I did not note an average number per tree. Although there was noise inside the colony from the young there was not the deafening sounds noted by some authors[8A]. The most noise I recall occurred at the approach of one of the young and resembled a harsh, coarse sound like chuck, chuck-a-chuck, chuck, chuck. Some young as you passed underneath them hidden in the canopy did reguritate their meal onto you. Most missed. The limb clambering ability of some had lead to their deaths as evidenced by their bodies hung in the fork of a branch. I counted 21 dead birds hung in various trees. Other fatalities obvious were 16 dead young in various nests and 11 dead young on the ground. Very few live birds were on the ground. Surprising for so much climbing around. Including the dead I counted 256 young.

I assumed this was the last of the summer young. Black-crowned night herons copulated on the average of nineteen days after their average arrival date on Long Island and then laid their first eggs an average of 3.3 days later[9A]. The average clutch size is 3-5 eggs[10A]. Incubation begins with the first egg and lasts for 24-26 days[8B]. Lou Campbell puts the average arrival date in the Toledo area at March 25[5]. This aged most of the young in the West Sister colony at about 7 weeks during my census. Yet Palmer[6A] stated that young night herons first fly at about six weeks and these young I saw did not fly but they must have been close. There was no evidence on Long Island of second broods[9B].

I had brought with me two spray cans of paint: blue and silver. I also carried a note tablet ruled for seven columns with twenty-five rows per page. As I encountered a tree with a nest I marked a box on my tablet page with an appropriate code and then marked the tree with a small silver dot to show me that I had counted the nests in that tree. There is real difficulty with losing your direction and sometimes a sense of time inside the canopy. I simply kept working over the night heron area of the island marking my tablet and tree spotting at random until I started to come upon trees I had previously spotted. This occurred about the same time that my time ran out (8 hours) but by that time I was convinced it was going to be difficult to find unspotted trees. The total results: 1300 black-crowned night heron nests and 16 great egret nests were counted in this black-crowned night heron area. This means that 2600 black-crowned night herons were present on the island in 1982 assuming that each nest was occupied. The chance of some nests being last years nests not used in the present year seems remote due to the appearence of fresh whitewash on most nests and the fact that most night herons frequently tear apart old nests and use the remains to construct new ones each year in the same tree or a site not far remote[8C].

While censusing the night heron colony I found a small cattle egret colony.

CATTLE EGRET

I believe this was the same colony I had seen the week before as it was in the same general location but the growth of the young in one week seemed remarkable. (Later when I saw a picture [11A] of the size difference between 5,7 and 9 day old cattle egret chicks, it was not remarkable). These were the only white young other than great egrets that I had seen during the census. However, young great egret bills are yellow whereas these were black-billed.

Eight nests were found in one group in closer proximity to each other than the night heron nests. The nests were, in general, also lower in the vegetation, each nest being about 6 to 8 feet from the ground. The vegetation also changed in this area to a stand of chokecherry trees rather than the small hackberry trees surrounding it. The height of the canopy appeared the same (later the pictures showed the chokecherry trees were taller) but the chokecherry trees were more numerous in stems and the diameters of the stems were smaller and more forked. There may have been more nests in this colony but if so they were empty and therefore, unidentifiable. Six of the eight nests had one young each. One nest had six eggs and one nest was empty except for a dead young hung in a forked branch near the nest.

One of the eggs was measured with dial calipers: 47.9 mm in length and 33 mm in widith. These dimensions are close to the average given by Harrison[16A] for cattle egret eggs: 47.5 X 33.7, but still within one of the extremes given by Bent[10B] for snowy egret eggs. The best statement is that this egg was large for a snowy egret egg (average: 43.0 X 32.4[16B]). The eggs were bluish white rather than bluish green (admittedly subjective) and oval. (Black-crowned night heron eggs average larger: 51.5 X 37.0 mm, are pale greenish-blue in color and oval to long oval in shape[16C].)

These young were aged at about five weeks based on the yellow rather than steel gray color of the iris of their eyes[11B], their size (very near adult) and their lack of flight (fly short distances at 40 days and reasonably well at 50 days[6B]). This age coincides well with the reported arrival date (April 14) for this species in 1982 at the OWR-Magee complex (see table of reported arrival dates of the cattle egret for this complex since 1977 in appendix B). This is based on 3 days for pair formation, 7 days for nest building, 7 days for the laying of the first egg after copulation and 24 days for incubation[6C 11C]. A cumulative total of 41 days to birth assuming the pair forms immediately upon arrival. Since single eggs are laid at one to two day intervals[12, 11D] in a clutch size of 4-5 eggs with a range of 3 to 9 eggs[12], there could be some additional days added to this total. However, generally only two young maximum survive due to the asynchronous pattern of egg-laying and hatching giving a decided advantage to the first chick[11E]. I saw only one young per nest. (Perhaps the first young, if there was one, in each nest had flown.) Normally, the species has only one brood but two and three have been reported[13]. Interspecific competition for nest sites between cattle egrets and other herons (black-crowned night heron not reported) was minimal in Lake County, Florida colonies[11F]. Cattle egrets nest much closer together than other herons and egrets so they don't crowd out other species in the rookery. They also eat upland food sources such as insects so they don't compete in the marshes for food with other species. Notice that the average arrival date in the Toledo area for black-crowned night herons (March 25) is at least thirteen days before the first reported arrival date for cattle egrets since 1977 (April 6).

There was a ninth nest separate from the others but still in the immediate area. It contained two cattle egret young that I aged at about 5 days old by a picture I later saw[11G]. The first eggs in the Florida colony were seen April 21, and eggs were still present July 18. This period, the author believes, protects against loss of all the year's young from a single catastrophe[11H]. Perhaps this explains the disparity in ages that I saw.

At first I hoped I had found the snowy egret colony. The large increase in snowy egrets, the last two summers in the marsh complex (nine in 1981 & seventeen in 1982) made for such speculation. Although some have said that you can't tell a snowy from a cattle egret nestling without collecting the yellow tip of the bill, the bill shape and the lack of any color difference between the tarsi and the toes are diagnostic of the birds I saw as cattle egrets[11I, 13]. One author states: "The snowy egret chick cannot be confused with any other 'white' heron nestling - common egret, cattle egret, and little blue heron. From age one day to fledging, the tarsi of the snowy egret are always darker than the toes"[13].

The black bill may be confusing since the adult's bill is yellow, however:

"The light yellowish beaks, legs, and irises at hatching darken during the first 3 weeks of life. These early beak color changes from yellow to black were also noted by Blaker (1969) and Siegfried (1972). At 3 weeks of age the iris has lost much of its pale yellow color and is light and gray. Only the tip of the beak remains a light yellow"[11J].

In conclusion I didn't find the snowy egret colony nor any evidence of nesting ibis, little blue heron or Louisianna heron. Perhaps I was to late in the season. The end of April would probably be the best time to visit to find these species as the adults would be in the colony incubating and the nest locations could be marked for future study. But I did find adventure, a previously undocumented nesting species and a good deal of information that gave me a lot to read and think about during the winter. It also occurred to me that the West Sister heron colonies should be censused each year. Just try to get some consistent information on heron numbers there in the last ten years (see appendix C)! Each nest tree could be marked with a metal numbered tag and each nest in each tree with a separate numbered tag. Just an accurate nest count alone would be valuable and probably represent accurately any yearly fluctuations in colony size. This could be done in two days at the end of the breeding season to minimize the impact on the colony. Once the trees and nests are numbered the time for resurvey each year would probably take one day. This would also provide information on whether the nests are rebuilt each year as thought or simply improved each season (assuming they are't destroyed over the winter). Sufficient information exists on the breeding biology of black-crowned night heron to extrapolate a good deal of information from such a nest survey. An additional one day search could be made in late April to locate and document unusual nesting herons. Since the success of a wildlife species is generally related to the quality of their environment such surveys would be useful as a yearly environmental quality indicator.

FOOTNOTES

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(30 April to 25 August 1976). U.S. Fish Wildlife Service Official Biological Service. FWS/OBS - 77/2, pg. D-28.

4. Parris, R.W. 1979. Aspects of great blue heron (Ardea herodias) foraging ecology in southwestern Lake Erie. M.S. Thesis. Ohio State University. (A) pg. 10, (B) pg. 40-41.

5. Campbell, L.W. 1968. Birds of the Toledo area. The Blade Co., Toledo, Ohio. pg. 49.

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8. Gross, A.O. 1923. The black crowned night heron (Nyctoxorax nycticorax naevicus) of Sandy Neck. The Auk 40: (A) pg. 26, (B) pg. 196-197, (C) pg. 192.

9. Allen, R.P. and R.P. Mangels, 1940. Studies of the nesting behavior or the black-crowned night heron. Proceedings of Linnaean Society, New York. 50-51: (A) pg. 9, (B) pg. 26.

10. Bent, A.C. 1926, Life Histories of North American Marsh birds. Dover, New York (A) pg. 203 (B) pg. 150.

11. Weber, W.J. 1975. Notes on cattle egret breeding . The Auk 92: (A) pg. 112, (B) pg. 116, (C) pg. 112 (D) pg. 112, (E) pg. 113, (F) pg. 116, (G) pg. 112, (H) pg. 116, (I) pg. 116, (J) pg. 115-116.

12. Cramp, S. 1977. The birds of the Western Palearctic. Oxford University Press. Oxford, London, New York. Volume 1: pg. 285.

13. McVaugh, W. Jr., 1975. The development of four North American Herons II. Snowy egret. The Living Bird. The laboratory of ornithogy at Cornell University. Ithaca, New York. 14th annual: pg. 180.

14. Hoffman, R.D. 1974. Mercury in herons, egrets and their nesting environment M.S. Thesis. Ohio State University. pg. 9.

15. Scharf, W.C. 1978. Colonial birds nesting on man-made and natural sites in the U.S. Great Lakes. Rept No. FSW/OBS - 78/15. U.S. Army Waterways Expt. Stat., P.O. Box 636, Vicksburg, Miss., 39180.

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APPENDIX A

Summer Occurance of Herons and Ibis in OWR - Magee Complex From Ohio Cardinal.

	Snowy Egret	Little Blue Heron	Louisianna Heron	Ibis (Sp)
1979	1	1	1	---
1980	3	1	---	---
1981	9	1	1	---
1982	17 (9 adult 8 im.)	3	1	1

Table above gives maximum number of birds seen at any one time.

See Appendix B for cattle egrets. Parris[4A] found one pair of little blue herons & one pair of Louisianna herons on West Sister Island in 1978 but did not report any nests of these species.

Immature black-crowned night heron, West Sister Island July 2, 1982.

APPENDIX B

Cattle Egret Reports From Ohio Cardinal

1978 - 1982

	Spring		Summer		Fall	
	Arrival Date	Max. No. Bird	Max. No. Bird	No. Nests	Max. No. Birds	Date
1978	4/22 (1)	8	14	20(A)	14	9/3/78
					48	9/19/78-10/6/78
1979	4/6 (7)	7	7	13(B)	7	8/21/79
1980	4/27 (1)	34	28		29	8/10/80
1981	4/12	32	15		53	8/7/81
					11	9/5/81
1982	4/14 (1)	3	12	9(C)	Max. No. not reported	

(A) Reported by Parris[4A] as number of pairs or nests by "visual estimate", method unknown and no other details given.

(B) Reported by Meeks and Hoffman[2A] as number of nests in June, method unknown and no other details given.

(C) Reported in this article as number of nests by actual count July 2.

This chart is puzzling to me. Each year that there are nest figures, the maximum number of birds seen in the summer is much lower than indicated by the number of nests e.g. 1978: 14 birds vs. 20 nests (40 birds). Also note that in the fall each year approximately the same number of birds that were seen in the summer are seen again except for two notable flocks in 1978 and 1981. The only conclusion I can draw is that there are birds nesting on West Sister which do not forage in the OWR - Magee complex. Also the only immature birds that I have heard reported were in August 1980 by Fry & Van Camp (dark legs). Where do all the immature birds of the year go? Palmer[6D] states: ". . . very pronounced postbreeding dispersal (July - early Sept.), birds going in any compass direction."

APPENDIX C

West Sister Heron Reports

	Great Blue Heron	Great Egret	Black-crowned Night Heron
1972 (A)	Total nests for all three species: 3,000		
1976 (B)	1,600	200	3,000
1976 (C)	600	600	3,000
1977 (D)	1,158	100	600-1000
1978 (D)	1,167	100	600-1000
1979 (E)	950	50	1,000
1982 (F)			1,300

(A) Hoffman[14], estimate based on author's presence on Island in July. Not an actual nest count.

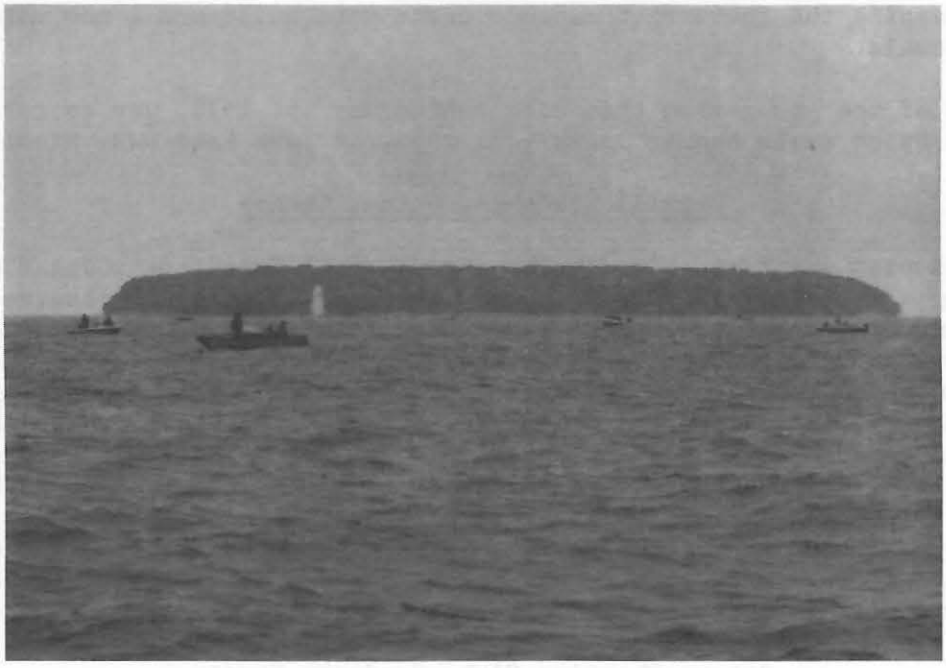
(B) Scharf[15], method unknown.

(C) Campbell[7B] & Toledo Naturalist's Association estimated these numbers of nests based on their presence on island.

(D) Parris[4A], estimate based on actual nest count from ground for great blue heron and great egret and by "visual estimate" of number of pairs on nests for black-crowned night heron. "Visual estimate" method unknown and no details given.

(E) Meeks and Hoffman[2A] as number of nests in June, method unknown and no other details given.

(F) Reported in this article based on a direct count of nests on July 2.



West Sister Island, Lake Erie.