

BREEDING BIRD CENSUS OF GOOSE CREEK MARSH, PELHAM BAY PARK, THE BRONX, NEW YORK

DAVID S. KÜNSTLER

Goose Creek Marsh is one of the largest salt marshes remaining in Bronx County, but its breeding birds have not been surveyed in 30 years. A brief breeding bird census of Goose Creek Marsh, a 65 acre (26.3 hectare) salt marsh to the east of the Hutchinson River and the Hutchinson River Parkway in Pelham Bay Park, northeast Bronx County, New York (lat. 40°52'N, long. 73°49'W) was conducted during mid June 1994.

METHODS

I censused Goose Creek Marsh on three dates. On 13 June, approximately one hour was spent in the northwest section of the marsh; on 16 June, about three and one-quarter hours were spent for the remainder of the marsh. This totaled about four and one-quarter hours for the entire marsh. However, due to a desire to get more detailed data from the northwest section, a second trip of 40 minutes duration was made there on 17 June. For the most part, the *Phragmites* was not entered for this count but many fewer birds could be expected there. Visits were made during low tide. Nikon Travelite III 9x25 binoculars were used. Weather was suitable throughout.

HABITAT

The various habitats of Goose Creek Marsh (Fig. 1) were broken down by the entitation carried out in 1986 (City of New York Parks and Recreation 1988; Sisinni and O'Hea Anderson 1993), from the lowest part of the marsh to the highest (Table 1). Botanical names follow Gleason and Cronquist (1991). The low marsh generally is flooded at each high tide and is dominated by Saltmarsh Cordgrass (*Spartina alterniflora*), with minor amounts of Slender Glasswort (*Salicornia europaea*). The tidal creek is another community, according to Reschke (1990), but it has been combined with the low marsh for purposes of this census. The open high marsh usually is flooded only once a month and is dominated by Salt Meadow Cordgrass or Salt Hay (*Spartina patens*) with Spike Grass (*Distichlis spicata*) and Sea-lavender (*Limonium*



Figure 1. Goose Creek Marsh. Photograph by David S. Küntler.

carolinianum), occasional patches of Black Grass (*Juncus gerardii*) and small amounts of Orache or Spearscale (*Atriplex patula*), the latter considered non-native by Gleason and Cronquist (1991) but native by Mitchell (1986). The salt shrub is dominated by the Marsh Elder (*Iva frutescens*) and Salt Meadow Cordgrass. This zone has low salinity. Higher up in the marsh is some occasional Groundsel-tree (*Baccharis halimifolia*). The highest part of the marsh receives little tidal flushing and is almost entirely dominated by Common Reed (*Phragmites australis*). The uplands surrounding much of the marsh support good quality oak-hickory forest, perhaps a combination of Appalachian oak-hickory forest and oak-tulip tree forest (Reschke 1990). There are also several New York State listed rare plants in and around the marsh. *Phragmites* has expanded inward into slightly lower areas of the marsh and the other ecological zones have shifted in the same direction. Thus, the net result may be that the acreage of *Phragmites* expanded, and the high marsh contracted with little change to the shrub acreage. This likely is because there is insufficient tidal flow through the culvert under the Hutchinson River Parkway. Another contributing factor could be the gradual sedimentation of the mosquito ditches which may previously have distributed more water to the marsh. The low marsh is probably little affected because most is along the tidal creeks with some vanishing remnants along the mosquito ditches.

Table 1. Community composition of Goose Creek Marsh

Community	Entitation Unit	Acres	Hectares
Low salt marsh	Unit 300	12.3	4.98
High salt marsh	Unit 301	26.2	10.61
Salt shrub	Unit 302	10.4	4.21
<i>Phragmites</i>	Unit 303	16.1	6.52
Total		65.0	26.32

Table 2. Breeding birds of Goose Creek Marsh

Species	No. pairs	Pairs/acre	Pairs/ha
Clapper Rail	1	-	-
Marsh Wren	20	1.92	4.75
Sharp-tailed Sparrow	6	0.58	1.43
Swamp Sparrow	15	1.44	3.56

RESULTS

The density of nesting pairs or territorial males of all but the Clapper Rail (*Rallus longirostris*) was based on the area of prime habitat, salt shrub (Table 2). Additionally, there were two sightings of Green Heron (*Butorides virescens*) in the creek, perhaps the same bird nesting in forest close to the marsh. Also, about four male Red-winged Blackbird (*Agelaius phoeniceus*) were seen. They may have had at least that many nests and females, but seemed only to be making temporary forays into the marsh. Willow Flycatcher (*Empidonax traillii*) was also heard, probably near the railroad tracks but outside the marsh.

DISCUSSION

Although only one Clapper Rail was heard, more were probably present. Clapper Rail is secretive and does not always make itself known. Also one was seen a few years ago at the Bartow-Pell Mansion vernal pond, where there is much less habitat. However, a regional decline has probably occurred, as exemplified by counts taken in the marshes of the Town of Hempstead. A 37-acre (14.6-ha) plot there supported 13 breeding pairs in 1966 held only four pairs in 1979 (Peterson 1988).

Marsh Wren (*Cistothorus palustris*) and both sparrows were almost exclusively seen in the salt shrub community. The Marsh Wren was the most commonly recorded marsh bird. They often made themselves obvious by virtue of their frequent singing and distinctive flight, low

with a significant rise and descent at the end as they broke into song. The domed brood nests built by females and dummy nests mostly built by males in the Marsh Elder sometimes were evident.

Sharp-tailed Sparrow (*Ammodramus caudacutus*) was never observed singing. One or two birds in a restricted area were assumed to represent a breeding pair. The nesting of the Sharp-tailed Sparrow seems to be synchronized with the spring tides so that the young are out of the nest before the monthly flooding of the high marsh (Lent 1988). Young (1958) found 121 pairs in the Pelham Bay Park area in 1955, and he considered this a likely underestimate. Though he also must have searched extensive marshes where Co-op City now stands, his number of birds, if more or less evenly distributed within the appropriate habitat, implies that the current density for Goose Creek Marsh is low.

Swamp Sparrow (*Melospiza georgiana*) was surprisingly common here. Bull (1964) stated that the Swamp Sparrow breeds in various types of freshwater wetlands and "more rarely in coastal brackish meadows." Arbib (1988) listed its habitat as "margins of freshwater marshes, grassy streamsides, reedbeds, large and small riverine areas, and less frequently the edges of salt marsh or salt meadow." As Bull (1964) observed, "Ordinarily only a few pairs are found nesting at a given locality...". However, he reported that 120 pairs had been found at Troy Meadows and 20 pairs at Idlewild. The Goose Creek population, therefore, may be among the larger ones in the New York metropolitan area, especially since the Idlewild population has long been extirpated.

In a large salt marsh such as Goose Creek Marsh, one might expect to find Seaside Sparrow (*Ammodramus maritimus*). Young (1958) found four pairs on the east side of the Hutchinson River in 1955. However, this species requires salt pannes for feeding, according to Jon S. Greenlaw (pers. comm.). Salt panne is a habitat that is essentially lacking in the high marsh and the low marsh, where these sparrows would be found. However, Carl Alderson (pers. comm.) has found only one of seven pairs using a third-acre salt panne in the Chelsea or Saw Mill Marsh in Chelsea, Staten Island.

Goose Creek is an important feeding ground for many birds that do not nest in the marsh itself. Many of these species do not feed in the marsh to any great extent during low tide when the census was conducted. Some of these species include Great Egret (*Casmerodius albus*), Snowy Egret (*Egretta thula*), Black-crowned Night-Heron (*Nycticorax nycticorax*), Canada Goose (*Branta canadensis*), and American Black Duck (*Anas rubripes*). Great Egret, Black-crowned Night-Heron, and, formerly, Snowy Egret probably come from nesting populations on Huckleberry Island in New Rochelle (Künstler and Capainolo 1987).

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New York City Department of Parks & Recreation, Van Cortlandt & Pelham Bay Parks, Administrator's Office, 1 Bronx River Parkway, Bronx, New York 10462

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