

THE MACHAIR OF THE OUTER HEBRIDES

by Rob Fuller and Nigel Buxton

Recently there has been increasing awareness that the Outer Hebrides of Scotland support really outstanding populations of breeding waders. The great majority of the birds breed along the western seaboard of the southern isles: North Uist, Benbecula and South Uist. We thought that brief descriptions of the habitats of this coastal strip would be useful to those readers who are unfamiliar with the islands, particularly as the Wader Study Group has recently carried out a survey of these breeding populations (see the accompanying articles).

The most characteristic feature of the area is the "machair" which forms a flat sandy plain running virtually the entire length of the west coast of the three islands. Machair is effectively a type of sand dune system in which the area of flat plain is relatively large compared with the area of undulating dunes. The sand itself is calcareous shell sand. Figure 1 shows clearly how the machair and dunes in the southern isles are confined to the western fringe. These islands support by far the most extensive machair formations in Britain.

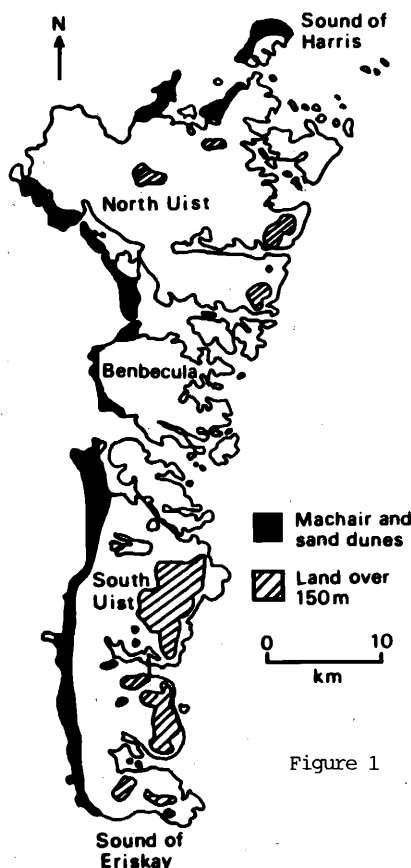


Figure 1 The approximate distribution of machair and sand dunes in the Uists and Benbecula (Reproduced from *BTO News*; artwork by Elizabeth Murray).

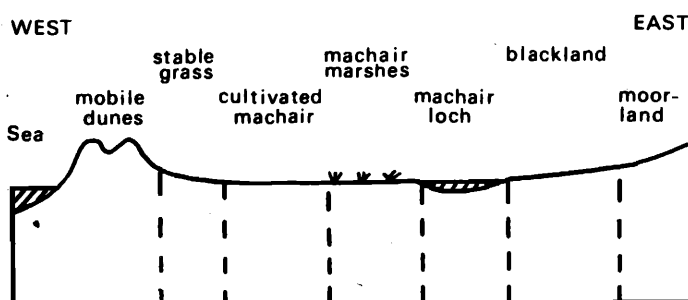


Figure 2 A diagrammatic cross-section of a typical sequence of machair and associated habitats in the Southern Isles of the Outer Hebrides (Reproduced from *BTO News*; artwork by Elizabeth Murray).

Associated with the dune machair are several other distinctive habitats. A simplified cross-section of a typical sequence of these west coast land types is presented in Figure 2. Along much of the coast a strip of mobile dunes fringes the machair plain. In many places these dunes are extremely narrow or even absent; elsewhere they form substantial systems extending up to one kilometre from the Atlantic-facing beach. Sometimes the dunes give way to the machair plain through an intermediate zone of semi-mobile dunes or gently undulating dune grassland. The machair plain itself is widely cultivated, sometimes on a strip rotation resulting in a patchwork of cultivation stages. The crops include oats, rye and barley. The land is often left fallow for several years. Where the cultivation is not of the traditional strip type, the land is farmed in larger more uniform blocks, sometimes including silage. The machair plain frequently carries damp slacks, some of which stand under water in the winter. Particularly on the inland edge of the machair there may be areas of damp grassland and rich fen which are labelled as "machair marshes" in Figure 2. Highly productive shallow lakes - machair lochs - occur on the inland margin of the machair, especially in South Uist.

Most of the land in the Uists and Benbecula is unproductive moorland and blanket bog overlying gneiss. Between the machair and these extensive peatlands there is a transition zone termed "blackland". This land was once peatland but has been greatly modified by human activity, especially by peat removal and the application of midden refuse. This, together with some "sweetening" of the land by calcareous sand has created rocky grasslands often with permanent and seasonal marshes. Some of the blackland is managed as in-bye land for wintering stock. Frequently at the transition from machair to blackland there are traditional hay meadows.

Different communities of breeding waders are associated with each of the land types described above. Oystercatcher *Haematopus ostralegus*, Lapwing *Vanellus vanellus*, Redshank *Tringa totanus*, Ringed Plover *Charadrius hiaticula*, Dunlin *Calidris alpina* and Snipe *Gallinago gallinago* are the characteristic species.

The data collected by the Wader Study Group and the Nature Conservancy Council will be used to assess the population sizes, densities and patterns of habitat distribution.

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Plate 1. Loch Hallan, Askernish Coast, South Uist. View looking eastwards showing dry machair (with rabbit burrows) in the foreground; wet machair and fen adjacent to a eutrophic machair loch; and cattle grazing on blackland beyond the loch. The background hills are moorland.

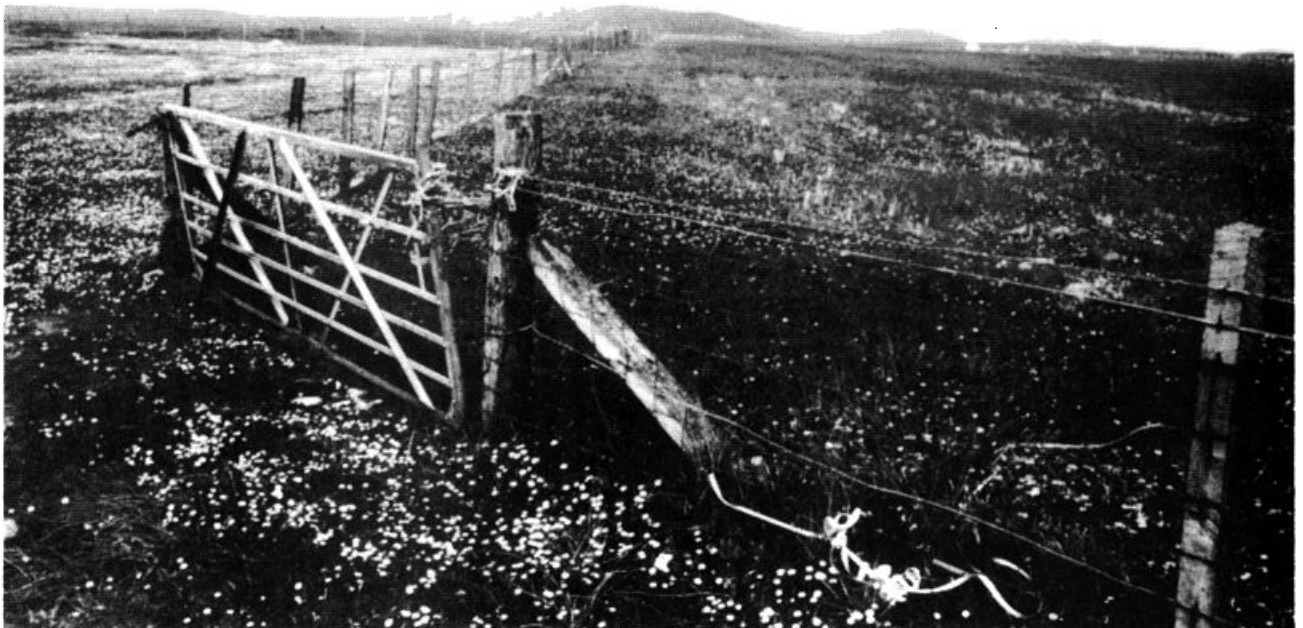


Plate 2. Fencing on dry machair, North Uist. Much of the level land visible in this photograph is cultivated at least periodically.



Plate 3. An extensive area of machair cultivation on North Uist.



Plate 4. Cultivated machair on North Uist. Note the strip of fallow machair to the left of the plough. High densities of breeding Ringed Plovers occur in many such places on the Uists.

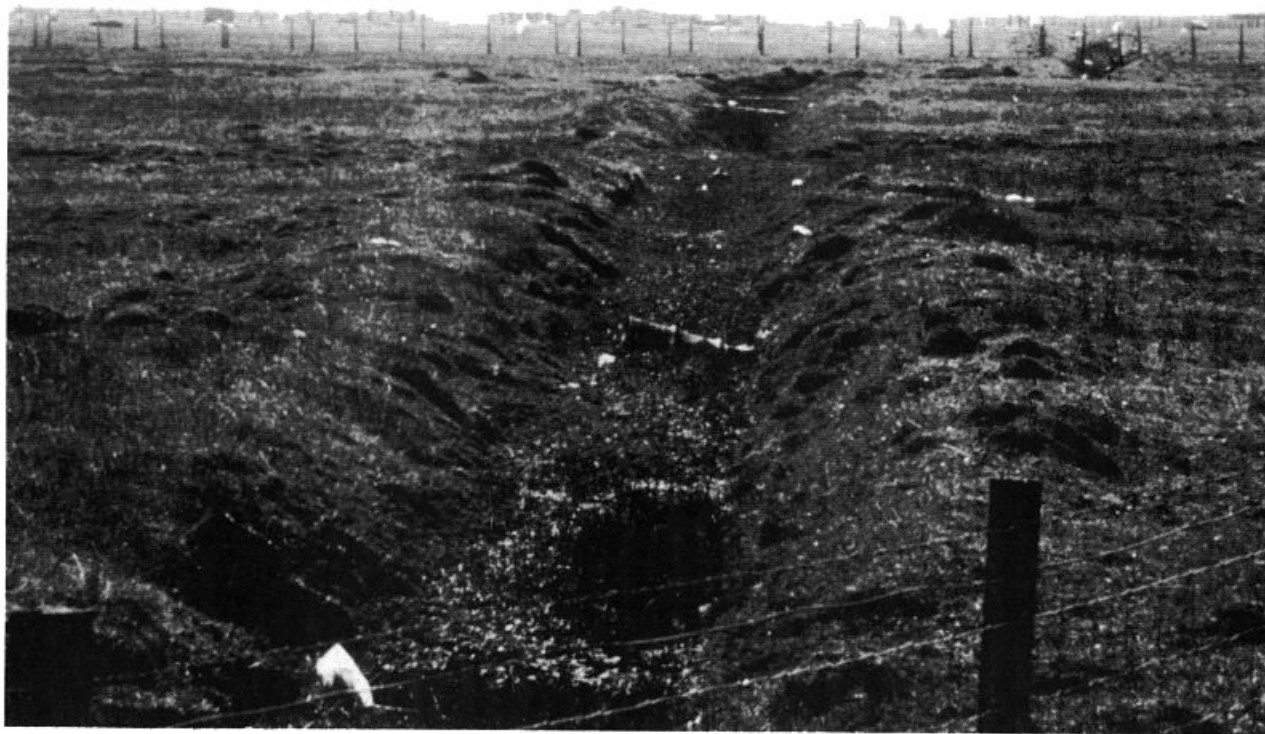


Plate 5. Damp machair with silted drainage ditch of the type likely to be cleared, Baleshare, North Uist.



Plate 6. Grazed saltmarsh on Baleshare, North Uist. There are high densities of breeding Lapwings, Redshanks and Dunlins on this site.



Plate 7. Fen fringing eutrophic Loch Hallan, South Uist, a typical area for Redshanks and Snipe.



Plate 8. Blackland on Baleshare, North Uist, showing numerous rocky outcrops and small marshes. Snipe, Redshanks, Lapwings and Oystercatchers are characteristic breeding waders of this habitat