



Colonial Nesting Birds Monitoring in Biscayne National Park

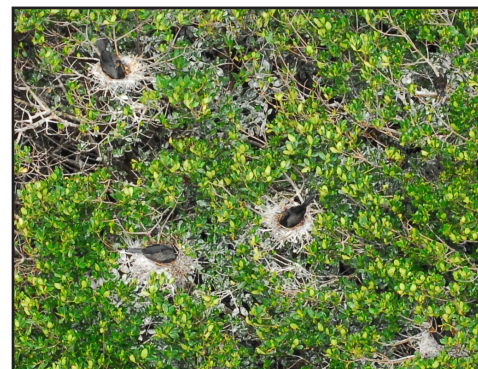
2013

Importance: *Trends in nesting birds add insight to Biscayne Bay's status*

Colonial nesting birds such as great egrets, great blue herons, white ibis, snowy egrets, roseate spoonbills, and cormorants are very important as vital signs of the health of Biscayne National Park. The presence of colonial nesting birds, the size and distribution of their nesting colonies, and the reproductive success of their nests indicate that the surrounding habitat is able to support these energy intensive activities. These birds must acquire large quantities of high quality food during the nesting season as they select mates, build nests, lay eggs, and rear chicks. Colonies are susceptible to disturbance and predation pressure. Thus, a decrease in nesting effort and nesting success, as well as local population declines, may indicate that the ecosystem is not functioning properly. Many of these colonial nesting species have already experienced declines and are listed as species of special concern, threatened, or endangered.

Objectives and Approach: *Monitoring six island colonies*

The objective is to track the status and trends in colony size, distribution, and active nests of specific colonial nesting birds species. The monitoring process involves taking monthly helicopter flights and flying over six island colonies inside Biscayne National Park. During flights, the South Florida/Caribbean Network (SFCN) personnel gather photographic data and also make observations of non-nesting birds at the colonies. Approximately 300 photos are taken per flight. The photo data are then processed and the number of active nests counted.



Double-crested Cormorants (*Phalacrocorax auritus*) are the most common bird species observed nesting in Biscayne National Park.



The six island sites regularly monitored for nesting colonies. Helicopter flights begin at Mangrove Key and end at Soldier Key. West Arsenicker Key and Arsenicker Key typically contain the highest species richness.

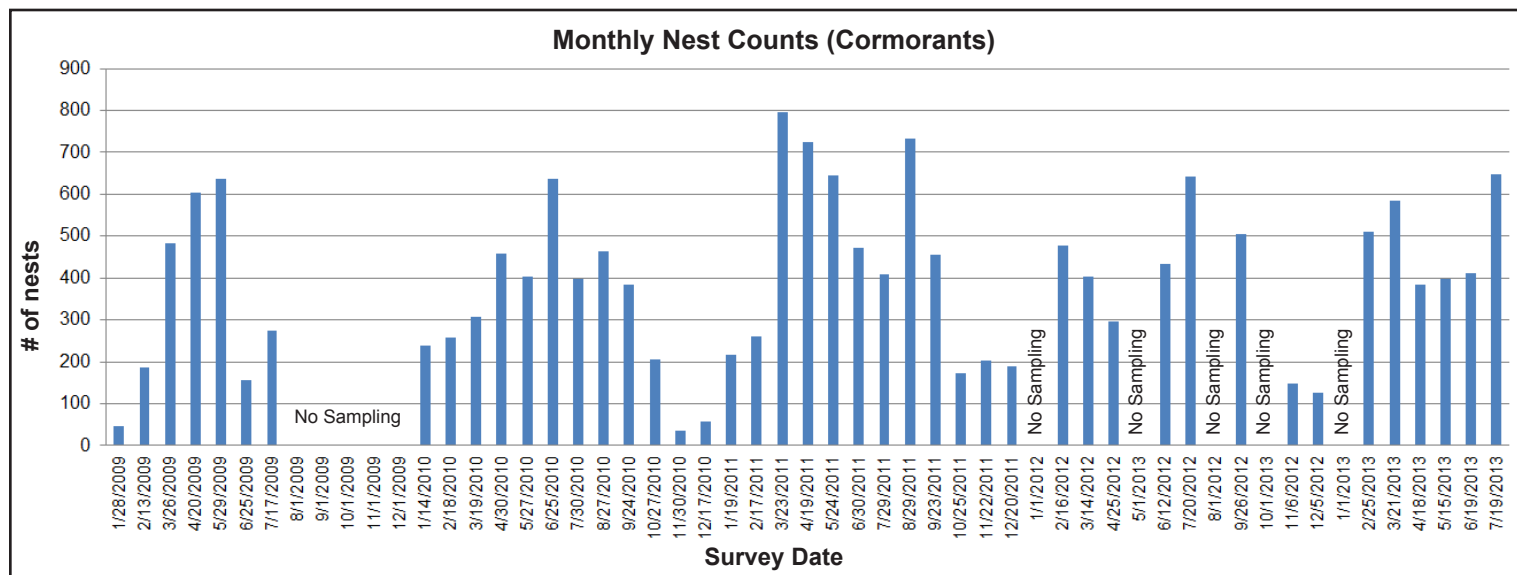
Left: Totals of occupied nests counted by species and month for the calendar year 2012. Double-crested Cormorants account for the majority of nests counted in BISC, from a high of 99% in March to a low of 82% in December. An occupied nest contains an egg, chick, or adults in immediate proximity. The nesting process can take longer than a single month, therefore an occupied nest may be counted in multiple months. "NF" indicates "No Flight" for that month.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Double-crested Cormorant	NF	477	403	296	NF	434	641	NF	505	NF	148	126
Great Blue Heron	NF	2	2	1	NF	3	0	NF	0	NF	1	9
Great Egret	NF	0	0	10	NF	12	0	NF	0	NF	7	0
Great White Heron	NF	14	4	5	NF	6	0	NF	6	NF	8	9
Roseate Spoonbill	NF	3	0	0	NF	0	0	NF	0	NF	0	1
White Ibis	NF	0	0	0	NF	28	18	NF	0	NF	0	0
Total	NF	496	409	312	NF	483	659	NF	511	NF	164	145

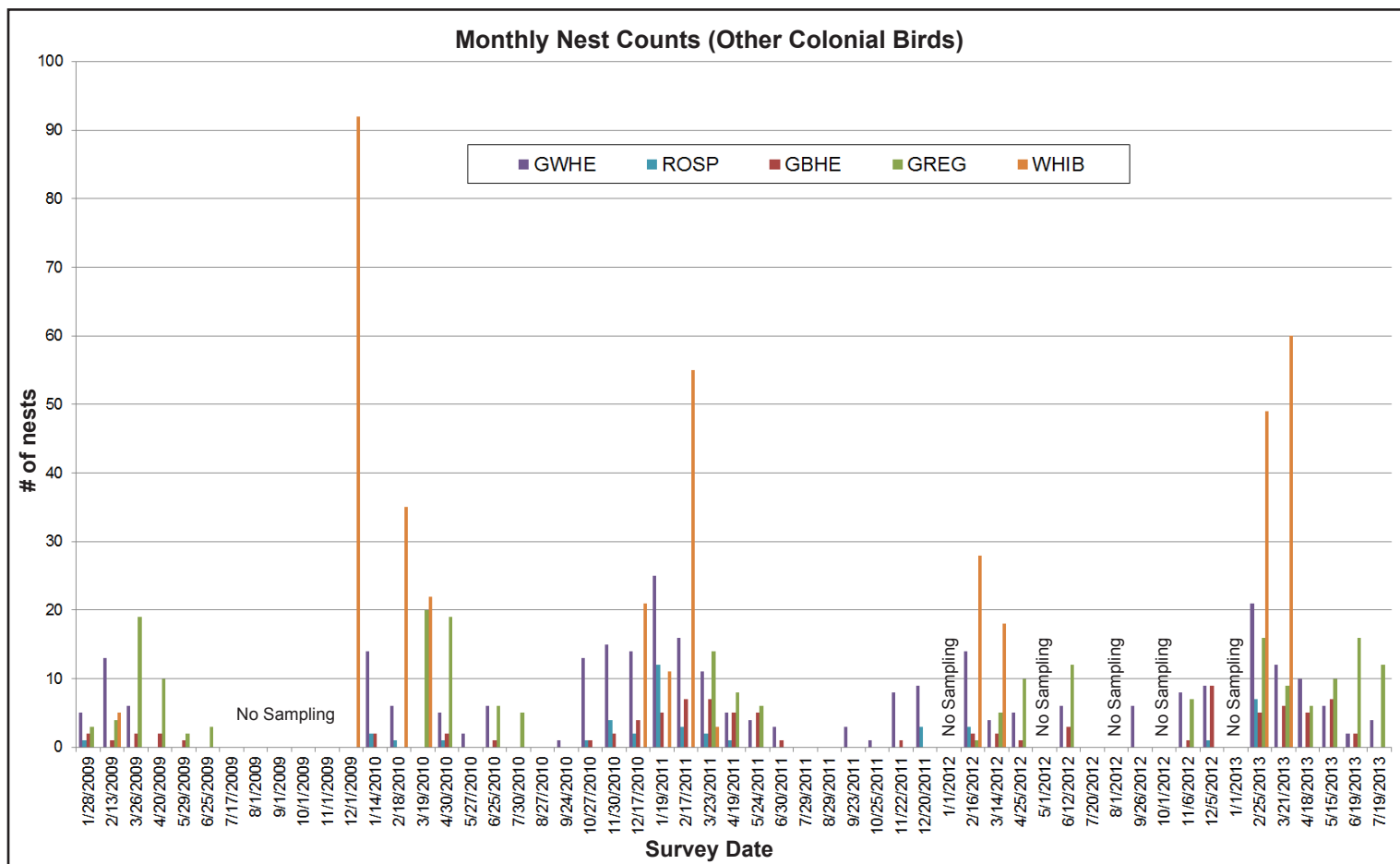


Status and Trends: *Various species show seasonality in their nesting behavior*

The SFCN completed its fifth year of monitoring colonial nesting birds in Biscayne National Park. The results of monitoring have yielded valuable nesting data that show species-specific nesting pattern trends. The Colonial Nesting Bird Protocol has been submitted for internal review and should be ready for external review in early 2014.



The number of occupied Double-crested Cormorant nests per month, as well as the peak nesting periods.



Peak occupied nesting and seasonal trends for five monitored species. Great Blue Heron = GBHE, Great Egret = GREG, Great White Heron = GWHE, Roseate Spoonbill = ROSP, and White Ibis = WHIB.



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http://science.nature.nps.gov/im/units/sfcn/monitor/terrestrial_freshwater/colonial_birds.cfm

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