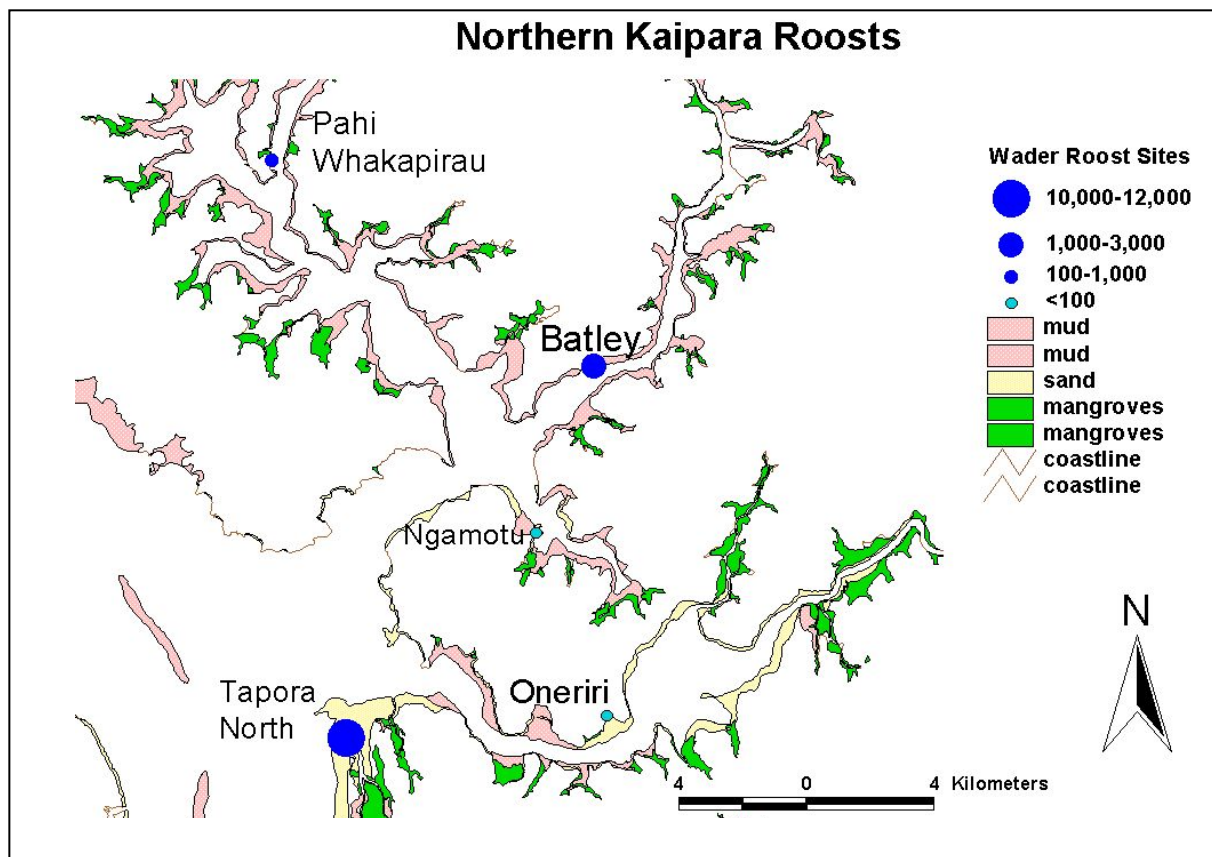
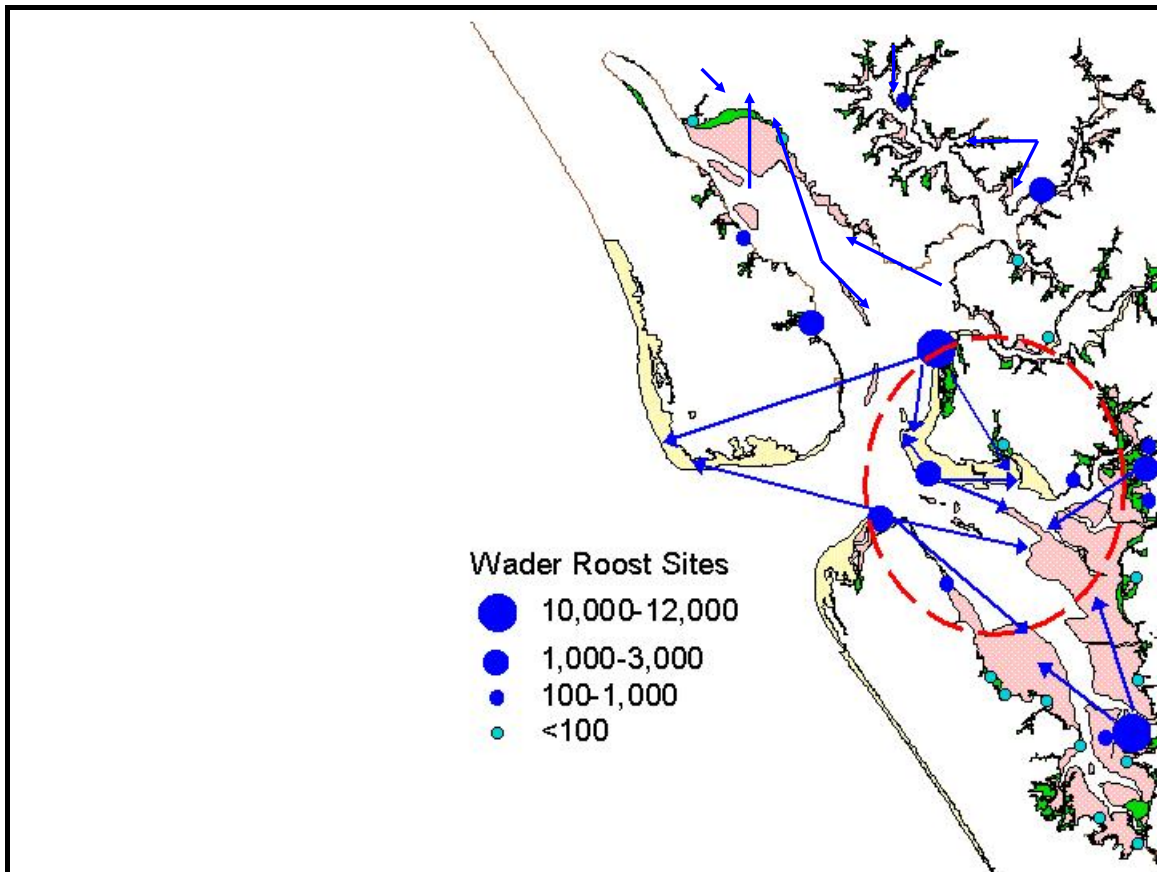




3.5.5 Movement of waders from roosts to feeding areas

Wading birds roost on the harbour according to the height of the high tide: they prefer to roost close to their main feeding areas (Figure 32). At neap tides there are more roosting places available closer to the prime feeding areas, whereas at spring tides many smaller roosts are inundated, forcing birds to roost further from their feeding areas. This situation can be exacerbated when a spring tide is combined with stormy weather, forcing birds into a small number of roosts, with some birds having to roost on nearby farmland. Oystercatchers, pied stilts, dotterels, plovers, herons, and spoonbills are species that are regularly seen roosting on paddocks, particularly in winter storms.

Figure 32 Movement between summer wader roosts and feeding grounds on the Kaipara Harbour. Wader feeding areas shaded pink, sand dunes yellow, and mangroves green (Bellingham and Davis 2004).



3.5.6 Wetland birds

Australasian bittern

Australasian bittern are nationally endangered in both New Zealand and Australia, where they are threatened by human-induced changes to their habitat. They favour wetlands with tall, dense vegetation; particularly raupo (*Typha* spp.) and spikerushes (*Eleocharis* spp.). During the day they hide amongst dense reeds or rushes then feed mainly at night on frogs, fish, large spiders, insects, and snails. Breeding occurs in summer from October to January. The nests are built in secluded places, on a platform of reeds, within the densely vegetated wetlands.

Banded rail

Banded rail are spread sparsely in the estuaries of the upper North Island and Nelson-Marlborough. The Kaipara Harbour has the largest banded rail population in New Zealand due to its size.

Spotless Crake

Spotless crake are found mainly in the raupo swamps of the northern part of the North Island and the Manawatu/Horowhenua dune lakes. At the Kaipara they are found in dense, brackish, marshes that contain tall raupo and spike-rushes.

Marsh crake

The marsh crake inhabits both fresh and saltmarshes, and the marshy banks of rivers. Marsh crake run quickly amongst the vegetation and on floating raupo. There are sparse records of marsh crake in the North Island and only a few records at the Kaipara Harbour.

North Island fernbird

Fernbird are found in saline and freshwater wetlands, particularly in the tall shrubby fringes. At the Kaipara they occupy the landward fringe of marsh ribbonwood, manuka, and coprosma in the saltmarshes. The Kaipara Harbour probably has the largest North Island fernbird population in New Zealand. North Island fernbird territories found at Omaha Estuary were about 0.6 ha (Parker 2002). Based on this comparable estimate and the available habitat within the Kaipara Harbour, the population is likely to contain between 3000 and 4000 birds.

3.5.7 Oceanic birds

Oceanic birds also breed around the harbour and include: little blue penguin, grey-faced petrel, and sooty and flesh-footed shearwater.

Little blue penguin

The population and range of the blue penguin has been declining in Auckland and Northland (Geurts., pers. com.) where they are not protected from predation, resulting in the Department of Conservation ranking them in the threat category of Gradual Decline. Blue penguins have a rather variable breeding season; the main egg-laying period occurs between September to November and only one clutch is laid. They nest in many localities around the Kaipara, but generally within 5 km of the harbour entrance.

Blue penguins usually feed outside the harbour on a variety of surface schooling fish, squid, and crustaceans. Although dive depths of 60 m have been recorded, 10-20 m is more common. They usually feed within 25 km of the coast and may make daily round trips of up to 75 km (Houston 2007). They are more commonly seen around the entrance of the harbour at dawn and dusk, on their way to and from the feeding grounds.

Grey-faced petrel

Grey-faced petrel nest at Pouto and at other localities in the harbour such as Motu Rimu, an islet in the harbour just west of the Tauhoa River (S. Phillips., pers. comm.). They feed on surface schooling fish, squid, and crustaceans, often 50 km or more offshore on the West Coast, returning to their burrows in the nesting season at dusk and departing for their feeding grounds before dawn each day. Grey-faced petrel have been in general decline on the Auckland / Northland West Coast for the past 50 years and all of the viable colonies that remain require active predator control to ensure their survival.

Sooty and flesh-footed shearwater

Sooty and flesh-footed shearwater share nesting burrows with grey-faced petrel and feed in similar localities at sea on the West Coast. The shearwaters nest in summer and the grey-faced petrel nest in winter.

3.5.8 Birds that forage in deep water

Pierce (2005) provides a summary of key bird species that forage in the deep waters of the Kaipara Harbour (Table 7).

Table 7 Key bird species foraging in deep water in the Kaipara Harbour.

Species	Status	Distribution at the Kaipara
Northern little blue penguin	E, T	Unknown.
Australasian gannet	C	Throughout the Kaipara.
Pied shag	T	Throughout the Kaipara.
Black shag	T	Throughout the Kaipara.
Little black shag	T	Throughout the Kaipara.
Little shag	C	Throughout the Kaipara.
Tern	E, M, T	Refer to Table 1 in Pierce (2005).

Status: E = Endemic, T = Threatened, C = Common.

3.5.9 Terrestrial birds

Terrestrial birds such as: herons, shags, banded rail, tui, grey warbler, silvereye, morepork, kingfisher, welcome swallow, and shining cuckoo, as well as a range of introduced passerine species, regularly use the mangrove habitat for feeding and, to a lesser extent, as breeding sites (Pierce 2005, M. Bellingham., pers. obs.) (Table 8). Frequent movement of these bird species from nearby forest and scrubland into mangrove shrublands has been observed (M. Bellingham., pers. obs.). It is likely that mangrove shrublands are a critical feeding habitat for

birds that forage for insects among the foliage and take nectar from mangrove flowers. Saltmarshes also provide food for these birds as they are rich in insects and spiders, and Coprosma and pohuehue fruit. These terrestrial bird species commonly nest in denser thickets within the mangroves and saltmarshes, especially where the land adjoining the Kaipara is devoid of forest and scrub, or where the forest occurs only in small remnant areas. These intertidal mangrove forests and shrublands provide valuable habitat for terrestrial birds by linking the small remnants of forest above the coastal marine area.

Table 8 Key bird species foraging in and adjacent to mangroves in the Kaipara Harbour.

Species	Status	Distribution throughout the Kaipara
Australasian bittern	T	Mangroves and saltmarsh areas.
Banded rail	T	Mangroves and saltmarsh areas throughout the harbour.
Kingfisher	C	Mangroves and adjacent areas throughout the harbour.

Status: T = Threatened, C = Common.

3.6 Coastal vegetation

The Kaipara Harbour has long been recognised for its mangrove and saltmarsh habitats and successional sequences from tidal channels to near-shore mangrove, saltmarsh, saltmeadow, maritime rushes, and full forest habitats; the most notable being the Tauhoa Scientific Reserve, Hoteo River, and Mt Auckland Forest (Atuanui Conservation Area) (Chapman 1976, Fahy et al. 1990, Shaw and Maingay 1990, Morrissey et al. 2007). Numerous other sites are also significant with regard to mangrove remnants, with associated maritime wetland on the landward side.

Areas of coastal vegetation within the southern Kaipara are presented in Figure 33 (ARC, GIS vegetation data). An assessment of coastal vegetation in the southern Kaipara Harbour was undertaken by Wildlands Ltd using aerial photographs (Figure 34) (Mead et al. in prep.) and found that the southern Kaipara Harbour contains areas of coastal vegetation that are nationally or regionally significant. These areas are:

- ❑ Waionui Inlet, which met many of the criteria for significant coastal vegetation and was ranked as both regionally and nationally significant. Waionui Inlet contains the largest area of herbaceous saline vegetation within the Kaipara Ecological District and the Auckland Region (284.1 ha), is an outstanding example of representative habitats, contains ecological sequences from marine to terrestrial environments, and has at least four threatened plants.
- ❑ Puharakeke Creek, which contains the largest area of mangroves within the Kaipara Ecological District and the Auckland Region (729.5 ha). It is typified by transitions from

mangrove or herbaceous saline to scrub or indigenous shrubland, and contains at least 35 indigenous scrub-covered estuarine islands.

- ❑ Opatu River in the eastern Kaipara Harbour, which contains the largest area of estuarine vegetation in the Kaipara Ecological District and Auckland Region (758.6 ha), extensive herbaceous saline vegetation, and ecological transitions from mangrove to herbaceous saline communities to indigenous forest.
- ❑ Kaipara River, which has a complex mosaic of vegetation types including estuarine islands.

A number of smaller sites are also significant, usually because they contain threatened species or complete ecological sequences from marine to terrestrial environments. These sites include, but are not limited to: Kaukapakapa River, Okahukura Peninsula, and Te Karaka Creek, which contain ecological sequences and support threatened plant species; Makarau River, Atiu and Takahe Creek, Lower Oruawharo River, Upper Tauhoa River, Hoteo River, and Otekawa Creek, which contain ecological sequences; and Sand Island and Omaumau River, which support threatened plant species.

Areas within the Kaipara that form important wildlife corridors are summarised in Figure 35 to Figure 37.

Figure 33 Areas of coastal vegetation within the southern Kaipara (ARC, GIS vegetation data).

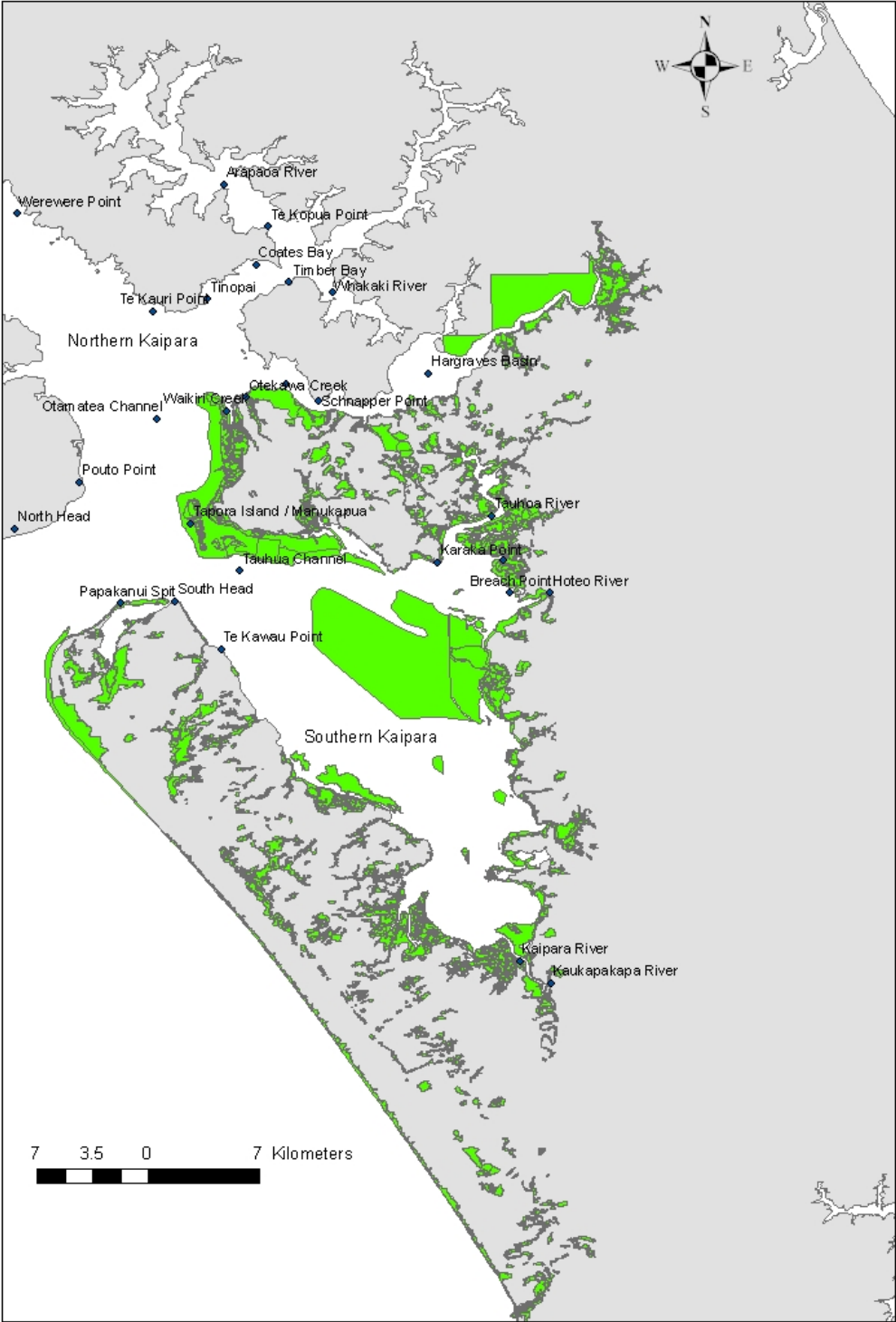


Figure 34 Areas of coastal vegetation of regional and national significance within the southern Kaipara (Mead et al. in prep.).

