ISSN 0111-2279

W I L D L I F E V A L U E S

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W I L D L I F E C O N S E R V A T I O N

O F B U L L E R A N D N O R T H W E S T L A N D

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March 1981

FAUNA SURVEY UNIT REPORT No.29

Note:

The author was previously known as Pauline M. Coker and has now reverted to her maiden name.

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A. INTRODUCTION

It is now accepted by most land-managers that the wildlife and other natural values of the environment must be taken into account in land-use planning. In the past, indigenous forests and wetlands were modified or transformed without regard for wildlife and as a consequence many of our native species became extinct, endangered or rare. In an attempt to minimise the destruction or modification of wildlife habitat, the Wildlife Service, which is responsible for the conservation of New Zealand wildlife, is currently making an inventory of all important wildlife habitats and is assigning wildlife and conservation values to them.

The identification and evaluation of wildlife habitats throughout New Zealand is being undertaken by the Fauna Survey Unit of the Wildlife Service. Regional wildlife surveys are carried out and the results published in a series of reports, of which the present account is one. The Fauna Survey Unit (FSU) pays particular attention to the habitats of species with limited national or regional distributions. It also recognises that the habitats of all our native species must be preserved to ensure the long-term survival of these species.

The survey of North Westland reported on here was carried out in February-April 1979. Other surveys of the northern West Coast area were carried out by the Wildlife Service in 1974, 1975 and 1976, the purpose being to investigate the species diversity and abundance of native birds in the West Coast Beech Project Area (REFERENCES). These earlier surveys were confined to the Paparoa Range, the Inangahua Valley, the Grey Valley, the Maruia Valley and the lower Taramakau area. A summary of the findings of these surveys is included in this report, but reference should be made to the original FSU reports for details.

The survey techniques used in the 1979 survey were similar to those used by the Wildlife Service in South Westland (Coker and Imboden 1980) and the southern boundary of the area covered by this report (Waitaha River) is the same as the northern boundary of South Westland. Together these two reports provide a broad picture of the wildlife of the West Coast region.

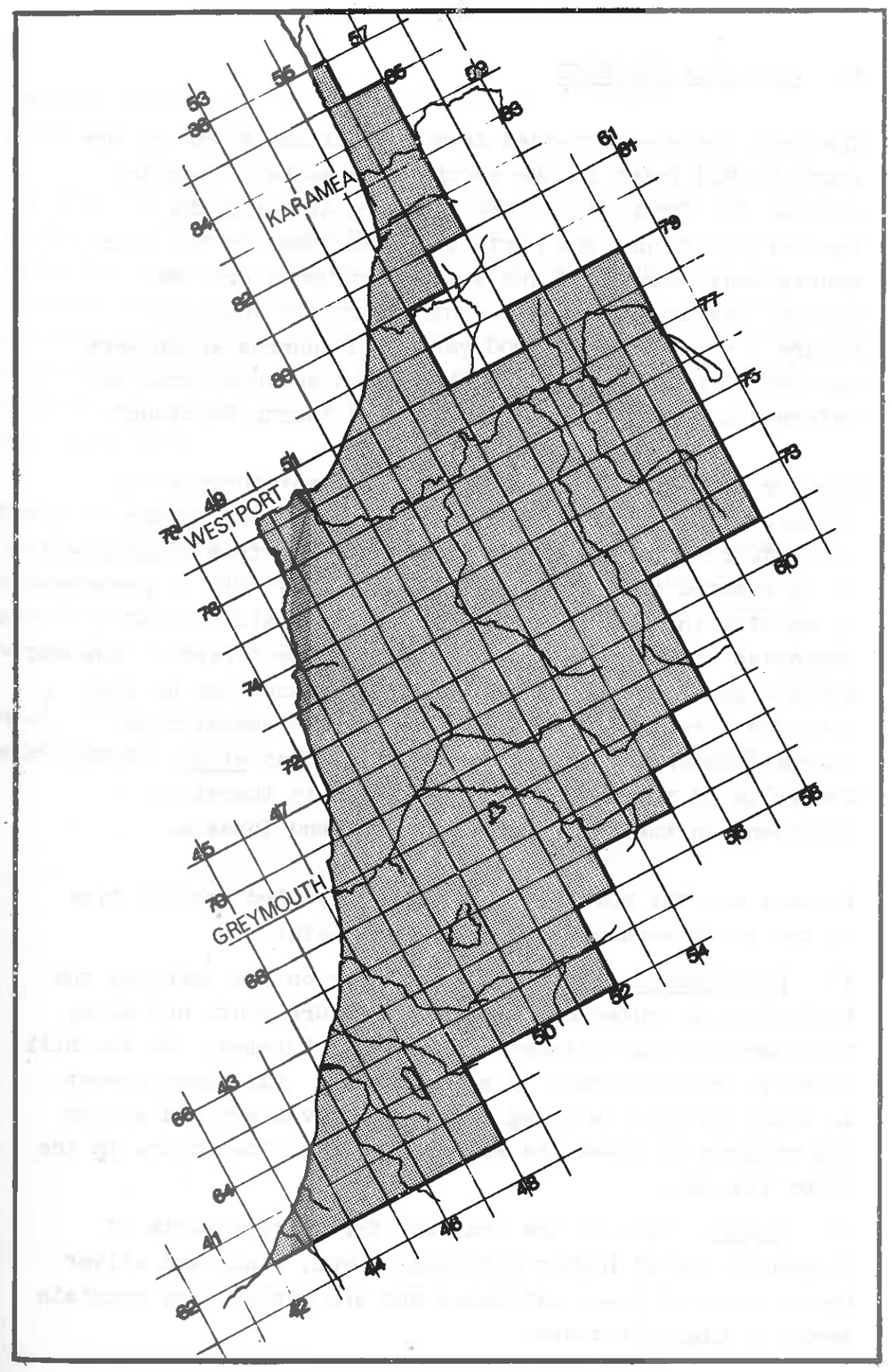

FIGURE 1 : THE AREA SURVEYED (shaded)

E.2. Estuaries and Lagoons

By definition, estuaries are semi-enclosed bodies of water with a free connection to the sea. They are thus affected to some degree by tidal action and within them sea water is mixed and measurably diluted with fresh water derived from land drainage. On the West Coast these include lagoons and tidal mouths of creeks and rivers. These areas often extend into salt-marsh and fresh-water swampland.

It is only in recent years that the value of estuaries has been widely recognised. Even now, many people regard them as unsightly waste lands and many valuable areas have been irretrievably lost because of rubbish dumping, reclamation and other activities.

In fact, estuaries are very rich in organic matter and have a very high biomass (total weight of organic matter) per unit area. They have the greatest productivity of any natural ecosystem and may be up to four times greater than good agricultural land. The detritus and algae they contain form the base of a great number of food chains. Large numbers of birds with a diversity of feeding habits are testimony to this productivity.

Estuaries are vital as breeding grounds and nurseries for many fish and Crustacea, some of which are of commercial value (e.g. whitebait, eels and flounders).

Biologically, estuaries are very vulnerable. They are a natural pollution trap. Dredging, reclamation, rubbish and sewage disposal, construction of roadways, siltation or an alteration in the saltwater or freshwater inflow can cause widespread mortality of the very sensitive organisms inhabiting an estuary. Such an event would also result in a serious loss in the birdlife which depend on these areas for a considerable proportion of their food supply. At present, many of the estuarine

areas of North Westland remain relatively free of pollutants and mechanical disturbances. Only Blaketown Lagoon was found to be seriously affected, but several others had been disturbed in a minor way. Unfortunately, a number of areas are under some threat from dredging. It is to be hoped that where dredging takes place care will be taken to ensure that the least possible damage is done to the ecosystem.

Habitats within estuarine areas

Most estuaries contain four broad zones.

(a) Sub-tidal areas. These are always covered by water. A variety of fish, Crustacea, Mollusca, and worms live in this zone and its prime importance for wildlife is as a feeding area, especially for gulls, terns and shags. Aquatic plants also are a valuable food supply for waterfowl.

(b) Tidal flats. The substrate of this zone varies from mud to sand and may sometimes include gravel. Generally, areas of finer particle size are the most productive. The tidal flats contain a rich diversity of food species which include cockles, crabs, and other invertebrates. Eel grass, algae and other plants are often present also. This zone is the most important and accessible feeding area in an estuary and the majority of birds which live all or part of their time within the greater bounds of the estuarine system would use it.

(c) Higher and predominantly freshwater zone. Most of the estuaries recorded in North Westland have dense reed beds above the high-tide level. The salinity in this zone is generally very low and the swamp vegetation of most of these areas is very similar to the freshwater type. Sea rush, jointed rush and Scirpus cernuus are the principal species found near the water's edge (particularly when the water is saline or brackish) and these merge into flax,

Eleocharis, Carex spp., Cyperus, raupo and introduced grasses. In some swamps there are stands of salt-marsh ribbonwood, Coprosma propinqua and cabbage tree. Several areas also contained or were fringed by small stands of kahikatea or hardwood/rimu forest. These may be used for roosting and/or breeding by herons, shags and some ducks (breeding). Water channels within swamps situated in the upper reaches of estuaries often contained aquatic plants such as pond-weed and milfoil.

On raised ground, weed species, in particular gorse and blackberry, are relatively common. The spread of these plants would detract from the value of the upper estuary since their density precludes use of the area by many species of swamp birds and waterfowl. Measures should be undertaken to control weed growth.

The swamp zone provides cover and refuge for waterfowl, harriers, rails, bitterns, crakes and fernbirds. Many of the lagoons are important refuges in the shooting season. Crabs, snails, other small animals, seeds and plants form a food supply for these birds.

(d) Sand-bars. Most of the river mouths recorded as "habitats of note" had substantial sand or shingle spits at their mouths. Others were partially separated from the sea by a long sand-bar running parallel to the coast so as to form a lagoon. These spits and bars are important breeding and roosting places for terns, gulls, some waders and shags (roosting only). Their function as a roost is particularly important at high tide and in some of the habitats there is very little dry land for birds to roost on. High tide roosts may also be on islands or adjacent paddocks where these are suitable e.g. Orowaiti.

Table 1 gives a list of species found at each of the estuarine habitats recorded. Introduced and some native passerines also make use of estuaries although these have not been included in the list. Starlings, finches, house sparrows, blackbirds, silvereyes, fantails, grey warblers, bellbirds and tui are mostly restricted to the swamp or forest zone.

Rivers which have very little tidal influence at their mouths are generally of lower wildlife value. The lack of tidal flats limits the use of such river mouths to gulls, terns, and shags. Their activities are mainly restricted to roosting or feeding in the river channel although they may breed, depending on the nature of the river mouth i.e. whether there are sand or shingle bars. While most of the river mouths of lesser wildlife value have not been recorded as "habitats of note", the Mokihinui has been included in Table V, Appendix I as an example of one which is not used very extensively by birds.

Examples

Blaketown Lagoon (Moderate) Habitat No. 91

This is an example of a habitat which although of moderate value for wildlife, would have been more valuable had it not been modified. Before Greymouth was built, Blaketown Lagoon was part of a much larger estuarine area and was contiguous with the area known as Erua Moana Lagoon. Harbour development; reclamation for roading, housing and an aerodrome; disposal of sewage, industrial wastes and rubbish dumping have all had some effect on the area as a wildlife habitat. The construction of a weir near the outlet has partially dammed the lagoon, increased siltation, changed the benthic fauna from true estuarine to almost freshwater, and raised the nutrient content of the lagoon by the impounding of sewage. This in turn has led to excessive growth of the aquatic Ruppia which dies off in summer and lies rotting in the lagoon. Estuarine bivalves such as cockles are absent.

However, the lagoon is still an important feeding ground, resting area and refuge for a range of aquatic birds. The nearest comparable habitats are Okarito and Okari Lagoons. Thus, it is the only such habitat within 130 miles of coastline. Removal of the weir and a certain amount of cleaning up would certainly improve the value of this lagoon.

Okari Lagoon (High) Habitat No. 46

It is an extensive tidal lagoon which has been little affected by man. Extensive tidal flats are available to feeding birds at low tide. On the seaward side a long sand bar provides a high tide roost for Caspian and white-fronted terns, gulls, S.I. pied oystercatcher, and a variety of waders (both New Zealand and migratory species). A high density of whitebait is seasonally present in the lagoon and in the Okari and Totara Rivers which feed the lagoon. Jointed rush beds scattered throughout the lagoon provide breeding areas for galaxiid fish which in turn become food for birds.

Swamplands border part of the lagoon. These are predominantly jointed rush with some Cyperus. Gorse, lupin, grasses and marram form much of the remaining vegetation.

A wide variety of birds uses the area. These include waterfowl, gulls, terns, shags and both New Zealand and migratory waders. It is one of the most important feeding areas for S.I. pied oystercatchers on the West Coast and there have been over 5,000 birds recorded there at one time.

Karamea-Otamahana Estuary (High) Habitat No. 5

This is very similar in its physical characteristics to Okari Lagoon although the swamp area has sea rush and saltmarsh ribbonwood in addition to jointed rush. The area thus forms a habitat for fernbird as well as bittern.

A banded rail was also found in the swamp at the southern end of the lagoon (Granite Creek) about 12 months prior to the survey. This species appears to be very rare on the West Coast. Unfortunately, the small area of swamp on the eastern side of the bridge in the south is being drained. It is very likely that one or both species of crake are also present in the southern swamp.

Four high-tide roosts were noted. The species observed using these roosts were S.I. pied oystercatcher, black and little shags, black-backed gulls, pied stilt, banded dotterel, Caspian tern, white-fronted tern, eastern bar-tailed godwit and ducks.

The whole area has a very high diversity of birds (including some migratory waders) and high numbers of grey duck, mallard, S.I. pied oystercatcher and banded dotterel. It was one of the few habitats in North Westland where black swan were observed.

TABLE 1. BIRDS OF THE ESTUARIES AND LAGOONS

	Oparara Lagoon	Karamea Aerodrome Lagoon	Karamea-Otamahana Estuary	Mokihinui River Mouth	Granity Wetlands	Birchfield Lagoon	Orowaiti Estuary	Buller River Mouth Refuge	Fairdown Lagoon	Okari Lagoon	Cobden Lagoon	Blaketown Lagoon	Saltwater Creek	Taramakau River Mouth	Arahura River Mouth	Totara Lagoon	Mikonui River Mouth
Black shag	X		X	X	X		X	X	X	X	X	X	X		X	X	X
Pied shag											X				X		
Little black shag								X								X	
Little shag	X	X	X	X	X	X	X	X	X	X		X	X		X	X	
White-faced heron	X	X	X		X	X	X	X	X	X	X	X	X			X	
White heron	X		X	X			X	X	X	X	X	X	X			X	
Little egret							X				X	X					
Reef heron				X													
Cattle egret			X													X	
Royal Spoonbill	X																
Australasian bittern			X		X				X		X		X			X	
Black swan	X	X	X					X			X					X	
Canada goose									X		X				X		
Paradise shelduck	X	X	X						X		X		X			X	X
Mallard	X	X	X		X		X	X	X	X	X	X	X		X	X	
Grey duck	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
NZ shoveler								X			X					X	
NZ scaup											X					X	
Harrier	X	X	X		X		X	X	X		X		X		X	X	
Banded rail			*														
Pukeko	X	X	X		X	X	X	X	X		X		X			X	
Weka	X												X				
SI Pied oystercatcher	X	X	X				X			X	X					X	X
Variable oystercatcher	X						X			X				X	X	X	
Spur-winged plover	X	X	X		X		X	X	X							X	X
Banded dotterel	X	X	X				X			X		X		X	X	X	X
Godwit (E. bar-tailed)	X	X	X				X			X							
Pied stilt	X	X	X				X	X		X	X	X			X	X	
Black-backed gull	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
Red-billed gull		X		X			X	X		X		X			X	X	X
Black-billed gull				X			X							X	X	X	
Caspian tern	X		X	X			X		X	X		X				X	
White-fronted tern			X	X			X			X		X		X	X	X	X
Kingfisher	X		X			X	X	X	X	X		X				X	
Welcome swallow	X	X	X		X		X	X	X			X			X		
Pipit	X				X			X	X	X		X					
SI fernbird			X					X								X	

*Reported

E.3. Coastal habitats

The nature of the coastline between the Waitaha and Heaphy Rivers varies from boulder beaches, black and golden sand beaches, and rocky shores, to steep cliffs and promontories. A number of rock stacks and islets lie close to the shore. The habitats included in this section are those which are strictly coastal and do not include those which are associated with river mouths (see chapter E.2.).

The coast is important for shags, gulls, terns, dotterels, oystercatchers, seals and birds of the open sea.

Cliff faces on the mainland and some islets are used by breeding spotted shags. Three shag colonies (Three Steeples, Perpendicular Point and Motukiekie Rocks) were recorded as habitats of note and there are other sites. A small colony of sooty shearwaters breeds on the cliffs near Perpendicular Point.

White-fronted terns and black-backed gulls use a number of sites along the coast for breeding, the most significant being the small islets and rock stacks off-shore. Other tern colonies occur at river mouths the most important being the Mikonui and the Arahura River mouths.

Variable oystercatchers occur along much of the coast around Punakaiki and Fox Rivers and banded dotterel are also found in small numbers along the coast. Both are slightly more abundant near river mouths where food species are more plentiful. Some breeding of these species occurs on shingle or sandy beaches.

A number of different seabirds such as skuas, mollymawks and shearwaters are observed offshore from time to time but these use the coastal waters for feeding and rarely come ashore.

Unlike South Westland no penguin colonies are known in North Westland.

Apart from the hauling and breeding site at Three Steeples and the hauling site at Tauranga Bay, a small number of N.Z. fur seals (approximately 2-10) use Point Elizabeth (G.R. 4746-6971) as a hauling site.

Difficulty of access prevented the survey of many islets and coastal sites and only four "habitats of note" were recorded (see Table VI, Appendix I).

Although the Westland coastline is relatively unaffected by concentrations of people, or by erosion, sedimentation, agriculture or reclamation some damage could occur from mining activities and possible oil slicks.

E.4. Indigenous Forests

(a) Introduction

Much has been written on the subject of North Westland's forests, not only by the Wildlife Service but also by other Government departments and by conservation organisations. Therefore, it is not intended to reiterate in detail the material contained in previous publications; however, a summary of previous wildlife surveys is given in E.(c). Briefly, the forests have the following features:

1. Together with the forests of North-West Nelson, South Westland and Fiordland, the forests of North Westland form a large and relatively continuous forest block. This block is the largest left in New Zealand and the life forms and associations which have evolved in isolation in this forest over millions of years are unique in the world.

2. Although large areas of country around Westport, the lower Grey Valley and the lowland and hill country south of Greymouth have been cleared of native forest, North Westland's forests are still largely intact and present altitudinal sequences of habitat (montane - hill country - terrace - lowland) along with the various forest types typical of the region. They thus form a large, more or less continuous mosaic of habitats with a varying qualitative and quantitative composition of plants and animals (Imboden and Crook, 1977).

3. They contain areas of lowland forest (predominantly podocarp - hardwood - beech). Lowland forests have been extensively modified and reduced elsewhere in the country and this diminution demands a recognition of the value of preserving the remainder (Royal Forest and Bird Protection Society, 1980). The importance of this forest has been demonstrated by a number of studies done in

TABLE V : ESTUARIES AND LAGOONS

No.	Habitat Name	Grid ref, County	Approx Size (ha)	Rating	Description	Value to Wildlife, Comments
2	Oparara Lagoon	5550-8385 Buller	110	High	Tidal lagoon and associated swampland, 70% exposed mudflats (low tide) + 20% rushes, sedges, shrubs + 10% coastal forest. Also sandspit with lupin and marram.	High tide roosts for waders on sand-spit. Good food supply on mudflats. Cover and refuge for waterfowl which were present in high numbers. Some use by migratory waders. Waterfowl shooting occurs.
4	Karamea Aerodrome Lagoon	5553-8351 Buller	5	Moderate	Small freshwater lagoon adjacent to Karamea Estuary. 90% open water + 10% Eleocharis - raupo → pasture - gorse.	Very high numbers of birds at high tide. These birds feed at the Karamea estuary at low tide. Some duckshooting.
5	Karamea-Otamahana	5550-8310 Buller	400	High	Exposed mud-flats, shingle and shallow water 70% (at low tide) + Plagianthus - Leptocarpus - Juncus 10% + Marram - Lupins - beach 15%. Long sandspits.	Five high tide roosts. High numbers of birds, particularly waterfowl, godwits, banded dotterel and S I pied oystercatchers. Banded rail have been reported from this estuary (Granite Ck.) Some of the southern swamp area is being drained. Bittern and fernbird in swamp. Waterfowl shooting.
10	Mokihinui River Mouth	5400-8005 Buller	40	Potential	Shingle bars and sand exposed at low tide, no mudflats. 20% of habitat is Leptocarpus.	Shingle bars provide limited roosting for gulls, terns, and shags. Limited feeding for these species and herons.
12	Granity Wetlands	5290-7847 Buller	75	Moderate-High	Brackish lagoon plus swamp. 40% open water + 40% (flax) - (Eleocharis)-(Leptocarpus) -(raupo)-(Coprosma) + 20% kahikatea-rata forest remnant. Saline → freshwater. Seawater enters at very high tides.	High numbers of waterfowl present. Good cover and feeding for waterfowl. Limited wader feeding. Bittern present. Suitable for waterfowl management.
13	Birchfield Lagoon	5268-7830 Buller	30	Moderate	Narrow lagoon without mudflats → freshwater swamp. 30% open water + Raupo - Eleocharis-Juncus-(Leptocarpus). Stoney bank separates much of the lagoon from the sea.	Vegetation is close to water and gives good cover for waterfowl.

TABLE V : ESTUARIES AND LAGOONS (Contd)

No	Habitat Name	Grid ref, County	Approx. Size (ha)	Rating	Description	Value to Wildlife, Comments
16	Fairdown Lagoon	5258-7823 Buller	50	Moderate-High	River mouth with both tidal and non-tidal reaches, adjoining swamp and remnant forest. Open water with Raupo-Eleocharis-Leptocarpus margins 50% + Raupo -flax(Carex spp)-(Eleocharis)-Coprosma spp) 35% + kahikatea and hardwood forest 15%.	High numbers of waterfowl (100+) mainly in non-tidal area. Diverse swamp vegetation. Bittern present in reedbeds. Dead rata trees provide roosts for shags, white and white-faced herons. Canada geese. Good cover for waterfowl.
26	Orowaiti Estuary	5115-7735 Buller	240	High	Large estuary with 70% mudflats exposed at low tide + sand-bar (roost) 10% + (Plagianthus)-(Coprosma)- Leptocarpus-sedges-(Carex spp). Reedbeds better developed in upper reaches.	Excellent feeding area for birds, especially waders. Four high-tide roosts including 3 on adjacent paddocks. High density of waders, gulls, and herons. Used by some migratory waders. High diversity of birdlife. Red-necked avocet.
27	Buller river mouth refuge	5080-7735 Buller	125	Moderate-High	Tidal reaches of creek at junction with Buller River. Exposed mudflats 70% - Eleocharis beds 20% - (Coprosma)-Leptocarpus-(flax)-2% kahikatea 10%. Farmland.	Feeding area for waterfowl and waders. High diversity of birdlife including fernbird + little black shag.
46	Okari Lagoon	4968-7630 Buller	400	High	Large tidal lagoon with 70% exposed mudflats at low tide and sand-dunes, swamp and tidal river mouths. Marram grass - cyperus - gorse 5% → Leptocarpus → Tidal water. Sand-bar.	High tide roost on island at northern end has SI pied oystercatchers, godwit and terns. Excellent feeding area for waders. Good diversity of waders (including migratory waders) and other birds. One of the most important areas for SI pied oystercatcher (over 5000).
90	Cobden Lagoon	4731-6895 Greymouth County Council	10	Moderate-High	Tidal lagoon at Grey River mouth with freshwater flax swamp and scrub.	Freshwater section is of high value for waterfowl. Tidal section used for feeding by waders and sea-birds. Good diversity of birds (waders and waterfowl). Bittern and scaup present.
91	Blaketown Lagoon	4727-6882 Greymouth County Council	25	Moderate	Tidal lagoon at Grey River mouth. Exposed mudflats at low tide 30% + Juncus - Leptocarpus-(Scirpus)-(Plagianthus)-saltmarsh 40% + open water 30%.	Mudflats and shallow water provide feeding areas for birds (waterfowl, waders, gulls, terns and shags). Mallard and grey ducks use the area as a refuge and high numbers are present in the shooting season. Sewage, rubbish and spoil dumping detract from the potential value.

TABLE V : ESTUARIES AND LAGOONS (Contd)

No	Habitat Name	Grid ref, County	Approx. Size (ha)	Rating	Description	Value to Wildlife, Comments
99	Saltwater Creek	4689-6782 Grey	120	Moderate	Long brackish channel and sand-spit, open water 25% + flax - (Coprosma)-(Mahoe)/(Carex) 15% + lupin-black-berry-gorse 45% + saltmarsh 15%.	Backwaters used by waterfowl and pukeko for feeding. Bittern present. Weeds need controlling to improve value.
108	Taramakau River Mouth	4665-6742 Westland	60	Moderate	Shingle spits and limited tidal sand flats exposed at low tide. Very little vegetation.	Breeding area for black-billed gulls and white-fronted terns (over 200 pairs). Feeding area in tidal flats.
124	Arahura River Mouth	4574-6616 Westland	80	Moderate	50% sandspits, shingle and beach, limited area exposed at low tide, + 40% open water + 10% Lepto-carpus-(gorse)-(lupin).	One of few mainland white-fronted tern colonies on the West Coast. Good species diversity of other birdlife. Good feeding area for gulls, terns, shags and dotterel. Very limited for waterfowl.
145	Totara Lagoon	4420-6400 Westland	400	High	Several interconnected, long brackish channels. Tidal→ freshwater. Several islands. Open water 10%→ (Eleocharis)-Leptocarpus→ Gorse - flax - (cabbage tree)-(shrubs)→ stunted kamahi-rimu forest. Gorse present on islands. Rough pasture in places throughout. Tidal flats near outlet. Long sand bar.	Valuable area for waterfowl which are present in high numbers. Good cover for breeding waterfowl. Aquatic weed present in fresh water zone for waterfowl feeding. Tidal flats used by herons and other waders. Bittern and fernbird present. Crakes are possibly present also. Used by a high diversity of birds.
150	Mikonui River Mouth	4335-6325 Westland	80	Moderate	Estuary with sand-spits and small lagoons. Sand-spits 40% + estuarine area with mudflats, 60%. Very little vegetation. Some marram grass.	One of few mainland white-fronted tern colonies on sandspit (400 pairs in 1978). Lagoon is used by waders for feeding but lack of cover limits the amount of use by waterfowl.

TABLE VI : COASTAL

No.	Habitat Name	Grid Ref County	Approx Size (ha)	Rating	Description	Value to Wildlife, Comments
30	Three Steeples	4975-7760 Buller	3	High	Three rocky islets 2.5 km offshore. Very little vegetation on the middle (where the seals were observed) or the north-east islet although the southern one had some vegetation. Seals use a rocky platform broken by scarp ridges.	Fur seals use the middle islet as a rookerie. In January/February, G. Wilson (1974) estimated that between 250-450 seals were present. Spotted shags nest on islets.
31	Tauranga Bay (includes Wall Island)	4960-7716 Buller	2	Moderate-High	Low rocky headland on northern side of the bay. The colony also includes a small rocky islet in the bay (Wall Island).	Hauling ground for approximately 60 fur seals with the greatest proportion of seals being present on Wall Island. A small number of white-fronted terns also use Wall Island.
60	Perpendicular Point	4857-7326 Buller	1	Moderate-High	Rocky face of headland. Shags breed along 250 m of the 30 m high rock face.	The largest spotted shag colony on the West Coast with 500-1000 pairs. 10-20 pairs of white-fronted terns also breed in the area. A small colony of sooty shearwaters.
78	Motukiekie Rocks	4788-7036 Grey	1	Moderate	Two offshore rock stacks.	Over 100 spotted shags and 40 nests observed.