



Fig. 1. Double-crested Cormorant young in a low nest
22 July 1986 *Photo by David Künstler*

HUCKLEBERRY ISLAND: PREMIER WATERBIRD COLONY OF WESTERN LONG ISLAND SOUND

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Huckleberry Island is about 1.2 km off the shore of Davenport Neck in New Rochelle, Westchester County, and 1.3 km from the Bronx (Fig. 2). It supports the largest colonial waterbird rookery of western Long Island Sound, is one of the largest and least known colonies in coastal New York (Peterson *et al.*, 1986; David MacLean, *pers. comm.*) and was only discovered in 1975 (Buckley and Buckley, 1980). Since then, many hundreds of birds of seven species have nested there, including the Double-crested Cormorant (*Phalacrocorax auritus*), Great Egret (*Casmerodius albus*), Snowy Egret (*Egretta thula*), Green-backed Heron (*Butorides straitus*), Black-crowned Night Heron (*Nycticorax nycticorax*), Herring Gull (*Larus argentatus*) and Great Black-backed Gull (*L. marinus*).

Background

Huckleberry Island is about 5 ha in size and is fairly level. It mostly is covered by deciduous forest. The rocky shoreline, most extensive on the east side, especially toward the northern part of the island, occupies about 15% of the island's area. At the west end of Huckleberry is a dock, an out-door bar, a small cabin burned down by vandals and a small area of manicured lawn and shrubbery. This is the only developed part of the island although several small deteriorating buildings are located elsewhere. The island has been owned by the Huckleberry Indians, a fraternity of the New York Athletic Club (NYAC), since 1927 (Edward Norris, *pers. comm.*).

The deciduous forest is composed of Sassafras (*Sassafras albidum*), White Oak (*Quercus alba*), Chestnut Oak (*Q. prinus*), hickory (*Carya* sp.), Black Locust (*Robinia pseudo-acacia*) and Ailanthus (*Ailanthus altissima*). Most basswood (*Tilia* sp.) was present as low bushy specimens along the edge of the woods. However, most younger trees that have regenerated are Norway Maple (*Acer platanoides*). A few living and dead conifers, such as Eastern White Pine (*Pinus strobus*) and Norway Spruce (*Picea abies*) are present. There are virtually no shrubs nor herbaceous growth under the forest canopy (and under the birds). There is some brush at the north end of the island which contains a good deal of Poison Ivy (*Toxicodendron radicans*).

Huckleberry Island was visited on 15 July and 22 July 1986 by David Künstler and Mark Furman, and on 17 June 1987 by David Künstler, Peter Capainolo and Gregory Owens. Peter Capainolo returned 25 June 1987 with John Piñero of the Queens College Center for Environmental Teaching and Research and Jay Williams of Deer Park to band nestlings.

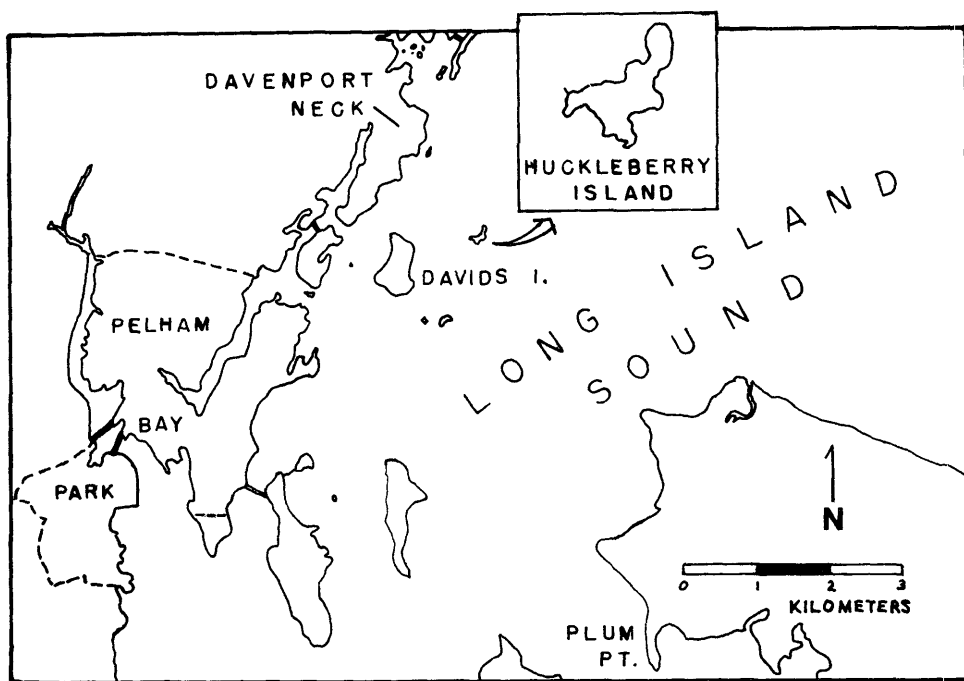


Fig. 2. Huckleberry Island in western Long Island Sound
Map by David Küntler

Surveys were accomplished entirely on foot. For censusing egrets and gulls, we assumed that each adult seen represented one nest (Buckley and Buckley 1980), to account for pair members away foraging.

Double-crested Cormorant

The visit on 15 July 1986 was the first ornithological survey taken there since that of Paul A. Buckley and Francine G. Buckley in 1983 (*pers. comm.*, Table I). Although 15 July was late in the season and many of the birds were gone, Double-crested Cormorants were found nesting, making this the sixth known colony in New York State (Fig. 1). Ten active nests were counted on that day and about 20 were counted on 22 July 1986, but this certainly did not represent all nesting pairs. A fairly thorough count on 17 June 1987 yielded 92 cormorant nests. Buckley and Buckley (1984) had called Huckleberry Island "especially promising" as one of the next possible cormorant breeding sites in the Long Island area.

The majority (about 63) of cormorant nests were located in the upper and outer branches of small trees, largely basswood, along the northeast forest edge. Many, though, were in the small, upper branches of the forest canopy, including some of the largest and tallest trees on the island. Table 2 shows which trees had how many nests. Most of the predominantly forest interior nests south of the larger concentration of nests are recorded in Table 2. Mark Furman (*pers. comm.*), who pilots boats in the area, stated that he first started noticing cormorants in 1983 or 1984. About 34 cormorants were swimming just offshore 22 July 1986. Two flocks swimming just off the island on 17 June 1987 totaled 86 adults mixed with numerous birds in immature plumage. All young seen in nests were small and far from fledging at this time. A cormorant apparently regurgitated a large Bluefish (*Pomatomus saltatrix*) head 17 June 1987. An adult female found dead of unknown cause on the rocks 15 July 1986 was deposited in the Queens College Center Museum (QCCM 116).

Egrets, Herons and Gulls

Great Egrets and Snowy Egrets were estimated at 10 pairs and 30 pairs respectively on 17 and 25 June 1987. The 1986 count revealed about 8 adult Great Egrets and 36 adult Snowy Egrets, or the same numbers of breeding pairs. Nest site selection and distribution on Huckleberry Island seems to be quite similar for these two species. Most of these birds nest in the very tops of densely crowned trees of moderate height, including some conifers, some of which were dead. Most nests are clumped on the eastern or southern parts of the island.

A Green Heron was flushed from its nest in a shrub near the edge of the northernmost woods on Huckleberry on 17 June. Although Green Herons do not often nest colonially, one or a few pairs may locate within a heronry. A Green Heron pair nested in 1977 (Erwin, 1979).

The largely abandoned nests of the Black-crowned Night-Herons were identified on 15 July 1986 by their small size and flimsy construction. One hundred nests were estimated on that trip. The count on 17 June 1987 was 127. These were mostly in the crotches formed by small branches against the bole of the young Norway Maples at or below the lower extent of the forest canopy. The cormorants and night herons were vertically segregated in the forest interior. The larger cormorants nested higher up, as might be expected from the findings of Burger (1979). The increase in numbers from 1986 to 1987 undoubtedly reflects the way in which night-herons were counted and is not a real increase in the size of the nesting population. Fifty pairs were estimated by Erwin (1979) for 1977 using a conversion factor to account for nests that were undetected by the observers. A food item, apparently regurgitated by an immature night-heron on 15 July 1986, was a 3.6 + dkm American Eel (*Anguilla rostrata*).

Table 1. Nesting pairs from surveys of Huckleberry Island 1975-1987.

	P.A. & F.G. Buckley (<i>pers. comm.</i>)					This study	
	1975	1976	1977	1978	1983	1986	1987
Double-cr. Cormorant	--	--	--	--	--	20	92
Great Egret	3	5	10	14	23	8	10
Snowy Egret	5	30	30	44	30	36	30
Little Blue Heron	--	--	P*	--	--	--	--
Green Heron	--	--	1*	--	--	--	1
Black-cr. Night-Heron	8	25	20	31	35	100	127
Herring Gull	--	4	10	27	260	300	1000
Gt. Black-backed Gull	--	--	1	2	8	3	400
Total	16	64	72	118	356	467	1660

*Erwin, 1979; Little Blue Heron "possible"

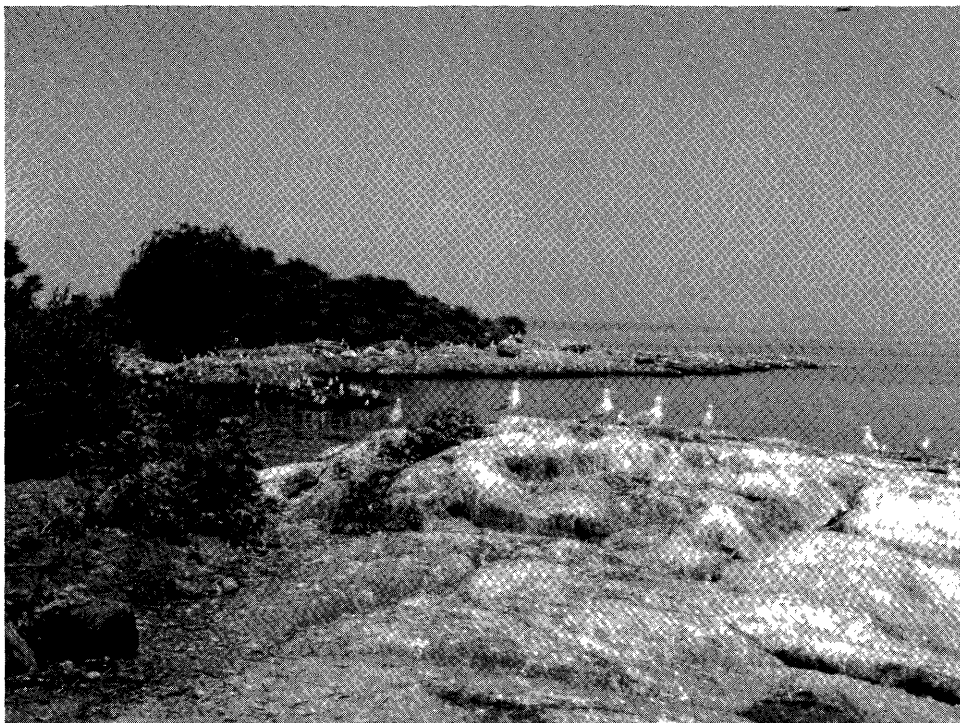
Table 2. Number of cormorant nests per tree by species, 1987.

	Nests per tree				
	1	2	3	4	5
Hickory sp.	2			1	1
White Oak	1	1	1		
Basswood sp.				1	
Black Locust			1		
Chestnut Oak		1			
Sassafras	1				
Total	4	2	2	2	1

Table 3. How species' numbers on Huckleberry Island (1987) rank compared to those of other coastal New York waterbird colonies (1986).

Double-cr. Cormorant*	4th	of	4	colonies
Great Egret	7th	of	12	"
Snowy Egret	8th	of	13	"
Black-cr. Night-Heron	3rd	of	22	"
Herring Gull	4th	of	36	"
Gt. Black-backed Gull	2nd	of	28	"

*All 1987 data for this species



*Fig. 3. Herring Gulls and rocky shoreline,
looking toward north end of Huckleberry Island*

25 June 1987

Photo by Peter Capainolo

Most gulls nest in the low vegetation near the edge of the rocks along most of the island's perimeter, some nest on the rocks, and a few even nest in the woods. The heaviest concentration of nesting gulls is located on the north end of the island (Fig. 3). On 15 July 1986 the north end was not well censused. Due to that and to the late date, few gulls were seen. Three hundred Herring Gulls, assumed to represent 300 pairs, were estimated and three nests found. No Great Black-backed Gulls were sighted until about three were seen a week later. We estimated 1000 Herring Gulls and 400 Great Black-backed Gulls, and the equivalent number of pairs, on 17 June 1987. Most appeared to be nesting. Buckley and Buckley (1980) found four pairs of Herring Gulls in 1976 and one

pair of black-backs in 1977 during what was probably these species' first year nesting on the island (Table 1). The Black-backed Gull chicks were older and hid more effectively under rocks or logs and were harder to find for banding in the limited time available.

Additional Observations and Relative Importance

The Little Blue Heron (*Egretta caerulea*) was listed as "possible" in 1977 (Erwin, 1979) but no details were provided.

Few other birds were noted during our visit of 17 June 1987. These included a flock of 79 Canada Geese (*Branta canadensis*) which walked into the water when we arrived. A few crows (*Corvus* sp.), and Common Grackles (*Quiscalus quiscula*) were seen. European Starlings (*Sturnus vulgaris*) were nesting in a tree.

A cause of mortality for at least some species is fishing line or string. A dead cormorant and an adult Great Egret were found suspended from one of these on 15 July 1986. Two cormorants were hanging together in similar fashion 17 June 1987 and a mass of line or string dangling next to an active nest threatened others.

Huckleberry Island is the only waterbird colony within a large area. The next colony to the west is South Brother and North Brother islands, a sizeable colony 16 km to the southwest in the East River. Great Captain Island in Greenwich, Connecticut, is a small, new heronry (Jane Moffatt, *pers. comm.*) 15 km to the east in Connecticut. Stony Brook Harbor, 49 km to the east, is Long Island's only north shore heronry. Closer sites having no species which nest on Huckleberry Island include Yellow-crowned Night-Herons (*Nycticorax violaceus*) at the Marshlands Conservancy, 8.2 km east in Rye (Alison Beall, *pers. comm.*), Least Tern (*Sterna antillarum*) colonies active in 1987 6.2 km to the south on Plum Point in the Village of Sands Point, Nassau County (Fig. 2), and on Lloyd Neck in Caumsett State Park, 23 km to the east in the northwest corner of Suffolk County (William Kolodnicki, *pers. comm.*).

Data from Huckleberry Island for 1987, when a more thorough count was made, may be compared with other Long Island area colonies. The last year for which data is available (excepting 1987 cormorant data) is 1986 (MacLean, *pers. comm.*). Of 169 waterbird colonies in coastal New York in 1986, only four others had seven species, 158 had fewer species and only six had more species. Table 3 gives the rank of the population size of each colonial species nesting on Huckleberry Island relative to other coastal New York colonies of the same species. In addition, one or a few pairs of Green Herons were recorded nesting in 14 waterbird colonies in 1986 (MacLean and Litwin 1987). If wading birds (egrets, herons, ibises) are singled out, 168 pairs of waders put this site at fifth among 27 such colonies. Similarly, for diversity of wading bird species,

16 of the 1986 colonies had fewer species and seven colonies had more. Compared to 1985 data (Peterson *et al.*, 1986), Huckleberry's relative colony size is even greater.

Rocky Shoreline

The birds are not the only unusual natural feature of Huckleberry Island. The rocky, indented shore of the submerged coastline (Fig. 3) is a geological formation typical of the New England coast but which, for the most part, does not extend farther south or west than nearby Pelham Bay Park. It consists of predominantly Fordham gneiss and is part of the Manhattan Prong of the New England Upland physiographic region. This shoreline provides the substrate for the "marine rocky intertidal" community, so named by the New York Natural Heritage Program, which keeps track of the rare plants, animals and natural communities of the state. The Heritage Program has given this community the uncertain rating S1S2 for the state, which is because of inadequate study. The highest rating, S1, generally means one to five occurrences in the state and S2 six to 20 occurrences. Although the number of occurrences of this community type in New York is certainly a subjective matter, the relative quality of Huckleberry Island's rocky intertidal community probably is quite good. The species diversity, a good general measure of that quality, is high on Davenport Neck on the mainland. Its fauna is not as likely to be as diverse as is Huckleberry Island's due to greater human visitation. This also partly would be due to proximity to pollution sources. On the other hand, Davenport Neck is more diverse than Pelham Bay Park's rocky shores because of its more easterly location and, hence, greater salinity (Stephen Young, *pers. comm.*).

Conservation and Recommendations

There are not many threats to the continued well-being of Huckleberry Island and its inhabitants. Though vandalism claimed a cabin on Huckleberry in 1986, it may not pose a great threat to the bird colony. Expected threats would include water pollution entering the birds' feeding grounds and the island's intertidal zone. Habitat destruction of the island does not appear likely in the foreseeable future. The island has been under the same ownership for 60 years and the Huckleberry Indians are not looking to sell it. Destruction of the birds' feeding grounds is an indefinite threat due to the unprotected nature of many small, widely scattered feeding areas which remain largely unknown. However, the Marshlands Conservancy and vicinity in Rye contain roughly 50 ha of salt marsh and mudflats which provide food

for at least some of the Great and Snowy Egrets of Huckleberry (Alison Beall, *pers. comm.*). All of the waterbird species of Huckleberry Island are regularly seen in Pelham Bay Park (Fig. 2; Künstler and Feller, 1987) in the Bronx, 2.0 km away, which is probably the most important feeding area for at least the herons and egrets by virtue of its proximity to Huckleberry and its quantity of suitable habitat—about 165 ha of salt marshes and mudflats of 1119 ha total. The park is presently protected from further development. Wetland area has been directly correlated to numbers of nesting wading birds in general in the Northeast (Erwin, 1979). On the other hand, the Black-crowned Night-Heron, Herring Gull (Erwin, 1979) and undoubtedly the Great Black-backed Gull, as well, respond more to coastline length. Thought is now being given within the New York City Department of Parks and Recreation to give not only the undeveloped parts of Pelham, but the rest of some 2800 ha of city-owned natural lands, permanent protection, immune from future politics.

The New York Department of State has designated nearly all of Huckleberry Island and the Marshlands Conservancy as Significant Coastal Fish and Wildlife Habitats, which should give some measure of protection to the island community at the federal, state and local levels. The actual boundary is not critical and possible external threats to the designated area would be reviewed as well as threats from within.

Unfortunately, a \$1 billion development proposal for Davids Island, 0.7 km to the southwest, covers all threats mentioned above except direct destruction of the island. Dredging, sewage, 20- to 50-story buildings, a bridge the length of the Brooklyn Bridge, an 800 slip marina and 3700 new residents in an already stressed ecosystem are not expected to help the western sound in general.

A potential threat from within the colony is the possibility of the birds killing off trees and subduing regeneration. There is virtually no vegetation under the canopy now and the cormorant nest trees have greatly reduced foliage already. If the birds (other than the gulls) ultimately make their colony site unsuitable for nesting, they must have alternative nesting areas. If the Davids Island proposal does not go through, that island might make a good "second home" in a region with exceedingly few other potential sites of this kind. Actually, Davids Island is likely the only other possible site for a large waterbird colony in this part of Long Island Sound. Another possible barrier to the birds' colonization here is the raccoon (*Procyon lotor*) population.

We hope that this report will generate more interest in the birds of Huckleberry Island and their ecology. The island is ideally suited for a monitoring team or research project, although limited time should be spent in the colony by a few people only. As many of the young trees

on the island are the aggressive and exotic Norway Maple that pose a threat to the mix of native trees now forming the canopy, a good project may be to experiment on a small scale with the notion of eventually ridding the island of Norway Maple or controlling it. However, this must be done carefully and slowly, since these trees are very important to the night-herons. It may be difficult to replace them owing to the stressed conditions on the island. A diversity of tree species along with a similar diversity of potential nest sites may suit the needs of several species of tree-nesting birds better than a forest of mostly one species. More species also may provide a more stable habitat. The owners have expressed interest in such a project and in managing the island for the birds.

Summary

For the first time since 1983, five ha Huckleberry Island, just off New Rochelle, Westchester County, was surveyed for its colonial waterbirds in 1986 and 1987. The sixth known Double-crested Cormorant colony in New York was discovered here in 1986, which numbered about 92 active nests in 1987. Also found here in 1987 were 10 pairs of Great Egrets, a low count, and 30 pairs of Snowy Egrets, which seemingly have remained stable in numbers since the 1970's. The 127 pairs of Black-crowned Night-Herons, in one of their largest regional colonies, have increased substantially and a pair of Green Herons were found. Since Herring Gulls started nesting here in 1976, they have grown to an estimated 1000 pairs. Great Black-backed Gulls first nested in 1977 and now, at about 400 pairs, form one of the biggest colonies in coastal New York. This makes Huckleberry Island the major waterbird colony of Long Island Sound west of the Norwalk Islands in Connecticut and one of the larger rookeries in coastal New York State. Furthermore, its shoreline supports a marine rocky intertidal community, rare in the state. There is potential for research and management here, for which the owners are quite receptive. While the owners presently show little interest in developing or selling the island, the major threat is a development proposal for Davids Island, probably the only suitable alternate nesting site in this part of Long Island Sound.

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