

**RAPTORS AND WATERBIRDS
ON THE MAURICE RIVER
CUMBERLAND COUNTY, NJ**

*The NINETEENTH YEAR
of an Ongoing and Long-term Study*

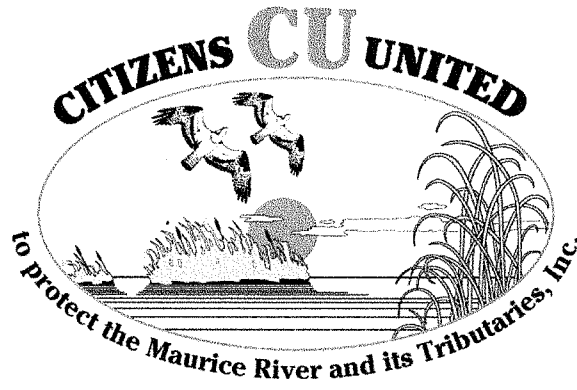
**Seasonal Summary: July, 2005 through June, 2006
including WINTER, 2005-2006**

**Research sponsored by
Citizens United to Protect the Maurice River and its Tributaries, Inc.**

By Clay Sutton and James Dowdell

June 27, 2006

Sponsored by:



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This study was made possible with assistance from the:



United States, Department of the Interior
National Park Service
Wild and Scenic Rivers Program

RAPTORS AND WATERBIRDS ON THE MAURICE RIVER

The NINETEENTH YEAR of an Ongoing and Long-term Study

Introduction and Overview:

The 2005-2006 season marked the nineteenth consecutive season for the Citizens United - sponsored Raptor and Waterfowl Monitoring Project on the Maurice River. The project continues to gather important long-term data on the Maurice River's highly significant regional concentrations of diurnal raptors, waterfowl, waterbirds such as herons, egrets, and ibis, and migratory shorebirds. Even after 19 years, discoveries are still being made along the Maurice River and its tributaries.

Because this is the nineteenth year of study, and because a major summary was offered in 2002 at the 15 year milepost, this season's report will be a short-form summary overview. A major popular literature-type report is planned next year, at the 20 year mark, as well as papers designed for scientific journal submission and publication.

Also, because all 18 previous reports are now on-line on the Citizens United to Protect the Maurice River (CU) website (www.cumauriceriver.org) there is little need to present an in-depth review here regarding methodology techniques and count locations. The 2005-2006 studies were carried out with the same methods as the previous 18 years. This adherence to a standardized methodology allows for comparability of data over time that will lead to a true understanding of Maurice River status and trends. See the previous seasonal reports available on the web for a full presentation of methods and past findings.

A core program of ten full winter surveys was carried out between December 7, 2005 and March 28, 2006 - 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, 2005 and spring, 2006. For the third time, the winter studies were expanded to include counts done in the all-important "shoulder seasons" of peak waterfowl and raptor-use. Beginning in 2003-2004, the Maurice River avian surveys became a true year-round effort - and this was continued in 2005-2006.

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 core winter survey (i.e., spring and fall), we again 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 nesting raptors, such as Cooper's Hawk, Northern Harrier, Bald Eagle and American Kestrel.

As in the past two project cycles, spring and fall studies greatly complemented the core winter effort. The seasons greatly overlap in the avian world, and the past core study period (December through March) encompasses late fall migration, nesting season for Bald Eagles and extensive spring migration and migration staging. By expanding studies to a year round effort, we simply allow for a full understanding of fall migration, winter use, spring migration, and the full breeding season for all species.

More importantly, expanded studies have continued to prove that the Maurice River is an important place for all seasons - important to high numbers and a wide variety of birds throughout the annual seasonal cycle.

Findings:

Maurice River raptor and waterbird use was studied on an average of once monthly throughout spring, summer, and fall, and about once every ten days in the core winter season (December through late March). Raptor and waterbird numbers from July, 2005 through May, 2006 are shown in **Table 1**. Peaks are indicated in **boldface**, and averages for key species for the core winter season are shown as well.

As in the past, comparative studies were conducted on the Cohansey River and on the Salem River as an adjunct to the Maurice River studies. The Cohansey was sampled three times in winter 2005-2006, and the Salem River just once. Cohansey River and Salem River winter raptor and waterbird surveys are shown in **Table 2**.

Also, as in past seasons, we estimated Canada Goose numbers on the Bayside State Prison grounds (birds were counted from Route 47). These tallies are shown below. Most if not all Bayside geese use the Maurice River for roosting and feeding, and these counts offer insight to regional goose populations and the potential for herbivory on Maurice River wild rice marshes.

Bayside State Prison - Canada Geese Populations, 2005-2006

Date	Number
7/26/05	40
8/12/05	300
8/23/05	750
9/24/05	575
10/17/05	850
10/26/05	675
11/18/05	800
12/7/05	450
12/17/05	850
12/28/05	575
1/19/06	675
2/2/06	450
2/16/06	1000
2/28/06	475
3/9/06	800
3/16/06	470
3/28/06	80
5/10/06	11
5/30/06	19

Discussion:

Fall migration, important in its own right because migration (with its attendant issues of flight strategies and stopover requirements) is a particularly perilous and stressful period of a bird's life cycle, is also a major factor in subsequent winter bird populations. For raptors and waterfowl, migration often ends at some point during the migratory timetable and route. Fall migration heading west along the Delaware Bayshore is a significant causal factor in the large numbers of birds that remain there to overwinter.

Six counts were conducted during the fall migration period, July through November. Significant numbers of herons, egrets, and Glossy Ibis were found along the river, primarily at (but not limited to) the Heislerville WMA and Bivalve EEP site.

Particularly noteworthy were the numbers of fall waterfowl encountered. Up to 720 American Black Ducks, 141 Mallards, 33 Blue-winged Teal, and 861 Green-winged Teal were counted in fall surveys - numbers more expected during spring staging. An excellent (for fall) 953 Northern Pintails were counted on September 24, a total second only to the 1225 counted later on a more-expected date of March 9.

As in past seasons, autumn raptor migration on the Maurice River was substantial. On October 17, 2005, an amazing migration flight was monitored at East Point and Heislerville WMA. An amazing 19 Bald Eagles, 671 Sharp-shinned Hawks, 90 Cooper's Hawks, 62 American Kestrels, and 25 Merlins were migrating west up Delaware Bay. Large numbers of Red-tailed Hawks were seen on October 26 and November 18.

Fall 2005 studies also documented large numbers of shorebirds using the lower river in early autumn. 20 species of shorebirds were found during the period July through November, including both Hudsonian Godwit and Marbled Godwit - good finds on Delaware Bay. Large numbers of Black-bellied Plover, Semipalmated Plover, and Yellowlegs were found. Fall migration numbers of Semipalmated Sandpiper and Short-billed Dowitcher rival those found in spring on the Maurice.

Late summer and fall surveys on the Maurice River in 2005 confirmed and corroborated previous findings, adding additional proof that the Maurice is a major fall migration staging area for raptors, waterfowl, waterbirds, and shorebirds.

Core Winter Studies

Ten winter surveys were conducted between December 7, 2005 and March 28, 2006. Both Snow Goose and Canada Goose numbers were below average. Although Canada numbers were down on the river from the previous season's record count, goose numbers at Bayside State Prison continue to climb. So although daytime river numbers were down somewhat, regional numbers remain very high.

Perhaps due to the mild winter, puddle duck numbers were well down. The Black Duck population on the river was slightly higher than the previous season, yet Mallard numbers were abysmal when compared to previous years and segments. Only Northern Pintail bucked this trend, posting an average of 478 (better than the previous year) and a peak of 1225 (on the expected date of March 9).

It continues to appear that Mallards are the prime victims of the combined forces of loss of wild rice to Canada Goose herbivory and sea level rise. Pintail populations on the river are also affected, but seemingly mainly in a spatial manner. Pintails have "relocated" to the Bivalve EEP marshes where Mallards clearly have not. Green-winged Teal numbers were good in 2005-2006, much higher than those observed in 2004-2005. For only the second time in 19 years, a Redhead was seen, a single bird at East Point on December 17, 2006.

While in past winter seasons the study area has supported some of the highest Ring-necked Duck numbers in New Jersey, during the past season the numbers plummeted. The cause is clear; the sand mine pond (at the Mauricetown Sand Plant) that the big numbers of ring-necks used has now been converted to a major settling pond. The resultant cloudy, sediment-filled cloudy water no longer attracts diving ducks.

Winter raptors, in general, showed better numbers than waterfowl. Black Vultures and Turkey Vultures were found in average numbers. Interestingly, Turkey Vultures were truly average - they posted an average of 95 for the third straight season, with a modest peak of 129.

Bald Eagle numbers were below recent averages. An exceptional peak of 26 were seen on March 16, our second highest count in 19 years, yet the average was a more modest 13. Winter 2005-2006 was quite mild, and the normal mid-winter incursion to the region never really occurred. By far the best eagle winters are the coldest, when freeze-ups push northern birds south to the Delaware Bayshore.

Northern Harrier numbers were average, yet "average" on the Maurice River is exceptional regionally. Sharp-shinned Hawks were judged to be average, yet Cooper's Hawk numbers remained high - a combination of wintering birds and local breeders. Red-tail numbers were also average but

again, “average” on the Maurice is very good for anywhere in the Mid-Atlantic.

American Kestrel rebounded a tiny bit - from the previous season’s record low average of 0.25 to 1.0, but probably only one individual Kestrel truly wintered on the river, a sad situation indeed.

For winter raptors, 2005-2006 core studies confirmed and bolstered previous findings, and Maurice River numbers remain exceptional. A full analysis of raptor and waterbird status and trends is planned at the end of the 20th year of study - at the close of the upcoming 2006-2007 season.

Spring Migration

With the Maurice River avian studies having become a true year-round look at the region's birds, three spring migration counts were carried out. These can also be seen in Table 1. The April count clearly shows that spring staging for Green-winged Teal continues well past the endpoint for core winter studies. So too Bald Eagles, both breeding birds and lingering immatures, continue well into spring in good numbers.

A 2005-2006 high of five Peregrines were seen at Bivalve on May 10, including four in sight at once! The Peregrines (probably both migrants and the Egg Island breeding pair) were attracted to the bounty of shorebirds on the lower river in April and May. Spring studies attempted to hit the peak of shorebird migration and use, and we were not disappointed. The Maurice River, particularly the lower river areas of Heislerville WMA and Bivalve EEP, as well as East Point beaches, continues to host regionally highly significant (and spectacular) numbers of shorebirds in spring. The high counts shown in Table 1 speak for themselves; the Maurice River region is one of New Jersey's most important shorebird use areas.

Regional rarities, two Curlew Sandpipers were at Heislerville WMA in May - and both graced the May 10 count. It is important to note that the drawdown of the one Heislerville WMA impoundment attracts and benefits many thousands of shorebirds. It should be encouraged, supported, and hopefully continued. The amazing 107 Wilson's Snipe count on March 28 were mostly seen on the upper river - at the Peek and Galetto Dock count sites. 107 is the second highest single location Wilson's Snipe count ever achieved anywhere in New Jersey.

Finally, the lower Maurice also supported significant concentrations of terns and skimmers in 2005-2006. A Maurice River record 239 Black Skimmers were counted on May 10, as well as 10 Least Terns. The lower Maurice remains a major New Jersey spring staging area for Black Skimmers. Two Black Terns were seen at Heislerville WMA on May 10, certainly regional rarities and good birds for Cumberland County and the Delaware Bayshore. Other "rarities" documented during the overall study period included one Cave Swallow seen on October 26, 2005 and two to three Cave Swallows seen on November 18, 2005. A "summering" or extremely early C. Black-headed Gull was an unseasonal find at Bivalve on August 23, and a "Western" Willet was a good find at Heislerville on May 10.

One of our rarest and most exciting finds was not a bird, but a mammal. A Mink crossed the road in front of us on May 4 on the Heislerville WMA gravel dike. It disappeared into the marsh, but Jim Dowdell then attracted it into the open by "squeaking" -- an imitation of a rabbit in distress. The mink twice came out of the marsh grass to investigate -- twice coming to our feet to sniff Jim's shoe! It was our first Mink sighting in 19 years on the Maurice. Mink are not so much rare as highly

secretive. A River Otter was seen at the same location on March 9, 2006.

Greater analysis of the Maurice River's role in spring migration staging and use is planned at the conclusion of 2006-2007 studies. Yet spring 2006 clearly confirmed that the Maurice River region is of huge importance to a variety of avian migrants. Spring 2006 counts continued to document the region's importance to very high numbers of migratory shorebirds.

In summary, the 2005-2006 season was the nineteenth year of long-term ornithological studies on the Maurice River, and findings continued to cement the Maurice River's importance to regional bird populations throughout the seasons. Fall and spring findings complemented core winter studies, and all combine to document significant bird use throughout the yearly seasonal cycle, and offer proof that Maurice River habitats and open space areas are some of the most important in both New Jersey and the Mid-Atlantic states.

We look forward to the upcoming 20th year of bird survey work on the river, and the in-depth review and analysis that will follow. We plan a major 20 year summary report at the end of the upcoming 2006-2007 season. We thank Citizens United for the continuing opportunity to work with its dedicated members and supporters in the documentation of the avian wonders of the Maurice River. It remains a privilege and an honor to represent Citizens United in carrying out such landmark long-term studies on such an important natural area. Even after nineteen years, the Maurice River continues to amaze us.

Finally, we also thank the U.S. Department of the Interior's National Park Service, Wild and Scenic Rivers Program, for continuing assistance to Citizens United. The award of a Wild and Scenic Rivers Partnership Grant to CU supported this project and enabled these surveys to be conducted. We recognize and thank the NPS for their continuing interest in this study and in the wildlife resources of the Maurice River.

- Clay Sutton
- Jim Dowdell

June, 27 2006

TABLE 1
Maurice River
Raptor and Waterbird Survey
July 2005 through May 2006

		FALL PERIOD										WINTER PERIOD									SPRING PERIOD				
DATE	7/26	8/23	9/24	10/17	10/26	11/18	12/7	12/17	12/28	1/19	2/2	2/16	2/28	3/9	3/16	3/28	AVG	4/14	5/10	5/30					
LOONS to CORMORANTS			*	*														*	*						
Red-throated Loon											1														
Common Loon					1					2								3							
Pied-billed Grebe										1								1							
Northern Gannet																3									
Double-cr Cormorant	62	298	150	660	484	57	1	3	1					1	17	21		206	169	38					
BITTERNS to VULTURES																									
Great Blue Heron	14	9	22	24	23	9	15	27	13	18	8	15	13	2	4	8		7	6	3					
Great Egret	76	51	47	46	11	6						1	1		3	13		90	56	54					
Snowy Egret	221	285	124	27												2		182	62	95					
Little Blue Heron	2																		1						
Tricolored Heron			1																4	1					
Cattle Egret																		3							
Green Heron	1	3																	1	2					
Black-cr Nt-Heron	7	6	5		1	7	19											14	4	2					
Glossy Ibis	59	135	6												1	8		154	66	54					
Black Vulture	2	2	6	12	14	22	5	23	24	13	20	13	35	22	20	3	17.8		3	1					
Turkey Vulture	23	49	61	89	113	172	129	105	107	85	103	84	93	54	118	74	95	5	18	40					
WATERFOWL																									
Snow Goose							2605	650	2785	675	225	5251	2650	2590	2972	943	2135	3							
Canada Goose	34	116	90	178	60	78	230	258	357	308	423	323	245	291	200	238	287	105	59	92					
Brant				5				19											1						
Mute Swan	18	5	43	109	54	2	2	5	4	7	18	19	33	52	21	54		58	24	44					
Tundra Swan			1	1	1									15											

Average shown is for core winter season only: 12/7/05 to 3/28/06

* Survey done on lower river only (East Point to Bridge)

TABLE 1
Maurice River
Raptor and Waterbird Survey
July 2005 through May 2006

		FALL PERIOD					WINTER PERIOD					SPRING PERIOD								
DATE	7/26	8/23	9/24	10/17	10/26	11/18	12/7	12/17	12/28	1/19	2/2	2/16	2/28	3/9	3/16	3/28	AVG	4/14	5/10	5/30
WATERFOWL Cont.			*	*														*	*	
Wood Duck					2	6									2	2				
Gadwall			5		4				1	2		21	5	10	18	30		19	2	2
American Wigeon							4					9	18	8	12	20			1	
Am Black Duck	40	95	679	720	580	276	862	2858	764	1303	422	973	1388	1404	1854	1738	1357	271	92	89
Mallard	2	3	10	51	14	141	216	410	215	292	310	478	401	440	95	120	298	4	6	5
Blue-winged Teal			33												1	1		3	2	1
Northern Shoveler		8	17	14	7									2	5	5		5		
Northern Pintail		8	953	129	26	203	600	302	102	513	426	609	604	1225	223	174	478	8		
Green-winged Teal		12	861	115	60	24	70	8	26	124	45	1353	585	3779	2329	2171	1049	1114		
Canvasback										3	8	14	4	8						
Redhead							1													
Ring-necked Duck											9			6	5	13				
Greater Scaup						3		15			1	3	2		3	1				
Lesser Scaup					3			1			3	19			3	6		2	1	
Scaup (sp.)					4	1	5	60					200	2		63				
Surf Scoter								3					1		4	47		28	1	
Black Scoter																		1		
Scoter (sp.)								8		1										
Long-tailed Duck							1	2	1	1										
Bufflehead				1		119	323	305	245	135	123	141	126	140	113	92	174	10		
Com. Goldeneye						1		26	11	26	10	2	68	4	1			1		
Hooded Merganser							3		3	3	9	20	19	48	11	8		12		
Com. Merganser									2		2	6	13	2	1					
Red-br Merganser							10	53	27	60	26	41	264	38	56	42	62	37		
Ruddy Duck					11	42	16			14	8				3	12			3	

* Survey done on lower river only (East Point to Bridge)

2

Average shown is for core winter season only: 12/7/05 to 3/28/06

TABLE 1
Maurice River
Raptor and Waterbird Survey
July 2005 through May 2006

[illegible]

Average shown is for core winter season only: 12/7/05 to 3/28/06

TABLE 1
Maurice River
Raptor and Waterbird Survey
July 2005 through May 2006

	FALL PERIOD							WINTER PERIOD							SPRING PERIOD					
DATE	7/26	8/23	9/24	10/17	10/26	11/18	12/7	12/17	12/28	1/19	2/2	2/16	2/28	3/9	3/16	3/28	AVG	4/14	5/10	5/30
SHOREBIRDS																		*	*	
Black-bellied Plover	6	260	375	70	59	8	4	2										111	170	243
Semipalmated Plover	225	340	60																630	459
Killdeer	4	2		10		30	3		13			4	14	6	3	2		6	7	7
Am Oystercatcher		4																1	4	
Greater Yellowlegs	46	60	47	55	105	14		2	6	2	1	1	14	9	30	173		246	65	1
Lesser Yellowlegs	19	38	29	7	9	13	2			10				8	77	47		40	34	
Solitary Sandpiper		1																		
Willet	13	1	2															7	38	24
Spotted Sandpiper	2																			
Whimbrel																			1	
Hudsonian Godwit		1																		
Marbled Godwit			1																	
Ruddy Turnstone	1	9																	35	27
Red Knot																			152	23
Sanderling	3				5				6	12									26	30
Semipalmated Sdp	5462	1749	60																2900	5960
Western Sandpiper	4	32			1															
Least Sandpiper	87	22	22																188	16
Wh-rump. Sandpiper			1																7	9
Pectoral Sandpiper																1		5		
Dunlin			36	175	846	570	805	34	90	94		1	28	45	134	1350		5336	4630	12
Curlew Sandpiper																			2	
Sh-billed Dowitcher	1770	470	65	1														17	2600	48
Lg-billed Dowitcher	1																			
Wilson's Snipe							1					1	3	1	46	107		3		

Average shown is for core winter season only: 12/7/05 to 3/28/06

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Maurice River
Raptor and Waterbird Survey
July 2005 through May 2006

		FALL PERIOD								WINTER PERIOD									SPRING PERIOD			
DATE	7/26	8/23	9/24	10/17	10/26	11/18	12/7	12/17	12/28	1/19	2/2	2/16	2/28	3/9	3/16	3/28	AVG	4/14	5/10	5/30		
JAEGERS to ALCIDS																						
			*	*														*	*			
Laughing Gull	440	x	750	400	x											5		250	x	x		
Com. BI-headed Gull		1																				
Bonaparte's Gull							3			1	3							9				
Ring-billed Gull	23	x	50	100	x	x	x	x	375	x	x	x	x	x	x	x		x	x	1		
Herring Gull	320	x	500	200	x	x	x	x	1375	x	x	x	x	x	x	x		x	x	x		
Lesser BI-bkd Gull			1						1						1							
Gt BI-backed Gull	54	x	100	30	x	x	x	x	185	x	x	x	x	x	x	x		x	x	x		
Gull-billed Tern																			2			
Caspian Tern		4	1	3																		
Royal Tern	1	1	7																			
Forster's Tern	200	287	337	275	144	2												139	73	108		
Least Tern	8																		10	10		
Black Tern																			2			
Black Skimmer					5														239	52		
PIGEONS to WOODPECKERS																						
Belted Kingfisher		3	4	2	2	5	5	7	8	10	5	2	3	4	8	5		1	1			

TABLE 2
Cohansey and Salem Rivers
Raptor and Waterbird Survey
2005 -- 2006

	COHANSEY RIVER					SALEM RIVER
DATE	1/1/06	1/16/06	3/5/06		AVG.	3/11/06
LOONS to CORMORANTS						
Red-throated Loon		2				
Pied-billed Grebe			1			
Double-cr Cormorant	2					1
BITTERNS to VULTURES						
Great Blue Heron	13	6	1			9
Great Egret						3
Black Vulture	3	11	12		8.7	136
Turkey Vulture	82	96	104		94	221
WATERFOWL						
Snow Goose	36110	10000	6225		17445	20206
Canada Goose	3831	2520	2429		2927	1140
Cackling Goose	2					
Mute Swan	2	4	4			250
Tundra Swan	4					35
Wood Duck	11					20
Gadwall		6	14			240
American Wigeon			50			572
Am Black Duck	122	115	127		121	62
Mallard	232	86	233		184	107
Blue-winged Teal						1
Northern Shoveler						92
Northern Pintail			76			752
Green-winged Teal			66			592
Ring-necked Duck	3					2
Scaup (sp.)	3					
Bufflehead		1				
Com. Goldeneye	1	1				8
Hooded Merganser	5	5	25			14
Com. Merganser	6					
Red-br Merganser	13		2			
Ruddy Duck			1			14

TABLE 2
Cohansey and Salem Rivers
Raptor and Waterbird Survey
2005 -- 2006

	COHANSEY RIVER						SALEM RIVER
DATE	1/1/06	1/16/06	3/5/06		AVG.		3/11/06
DIURNAL RAPTORS							
Bald Eagle	15	19	12		15.3		15
Northern Harrier	17	27	29		24.3		11
Sharp-sh Hawk	3	3	3		3		
Cooper's Hawk	7	4	2		4.3		2
Red-sh Hawk	3	1	1		1.7		1
Red-tailed Hawk	34	47	43		41.3		49
American Kestrel	5	1	1		2.3		5
Merlin	1				0.3		
Peregrine Falcon			1		0.3		
GROUSE to CRANES							
Ring-nk Pheasant	5	20					2
Wild Turkey	411	8	25				1
Northern Bobwhite	2						
Clapper Rail	1						1
American Coot	1						150
Sandhill Crane	12	8					2
SHOREBIRDS							
Killdeer	2	3	4				8
Greater Yellowlegs			16				
Lesser Yellowlegs			6				
Dunlin	4	6					
Wilson's Snipe							3
American Woodcock	1						
JAEGERS to ALCIDS							
Ring-billed Gull	291	x	x				x
Herring Gull	512	x	x				x
Gt Bl-backed Gull	25	x	x				x
PIGEONS to WOODPECKERS							
Great Horned Owl		2					2
Short-eared Owl	1	2					
Belted Kingfisher	5	3					1

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