

## RAMSAR WETLANDS INFORMATION SHEET

1. **Country:** New Zealand
2. **Date:** 20 November 1991
3. **Ref:** NZ005
4. **Name and Address of Compiler:** Helen Neale, Conservation Officer, Department of Conservation, Private Bag 3072, Hamilton, NEW ZEALAND.
5. **Name of Wetland:** FIRTH OF THAMES
6. **Date of Ramsar Designation:** 29 January 1990
7. **Geographical Co-ordinates:** 175°23'E 037°13'S
8. **General Location: (e.g administrative region and nearest large town.)**  
Located approximately 52km south east of Auckland in the North Island at the northern boundary (direct line).
9. **Area: (in hectares)**  
  
7800 hectares approximately.
10. **Wetland Type: (see attached classification, also approved by Montreux Rec. C.4.7)**  
A B D E F G H I J Q
11. **Altitude: (average and/or maximum and minimum)**  
-1.1 to 2.1 m from mean sea level.
12. **Overview: (general summary, in two or three sentences of the wetlands's principle characteristics)**  
The Firth of Thames is an internationally important feeding ground for up to 25,000 birds at any one time, most of which are migratory.  
  
The Firth is one of New Zealand's three most important coastal stretches for wading birds and is listed as a wetland of international importance under the Ramsar Convention.
13. **Physical Features:(e.g. geology; geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth; water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)**  
The Firth of Thames lies in the northern part of the Hauraki graben bounded by fault lines along the Hunua and Coromandel ranges. The Walkato River originally flowed through the Hauraki graben and emptied into the Firth, bringing with it much of the fertile alluvium of the region.  
  
Today the Waihou, Piako and Waitakaruru Rivers flow into the Firth from the south and together with the strong north west wave action (responsible for chenier build up) determine the biological character and natural resource values of the Firth. The catchment area of the Firth is 3600km<sup>2</sup>.  
  
The sea floor of the Firth consists of fine clay, silt and sand sediments laid over pumice sands and the maximum depth of the intertidal area is 2.2m at mean high water spring.  
  
The graded shell beach ridges between Miranda and Kaiaua are an example of a Chenier Plain, a

landform unique in New Zealand and rare globally.

The average annual rainfall is approximately 1200mm/year with a mean annual temperature of about 13°C.

**14. Ecological Features: (main habitats and vegetation types)**

The Ramsar site includes most of the approximately 8500 hectares of exposed intertidal feeding grounds in the Firth of Thames. Four main wetland types are included in the Ramsar site -shallow estuarine water and mudflats (7000ha); shellbanks (40ha); grass flats (30ha) and mangrove forest, salt marsh and swamp (730ha). The shell banks present in the area are used as high tide roosts by many birds, while adjacent grass flats are used for feeding and as roosts by some species.

The remaining area from Miranda to the Waihou River mouth consists of soft mudflats, flourishing and expanding mangrove communities and some intermingling salt marsh (mainly *Salicornia australis*). This area is an important feeding ground for Golden plover (*Pluvialis fulva*). Mangrove (*Avicennia resinifera*) is within 100km of its southern limit at this site and is increasing in area.

The most seaward flowering plant the mangrove, grows in the zone which is inundated each day. Mangroves have high ecological value and this extensive area of mangroves is therefore significant. Further shoreward and reached only by fortnightly or monthly spring tides are the salt marshes forming wide rush beds. The salt marsh associated plant Maori musk (*Mimulus repens*) is a species that is uncommon nationally and found at one locality in the Firth.

By contrast the formation called salt meadows is flooded only by very exceptional high tides. The soil is salty and often waterlogged and the plants are usually succulent. The salt meadow forms a narrow fragile community.

There is a high proportion of exotic species present, particularly in better drained sites,

The mistletoe (*Ileostylus micranthus*, status: indeterminate) is found here growing on *Coprosma propinqua*. As noted above *Mimulus repens* which is uncommon nationally is found here. Several exotic species of restricted occurrence are found here.

74 shorebird species, many rare or uncommon, have been recorded at this site (list appended). The average number of waders present in the area over the year is 25,000, while the total number present may peak at as many as 40,000 migratory birds during the summer months. (Ornithological Society of New Zealand bird count data).

**15. Land Tenure/Ownership of:**

- (a) **site:** The Ramsar site is Crown land.
- (b) **surrounding areas:** The majority of land adjoining the site is in private ownership.

**16. Conservation Measures Taken: (national category and legal status of protected areas - including any boundary changes which have been made: management practices; whether an officially approved management plan exists and whether it has been implemented)**

- (a) **at the Ramsar site:** The Ramsar site is primarily shallow estuarine water, mudflat and mangrove forest which are Crown land (managed by the Department of Conservation), and currently has no special protection status. A 30 hectare coastal reserve (Crown land - managed by the Department of Conservation) has been included as part of the Ramsar site, This reserve is flanked by approximately 1.6km of coastline north of Miranda, is adjacent to a major series of shellbanks and has been included as part of the wetland.

Management of the area has been slight to date. The practice of grazing the grass roost areas has benefited birds using these areas, particularly banded dotterel.

- (b) **surrounding areas:** Land adjoining the site is in private ownership. It lies under several territorial authorities and protection status varies accordingly.

The Franklin County Council has designated all land adjoining the coast as "Government Purpose Wildlife Reserve". While the majority of other adjoining land is zoned rural (*i.e.* general farming practices are allowed; industrial use is excluded).

The 27.7 hectare farm property between the coast road and the sea to the south has recently been placed under conservation covenant. This is an agreement between the landowner and the Department of Conservation to maintain the area in its natural state. Grass on the shell bank within the conservation covenant area has been kept short by grazing, to the benefit of birds using the area for roosting.

Auckland Regional Council in their Regional Plan recognise the Kaiua - Miranda coastline as having international and national significance. The Waikato Regional Council seems to have made no moves toward formal protection of wildlife values on the part of the coast it administers.

**17. Conservation Measures Proposed But Not Yet Implemented: (c.g. management plan in preparation; officially proposed as a protected area etc)**

- (a) existing proposals: One of the primary aims in the future is to place some form of coastal planning zone which provides protection/reservation for the area from the seaward margin to the terrestrial margin. A number of management proposals have been recommended by the Royal Forest and Bird Protection Society of New Zealand and the Miranda Naturalists Trust. The following recommendations relate to the Miranda area of the Firth in particular.
- There is a need for public access tracks and interpretative trails, and the provision of viewing points, hides and possibly vegetation planting.
  - A planting programme in certain areas including suitable indigenous screen plants, and special plantings for specific species (if needed) could be undertaken.
  - The continued provision of short-grass roost sites is necessary.
  - There may be a need for management of high tide roosts if sea levels rise in the future.
  - Purchase of any land between Kaiua-Miranda Road as it comes on the market should be pursued or the land covenanted.

**18. Current Landuse: Principal Human Activities in:**

- (a) **site:** Protection of wildlife, nature watching of birdlife and photography are the predominate uses on the Ramsar site. Grazing occurs where grass is established, although most areas of the wetland are not available for grazing as they are intertidal.
- (b) **surrounding/catchments:** The surrounding terrestrial areas are primarily used for pastoral farming. The Firth is used for fishing, both commercial and recreational, and game bird hunting takes place on it during the hunting season.

The population of the Hauraki Plains is 5,019 (1986) with the Thames community totalling 6114. The wetland is less than 80 kilometres away from two major centres of population, Auckland and Hamilton. It is therefore accessible to one third of the population of New Zealand.

**19. Disturbances/Threats, Including Changes in Landuse and Major Development Projects: (factors which may have a negative impact on the ecological character of the wetland)**

In the past, much of the surrounding land has been cleared of forest resulting in sediment deposition and loss of some habitat in the Firth. Some slips are still occurring in the catchment today. Other changes in land use could have adverse effects on the wetland (these are outlined below).

Restrictions on access and site management may be required in the future to allow the public to view the area while minimising the impact on it and the species using it.

Stock grazing is a threat to the mangrove area and fencing should be established to protect the mangrove community.

(a) **At the site:** The wetland is generally recognised as being of high value by local authorities and the resident population, and it is unlikely that any changes in land use of the wetland itself will occur.

(b) **In the surroundings/catchment:** A number of possible developments could affect the wetland including prospecting and mining, housing development, land development and poor land use. The provision of a protected zone through coastal planning would provide some protection against such developments.

The Waihou and Piako Rivers discharge sediment and nutrient into the Firth and further water quality deterioration could result from unsuitable farming practices in the catchment.

**20. Hydrological and Physical Values: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation etc)**

The primary hydrological value of the wetland is in providing a habitat and food source for avifauna and fish. The Firth also has a role in sediment trapping and prevention of coastal erosion.

**21. Social and Cultural Values: (e.g. fisheries productions, forestry, religious importance, archaeological site etc)**

The area was a traditional food gathering site for Maori, both fish and waterfowl (prior to their protection godwits were harvested). The Firth provides an important shared resource for various tribes, It continues to be a major floundering area with access especially from Kaiiua.

The Firth is recognised as an important wildlife and fish habitat and various groups visit the area for scientific or educational purposes. The Miranda Naturalists Trust operates their own education centre at Miranda.

The main use of the Firth itself is by local fishermen and there is extensive commercial fishing in the area.

**22. Noteworthy Fauna: (e.g. unique, rare, endangered, abundant or biogeographically important species; include count data etc)**

## Transequatorial Migrants:

Eastern bar-tailed godwit (*Limosa lapponica baueri*) - most abundant of arctic migrants with an estimated 100,000 spending the southern summer in New Zealand. The Firth of Thames population represents approximately 10% of this total, but may vary. Immature non-breeders remain in New Zealand, particularly in the northern harbours, for the winter.

Lesser knot (*Calidris canutus canutus*) - breeds in Siberia and some of those in eastern Siberia migrate to New Zealand for the southern summer. Numbers vary considerably from 2,000 to 11,000. 5-11% overwinter in New Zealand. Flocks of knots often fly and roost with those of godwits.

Pacific golden plover or least golden plover or eastern golden plover (*Pluvialis fulva*) - Rare in New Zealand - this species breeds in Northern Asia and migrates into an area between the tropical Pacific and southern New Zealand. Often fly inland to marshes, pastures and ploughed land to feed on insects in short, thin herbage.

Turnstone (*Arenaria interpres*) - a circumpolar species with those breeding in the northern Pacific and Siberia wintering in an area from Hawaii south as far as New Zealand. They, like the plovers, may feed inland and there appears to be an upward trend in numbers. Each year several thousand reach New Zealand. The northern harbours are favoured for overwintering by immature non-breeders.

Curlew sandpiper (*Calidris ferruginea*) - Rare in New Zealand - this species breeds in Northern Asia and migrates every year in small numbers to New Zealand at the southern extent of its range. There appears to be an increase in numbers with 20-30 usually present,

Sharp-tailed sandpiper (*Calidris acuminata*) - Rare in New Zealand - one of the commonest arctic shore birds in Australia. In New Zealand, small flocks are found in suitable areas around the New Zealand coast each year. The Firth harbours flocks of up to 20 but numbers fluctuate.

Red-necked stint (*Calidris ruficollis*) - Rare in New Zealand - this species breeds in north. eastern Siberia and is one of the commonest arctic shorebirds visiting Australia. Small numbers reach New Zealand and these are often found associated with non-breeding wrybills on the roosts. They also feed in similar habitats picking small crustaceans, annelids and bivalves from the surface of the inshore mud.

Far eastern curlew (*Numenius madagascariensis*) - Rare in New Zealand - this species is characterised by its large size and markedly down curved bill. Usually at an average of 10 are present in the Firth. The other most favoured location in New Zealand is Farewell Spit.

## Internal Migrants:

South Island pied oystercatcher (*Haematopus ostralegus finschi*; endemic subspecies). A spectacular increase in numbers has been observed since counting began and they represent a significant percentage of total shorebirds in the Firth. This species breeds exclusively in inland South Island, mainly on the large eastern river beds, lake shore and farmland in south Island but occasionally in the sub-alpine zone. It has been legally protected since 1940 but climatic factors may also be contributing to their population increase.

Pied Stilt (*Himantopus himantopus leucocephalus*). Pied stilt breeds in both the North and South Islands but is more abundant in the latter. Large fluctuations in numbers occur at Miranda where the population winters.

Wrybill (*Anarhynchus frontalis*; endemic, status: vulnerable). This area represents the most important wintering ground for this species. Birds start arriving from the Canterbury River beds at the end of

December to eventually comprise 50-60% of the total population. The main departure of the birds from the Firth occurs in August with approximately 10% of the birds departing later. These are primarily immature non-breeders. Depending on such factors as the height of the high tide and the weather, wrybills in the Firth either occupy a series of discrete roosts or all congregate at a single site.

New Zealand dotterel (*Charadrius obscurus*; endemic, status: endangered) and black stilt (*Himantopus novaezelandiae*; endemic, status: endangered) regularly visit the area in small numbers, and the former species is known to nest at Miranda,

**Summary:** The Firth of Thames area supports particularly dense populations of shorebirds for the amount of intertidal habitat available. Of the species of birds using the intertidal mud and sand flats or the shallow waters of the area there are: one grebe species, five commorant, four heron, one spoonbill, seven members of the family Anatidae, one gallinule, two oystercatcher, six plover, 27 members of the family *Scolopacidae* (curlew, whimbrel, godwit, snipe and sandpiper), two stilt, two skua and seven gull and tern.

Most of these species are migratory spending their winter season in the Firth. The most important numerically are listed above.

The area provides an important fishery of local significance with flounder and snapper being the main fish species caught as well as incidental catches of other species such as sandshark.

**23. Noteworthy Flora: (e.g. unique, rare, endangered, or biogeographically important species/communities etc)**

The mistletoe (*Ileostylus micranthus* - status indeterminate) is found growing on *Coprosma propinqua* in the Miranda region and is uncommon nationally. The salt marsh associated plant Maori musk (*Mimulus repens*) is a species that is uncommon nationally and found at one locality in the Firth.

There are a high proportion of exotic species present, particularly in better drained sites.

**24. Current Scientific Research and Facilities: (e.g. details of current projects; existence of field station etc)**

The wildlife of the area has been monitored since the 1940's with regular bird counts and studies undertaken by the Miranda Naturalists Trust and Ornithological Society of New Zealand. Work on the botany and entomology of the salt marsh and mangrove area has also been undertaken.

There is considerable scope for more research in the future.

**25. Current Conservation Education: (e.g. visitor centers, hides, information booklet, facilities for school visits etc)**

A number of organisations and school parties visit the Firth of Thames for educational purposes. The Miranda Naturalists Trust operates their own centre at Miranda which is used for educational purposes and promotion of research. The Trust produces some educational material and pamphlets on the area and its wildlife,

**26. Recreation and Tourism: (state if wetland used for recreation/tourism; indicate type and frequency/intensity)**

The potential exists to develop this area for tourists and recreational activities compatible with the aims of the area.

27. **Management Authority: (name and address of body responsible for managing the wetland)**

Management of Crown land and wildlife: Department of Conservation, Waikato Conservancy, Private Bag 3072, Hamilton, New Zealand.

Resource Consents: The Waikato Regional Council (Box 4010, Hamilton East) has statutory responsibilities under the Resource Management Act 1991 for water resources and the preparation of coastal plans.

28. **Jurisdiction: (territorial e.g. state/region and functional e.g. Dept of Agriculture/Dep of Environment etc)**

Territorial: Hauraki Plains District Council; Waikato District Council; Franklin District Council; Waikato Regional Council.

Functional: Department of Conservation

29. **Bibliographical References: (scientific/technical only)**

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Hay, R. (Undated) : Shore birds of the Miranda coastline. Miranda Naturalists Trust. Nature Notes No.3.

Morton, J. (Undated) : The shore and salt marsh plants of Miranda. Miranda Naturalists Trust. Nature Notes No.1.

Morton, J. 1983 : Invertebrates as a food resource at Miranda Flats. Miranda Naturalists Trust. Nature Notes No.2.

Morton, J. (Circa 1985-86): An ecological estimate of the Firth of Thames. Cyclostyled, pp7.

New Zealand Wildlife Service National. 1981: [Sheet for Firth of Thames - P89] Habitat Register pp2.

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Sibson, R B. 1978 : The Firth of Thames. New Zealand Environment, 21:4-7.

Veitch, C R. 1978 : Waders of the Manukau Harbour and Firth of Thames. Notornis, 25(1): 1-24.

30. **Reasons for Inclusion: (state which Ramsar criteria - as adopted by Rec.C.4.15 of the Montreux Conference - are applicable)**

- 1.(b) The Firth of Thames is a particularly good example of a coastal intertidal habitat.
- 2.(a) The Firth of Thames supports an appreciable assemblage of threatened species, both birds and plants:
- wrybill (status: vulnerable)
  - New Zealand dotterel (status: endangered)
  - black stilt (status: endangered)
  - mistletoe (*Ileostylus micranthus* - status: indeterminate)
- 2.(b) The area of special value for maintaining the genetic and ecological diversity of the region.
- 2.(d) The Firth of Thames is of special value for endemic species and communities, including:
- wrybill (status: vulnerable)
  - New Zealand dotterel (status: endangered)
  - black stilt (status: endangered)
  - mistletoe (*Ileostylus micranthus* - status indeterminate)
3. (a) The Firth of Thames regularly supports in excess of 20,000 waterfowl.
- supports an average of 25,000 waders
  - supports up to 40,000 waders in summer months
- 3.(b) The area regularly supports substantial numbers of individuals from particular groups of waterfowl, including:
- eastern bar-tailed godwit - 10% of the New Zealand population (approx 10,000)
  - lesser knot - 2 - 11,000 birds
  - wrybill - 50-60% of the New Zealand population
- 31. Map of site: (please enclose the most detailed and up-to-date map available - preferably at least 1:25,000 or 1:50,000)**