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Great Black-backed Gulls breeding in salt marsh in New Jersey.—Great Black-backed Gulls (*Larus marinus*) have recently expanded in the northeastern U.S., nesting along the east coast as far south as Jamaica Bay, New York (Peakall, Kingbird 17:69–73, 1967), where they normally nest on sandy islands, shingles, moors, and grassy areas. In 1972, Parnell and Soots (Auk 92:154–157, 1975) found several adults and one nest on a dredge island in North Carolina. This report documents the invasion and successful nesting of Great Black-backed Gulls in the salt marshes of New Jersey. Since breeding behavior and success data are usually unavailable from the first pairs nesting in an area, I present these data.

In 1976, Great Black-backed Gulls nested on 5 salt marsh islands in Ocean County, New Jersey (39°41′-39°46′ N): 8 pairs on Clam Island, 2 pairs each on Sloop, Caravel, and Egg islands, and 1 pair on Sandy Island. *Spartina patens* and *S. alterniflora* dominate these low salt marsh islands with *Iva frutescens* growing in the higher areas. I checked nests on Clam Island 2 to 4 times a week from early April until late July, on Caravel Island weekly, and on the other islands once or twice a month.

On all islands Black-backed Gulls nested within Herring Gull (*L. argentatus*) colonies of 15 to 800 pairs. Laughing Gulls (*L. atricilla*) and Common Terns (*Sterna hirundo*) nested on Clam Island and Egg Island. Common Terns and Black Skimmers (*Rynchops nigra*) nested on Caravel Island.

Black-backed Gulls generally nested under *Iva* bushes on grass in the center of the densest area of Herring Gulls. Channels divide Clam Island into several subislands, each containing one or more small areas with *Iva* bushes. On 9 April when I first visited Clam Island, I found 16 Herring Gull nest scrapes and 2 partially completed Black-backed Gull nests on the NE subisland, 10 Herring Gull nest scrapes and 2 completed Black-backed Gull nests on the NW subisland, and 8 Herring Gull scrapes and 2 Black-backed nests on the SE subisland. Although nesting activity began on all subislands at the same time, the Black-backed Gulls were separated by 500 to 800 m. Thus, Black-backed Gulls spaced themselves as if solitary with respect to conspecifics, but colonially with respect to Herring Gulls.

In all colonies Black-backed Gulls initiated egg-laying between 7 and 18 April, during the earliest period of egg laying for Herring Gulls. All nests found contained 3 eggs. Erwin (Wilson Bull. 83:152–158, 1971) found that Black-backed Gulls lay eggs earlier than Herring Gulls in Rhode Island and have a mean clutch size of 2.83.

Black-backed Gull eggs hatched first in all Herring Gull colonies. Hatching success on all islands was high (95%) compared to that reported by Harris (76%, Ibis 106: 432–456, 1964) and Erwin (44%, ibid). The high hatching success on Clam Island may be due to the lack of mammalian predators and the nesting synchrony in the area. Herring Gulls and Black-backed Gulls established territories at about the same time in these epicenters, thus eliminating behavior in defense of their nests which would have a disruptive effect. Erwin (ibid) attributed the low success to excessive territory defense on the part of the Black-backed Gulls because of their synchrony with the Herring Gulls. Within 10 days of hatching in New Jersey, the chicks entered the nearby channels and bays (5–20 m) when disturbed by humans. Generally the brood remained together with one or both parents flying overhead. Parents did not mob the intruder but left with the chicks. Chicks usually remained near land but sometimes swam 100 m away from the islands. After the intruder left, the parents flew back to the nest, landed, and gave repeated calls. The chicks, visually isolated from their parents and nest, returned to the nest within a half hour. Herring Gull chicks did not enter the water until consider-

ably older (over 25 days), and their parents mobbed human intruders. Perhaps one advantage of Black-backed Gulls nesting with Herring Gulls is the protection the attacking Herring Gulls provide.

Although Black-backed Gulls are well known predators on the eggs and young of other gulls and terns (Hatch, Auk 87:244–254, 1970), I did not observe any instance of Black-backed Gull predation on either eggs or chicks in over 560 h of observation from a hide where I could see 40 Herring Gull nests and 2 Black-backed Gull nests. Similarly I never found the remains of eggs or young near the 8 Black-backed nests regularly checked on Clam Island. Even though over 500 Herring Gulls were banded in the vicinity, Black-backed Gulls never regurgitated any bands near their nests. The mean clutch size of Herring Gulls was similar in areas with and without nesting Black-backed Gulls on Clam Island.

Black-backed Gull adults generally ignored the Herring Gulls nesting nearby, although the Herring Gulls appeared to move away from approaching Black-backed Gulls. Black-backed adults actively chased Herring Gulls only when Black-backed Gull eggs were hatching. When disturbed by a human, gulls circle overhead. During these disturbances, the Black-backed Gulls chased and pecked at any other gull flying over their nests and eggs.

Nine times I observed Herring Gulls initiate and successfully chase Black-backed Gulls when their chicks (as old as 32 days) approached adult Black-backed Gulls. I saw only 1 fight when a Herring Gull chick walked to within 1 m of a Black-backed nest and was chased by the resident adult. A fight ensued between the parents which involved pecking, wing flapping, wing tugging, and feather pulling. The Black-backed Gull subsequently flew and the Herring Gull chased its chick back the 5 m to its own nest.

Black-backed Gulls had high fledging success on the islands examined, as all pairs fledged 2 to 3 young ($\overline{X} = 2.42$). Young were considered fledged once they reached 1300 g or were able to fly. Young from Clam and Caravel islands were weighed periodically and their weights were similar to those reported by Harris (ibid). It is difficult to obtain fledging rates for this species since they are often eliminated from mixed species breeding colonies by investigators interested in low predation rates (Harris, ibid). The high fledging rate in Ocean County, New Jersey may be the result of experienced breeders, high food supply, low predation rates, little conspecific competition for nest sites, or a combination of these factors. Mammalian predators are lacking from these low tide swept islands, and Herring Gulls do not yet appear to be as active predators on eggs as usual.

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