

Status of the Piping Plover on the East Coast of North America

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A summary of our recent knowledge of this Blue-listed species

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THE PIPING PLOVER (*Charadrius melodus*) is widely recognized to be uncommon and decreasing in recent years and hence has been "Blue-listed" as a bird in potential danger (Arbib 1979, and earlier). Here we give available information on its numbers along the East Coast of North America, where it forms a population separate from that of the Great Lakes and Central Plains. Many of our estimates are based on correspondence with knowledgeable persons, most of whom stressed the tentativeness of their figures. We hope our review will encourage the gathering of more exact estimates.

NUMERICAL STATUS BY REGIONS

Newfoundland

There is no evidence that the bird has nested in Labrador (Todd, 1963). On insular Newfoundland, Peters and Burleigh (1951) recorded it as "fairly common," but mention sightings of only 6, 2, and "several" pairs at three sites. R. Lambertson and S. Tingley (pers. comm.) estimate that only 10-15 pairs now nest, all in the southwest. However, a breeding pair at Musgrave Harbour on the northern coast in 1973 (R. Montgomerie, pers. comm.) suggests that it may at times nest in other places not yet investigated. The species is not in a recent list of summer birds of the French islands of St. Pierre and Miquelon (Etcheberry 1976).

Québec

A survey in 1977 of suitable beaches on the north shore of the Gulf of St. Lawrence (Natashquan, Harrington, Chevery, and the mouths of the Cross and Netagamion Rivers) by the Canadian Wildlife Service and D. Christie (pers. comm.) produced no sightings. Anticosti Island probably has little or

no suitable habitat; early reports, when not dubious, suggest that it occurred as a fall migrant (Ouellet 1969). Although it was found there at least until 1967 (H. Ouellet, pers. comm.), it does not now nest in the southern Gaspé peninsula (David, *in* Arbib 1976). On the Magdalen Islands, Strauch (*in* McNeil *et al.* 1973) estimated that "no fewer than 50 pairs were present during 1969." Based on observations from 1973 to 1976, N. David (pers. comm.) thought that the total might be as high as 100 pairs. However, a thorough census carried out by W. Cairns in 1979 produced a figure of about 30 pairs.

Prince Edward Island

In 1977 and 1978, W. Cairns surveyed suitable breeding habitat and estimated that 50 to 60 pairs were nesting.

New Brunswick

About half the suitable nesting habitat along the north shore of the province was surveyed in 1979 by W. Cairns. The approximately 40 pairs in these places is in agreement with the 50 to 100 pairs believed by D. Christie (pers. comm.) to be nesting in the province.

Nova Scotia

Extensive surveys by W. Cairns and the Nova Scotia Department of Lands and Forests in 1975 and 1976 discovered 54-57 pairs in Halifax, Lunenburg, Queens and Shelburne counties. Surveys by the Department in 1977 (P. J. Austin-Smith, pers. comm.) revealed an additional 12 pairs (single birds taken as indicating a pair) along the province's north shore. The bird no longer nests on Sable Island and is now rarely seen there (I. McLaren, pers. obs.). Repeated surveys in some of the mainland areas in 1979 (P. J. Austin-Smith, pers. comm.; R.

Chiasson and S. Fleming, pers. comm.) gave very similar results to those of 1975-1977.

We doubt that it nests elsewhere in any numbers and are quite confident that 70 pairs would be a maximum for the province.

Maine

Figures from the State Planning Office indicate that 22-28 pairs nest annually in the southern part of the state, where most suitable beaches are located. However, P. Vickery (pers. comm.) thinks that there could be up to 40-50 pairs nesting in the state.

New Hampshire

No birds have nested in recent years in the very small areas of suitable habitat (K. Elkins, pers. comm.).

Massachusetts

B. Blodget (pers. comm.) estimates that 149+ pairs nest in the state. R. Forster (pers. comm.) from the Massachusetts Breeding Bird Atlas (Mass. Audubon Soc.) and his own observations, suggests a figure of 125 pairs. The large islands may not be major "refugia"; for example, G. Ben David (pers. comm.) indicates that only 12-15 pairs nest on Martha's Vineyard.

Rhode Island

R. Ferren (pers. comm.) estimates that the usual maximum during recent years was 15 pairs (range, 11-16 pairs).

Connecticut

N. S. Proctor (pers. comm.) recorded only 20 nesting pairs during a survey in 1977, although he had earlier estimated that about 36 pairs might have occurred.

New York

Following a helicopter survey of all of Long Island in 1975, P. A. and F. G. Buckley (pers. comm.) report that "we can put reasonably firm limits of 80-100 pairs for the whole area." Habitat is not suitable elsewhere in the state.

New Jersey

Kane and Farrar (1976) reported 93 pairs between Cape May Inlet and Sandy Hook, but did not examine some areas. R. S. Kane (pers. comm.) suggests that 2-3 pairs also nest in Cape May Point State Park. Perhaps a total of 100 pairs would allow for scattered pairs elsewhere.

Delaware

Recently (Smith *et al.*, 1978) "the breeding population was estimated to be near 40 pairs."

Maryland

We have no current surveys for the state, although Stewart and Robbins (1958) state that it is "uncommon in the coastal area" and F. R. Scott (pers. comm.) believes that this status is unchanged. A count of 85 birds on May 30, 1972 on the Maryland portion of Assateague Island was thought to be a maximum for the state (Scott and Cutler 1972). The island includes most of the suitable habitat in the state, and assuming that these birds represent most of the resident breeders allows an estimate of 50 pairs in Maryland.

Virginia

Ten pairs were believed to have nested on Chincoteague N.W.R., in June 1978 (Claudia Wilds, pers. comm.). On the barrier islands to the south, 121 birds were counted during June 23-27, 1979 (Scott 1979); these were adults (W. Williams, pers. comm.). The bird is an uncommon breeder on the west side of the mouth of Chesapeake Bay (4 pairs in 1974, according to Scott and Cutler 1974) and south of Cape Henry along the coast (F. R. Scott, pers. comm.). F. R. Scott cautions (pers. comm.) that some unsurveyed birds nest on dredging spoil in marshes. These might inflate our minimal estimate of about 75 pairs to perhaps 100 pairs.

North Carolina

Although no overall surveys or estimates are available, the bird's present breeding status is, according to H. E. LeGrand, Jr. (pers. comm.): "probably a rare breeder south along the coast to Shackleford Banks, with four positive nesting records since 1960." Four more nestings occurred in 1979 (LeGrand 1979). Extensive suitable habitat on the Outer Banks is not necessarily occupied; for example, H. E. LeGrand (pers. comm.) is unaware of any recent nestings in the Pea Island area, where it once occurred. We suggest that 10 pairs would be a generous estimate for the state.

Discussion

USING MAXIMAL ESTIMATES, as given above, we feel that at most 910 pairs of Piping Plovers now nest on the Atlantic coast of North America. It should also be stressed that in our own censuses, and presumably those of others, the term "pair" need not imply breeding. For example, although an estimated 60-70 adults occurred in 1976 on Cadden Beach, the major breeding area in Nova Scotia, only 27-29 pairs nested (Cairns 1977). Fewer than 100 pairs may occur on Long Island, New York, where some 500 pairs nested 40 years ago (Wilcox 1939). On the margins of its range it does not now nest, where it once did, along the north shore of the Gulf of St. Lawrence (Todd 1963), on Sable Island (Dwight 1895), on the southern part of the Gaspé peninsula (David, *in* Arbib 1977), and in parts of North Carolina (see above).

Between the turn of the century and the thirties, the species recovered from an earlier decline in numbers (Bent 1929, Wilcox 1939). However, this earlier decline was occasioned by year-round hunting. The present situation presumably results from failures to produce enough young, rather than from increased post-fledging mortality. Habitat change, disturbance of nesting birds, and direct destruction of eggs or young are possible general causes of reduced reproductive success.

Piping Plovers nest only on sand beaches, especially in areas overwashed by past storms and not yet recolonized by dune vegetation. Thus the species may be subject to short-term and long-

term changes in "carrying capacity" of its breeding range.

Habitat "destruction" by human activities has been cited as a problem for Piping Plovers by some of our correspondents, but "change" is the better term, since its nesting habitat is virtually indestructible, except by wholesale removal of beach sand to bedrock or cobble, now proscribed in most jurisdictions. Paradoxically, some programs of repair and replanting of beaches and dunes abused by human impact may have worked to the plover's disadvantage in recent years, for it does not tolerate much vegetation. Fortunately, more sophisticated approaches to beach management now recognize the inevitability of instability in dune systems (Dolan *et al.*, 1973). Some correspondents have indicated that the diminished availability as nesting habitat of fresh dredging "spoil" has added to the plover's problems.

THE FACT THAT THE PLOVER does not now nest on many beaches where it once nested and which still appear to be suitable seems to indicate that the species has decreased because of disturbance or direct destruction rather than shortage of suitable habitat. Disturbance comes in various forms. One of us (W. Cairns) found that some birds on a remote beach in Nova Scotia left their nests when approached no closer than 85 m, whereas incubating birds on some recreational beaches allowed approach to within 3 m. Probably mere presence of people, within limits, does not affect reproductive success. Actual destruction of nests and young is more serious. This may be caused by pedestrians or people on horseback, but most often, according to our observations and those of correspondents, by vehicles. We have seen motorcycles, automobiles, and all-terrain vehicles on beaches where Piping Plovers nest. We have also seen attended and unattended dogs chasing the plovers, and received one report of chicks being killed by a dog. Quinn and Walden (1966) considered feral dogs and cats to be a major threat. It is also possible that natural predation by such animals as gulls, crows, foxes, and raccoons, has increased with clearing and urbanization of the East Coast.

An attempt was made to estimate the effect of disturbance on Piping Plover nesting success in Nova Scotia in 1976,

using censuses of adults, nests, and running and fledged young, as well as some capture/recapture data on banded young (Cairns 1977). On Cadden Beach, Queens County, which is large, remote from roads, and rarely visited by people, 27-29 pairs produced an estimated 1.3 - 2.1 fledged young per pair. On eight smaller, more accessible recreational beaches in Halifax, Lunenburg, Queens, and Shelburne counties, 15 pairs produced 0.7 - 1.1 young per pair.

We know of suitable beaches that have no Piping Plovers and of others to which they continue to return in spite of persistent disturbance and nesting failures. Presumably the birds cannot predict and avoid reproductive failure in habitats that otherwise appear suitable to them. Anticipating disturbance and destruction may be especially difficult, since the birds settle early in the season, before beaches become heavily used for recreation.

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