Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:
6 May 2005

3. Country:
New Zealand

4. Name of the Ramsar site:
Manawatu river mouth and estuary

5. Map of site included:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* □ -or- *no* □

b) digital (electronic) format (optional): *yes* □ -or- *no* □

6. Geographical coordinates (latitude/longitude):
NZGD1949: 40.29'S; 175.14'E.

7. General location:
Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The Manawatu estuary is located on the west coast of the lower North Island, New Zealand. It is adjacent to the small township of Foxton Beach (population 1,893), and is located 5 km west of Foxton township, approx 20km north of Levin (population 19,044), the administration centre for the Horowhenua District Council, and approx 35km south-west of Palmerston North (population 72,681), the administration centre for the Manawatu-Wanganui Regional Council.

8. Elevation: (average and/or max. & min.)

Sea Level

9. Area: (in hectares)

c.200 hectares

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Manawatu River Estuary is a moderately sized estuary retaining a high degree of naturalness and diversity. It is nationally important as a feeding ground for international migratory birds as it is the largest estuary in the southern half of the North Island of New Zealand. The area is of high ornithological value because of the diverse range of bird species which can easily be seen there, especially at high tide. The salt marsh- ribbonwood community is the largest in the ecological district and contains the southernmost and biggest population of fernbirds in the ecological district. (*Ravine,*1992). The estuary has important fisheries values.

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11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

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12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1:

The Manawatu estuary is situated in the Manawatu Ecological Region, which includes the Foxton ecological district – a long strip of Holocene sand dune country with its several associated wetlands, lagoons and several estuaries form the most extensive sand dune system in NZ (McEwen 1987 in Ravine 1992). The Manawatu estuary was recommended as an area for protection through the Protected Natural Areas Programme. Ravine 1992 noted that at 'least half of the estuary remained highly natural, with a good range of indigenous species occupying a diversity of niches bought about by the effects of salinity, tidal influences, fertility and sand cover. While elements of this diversity are mirrored in other estuaries, nowhere else in the ecological region is there the sheer area and high natural quality found here.' The Manawatu estuary is noted as being one of the largest remaining natural area in the ecological district, and is the most natural and diverse estuarine wetland within the ecological region.

Criteron 2:

There are 13 species of birds, 6 species of fish and 4 species of plants that utilise the Manawatu estuary area that are listed in the New Zealand threatened species list (Hitchmough 2002).

Under the New Zealand Department of Conservation's threat classification scheme 10 bird taxa which occur in the estuary are regarded as threatened and 3 as at risk. Of the threatened species the site is of particular importance for Wrybill *Anarcynhchus frontalis* (passage and winters), Australasian bittern *Botarus poiciloptilus* (winters and probably breeds), Caspian tern *Sterna caspia* (occurs year round), banded dotterel *Charadrius bicinctus* (breeds and winters) and white-fronted tern *Sterna striata* (occurs year round). Fernbird *Bowdleria punctata*, classified by DOC as 'at risk' has a regionally significant breeding population at the site (Hitchmough 2002).

Five of the species that that have been recorded or occur regularly in the estuary have been classified as threatened by IUCN: New Zealand Shore Plover *Thinornis novaeseelandiae* (Endangered – a rare vagrant to the Manawatu estuary), Australasian Bittern (Vulnerable), Wrybill (Vulnerable) and black-fronted tern *Sterna albostriata* (Endangered) (IUCN 2004). However, the site is of most significance to wrybill and Australasian bittern.

Five species of threatened fish that have been recorded in the catchment (there are no records from the estuary). Longfin eel, giant kokopu *Galaxias argenteus* and mudfish are classified as being in 'gradual decline', shortjaw kokopu and lamprey are classified as 'sparse' (Hitchmough 2002 and recent re-classification of threat status). Longfin eel, giant kokopu and short jaw kokopu are likely to make use of the estuary for feeding, and for juvenile habitat when migrating into freshwater from the

sea. Lampreys are likely to only make minimal use of the estuary area. Brown mudfish are listed in the proposal. There is only one record of them close to or in the estuary on the NZFWFDB (New Zealand freshwater fish database) which is dated 1976. Mudfish are in the Manawatu catchment, but there has been no recent verification of them in the estuary.

There are a number of threatened plant species in the estuary. *Carex litorosa* is listed as serious decline and hasn't been seen since 1978. The herb, *Selliera rotundifolia*, is endemic to this coast and is ranked as gradual decline. *Leptinella dioica subsp. monoica* is also classified as being in gradual decline. *Mimulus repens* is listed as sparse. Two other species, *Bolboschoenus caldwelli* and *Ruppia polycarpa* are considered regionally endangered or rare (Wanganui Conservancy threatened plant database/ NHS 10 02 05).

The Manawatu estuary could be said to support threatened ecological communities as coastal wetlands are not common, and this estuary supports large areas of characteristic communities. There are four key ecological units within the estuary (Ravine 1992), saltmarsh/ribbonwood/jointed wire-rush-sea rush on tidal flat; flax-raupo/sharp rush/jointed wire-rush rushland on tidal flat; half star herbfield on tidal flat and bachelor's button herbfield on tidal flat (refer attached map of ecological units within the estuary). Vegetation dominated by salt-tolerant associations occupy only about 3% of the total NZ wetland area (Cromarty and Scott, 1995). The Wanganui Conservation Management Strategy (1997) notes that the Manawatu estuary contains the Conservancy's largest amount of salt-marsh ribbonwood, an important component of fernbird habitat.

Criteron 3:
The proposed area is the largest saltmarsh in the Manawatu ecological region, and is important for maintaining the biological diversity of the Foxton ecological district, which is the coastal section of the Manawatu ecological region. The fernbird population is the southernmost population of the North Island subspecies *Bowdleria punctata vealeae*. The estuary and associated habitats are particularly valuable as the majority of native vegetation in the ecological district has been lost or seriously impacted by conversion to agriculture.

The upper reaches of the Manawatu Estuary are comprised of the river channel and large areas of saltmarsh with some open ponds and channels. As access to this area is difficult, it supports a large colony of Fernbirds, as well as Royal Spoonbills, Australasian Bittern and Marsh Crake.

Within the ecological region, the Manawatu estuary is the only site that provides a significant area of habitat to wintering, passage and breeding waterbirds and as such contributes significantly to regional biodiversity values. Indeed in the western lower North Island of New Zealand, estuarine habitats are limited. The largest numbers of wintering waterbirds in the region occur at the Manawatu estuary including bar-tailed godwit *Limosa lapponica* (300-450), red knot *Calidris canutus* (up to 250), banded dotterel (c100), wrybill (up to 70 winter and additional birds occur on passage), royal spoonbill *Platalea regia* (up to 50% of national population) (Cromarty and Scott 1996). Of the two most frequent Arctic visitors, bar tailed godwit numbers have stayed stable: maximum of 400-500 with an average of 300 over summer (OSNZ, unpublished data).

A number of uncommon wintering shorebirds also regularly occur including Pacific golden plover *Pluvialis fulva*, far eastern curlew *Numenius madagascariensis*, terek sandpiper *Tringa terek*, great knot *Calidris tenuirostris* and whimbrel *Numenius phaeopus* . These species occur at very few sites nationally.

The Manawatu Estuary has one of the most diverse ranges of birds to be seen in any one place in New Zealand. Ninety three species have been identified at the estuary (Ornithological Society of New Zealand, Manawatu Branch records).

Criteron 4:
The estuary supports more than 1% of the global population of Wrybill during two significant stages of their lifecycle – passage between the breeding grounds of the South Island and major wintering sites generally above 38°C at the top of the North Island, and as a wintering site. Passage and

wintering sites in western central North Island are very limited. On occasions adverse weather conditions will result in higher numbers of Wrybill than usual with 800 birds recorded on one occasion (>20% of world population) (OSNZ records). Neighbouring estuaries generally only support small numbers of birds (<10). The Manawatu estuary is also important for the species mentioned in criterion 3 above as a winter feeding and roosting site. Large numbers of waterfowl including Australasian Shoveler and Grey Teal occur in winter with numbers increasing during the hunting season.

Flocks of 200-300 of New Zealand Shoveller and New Zealand Grey Teal have been seen sheltering in the estuary in the duck-shooting season, (June and July) well away from the maimais and duck shooters.

Criteron 6:
The Manawatu estuary regularly supports about 1% of the world population of Wrybill. Annually, about 30-70 birds overwinter on the mudflats. The estimated world population is 4200, and has declined at a rate of 5% per annum (OSNZ, unpublished data). So, whilst the estuary does meet this criterion – it is only just, which would not allow for any major decrease to the population level through either natural or anthropogenic disturbance events. However, the number of birds that use the site is probably larger than the total counts as birds pass through the site on passage between the main wintering grounds further north and the breeding grounds in the South Island.

Wrybill (*Anarhybchus frontalis*) is endemic to New Zealand, a small grey and white plover with a bill abut 2.5cm long, which is unique because the tip turns to the right. It is known to breed only on the shingle of some of the large riverbeds in Canterbury and Otago in the South Island of New Zealand where its breeding success is threatened by floods and pests such as mustelids.

The Manawatu Branch of the Ornithological Society of New Zealand regularly monitor wrybill numbers.

Criteron 8:
The Manawatu River catchment has a high diversity of native fish (NZ Freshwater Fish database) including a number classified as threatened such as longfin eel, giant kokopu and shortjaw kokopu. A large proportion of native fish in the catchment migrate from the ocean through the estuary and into the river catchment. Whitebait spawning is believed to occur within the estuary (SSBI records (Sites of Biological Interest, and Regional Coastal Plan site registration). Black flounder (*Rhombolosolea retiaria*), estuarine star gazer (*Leptoscopus macropygus*), grey mullet (*Mugil cephalus*) were found in the lower Manawatu river in a recent survey using an electro-fishing boat (Hicks and Bell, 2003) and a variety of other coastal fish species are likely to be present in the lower estuary.

The Manawatu estuary, particularly two small streams entering the estuary (whitebait creek and an unnamed creek), are highly popular for recreational white-baiting.

Half the species of freshwater fish spend a significant part of their life histories in the sea. There are five different species in the whitebait fishery (inanga, koaro, banded kokopu, giant kokopu and shortjaw kokopu) and all move to and from the sea. No less than 17 endemic species spend a significant part of their life in the sea. They return in spring travelling on the incoming tides to breed in the reeds and marshes of small side streams and the estuary. *(McDowall, 2000)*

It is a culture in New Zealand for people to go 'whitebaiting' for the migrating juvenile inanga, and the estuary is a popular site for this recreational fishery. There is a season in the early spring within which fishers are allowed to net for these fish in daylight hours only. Also, local fisherman have told, how, in some places in the upper estuary, they have seen the water teeming with thousands of tiny black flounders about 2-3 cm long.

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13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Foxton ecological district, within the Manawatu ecological region.

b) biogeographic regionalisation scheme (include reference citation):

An ecological district is a local part of New Zealand where the features of geology, topography, climate and biology produce a characteristic landscape and range of biological communities (Myers et al, 1987 in Ravine 1992). New Zealand has been divided into 268 ecological districts which are grouped into 85 ecological regions (McEwan W. M. (1987) Ecological Regions and Districts of New Zealand. New Zealand Biological Resources Centre, Department of Conservation, Wellington, New Zealand). More recent classification systems such as the Land Environments of New Zealand are not biogeographical regionalisations and have not included estuaries.

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14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The site comprises a natural estuarine system with muds, silts and clays. The main freshwater inflow is from the Manawatu River, which drains a large catchment area. The average rainfall is 850mm, and the prevailing winds are westerlies. The lower Manawatu River is tidal for 20km and navigable by small boats.

Water depth: The river channel depth is 7-9 metres (*personal communication, Val & Don Hayes, Foxton River Cruises)*

Tidal fluctuations: M.H.W.S. 2.4 M.L.W.S. 0.2 @ 40.28' S; 175.13' E
(Land Information New Zealand)

Volume of water: Maximum before flooding the land is 1200 m

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15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Manawatu River drains a catchment which is both east and west of the Tararua and Ruahine Ranges. The main stem of the river rises in the Ruahine Range northwest of Dannevirke on the eastern side of the divide, and passes through the ranges via the Manawatu Gorge. It then flows through the Manawatu and Horowhenua Districts to the west coast at Foxton. The area above the Gorge is often referred to as the upper catchment, whereas the lower catchment is downstream of the Gorge. Major tributaries of the river include the Mangahao, Mangatainoka, Makuri and Tiraumea rivers in the east, and the Oroua and Pohangina rivers in the west (Manawatu-Wanganui Regional Council 1998).

The catchment covers an area of 5944 km^2, with 3231 km^2 east of the Gorge and 2713 km^2 on the west side.

The estuary is at the mouth of the Manawatu River, a major river, unique in the Southern Hemisphere in that it rises in the eastern foothills of the Ruahine Range, passes through the Manawatu Gorge to the Manawatu plains and out to the coast on the western side of the island.

It passes through several towns and one city on the way. Dairy farming, cropping and forestry are the main land uses of the area. In spite of this the estuary retains a high degree of naturalness and

diversity, and is of high ornithological value. It also has important New Zealand fisheries values. The climate is mild, with predominately strong westerly winds, which have created unique parabolic sand dunes along the Foxton/Himatangi coast line.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The wetland has a general role in flood control and sediment trapping, and is of great importance in supporting aquatic and terrestrial food chains.

17. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

1. F-Estuarine Wetland 30%
2. G-Intertidal salt marsh 30%
3. H-Mud flats, sand flats 30%
4. E -Sand bar, spit and dune system 10%

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

There are four ecological units within the proposed area (Ravine 1992). Unit one consists of saltmarsh ribbonwood/jointed wire-rush – sea rush rushland on tidal flat. Unit two consists of flas-raupo/sharp rush/jointed wire-rush rushland on tidal flat. Unit three consists of half star (*Selliera radicans*)-shore primrose (*Samolus repens)* – glasswort (*Sarcocornia quinqueflora)* herbfield on tidal flat. The forth ecological unit consists of bachelor's button (*Cotula coronopifolia)* herbfield on tidal flat.

The estuary is a breeding ground for species of native fish, and a migration path on which fish stocks in the river catchment depend.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

The Manawatu estuary supports large areas of threatened ecological communities. The Manawatu estuary contains the Conservancy's largest amount of salt-marsh ribbonwood, in the saltmarsh/ribbonwood/jointed wire-rush – searush ecological unit.

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

The Manawatu Estuary is of national importance for migratory shorebirds, and was recommended as an area for protection (RAP) by the Department of Conservation in its Protected Natural Areas Programme Survey in 1992. The extensive areas of mudflats provide feeding habitat for large numbers of international migratory shorebirds such as:

Pacific Golden Plover *Pluvialis fulva*, 5% of the national population
Far Eastern Curlew *Numenius madagascariensis*, 4-10% of the national population (Directory of Wetlands, 1996)
Bar-tailed Godwit *Limosa lapponica*, (300-450)
Ruddy Turnstone *Arenaria interpres*
Red Knot *Calidris canutus* (40-260)

Less common species of migratory shorebirds have included:
Asiatic Whimbrel *Numenius phaeopus variegatus*
Wandering Tattler *Tringa incana*
Terek Sandpiper *Terek. cinerea*
Great Knot *Calidris tenuirostris* (first recorded in New Zealand at this estuary in 1967)

The estuary is particularly important for native wintering shorebirds
Royal spoonbills *Platalea regia,* up to 50% of the national population (Orthithological Society of N.Z.)

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21. Social and cultural values:

e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Archaeological significance:

Archaeological evidence points to the existence of a semi-nomadic *Moa* hunter culture in the region between 1400 and 1650 AD, predating larger tribal settlements. Significant moa hunter sites have been unearthed throughout the Horowhenua and Wanganui districts.

More permanent settlement came from the east as successive waves of tribal migrants established permanent settlements along the river systems. Each wave displaced the previous one to some extent. Previous inhabitants were forced to settle in the mountain extremes, or move permanently to the South Island. The Manawatu River formed a busy communication network between the interior and the coast. The Rangitane tribe settled along the Manawatu and the Mua Upoko in the Horowhenua.

Indigenous cultural values:

The most recognised Iwi associated with the Manawatu River and estuary are Rangitaane, Muaupoko and Ngati Raukawa. The Manawatu River was named when Haunui a Nanaia travelled down the west coast of the lower North Island in search of his wife. When he got to the Manawatu his heart sank at the sight of the large turbulent river that he had to cross.

The Manawatu River is seen by Rangitaane as the lifeblood of the region and also as an indicator of the condition of the land and surrounding environment. They view the river as the link between the spiritual and physical worlds.

Today, Rangitane, Mua Upoko and Ngati Raukawa all co-exist in the area, and all have been consulted about the recognition of the Manawatu Estuary as a Ramsar Wetland of International Importance. All three tribal groups have supported the project.

European cultural values:

The region was first settled by Europeans in the early 1800s, many being whalers from Kapiti Island. Organised settlement began at Paiaka 15 kilometres upstream from the Manawatu River mouth, but due to problems gaining land title, and a severe earthquake in 1855 settlers moved closer to the coast to what is now Foxton township.

A port was developed in Foxton to export commodities such as flax, timber and agricultural products. The Manawatu River served as a gateway to the fertile areas inland, until roads and a tramway linked Foxton to the inland township of Palmerston North in the 1870s.

In the 1930's because of constant flooding in Foxton, it was decided to make a cut though a bend in the river to allow the floodwaters to escape quickly. However, this soon became the main bed of the river, and effectively put an end to the port of Foxton, as what is known today as "The Loop" is a silted up backwater.

Today there is a wharf in the estuary, and a boat ramp. The estuary is used extensively for recreational activities such as fishing, whitebaiting, boating, bird-watching, walking, and educational studies by the local residents of the Foxton Beach township, as well as people from the surrounding region.

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22. Land tenure/ownership:
(a) within the Ramsar site:

The legal status of much of the estuary is unallocated crown land with no legal protection, i.e. the navigable riverbed is currently administered by LINZ (under the Coal Mines Act) and the intertidal/foreshore area by DoC (under the Foreshore and Seabed Endowment and Revesting Act (FASERAct)).

The site also includes a complex of allotments in public ownership, including Harbour Improvements Reserve (42ha), Conservation Area (25ha), and various new and deemed marginal strips (refer attached cadastral map).

There is a small amount of privately owned land - Koputara Holdings Ltd has indicated that they support the proposal, but graze an area of the wetland. They write that they use the area 'wisely' so that little damage is caused by stock, and R.P and K.D Mather who also write in support of the proposal noting that 'the key to success is in the use of good old common sense to achieve harmony and ensure all our futures benefit from our decisions'. Both sentiments expressed by these private owners are compatible with the wise use philosophy of the Ramsar convention.

(b) in the surrounding area:

The surrounding area is 20% Foxton Beach ownership, including 25% private farmland, 5% Horowhenua District Council reserve, and 50% Rayonier NZ. Ltd (Waiterere Forest). Rayonier NZ Ltd. supports the proposal provided that it does not restrict activities that are carried out as part of normal forestry operations (harvesting, re-establishment, aerial spraying, pruning/thining and road /track construction).

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23. Current land (including water) use:

(a) within the Ramsar site:

The waters of the estuary are used for recreational activities, such as sailing, boating and fishing. The estuary is officially a harbour, with a Harbour master to manage the Manawatu River Users Group. A commercial boat operates from the estuary wharf. The saltmarsh is used by duck shooters in the

shooting season of May and June. A local farmer grazes cattle occasionally in the saltmarsh where he owns a small area.

(b) in the surroundings/catchment:

The surrounding land on the south bank is a production forest, owned by Rayonier New Zealand. The land on the north bank is predominantly closely-settled township of Foxton beach, recreational reserve and two farms. There is a wharf and boat ramp, a parking area and sailing clubhouse.

Land use in the catchment is predominantly agricultural with approximately 5100 km^2 in agricultural use including exotic forest. There are approximately 700 km^2 of indigenous forest within the catchment, most of which is found on the Tararua and Ruahine Ranges with small areas on the Waewaepa and Puketoi Ranges (Manawatu-Wanganui Regional Council 1998).

Water abstraction demands are increasing, particularly in the upper Manawatu catchment.

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24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

(a) within the Ramsar site:

Invasive plants

Several introduced plant species have some impact on the natural values of the wetland, notable *Juncus acutus*, *Tall* Fescue *Festuca arundinacea,* Creeping Bent *Agrostis stolonifera* and the aquatic weed *Spartina anglica* which was originally planted for reclamation purposes. Spartina out-competes native species and reduces the diversity and abundance of the benthic fauna.

It was noted when the Manawatu estuary was included in the Oceania Inventory (Cromarty and Scott, 1996) that cordgrass *Spartina anglica* covered 80ha of the estuary reducing the amount of habitat available to native fauna and flora. Since then the Department of Conservation has pursued its management objective to eradicate spartina from the estuary. Aerial spraying in the last few years has enabled more successful control and currently there are estimated to be less than 500 plants distributed throughout the estuary (refer attached map of previous cover).

Other exotic grasses have invaded the Fernbird Flat area through light grazing and this still occurs. Domestic livestock are reducing the natural areas and allowing the invasion of *Agrostis stolonifera* and *Festuca arundacea*. (Cromarty and Scott 1996).This land is privately owned. The managers of the private land (Koputara Holdings) have written in support of the application noting that a small mob of up to 30 cattle occasionally graze part of the area, and that the landowners endeavour to use the area wisely so that little damage is caused by stock. This is compatible with the 'wise-use' philosophy of the Ramsar convention.

Invasive fish

Pest fish (Koi carp, rudd and catfish) were not detected in an electrofishing survey of the lower Manawatu River (Hicks and Bell, 2003). *Gambusia* (mosquito fish) are known from one site in the Manawatu catchment and have the potential to invade into the estuary from that site, but have not been detected in the estuary to date.

(b) in the surrounding area:

Water quality

The Manawatu River passes through several small towns (Dannevirke, Woodville, Ashhurst, Linton Military Camp) and the city of Palmerston North. Each discharges treated waste water and storm-

water into the river. The river is also enriched by nitrogen and phosphorus from run-off from dairy farms and agricultural farming, especially in flood events.

Water quality in the Manawatu catchment is managed under the Manawatu Catchment Water Quality Plan (Manawatu-Wanganui Regional Council, 1998b). The plan notes that there are over 400 discharges to water and over 400 discharges to land in the Manawatu catchment (*ibid*). The consents database held by the regional council indicate that the number of discharges to water have dropped to about 50 in 2003 (J. Roygard, pers comm.). This is attributed to policy leading to a shift from dairy farm effluent disposal to water being replaced by land treatment.

The objective of the Manawatu plan is to enhance the surface water quality in the Manawatu catchment by the year 2009 to a level which meets the needs of all people and communities while safeguarding the life-supporting capacity of the water. In the last State of Environment (SOE) report (Young and McNeill, 1999), phosphorus levels in the lower Manawatu have been identified as being 'poor', enterococci levels as 'excellent', water clarity as 'poor' and ammonia levels as 'good' (on a scale of poor to excellent) (Young and McNeill, 1999).

The Manawatu-Wanganui regional council has provided written support to the application indicating their willingness to be involved in ongoing management of the estuary.

Use of off road recreation vehicles

Recreational activities include off-road use of four-wheel drive vehicles, with an area of sand-hills being set aside for 4WD Drive Club use. This damages the coastal-fore dunes, and prevents coastal vegetation from growing, and allows the sand to be blown inland to cover mud flat feeding grounds.

The Horowhenua District Council has prepared a draft Foxton Beach Management Plan, a non-statutory plan for the Foxton beach area identifying four zones for different permitted activities. This is designed to manage the use of off road recreation vehicles.

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25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measures taken:

Some 25ha of Crown land are held as a Conservation area, managed and administered by the Department of Conservation. However, due to shifting channels of the river this is now in the middle of the river channel. Control of the aquatic weed *Spartina angelica* is undertaken, and aerial spraying has practically eliminated this.

The Foxton Beach Coast Care Group is working to protect the bird feeding grounds from off-road vehicles. Two off-road vehicle clubs have agreed to limit their activities to a specified zone. Horowhenua District Council has erected heavy timber posts to prevent vehicles driving over one area of mudflat feeding ground and created Zones in their Draft District Plan, and Zone 3, in a hollow in the sand dunes on the spit, allows 4wd vehicles to be driven within a defined area. The Foxton Beach Coast Care Group has designed a set of signs for this area to indicate to drivers of vehicles where the designated areas are to keep them from spoiling the mud flats where the birds feed.

Horowhenua District Council has an organised group of local Maori and other residents who are replanting some vegetation.

A set of by-laws for boats is overseen by the Manawatu Estuary River Users Group with voluntary wardens reporting people who transgress.

26. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

Applying for Ramsar listing status for this estuary has raised public awareness of the importance of the area.

It is proposed that an inter-agency management plan will be developed for the estuary. This will be facilitated by the Manawatu estuary trust (a community group) and will bring together the various management agencies – the Department of Conservation, the Horowhenua Disrict Council, the Manwatu-Wanganui Regional Council as well as Maori interests and adjoining landowners.

The Manawatu Estuary Trust is planning to build a Visitor Centre on the edge of the mudflats, with proposed activities and displays to explain the values of the estuary and emphasize its importance. It plans to have a library and a small laboratory incorporated into their visitor centre for use by students and researchers.

The Foxton Wetland & Game Bird Society have expressed interest in building a boardwalk.

Proposed monitoring

- The Manawatu Branch of the Ornithological Society of New Zealand will continue to monitor the bird numbers at the estuary, as they have done for many years.
- The Foxton Beach Coast Care Group are actively monitoring sand movements in the estuary measuring the sand drift from vehicle use of the sand dunes, which appears to be covering some of the mudflats where the birds feed.
- The visitor centre planned by the Manawatu Estuary Trust will keep records, and will provide a base for monitoring activities.
- The Manawatu Estuary Trust at present has 80 members, many of whom have volunteered to assist with improvement programmes, and will regularly monitor the key criteria that justify the Ramsar proposal.
- The Foxton Wetland & Game Bird Society who cull the mallard ducks in the shooting season, will monitor the saltmarshes, and have offered to build a boardwalk (once resource consent is obtained)

27. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Manawatu river mouth and estuary is 35km south west of Massey University in Palmerston North. The Manawatu Estuary Trust has commissioned a CD Rom to be produced by the New Zealand Centre for Precision Agriculture at Massey University, Palmerston North, which will outline the ecology of the estuary, its values, and research work done. This will be available for all school classes which visit the estuary to study.

28. Current conservation education:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The Manawatu Estuary Trust, aims to promote protection of the estuary as well as education, research and eco-tourism. They are in the process of raising funds for a Visitor Centre to be erected beside the estuary for the education of the public on the values of the wetlands.

The vision for the Trust is to have

- Interpretation Displays on ecology, birdlife, sand dunes, etc.
- Guided or independent walks

- Canoeing safaris
- Children's activities
- Class visits and school holiday programmes
- Community Group evenings, seminars and workshops
- Art shows, flower shows, summer concerts.

29. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

With the town of Foxton Beach bordering the estuary, it is widely used for recreation. The main use is at the weekends, with several clubs involved. The club activities are generally well supervised and law abiding. The types of recreational use are:

Fishing, Walking, Yachting, Bird-watching, Boating, Duck Shooting, Motorboat sports, Canoeing, 4wd motoring.

30. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

State

The New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement was prepared by the Minister for Conservation under the Resource Management Act, 1991. The purpose of the Coastal Policy Statement is to ensure sustainable management of the coastal environment, which extends to the 12 Nautical Mile territorial boundary.

Of particular relevance is policy 1.1.2 which states:
"It is a national priority for the preservation of the natural character of the coastal environment to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna in that environment…."

The Resource Management Act 1991

Section 5 of the Act (RMA) states:
(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
(2) In this Act, "sustainable management" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety.

Regional, district and city councils carry out their functions under the RMA through the preparation and implementation of Regional Policy Statements and Regional and District Plans. (Prior to the RMA was the Town and Country Planning Act and its amendments, used by these councils). The RMA requires the councils to have regard to the CMS, any Coastal Policy Statements and any management plans and strategies prepared under other statutes such as the Conservation or Reserves Acts when preparing or reviewing their own plans and strategies.

Region

The Manawatu-Wanganui Regional Policy Statement is prepared by Horizons.mw under the Resource Management Act, 1991. The Manawatu-Wanganui Policy Statement sets out broad resource management issues, objectives and policies for the Manawatu, Wanganui and Horowhenua

regions relating to both land and water. Territorial plans and rules are required to be consistent with the Regional Policy Statement.

Under the Resource Policy Statement, the Manawatu-Wanganui regional council have prepared a number of other plans that have direct relevance for management of the estuary and its catchment. These include the Manawatu Catchment Water Quality Plan (Manawatu-Wanganui Regional Council 1998b), the Manawatu-Wanganui Regional Coastal Plan (1997), the Regional Plan for Beds of Rivers and Lakes and Associated Activities (2001).

The Manawatu River Harbour Bylaws 1998 provide for matters of navigation and safety on the Manawatu River. The Bylaws have been prepared to reflect current practice on the river, as agreed by the user organisations which make up the Manawatu River Users Group. Manawatu-Wanganui Regional Council pursuant to powers granted by Section 212 of the Harbours Act 1950.

The Conservation Management Strategy (CMS) Wanganui Conservancy (1997-2007) is a statutory document under Part IIA of the Conservation Act, 1987 for the Department of Conservation. It sets out long-term management directions and provides a framework for the day-to-day conservation management of areas administered by the Department of Conservation.

Local

The Horowhenua District Plan is prepared by Horowhenua District Council, under the Resource Management Act, 1991. It relates primarily to land management of the estuary.

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31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

(a) Horowhenua District Council, Private Bag 4002, Levin, New Zealand. (Peter Shore, Parks & Reserves Manager)
(b) Department of Conservation, Palmerston North Office, PO Box 11011, Palmerston North (Phil Mohi, Manager)
(c) Horizons Regional Council, PO Box 11025, Palmerston North. (Ewen Robertson , Harbour Master)

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32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

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Ravine, D. 1992: Foxton Ecological District. Survey report for the protected natural areas programme. Department of Conservation, Wanganui, New Zealand.

Young, D; McNeill J. (eds) 1999: Measures of a Changing Landscape: State of the Environment Report, Manawatu-Wanganui region. Published by the Manawatu-Wanganui Regional Council.

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