

1993

## Colonial Waterbird Studies

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**Virginia Department of Game and Inland Fisheries**  
**PERFORMANCE REPORT (July 1, 1992 - June 30, 1993)**

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<b>Project:</b>	Nongame & Endangered Species Investigations	<b>No:</b>	WE99R-2
<b>Study:</b>	Bird Conservation	<b>No:</b>	IV-3
<b>Job:</b>	Colonial Waterbird Studies	<b>No.</b>	A-G
<b>Personnel:</b>	Dana Bradshaw, Bryan Watts, Karen Terwilliger, Ruth Beck	<b>Costs</b>	
		<b>Total:</b>	\$28,700
		<b>State:</b>	\$ 7,175
		<b>Fed'l:</b>	\$21,525

**Status/Recommendations:** On schedule, continue study.

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### **Summary**

For the first time since the 1970's, a systematic survey was conducted in eastern Virginia to locate and map colonial bird colonies. Areas surveyed included all significant drainages of the Coastal Plain, the urban areas of Hampton Roads, the Chesapeake Bay islands, and Bayside drainages of the Eastern Shore, and the seaside Eastern Shore and barrier islands. Aerial, ground, and boat surveys were used to locate and count colonies with much of the effort provided by volunteers. The Center for Conservation Biology at the College of William and Mary provided the majority of the survey effort with additional assistance from the Game Department, U.S. Fish and Wildlife Service, the Nature Conservancy, and other volunteers as needed.

**Objective A:** To coordinate the protection and management of colonial birds in the state.

### **Procedure:**

To ensure and enhance the protection of colonial birds within the state, several major cooperative agreements and strategies continued to be implemented from July 1, 1992 to June 30, 1993.

### **Findings:**

The cooperative agreement has continued between the Game Department, U.S. Fish and Wildlife Service, Hampton Parks, College of William and Mary, and the Virginia Living Museum to ensure the protection and management of Grandview Beach in Hampton, Virginia. This area is among the areas selected as critical habitat for piping plovers and has provided suitable habitat for a least tern colony for well over 100 years. Weekly monitoring of this site documented as many as 700 adult least terns with 301 active nests located on May 30, 1993. This agreement

includes protection through posting, monitoring the success of species utilizing the area, and educating the public about the sensitive nature of the area. Grandview Beach is a very heavily visited area and is widely used for recreational purposes. The area was monitored each weekend by a W&M student who acted as an information source to assist public awareness of the site. On summer weekends from 75 to 100 visited the immediate area around the colony. The north end of the beach is an active site for picnics, parties, and occasional camping and open fires. More signage may be required at the north end to reduce this problem. Most individuals remain outside of posted areas, although dog tracks were commonly found within the nesting area.

A second cooperative agreement exists between the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Game Department, and the College of William and Mary regarding the management of Craney Island in Portsmouth, Virginia. This agreement serves to protect and enhance available habitat and create additional suitable nesting areas for beach nesting birds, with particular emphasis on least terns and piping plovers. Weekly monitoring of this area documented some 500 adult least terns with 217 active nests located. The Craney site was manipulated and managed specifically for terns and piping plovers. Limited access to active sites was maintained by the staff at Craney Island according to contractor recommendations. All areas were posted, roads were closed as necessary, and natural barriers were created to provide buffers. The Army Corps staff were quite cooperative. Personnel demonstrated a productive contribution by assisting with all management recommendations of the terns and plovers.

An additional cooperative agreement exists between the Game Department, Department of Transportation, and the College of William and Mary regarding the protection and management of the Hampton Roads bridge tunnel nesting site. This site harbors over 3000 pairs of common terns and some 190 black skimmer pairs. Graduate students at the College of William and Mary have been conducting research at this site for the last three years. Efforts have included manipulating habitat and creating new habitat. Additional efforts have been directed toward reducing predation from the local rodent population.

A new partnership was formed in 1993 bringing together the cooperating parties for bird studies on the seaside Eastern Shore and Barrier Islands. This group, loosely known as the Avian Alliance, or Avian Partnership is comprised of representatives from the Department of Game and Inland Fisheries, the Nature Conservancy, the U.S. Fish and Wildlife Service, the University of Virginia, and the College of William and Mary. Their mission is dedicated to discussing and formulating strategies for research, management, and ultimately conservation of bird populations in this priority region of the state.

On the mainland of Virginia, effort is now being directed toward the identification of landowners of significant colonial bird colonies. Much of this work has been completed and will soon be resulting in a much more effective habitat management strategy for several species of wading birds.

**Objective B:** To conduct surveys of colonial breeding birds in Virginia in order to detect changes in population number and population shifts.

**Procedure:**

For the first time since the 1970's, a systematic survey was conducted in eastern Virginia to locate and map colonial bird colonies. Areas surveyed included all significant drainages of the Coastal Plain, the urban areas of Hampton Roads, the Chesapeake Bay islands, and Bayside drainages of the Eastern Shore, and the seaside Eastern Shore and barrier islands. Aerial, ground, and boat surveys were used to locate and count colonies with much of the effort provided by volunteers.

**Findings:**

This systematic watershed approach greatly increased the known population numbers of several species. Table 1 provides a summary of the findings by specific geographic region, as compiled by the Center for Conservation Biology at the College of William and Mary.

**Table 1. Colonial waterbird numbers and totals for the seaside Eastern Shore.**

Species	Max. # of Pairs	% of Total	Total # of Pairs
Black-crowned night heron	542	87	626
Black skimmer	2514	81	3105
Brown pelican	324	88	368
Caspian tern	7	88	8
Cattle egret	863	59	1473
Common tern	2918	45	6452
Double-crested comorant	-	-	348
Forster's tern	1835	68	2696
Great Black-backed gull	353	74	477
Great blue heron	4	-	8979
Great egret	740	32	2285
Green-backed heron	47	49	96
Glossy ibis	792	78	1021
Gull-billed tern	606	100	608
Herring gull	6186	77	8026
Laughing gull	38043	98	38913
Least tern	921	68	1345
Little blue heron	376	90	420
Royal tern	3300	52	6300
Sandwich tern	30	100	30
Snowy egret	1804	80	2266
Tric-colored heron	711	93	767
Yellow-crowned heron	63	17	371
Totals	62,979	72	86,980

**Table 2. Colonial waterbird numbers and totals for the Chesapeake Bay.**

Species	Max. # of Pairs	% of Total	Total # of Pairs
Black-crowned night heron	84	13	626
Black skimmer	400	13	3105
Brown pelican	44	12	368
Caspian tern	1	12	8
Cattle egret	375	25	1473
Common tern	400	6	6452
Double-crested comorant	-	-	348
Forster's tern	861	32	2696
Great Black-backed gull	124	26	477
Great blue heron	241	3	8979
Great egret	41	2	2285
Green-backed heron	8	8	96
Glossy ibis	229	22	1021
Gull-billed tern	-	-	608
Herring gull	1840	23	8026
Laughing gull	870	2	38913
Least tern	-	-	1345
Little blue heron	44	10	420
Royal tern	3000	48	6300
Sandwich tern	-	-	30
Snowy egret	462	20	2266
Tric-colored heron	56	7	767
Yellow-crowned heron	15	4	371
Totals	9,095	10	86,980

**Table 3. Colonial waterbird numbers and totals for the Coastal Plain Southside (south of the James River).**

Species	Max. # of Pairs	% of Total	Total # of Pairs
Black-crowned night heron	-	-	626
Black skimmer	-	-	3105
Brown pelican	-	-	368
Caspian tern	-	-	8
Cattle egret	-	-	1473
Common tern	-	-	6452
Double-crested comorant	-	-	348
Forster's tern	-	-	2696
Great Black-backed gull	-	-	477
Great blue heron	1733	19	8979
Great egret	602	26	2285
Green-backed heron	-	-	96
Glossy ibis	-	-	1021
Gull-billed tern	-	-	608
Herring gull	-	-	8026
Laughing gull	-	-	38913
Least tern	-	-	1345
Little blue heron	-	-	420
Royal tern	-	-	6300
Sandwich tern	-	-	30
Snowy egret	-	-	2266
Tric-colored heron	-	-	767
Yellow-crowned heron	-	-	371
Totals	2,335	3	86,980

**Table 4. Colonial waterbird numbers and totals for the Coastal Plain (north of the James River).**

Species	Max. # of Pairs	% of Total	Total # of Pairs
Black-crowned night heron	-	-	626
Black skimmer	-	-	3105
Brown pelican	-	-	368
Caspian tern	-	-	8
Cattle egret	235	16	1473
Common tern	-	-	6452
Double-crested comorant	207	59	348
Forster's tern	-	-	2696
Great Black-backed gull	-	-	477
Great blue heron	6896	77	8979
Great egret	176	8	2285
Green-backed heron	-	-	96
Glossy ibis	-	-	1021
Gull-billed tern	-	-	608
Herring gull	-	-	8026
Laughing gull	-	-	38913
Least tern	-	-	1345
Little blue heron	-	-	420
Royal tern	-	-	6300
Sandwich tern	-	-	30
Snowy egret	-	-	2266
Tric-colored heron	-	-	767
Yellow-crowned heron	-	-	371
Totals	7,514	9	86,980

**Table 5. Colonial waterbird numbers and totals for the Coastal Plain urban areas.**

Species	Max. # of Pairs	% of Total	Total # of Pairs
Black-crowned night heron	-	-	626
Black skimmer	191	6	3105
Brown pelican	-	-	368
Caspian tern	-	-	8
Cattle egret	-	-	1473
Common tern	3134	49	6452
Double-crested cormorant	141	41	348
Forster's tern	-	-	2696
Great Black-backed gull	-	-	477
Great blue heron	105	1	8979
Great egret	726	32	2285
Green-backed heron	41	43	96
Glossy ibis	-	-	1021
Gull-billed tern	2	0	608
Herring gull	-	-	8026
Laughing gull	-	-	38913
Least tern	424	32	1345
Little blue heron	-	-	420
Royal tern	-	-	6300
Sandwich tern	-	-	30
Snowy egret	-	-	2266
Tric-colored heron	-	-	767
Yellow-crowned heron	293	79	371
Totals	5,055	6	86,980

Of particular interest in these totals is the increase in double-crested cormorant numbers from 1992. From approximately 170 pairs in 1992 at two nesting sites, there were discovered over 340 pairs in 1993 occupying four nesting sites ranging from dead snags, to cypress canopies, to ground nesting, and finally to transmission line towers. The range and diversity of nesting substrate that this species is utilizing in conjunction with its rapid population growth rate suggests a species that will soon dominate the waters of eastern Virginia. Already described as a pest in some interior states, this will be a species to watch in the future.

In addition, brown pelicans were discovered nesting among the islands of the Chesapeake Bay this summer adding to their landholdings in Virginia and suggesting they are here to stay as breeders in this state.

#### **Recommendations:**

Given the comprehensive nature of the colonial bird survey in 1993, it has been suggested that some species may be adequately monitored every three or four years rather than each year. This is especially true for great blue herons whose habitat is somewhat more remote and



subsequently stable than many of the other colonial species. On the other hand, the beach nesters, barrier island populations, and urban colonies may benefit from annual monitoring because of the increased attention on these populations and the frequent need for environmental review information.

**Objective C:** To sample nesting success in colonies of selected species each year.

Information not available.

**Objective D:** To conduct preliminary studies on the effects and extent of predation on colonial breeders.

Information not available.

**Objective E:** To locate, map, and describe all existing yellow-crowned night heron colonies and single nests in Tidewater, Virginia.

**Findings:**

Locations for all yellow-crowned night heron colonies and individual nests have been mapped and provided to the Game Department on USGS topographic maps. The known state total of 371 pairs as surveyed in 1993 far exceeds the estimate thought to have existed in the state just a few years ago. Our entire database on this species has resulted almost solely from the efforts of Dr. Bryan Watts, now the co-founder of the Center for Conservation Biology.

**Objective F:** To locate and map all appropriate or potential habitats for future observation and management.

**Findings:**

This job is ongoing as more habitat is being censused and characterized for future reference each year.

**Objective G:** To evaluate human impacts on heron populations in residential areas in Tidewater Virginia.

In addition to an increase in numbers from the comprehensive colonial bird survey, yellow-crowned night herons were also targets of various research efforts directed through the College

of William and Mary and the Virginia Institute of Marine Science. One VIMS student is completing a graduate thesis on yellow-crowneds that will be out this spring. This thesis looked at distribution of nesting and foraging yellow-crowneds as it related to habitat availability and human disturbance among other things.