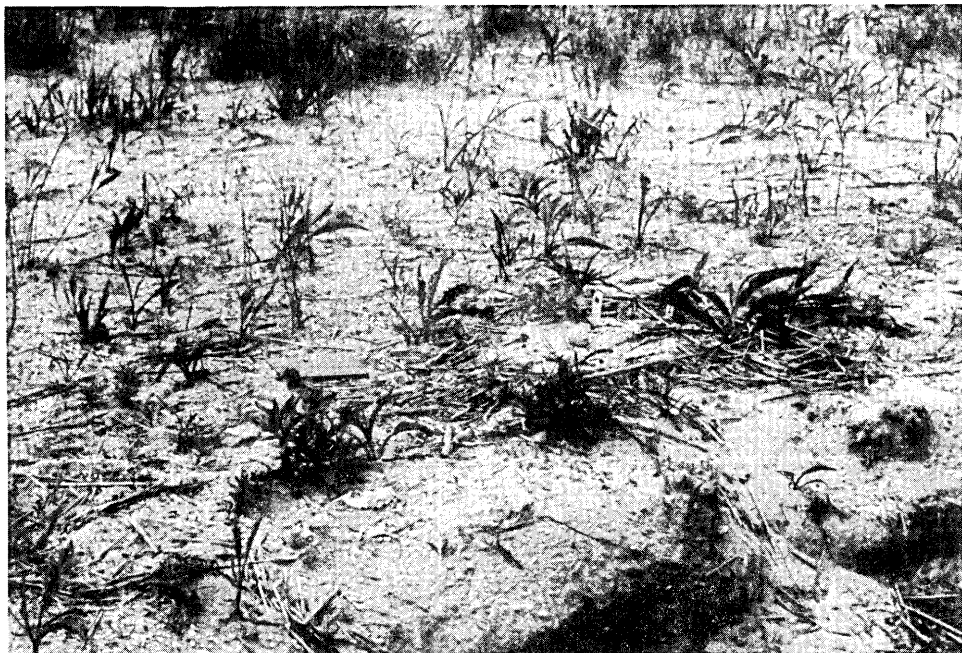


BREEDING STATUS OF THE AMERICAN OYSTERCATCHER IN THE TOWN OF HEMPSTEAD

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American Oystercatcher nesting habitat – dredge spoil
John Zarudsky

The American Oystercatcher (*Haematopus palliatus*) population and range on Long Island has expanded considerably during the more than twenty-five years since the first nest was recorded on Gardiner's Island in 1957 by L. Wilcox. That occurrence, along with other nesting records from 1960-1964 in eastern Long Island at Gardiner's Island, Cartwright Island, Moriches Inlet, and Shinnecock Bay, have been documented by Post (1961) and Post and Raynor (1964).

During the 1970's increased numbers and a westward expansion were recorded in a number of regional reports. In 1970, approximately 30 breeding pairs were reported on Gardiner's Island (*Kingbird* 20: 206).

In 1975, expansion into western Great South Bay, South Oyster Bay, and Jamaica Bay (10-12 pairs, 12 May) was cited by A. Lauro (*Kingbird* 25: 174). In 1976, 50 pairs were recorded during a Long Island aerial survey as cited by M. Gochfeld (*Kingbird* 26: 75). In 1977, continued breeding expansion of American Oystercatcher was cited by A. Lauro (*Kingbird* 27: 238); 40 pairs were counted on the sewer outfall line area of Nassau County, north of Jones Beach, during the summer.

During the 1980's, substantial increases have been recorded locally within the Town of Hempstead from 1981-1984 (Table 1), with expansion particularly apparent during 1983 and 1984. In 1983, 26 nests (21 breeding pairs) were recorded, and, in 1984, 48 nests (37 breeding pairs) were counted.

Table 1. Location and number of American Oystercatcher nests within Town of Hempstead Estuary. (1980-1984)

Location	1980	1981	1982	1983	1984
North Line Island	*	2*	6	9 (6)	20 (13)
Seamans Island					1
Great Island-Low Island			1	2	4 (3)
Middle Line Island		3	2	3	2 ***
Green Island					1
Flat Island			1	1	2
Black Banks Island		2	2	4 (2)	3
Island NE of Sanford Is.		1	1	2	6 *** (3)
Long Meadow (East)				1	2 **
Long Meadow (West)				1	2
Cuba Island			1 **	1	1
Alder Island				1	1
Pine Marsh					1
Cinder Island				1	1
North Cinder Island		1			
Lawrence Marsh		—	—	—	1
		9	14	26 (21)	48 (37)

* Year of sewer outfall repair and restoration activities

** Estimated; pair of adults frequently seen on area

() Estimated number of breeding pairs

*** One pair of total reported by B. Lauro

In other locations on the south shore during 1984, namely in South Oyster Bay from the Town of Hempstead – Town of Oyster Bay line to Oak Beach, 32 pairs were recorded by B. Lauro (pers. comm.) and an estimated 20 pairs were breeding in Jamaica Bay (D. Riepe, pers. comm.). Further reports received from Seatuck Research Unit in conjunction with Common Tern censuses showed that at least one pair of oystercatchers was observed with each of the ten colonies extending



American Oystercatcher nest on wrack – salt marsh
John Zarudsky

from Signus Thatch Island (Town of Babylon) to Hicks Island in Peconic Bay. Captree Island, however, had 2 or 3 pairs. On Gardiner's Island a total of 12-15 pairs was estimated on Bostwick Point and Cartwright Point by M. Male (pers. comm., 27 Dec. 1984).

From these various reports, including those from Jamaica Bay, the Town of Hempstead, and South Oyster Bay, the annual total of breeding pairs for Long Island is estimated at well above one hundred, an increase not originally anticipated during the 1960's (Post and Raynor, 1964).

While a number of factors may have contributed to the increases and range expansion over the past two decades, local and recent expansion within the Town of Hempstead estuary may be partly attributed to greater nest-site availability, resulting from dredge-spoil deposits that were created by the construction (1972-1974) and repair (1980-1981) of the Cedar Creek Sewage Treatment Outfall. These spoil deposits occur as overfill of the pipeline, residual material paralleling the pipeline, and managed disposal of excess material.

Prior to these construction activities, aerial photographs of the area indicate a lack of available high ground for nesting and an area not unlike other sectors of the estuary.

Nest Site Selection

Nesting areas included dredged material (spoil) which includes barren, sparsely vegetated, or vegetated sites, supra (high) sand bars, averaging 21 x 207 feet (6.4m x 83.1m) and salt marsh. Of 45 nests recorded during 1984, 33 (77.3%) were on dredge spoil, 10 (22.2%) on supra (high) sand bars, 1 (2.2%) on marsh and 1 (2.2%) on construction material. Most of the nests, *i.e.*, 38 (84.4%) occurred east of the Wantagh Causeway with 31 (68.9%) located on dredge spoil primarily associated with the construction of the sewer outfall. Similarly, in 1983, 22 of 26 (84.6%) of the nests occurred east of the Wantagh Causeway, with 17 (65.4%) located on dredge spoil (Fig. 1).

Arrival Period

American Oystercatchers were first observed in the Hempstead Bay area in 1984 during the third and fourth weeks of March. Several sightings included two adults on 22 Mar near Point Lookout, three adults on 28 Mar in East Bay and six adults on 29 Mar on Flat Island, a previously used nesting area east of the Wantagh Causeway. Arrival dates that have previously been recorded by various observers elsewhere on Long Island have been 26 Mar 1967, at Jones Beach, 9 Mar 1979, at Jones Beach, the earliest date recorded; 16 and 23 Mar at Tobay, 22 Mar at Hampton Bays, and 23 Mar at Shinnecock during 1980; and 14 Mar 1981 at a number of points on Long Island.

Nest Initiation

The earliest eggs in nests in 1984 were observed on North Line Island

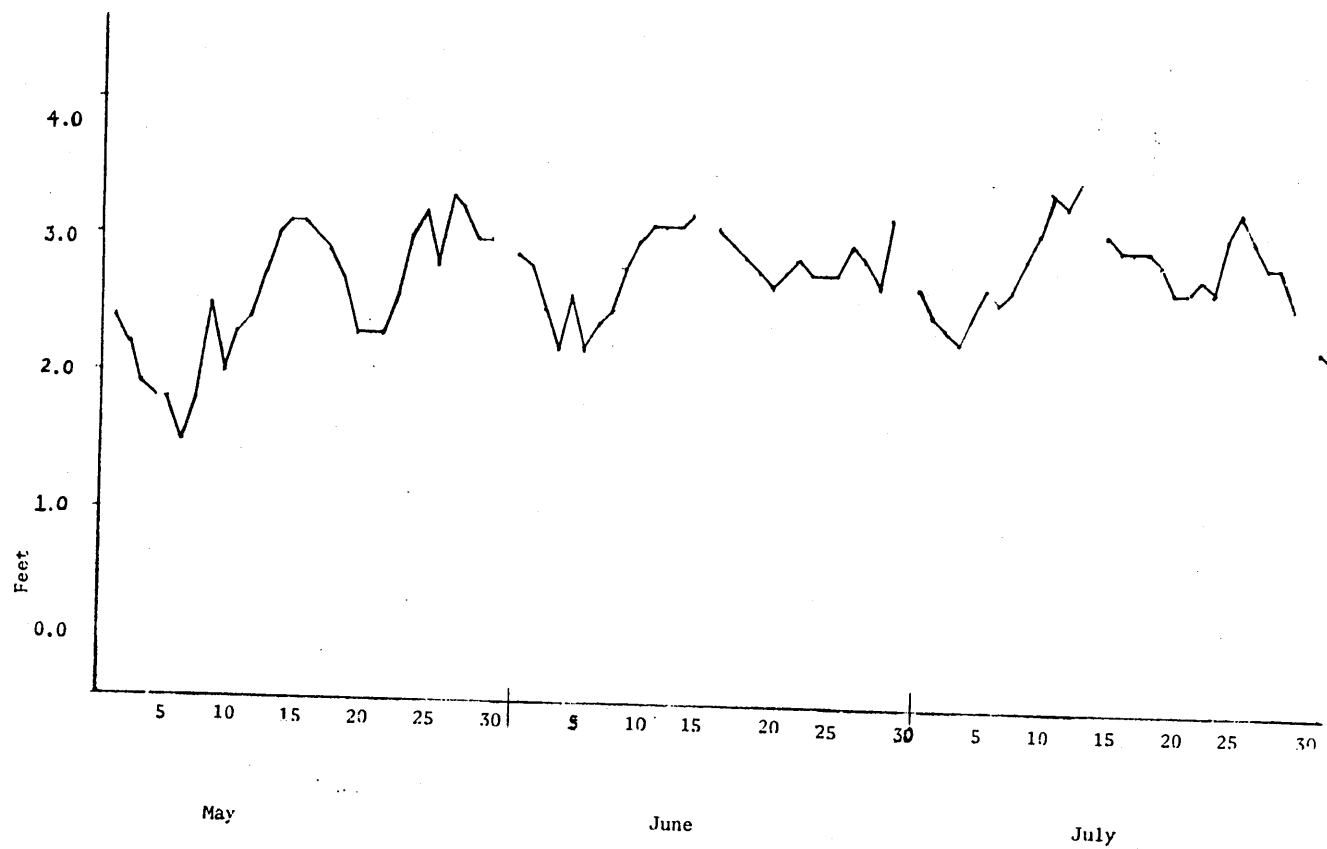


Fig. 2. Daily highest tides, Seamans Neck Park, Seaford - 1983

during the last week in April. Of seven nests located on 27 Apr., three contained one each, one contained two eggs, and three contained three eggs each. At least 20 nests were located during the first week in May on North Line and adjacent islands.

Clutch Size

Clutch size was obtained only for those nests that were observed for several weeks and that did not include nests robbed or abandoned before a full clutch was produced. Based on 34 nests, the mean clutch size (± 1 SD) in 1984 amounted to 3.08 ± 1.02 and for 15 nests in 1983, $3.26 \pm .88$. In Virginia mean clutch size for nests studied during six years (1978-1983) was 2.8 in first clutches (Nol, Baker, and Cadman, 1984).

Nest Diameter

The average diameter for 15 nests, which are usually a depression in the sand lined with shell fragments or pieces of littoral drift, was 18.9×19.6 cm.

Minimum Distance Between Nests

This species is semi-colonial, and two or more nests were often found on the same bar or dredge spoil hummock. Among minimum nearest-neighbor distances for active nests in 1984 were: 14.4 feet (4.4m) on Black Banks Island, 18.0 feet (5.5m) on Flat Island, and 18.3 feet (5.6m), 18.2 feet (5.5m) and 15.0 feet (4.6m) on North Line Island.

Average Elevation of Nest Site Above Mean High Water

Since above-normal tidal fluctuations can affect nests built near marsh levels, quantitative measurements were taken in 1984 to determine actual nest height above mean high water (MHW).

On North Line Island, at a large spoil area on which 20 nests were located and where elevations are known, a transit was used to obtain nest elevations. These elevations were then referenced to data from a local tide gauge recorder. The average elevation above MHW during the months of April, May, June and July for nests located on this area was 1.1 feet (0.3m). On other spoil areas and sand bars where reference elevations were not available, a hand level and Lenker self-reading rod was used to estimate nest height above MHW using short ($< 15''$) (38.1cm) *Spartina alterniflora* as a reference. The average elevation above MHW for these nests was also 1.1 feet (0.3m). These measurements indicate, then, the use of nest sites elevated with a reasonable degree of protection from average high and, to an extent, moon tides. In 1983, five of 26 nests were located close to marsh elevations. Two of three marsh nests and two nests on low spoil ($< 1'$ above the marsh) were believed to have been unsuccessful due to lunar tide flooding. The period of egg loss or abandonment coincided with above marsh (2.6'

(.79m) tidal highs of 3.2 (.97m) and 3.5 feet (1.1m) (fig. 2). Of two nests in 1984 built at or near marsh elevation, the one on low spoil experienced the same tidal flooding as in 1983. It is probable that if the population increases and competition for formerly used sites also increases, more nesting on high marsh with wrack will occur.

Late Summer Migration

Shorebirds tend to congregate on various mud flats and sand bars to feed and rest during their annual spring and fall migratory journeys. During late summer, large numbers of oystercatchers have been seen by various observers congregating on the Line Islands; one flock in late summer of 1977 consisted of 75 birds, 109 on 3 Sept. 1979, 155 on 11 August 1983, 215 on 15 August on North Line Island, and 104 on 31 July 1984.

Human Disturbances

Isolated supra sand bars and sandy dredge spoil sites afford ideal small-boat landing sites for picnicking and at times exercising dogs. Several instances of nest disturbance—damage to eggs or killing of chicks—have been attributed to recreational activities carried on at these sand bars. Disturbance is particularly acute during the Memorial Day weekend, when there may be both eggs and chicks present.

On the larger spoil area, North Line Island, where Common Terns, Herring Gulls, and American Oystercatchers, and occasionally Black Skimmers nest, "No Trespassing—Bird Nesting Area" signs were posted in order to identify the area and hopefully minimize disturbances.

Juvenile Production

Juvenile fledgling success was estimated on the basis of observations at six to eight weeks after hatching, or until late July. For 20 nest sites observed, juvenile success was .80 on North Line Island. However, where at least 13 breeding pairs nested, it was difficult to distinguish all nesting pairs with juveniles. Juvenile success could only be estimated at .54.

Since Herring Gulls and Common Terns also nest in the area, it is believed that predation and interspecific competition may limit production. The killing of juvenile oystercatchers by Herring Gulls has been reported previously by Post (1961), and Common Tern attacks on both adults and juveniles were believed to have caused juvenile mortality at Moriches during 1961-1963 (Post and Raynor, 1964). On North Line Island, an oystercatcher nest was occupied and subsequently taken over by a Herring Gull and both Herring Gull and American Oystercatcher chicks have been observed under the same clump of vegetation during 1984. The eventual fate of those oystercatcher chicks, although unknown, was dubious.

Conclusion

The American Oystercatcher population has expanded considerably during more than two and one-half decades since nesting was initially documented on Gardiner's Island in 1957. Substantial increases have been recorded especially along the South Shore from Jamaica Bay to South Oyster Bay during 1983-84. During this time period, within the Town of Hempstead, nesting has been primarily concentrated on dredge spoil deposits, accounting for 70.4% of the total nests recorded. An additional 21% of the nests occurred on supra sand bars located along major boat channels. Oystercatchers begin arriving in local estuaries from mid to late March with egg nest initiation occurring by late April. Clutch size in 1984 was 3.1 ± 1 , and $3.3 \pm .9$ in 1983. Average nest height above mean high water was 1.1 feet (0.3m). Juvenile production for twenty separate nest sites was .80. On areas where Herring Gulls, Common Terns, and American Oystercatchers nest, such as on North Line Island, interspecific competition may limit oystercatcher reproduction. Juvenile success there was estimated at only .54.

It will be interesting to observe to what extent the expansion of the oystercatcher population will be limited in future years, particularly if dredge spoil areas can continue to provide nesting sites as plant succession occurs and if competition for these sites by gulls increases. Periodic managed disposal of dredged material, however, can help insure that future nesting habitat is provided or maintained.

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