



Colonial Nesting Birds Monitoring, 2017 Summary

Importance: Trends in Nesting Birds Add Insight into Biscayne Bay's Health

Colonial nesting birds such as Great Egrets, Great Blue Herons, White Ibis, Great White Herons, Roseate Spoonbills, and Double-crested Cormorants (focal species) are very important as vital signs of the health of Biscayne National Park. Many of these colonial nesting species have already experienced declines and some are state-listed species of special concern. 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 raise chicks. Colonies are also susceptible to disturbance and predation pressure. A decrease in nesting effort may indicate the ecosystem is not functioning properly.

Objectives and Approach: Monitoring Eight Island Colonies

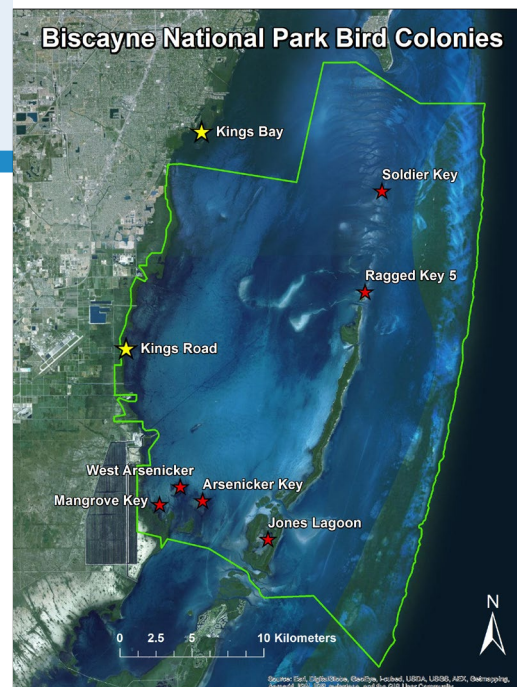
The objective is to track the status and trends in colony size, distribution, and active nests of specific colonial nesting birds species. The monitoring process involves monthly helicopter flights over known island colonies inside Biscayne National Park and an annual search for new colonies. During flights, South Florida/Caribbean Network personnel gather photographic data on nests and also make observations of non-nesting birds at the colonies. Approximately 500 photos are taken per flight. The photo data are then processed and the number of active nests are counted. Results are reported by nesting year (July 2016–June 2017).



A Great White Heron (*Ardea herodias occidentalis*) stands over its eggs in Soldier Key (January 2017).

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar*	Apr	May	Jun
Double-crested Cormorant	1046	677	537	278	425	552	264	252	151	456	NS	1033
Great Blue Heron	0	0	0	0	3	3	6	5	5	5	NS	4
Great Egret	5	1	0	0	0	0	1	15	2	5	NS	7
Great White Heron	2	0	0	4	9	15	25	26	30	15	NS	4
Roseate Spoonbill	0	0	0	0	0	1	2	4	0	0	NS	0
White Ibis	93	4	2	0	0	0	0	0	0	0	NS	67
Total	1146	682	539	282	437	571	298	302	188	481	NS	1115

Totals of active nests counted by species and month for the nesting season 2015–2016. Double-crested Cormorants account for the majority of nests (> 95%) counted in Biscayne NP. An occupied active nest contains an egg, chick, or adults in immediate proximity with signs of occupation. The nesting process can take longer than a single month, hence an occupied nest may be counted in multiple months. NS indicates "No Survey" for that month. *Indicates flight date actually took place on April 1.



The six original island sites monitored for nesting colonies (red stars). Note the two new nesting colonies (yellow stars).



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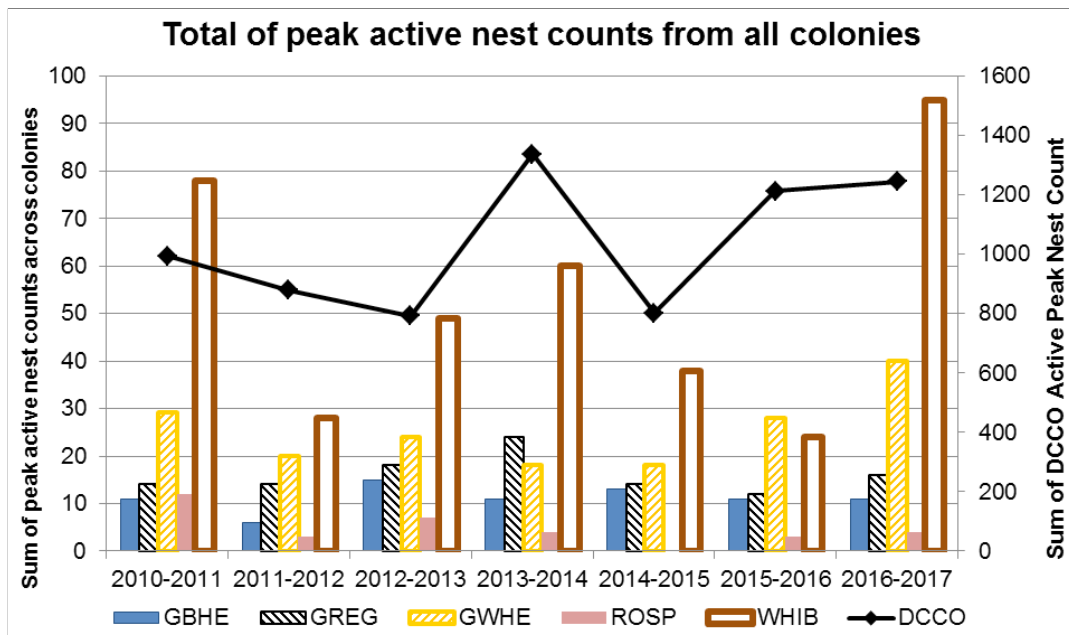
http://science.nature.nps.gov/im/units/sfcn/monitor/terrestrial_freshwater/colonial_birds.cfm

Status and Trends: Seventh Full Year of Monitoring

The South Florida/Caribbean Network completed its seventh full nesting season of monitoring colonial nesting birds in Biscayne National Park. Overall, the number of nests was slightly higher compared with the average of the past six nesting years, for four of the focal species. Peak nest counts and nesting indices fell within the range of variation seen in those years. The exceptions were Great White Herons and White Ibis which have new maximums, and Double Crested Cormorant which has a new maximum nesting index. In the 2016-2017 nesting season, Double-crested Cormorants (DCCO) nested at every colony except West Arsenicker. Cormorants continue to nest year round and account for 95% percent of the nests counted. Great Blue Herons were observed nesting on four of the eight colonies. The peak nest count for the 2016-2017 nesting season was 11 compared to a mean of 11.2 of previous years and is within the previous data range of 6-15 nests. Park wide peak nest counts for Great Egrets showed 16 nests which equaled the mean from previous years. During the 2016-2017 nesting season, Great Egrets nested at four colonies across the park. The Great White Heron peak nest count of 40 was 75% above the mean of previously monitored seasons of 22.8 and was also above the previous maximum peak nest count of 29 recorded in the 2010-2011 nesting season. Great White Herons nested on six of the eight colonies monitored. Roseate Spoonbills were only observed nesting at Jones Lagoon, which is consistent with previous years. White Ibis had a peak nest count of 95 which exceeds the previous high of 92.



The two new colonies monitored this nesting season are Kings Road Island (KRIS, top picture); and Kings Bay (KIBA, bottom picture). This is the first time data from these two new colonies are included in SFCN's monitoring results.



Left: The annual nesting index is defined as total nests counted across all months (July-June) and colonies.

Overall nesting for the focal species did not show a trend. White Ibis showed the highest numbers since the inception of SFCN's monitoring.

Key:

GBHE—Great Blue Heron
 GREG—Great Egret
 GWHE—Great White Heron
 ROSP—Roseate Spoonbill
 WHIB—White Ibis
 DCCO—Double-crested Cormorant



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