CONSERVATION OF WADER HABITATS IN AUSTRALASIA

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Shorebirds in Australia and New Zealand are subject to threats from a variety of human activities. Habitat destruction represents the greatest threat, especially where human population densities are highest: on the east and south coasts of Australia and in the northern part of the North Island of New Zealand. There is increasing recognition of the need for wetland conservation, upon which the future survival of shorebirds depends. In Australia, the co-ordinated conservation of such mobile birds as shorebirds is hindered to some extent by the fragmentation of both government and non-government conservation agencies along state boundaries. In the last 15 years, attempts to co-ordinate measures between states have been initiated, prompted by the signing of treaties for the protection of wetlands and shorebirds that require a national response. In New Zealand, a review is underway of wetland conservation. This, together with the Ornithological Society of New Zealand's national wader count results, will provide more direction to government efforts in the future.

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INTRODUCTION

This paper briefly reviews shorebird conservation problems in Ausralia and New Zealand. It starts by providing a general background to the mechanisms for conservation in each country, identifies some conservation problems facing shorebirds, examines initiatives that have been taken to conserve shorebirds (including international treaties), and then identifies some priorities for shorebird conservation in the future.

BACKGROUND

Australia

Most shorebirds in Australia inhabit wetlands. Awareness of wetlands and the need for their conservation has increased dramatically in the last twenty years with the growth of the environment movement. Community awareness of shorebirds and their prodigious migrations is only just beginning to increase, in many instances through the Royal Australian Ornithologist's Union (RAOU) Wader Studies Programme. This awareness is an essential first step in any conservation initiative.

Under the Australian constitution, states have full responsibility for wildlife and environmental conservation. Accordingly, all seven states and territories have their own government conservation agencies. In the non-government arena, most states have their own ornithological organisations and generalist environmental groups which, to varying degrees, lobby their respective governments on bird and other conservation issues. The RAOU and the Australian Conservation Foundation are the only truly national organisations. This fragmentation along artificial boundaries presents similar administrative problems for conservation in Australia to those that arise elsewhere e.g. Europe, where an international perspective is essential.

In 1972, a federal environment ministry was created and the Australian National Parks and Wildlife Service was formed, in recognition of the need for a national perspective on conservation. In 1974, the Japan-Australia Migratory Birds Agreement (JAMBA) and the Ramsar convention were signed. It was not until 1981 that JAMBA was ratified: this had to wait until all states and territories passed legislation enabling them to fulfil the obligations of the treaty.

New Zealand

In New Zealand most shorebirds inhabit coastal wetlands. Since last century many shallow coastal estuaries and inlets have been filled in, used as rubbish dumps or harbours, or had buildings erected on them. Any concern for wetlands has been slow to surface, and the value of the remaining wetlands has been recognised only during the past 30 years. Recognition of the role of wetlands in supporting populations of migratory shorebirds spans this period. The conservation and management of wetlands is under the jurisdiction of several legislative acts. Consequently many government departments and regional authorities have responsibility for wetlands but the legislation has not been used to its full extent in protecting these wetlands. The main reason for this is that New Zealand has lacked a clear statement of national policy on wetlands (Stephenson 1983). The New Zealand Wildlife Service has expressed concern over wetlands and has been the major advocate for their conservation for many years. However, until recently the Wildlife Service's efforts were hindered, largely by a lack of basic information, and also by its legislative responsibilities being restricted to wildlife and not the habitats they require. As a result of widespread public and government concern a major government review of wetland conservation is now underway.

There are many national and regional conservation groups which comment on conservation issues. With respect to

shorebirds, the Ornithological Society of New Zealand (OSNZ) has provided information from an extensive data base, and increasing use is made of the Society's national wader count results.

CONSERVATION PROBLEMS

Australia

Most of Australia's shorebirds occur along only 10% of the coastline (see Figure 1). This 10% includes the south-east coast (Victoria and South Australia). Significant populations of some species occur elsewhere, particularly up the east coast. Since most Australians live within 100 km of the south and east coast, it is here that the greatest threats to shorebird habitat exist. The remote northern and western coast, where more than half the shorebirds live, is almost untouched wilderness and there are few threats here other than small-scale, local problems.

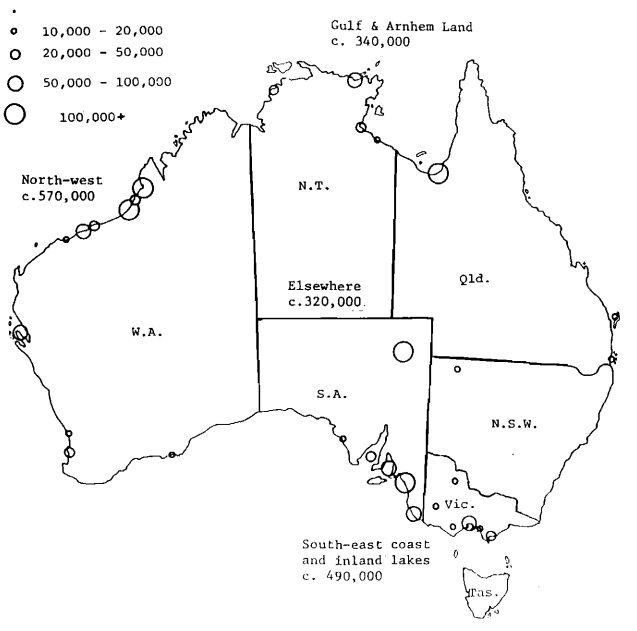

Figure 1. Major non-breeding areas (sites holding >10 000 birds) for waders in Australia.

Habitat destruction and modification is the primary problem facing shorebirds in southern and eastern Australia. Coastal wetlands in the vicinity of the large metropolitan centres have been grossly altered. In the case of Port Phillip Bay (one of the top ten shorebird sites in Australia), the urban-industrial development of Melbourne has encroached on most coastal wetlands. Fortunately, evaporative saltworks and a large (10 x 25 km) sewage farm, all built around the turn of the century, provide suitable habitat for about 75% of the bay's shorebirds. In other places, evaporative saltworks have provided additional feeding and roosting habitat. Three of the top ten sites for shorebirds owe their importance to some degree to these artificial wetlands. Port Hedland Saltworks, in north-western Australia is perhaps the most spectacular example. It supports over 65 000 shorebirds during southward migration. Fortunately, the owners of these artificial habitats are very sympathetic to the needs of birds and are always willing to co-operate and assist ornithologists.

Up the east coast, in New South Wales and Queensland, the story is not as rosy. The pleasant, sub-tropical climate and a lack of planning have resulted in an uncontrolled boom in real-estate development on the coast. Canal-based estates (modelled on those in Miami, USA) are particularly popular and are always located in coastal waterways. They usually result in the complete destruction of natural habitat, not just for shorebirds but also for other parts of the ecosystem (e.g. fish nursery areas, mangrove woodlands). If this unplanned development continues at its current pace then many areas will be lost, as will the populations of shorebirds that use them. Currently, the prospects for reservation of critical shorebird habitats in the face of the inexorable march of the real-estate dollar are grim.

Inland wetlands are the other vulnerable shorebird habitat. Most of the rivers which flow westwards from the Great Dividing Range in eastern Ausralia have been regulated for flood mitigation and irrigation. This has greatly altered the nature of large inland wetlands. The precise effects of this upon shorebirds (and other wetland features) is not fully understood. Shallow, freshwater marshes, suitable for many shorebirds have been drained or filled over the last two centuries of European settlement. For example, it has been estimated that in parts of Victoria, up to 79% of the shallow freshwater marshes have been destroyed (Corrick 1982). It is likely that a similar figure applies across much of the settled part of inland south-eastern Australia.

Most shorebirds are protected from hunting and other interference by laws in all states and territories. An exception is the Latham's Snipe *Gallinago hardwickii* which is still on the game list in the eastern states. All eastern states except Queensland have placed a moratorium on snipe shooting, pending the results of current research on its population biology. In southern Queensland, it is still shot during migration.

New Zealand

Most shorebirds occur in saline wetlands on the northern harbours of the North Island and coastal areas of Nelson (see Figure 2), although important populations of some species occur also elsewhere in the country. The largest concentrations of people also live in the north of the North Island, and the Nelson region is popular with tourists.

In northern New Zealand, three of the richest shorebird habitats are either adjacent to (Manukau Harbour) or nearby (Kaipara Harbour and the Firth of Thames) Auckland, the country's largest metropolitan area. Major modifications to Manukau Harbour include increasing urban development and associated run-off of pollutants, discharge of sewage and industrial effluent, and increasing nutrient input from agricultural developments (Veitch 1978). In addition, 100 ha of mudflats were covered with solid fill during the construction of the airport. The nearby Kaipara Harbour and Firth of Thames are affected by increasing nutrient inputs from sewage disposal and agricultural developments. Disturbance of roosting birds by humans is increasing but remains low compared with that in Manukau Harbour.

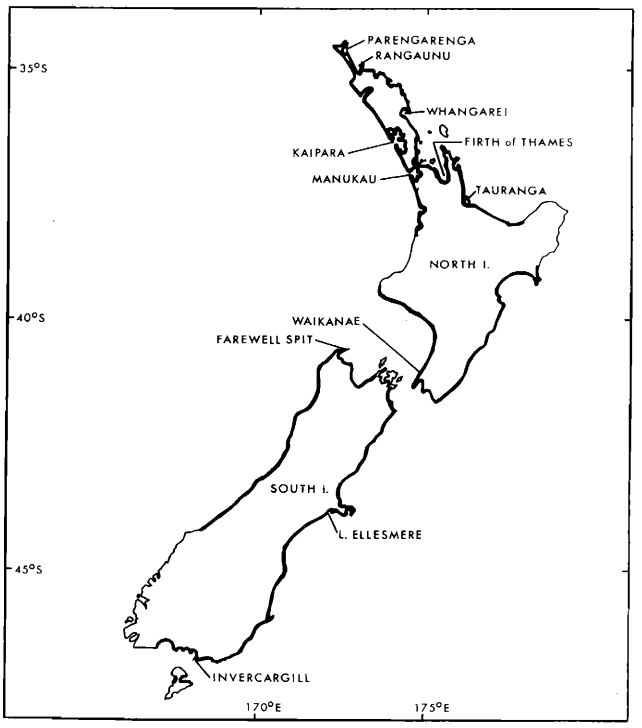

Figure 2. Wetlands of importance to waders in New Zealand. Thick lines show the coasts covered during OSNZ national wader counts.

In the Nelson region, most shorebirds occur at Farewell Spit, an area protected as one of international importance. Access to this area is strictly controlled. However, important shorebird habitats along the coast to Nelson City suffer increasing disturbance from human activity, especially during the summer when there is a large influx of tourists.

About 90% of the shallow, fresh/brackish water wetlands throughout New Zealand are estimated to have been destroyed in European times (Hughes 1981). Most of these were drained or filled in, and then converted to farmland. The relatively shallow brackish water wetlands of Lakes Ellesmere and Wairarapa are the largest of their type remaining. Both are important feeding areas for post-breeding flocks of endemic and migratory shorebirds. Large parts of these lakes have been drained already but attempts are underway to protect the remainder. In southern New Zealand, Waituna Lagoon, declared a wetland of international importance, is now threatened by peat-mining proposals.

Until recently a major problem has been a lack of basic information about shorebirds and shorebird habitat in New Zealand. The completion of the Wildlife Service's inventory of wetlands and OSNZ's national wader counts should alleviate this problem in future.

All shorebirds are protected by law from hunting and other interference.

INITIATIVES

Australia

Under JAMBA, the Australian National Parks and Wildlife Service has been the principal funding agency for the RAOU Wader Studies Programme (1982-85) and has provided financial support to the Interwader project Asia. A co-operative Australian-Japanese research programme on Latham's Snipe has also been initiated. In October 1986, Australia and China signed a migratory birds agreement. Other treaties along the Eastern Palearctic-Australasian flyway are being negotiated or are contemplated.

Under the Ramsar convention, Australia currently ranks third amongst the parties to the convention in the number of nominated wetlands, and fifth in terms of the area covered by nominations. Three of the top twenty sites for shorebirds have been nominated already and a further four are being considered for nomination.

Ten of the top twenty shorebird sites are currently reserved completely or in part. Many lesser sites are also reserved in some form. However, additional reservation or extension of existing reserves is needed if shorebirds in Australia are to be effectively conserved.

New Zealand

New Zealand became a signatory of the Ramsar convention in 1976. Two of the top 17 sites currently recognised as being of international importance by the Wildlife Service have been nominated. However, there is no reflection of this status within New Zealand's domestic law (Stephenson 1983), although this situation is currently under review.

FUTURE PRIORITIES

Australia

Much progress has been made in the conservation of shorebirds and their habitat in Australia over the last fifteen years but the task is far from complete. Research over the last five or six years has enabled national priorities for shorebird conservation to be identified. These include (although not necessarily in order of priority):

- Increased community awareness of shorebirds and their wetland habitats;
- adequate reservation of shorebird habitats on the coast of northern New South Wales and Queensland;
- more precise identification and subsequent reservation of northern Australian shorebird habitats;
- extension of existing reserves to cover known shorebird habitat more completely in southern Australia;
= identification and reservation of key migratory stop-overs;
- further research aimed at providing information to guide the above priorities.

The conservation of shorebirds in Australia cannot be considered in isolation from what is happening in Asia (see Parish this volume). As a comparatively rich nation in the flyway, Australia is in a good position to initiate and partially fund research and conservation measures in Asia. Indeed, without such measures, all the efforts Australia makes to conserve its shorebirds will be mostly ineffective.

New Zealand

Real progress in the conservation of shorebirds and their habitat has been made only during the past 10 years. The review of wetland conservation currently underway should further

enhance shorebird conservation. Shorebird research is also being reviewed. A detailed analysis of the OSNZ national wader counts to June 1986 is underway and the results of this will show directions for future research.

Meanwhile, general priorities include:

- conservation of important shorebird habitats throughout the country;
- identification and reservation of key migration stop-overs;
- further research to guide and support the conservation of shorebird habitats.

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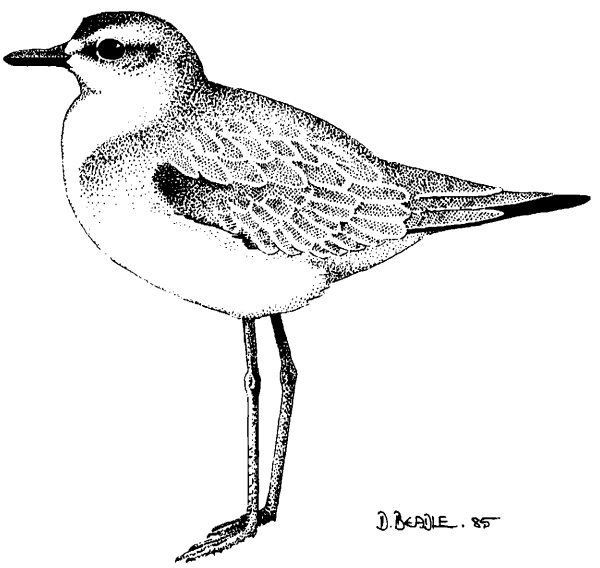
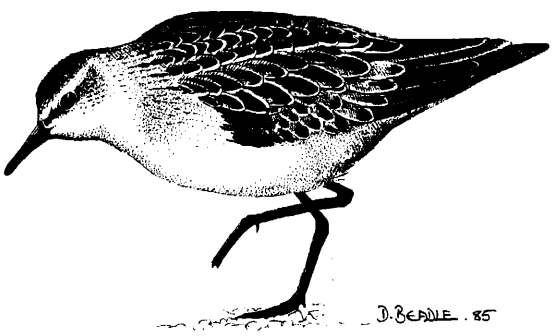


Large Sandplover



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