagle	4	2	1	5	7	17	11
Northern Harrier	2			3	6	51	34
Sharp-shinned Hawk					7	248	5
Cooper's Hawk	1				2	61	1
Northern Goshawk						1	
Red-shouldered Hawk			1				1
Broad-winged Hawk						1	1
Red-tailed Hawk	27	2	3	2	1	39	75
American Kestrel			2		9	25	
Merlin					1	5	
Peregrine Falcon	1	1		1	1	1	

TABLE 3 (continued)
MAURICE RIVER RAPTOR and WATERBIRD SURVEY
FALL 2003

	7/25/03	8/7/03	8/15/03	9/5/03	9/24/03	10/13/03	11/14/03
Wild Turkey	4						
Northern Bobwhite	1						
Clapper Rail	26	25	5	3	3	4	1
Black-bellied Plover		1	33	218	149	291	17
Semipalmated Plover	76	170	324	750		1	
Killdeer	6	2	24			2	3
Am Oystercatcher	1						
Greater Yellowlegs	7	19	86	6	67	18	118
Lesser Yellowlegs	40	58	64	60	70	71	7
Willet	14	5	1	3	1		
Spotted Sandpiper	4	1			1	1	
Red Knot				4	8	3	
Sanderling					1		
Semipalmated Sdp	2475	6245	4300	2000	12	2	
Western Sandpiper	1	2		25		1	4
Least Sandpiper	162	109	260	300	6	3	8
White-rump. Sandpiper			2	25			
Pectoral Sandpiper							1
Dunlin					6	1810	1214
Stilt Sandpiper		3	1				
Short-billed Dowitcher	150	297	624	100	20	8sp.	
Long-billed Dowitcher				1			
Wilson's Snipe						2	
Laughing Gull	1420	1250	1700	600	600	400	1
Bonaparte's Gull							8
Ring-billed Gull	52	17	60	25	25	50	2000
Herring Gull	261	180	400	525	150	500	500
Gt Black-backed Gull	47	65	40	45	40	50	150
Gull-billed Tern	2	1					
Caspian Tern		1	2		3		
Royal Tern					12		
Forster's Tern	311	77	350	375	148	33	2
Least Tern	2						
Black Skimmer		1					
E. Screech-Owl					1		
Belted Kingfisher	1	1			11	14	2
NOTES:							
(1) 7/25, 10/13, and 11/14 represent <u>full river surveys</u>							
(2) other dates show <u>lower river totals only</u> (East Point, Heislerville WMA, and Bivalve EEP).							

FINDINGS - Spring 2004 Raptor, Waterfowl, Waterbird, and Shorebird Studies:

Five surveys were carried out in the “post-season” of the core winter core studies; the Maurice River was surveyed five times in spring and early summer of 2004. The results of spring surveys are shown here in **Table 4**. Substantial spring waterbird use was recorded, including large numbers of herons, egrets, ibis, and cormorants. The very uncommon Red-necked Grebe was found three times on the Maurice as a spring migrant.

Waterfowl use remained high following the end of winter surveys. The 1,265 Black Ducks on April 6 proved continued spring use of Maurice River marshes, and Green-winged Teal counts remained high through May 5. Important waterfowl use of the Maurice continues long after classic winter counts have ended. As Table 4 attests, spring use by raptors is notable too. Sixty-two Red-tails, many of them migrants, were counted on April 6, along with 38 N. Harriers, 18 Bald Eagles, and a migrant Golden Eagle. Peregrines peaked at 4 individuals on May 5.

Most notably, spring shorebird use of the lower river and beaches is highly significant. As in fall, Heislerville and Bivalve mudflats attract vast aggregations of migrant shorebirds. East Point beaches remain important for shorebird/horseshoe crab aggregations as well. Significant spring high counts of 860 Black-bellied Plover, 468 Semipalmated Plover, 269 Greater Yellowlegs, 427 Lesser Yellowlegs, 6,900 Semipalmated Sandpiper, 7,800 Dunlin and 1,525 Short-billed Dowitcher were accrued. The 280 Red Knots on May 5 were not on the beaches, but on Heislerville and Bivalve mudflats. On May 5, 11,912 shorebirds of 18 species were counted on the Maurice, numbers significant to New Jersey, the Delaware Bayshore, and the entire mid-Atlantic region.

Rare spring shorebirds recorded included a Golden Plover on May 5, a “Western” Willet (the Great Plains subspecies - this is thought to be the first true spring record for NJ) on May 5, and a spectacular black and red male breeding-plumaged Ruff (a Eurasian shorebird) also on May 5 at Bivalve. An American White Pelican was found at Bivalve on the final survey (June 3), a rare regional sighting and occurring on an odd (late) date.

Other interesting Bivalve sightings reported by others (logged in at the Cape May Bird Observatory) in the past season were a White Ibis (August 14, 2003), American Avocet (Sept. 30, 2003), American White Pelican near East Point (March 7, 2004), Wilson’s Phalarope (May 12-16, 2004) and a White-faced Ibis near Thompson’s Beach (May 14-16, 2004). Three Short-eared Owls, the only ones of the season for the Maurice, were seen near dusk at East Point on January 8, 2004 by Sandra Keller. Finally, an apparent Bufflehead X Hooded Merganser hybrid was seen at Heislerville by Dowdell and Sutton on January 6, 2004.

TABLE 4
MAURICE RIVER RAPTOR AND WATERBIRD SURVEY
SPRING 2004

	4/6/04	4/20/04	5/5/04	5/27/04	6/3/04
Red-throated Loon	1				
Pied-billed Grebe	1				
Red-necked Grebe	1	1			
Northern Gannet		16			
American White Pelican					1
Double-cr Cormorant	87	213	99	7	55
Great Blue Heron	7	1		4	3
Great Egret	40	16	11	83	29
Snowy Egret	117	78	103	100	28
Green Heron				2	2
Black-crowned Nt-Heron	1				1
Glossy Ibis	13	155	210	85	139
Black Vulture	42	12	12	5	8
Turkey Vulture	142	67	60	24	71
Canada Goose	335	116	126	40	103
Mute Swan	38	35	23	74	58
Gadwall	51	23	12	4	
American Wigeon	2				
American Black Duck	1265	303	246	89	66
Mallard	97	8	4		3
Blue-winged Teal	10	8			
Northern Pintail	225	6			
Green-winged Teal	1144	1376	660		
Ring-necked Duck	7	1	1		
Greater Scaup	10				
Lesser Scaup	30	4			
scaup (sp.)	85				
Long-tailed Duck		1			
Bufflehead	181	17			
Common. Goldeneye	16				
Hooded Merganser	2				
Red-breasted Merganser	101	2	3		
Osprey	65	76	71	30	67
Bald Eagle	18	12	7	2	8
Northern Harrier	38	11	7	1	4
Sharp-shinned Hawk	3	1			
Cooper's Hawk	6	3	1		2
Broad-winged Hawk					1
Red-tailed Hawk	62	36	21	3	19
Rough-legged Hawk	1				
Golden Eagle	1				
American Kestrel	3	1			
Merlin	3		1		
Peregrine Falcon	2		4		

TABLE 4 (continued)
MAURICE RIVER RAPTOR AND WATERBIRD SURVEY
SPRING 2004

	4/6/04	4/20/04	5/5/04	5/27/04	6/3/04
Wild Turkey		2		4	
Clapper Rail		26	25	14	5
American Coot	2	1			
Black-bellied Plover	25	211	860	303	144
Am Golden-Plover			1		
Semipalmated Plover			468	74	192
Killdeer	20	1	2	3	5
Am Oystercatcher		2			
Greater Yellowlegs	78	269	213		5
Lesser Yellowlegs	104	238	427		
Solitary Sandpiper			1		
Willet		36	31	34	21
Spotted Sandpiper			1	1	
Whimbrel				1	
Ruddy Turnstone			6	35	2
Red Knot	1		280	65	
Sanderling			100	450	
Semipalmated Sdp		2	360	6900	2750
Least Sandpiper	10	39	932	92	
Wh-rumped Sandpiper			4	2	
Pectoral Sandpiper	2				
Dunlin	425	7800	6700	31	
Ruff			1		
Short-billed Dowitcher	6	245	1525	45	10
Wilson's Snipe	18				
Laughing Gull		250	X	6000	X
Bonaparte's Gull	71	34	7		
Ring-billed Gull	X	50	300	1	
Herring Gull	X	X	X	1200	X
Gt Black-backed Gull	X	X	X	280	X
Forster's Tern	5	184	124	250	122
Least Tern			3	1	12
Black Skimmer			47		10
Great Horned Owl					1
Belted Kingfisher	6	2	1		
NOTES:					
(1) 4/6, 4/20, 5/5, and 6/3 all represent full river surveys					
(2) 5/27 Survey was of the lower river only.					

DISCUSSION:

In summary, the extended season of Maurice River Studies, in which the core winter raptor and waterbird studies were expanded into a full-time, year-round effort, were highly successful. The protracted study period yielded notable findings for spring, the summer breeding period (which for local breeders coincides with both spring *and* fall shorebird migration), and the all-important fall migration.

Spring and fall data for the Maurice River study area supplements the substantial and significant existing winter bird-use data, and expands our knowledge of the avian resources of the Maurice River into the other seasons of the year. Most importantly, these preliminary 2003-2004 findings importantly append core winter studies in confirming that significant bird use of the Maurice occurs at all seasons. This new spring and fall data augments and reinforces our existing seventeen years of winter data, and both supplements and complements known wildlife values with important new information regarding status, seasonal distribution, and numbers of birds using the Maurice River.

Such adjunct studies on all waterbirds continue to cement the Maurice River region's status and reputation as one of the most important bird habitats in New Jersey and on the entire Delaware Bayshore. New seasonal studies confirm and corroborate previous survey efforts, and show that for both bird use and the enjoyment of birds, the Maurice is a place for all seasons.

Such documentation and information should be carefully evaluated and considered by land use planners and regulators as crucial decisions are made regarding the Maurice River watershed and the surrounding rural regions. The land use of the region could see rapid changes and habitat loss and degradation if and when several large scale projects currently in the planning stages come to fruition. These include the ill-conceived (from an avian ecovalues standpoint) "Millville Racetrack" proposal currently being considered for the watershed, a project with considerable potential to adversely impact a number of rare, threatened, and endangered species found in the area. Certainly the secondary impacts of such a major project could have far-reaching impacts on the avian resources of the Maurice River and its tributaries. It is strongly hoped and advised that officials, regulators, and planners give strong consideration to the seventeen years of documented avian ecovalues that have resulted from these ongoing and long-term bird studies.

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The river is not wild by accident or neglect, but only through the dedicated and tireless efforts of special people. It is an honor and a privilege to work with all of you, and a continued thrill, even after seventeen years, to "head out" for the counts, and to carry out these exciting long-term bird studies on the unrivaled "Mighty Maurice."

FOR FURTHER REFERENCE:

All Maurice River ornithological studies have been directed and co-authored by Clay Sutton, either as an independent contractor or formerly as staff ornithologist of Herpetological Associates, Inc., Plant and Wildlife Consultants. Principal publications resulting (either wholly or in part) from the above studies (either funded or co-funded by CU) are as follows:

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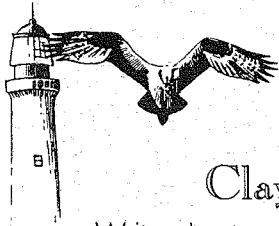
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