

## Submission on Proposed Central Interceptor

- 1.1 My name is Edward Shawn Michael Kitching and I live at 41a Edgewater Parade, Waiuku 2123. I am a retired Shipmaster. I grew up in England on the south coast where I developed a lifetime interest in wildlife.
- 1.2 Since I arrived in New Zealand I have continued that interest with 36 years sailing and living on my own boat, sailing into every harbour from Tauranga to Houhora, studying the wildlife in them.
- 1.3 Thirty years of my working life was spent at sea. I have entered many harbours all over the world and studied the ecology and wildlife in them. After leaving the sea I was a tutor and examiner at the Manukau Institute of Technology, Maritime Studies Dept.
- 1.4 I am an active member of Ornithological Society of NZ, Manukau Harbour Restoration Society, Waiuku Estuary Restoration Trust, Awhitu Peninsula Landcare Trust (Inc), Counties Sport Fishing Club and LegaSea (a group advocating on behalf of recreational fishers). For some years I conducted the OSNZ bi-annual bird censuses for the Mangere and Ambury Park areas.
- 1.5 I am speaking to you today as a resident of Waiuku of many years who has spent years working with the birds of the Manukau Harbour.
- 1.6 I wish to address the potential impact of the emergency discharges from the Central Interceptor of untreated raw sewage and large volumes of "fresh" storm water on the bird and marine life of the Manukau.
- 2.0 Effects on Bird Life and the Importance of the Manukau Harbour
- 2.1 Many of the birds using Manukau Harbour are migratory, some species being present in summer and some in winter. The summer migrants are mainly Godwits and Knots, which are present from late September to early April.
- 2.2 The winter migrants, mainly South Island Pied Oystercatchers, Wrybill, Banded Dotterel, Spoonbill and White Heron, are present during the other 6 months (April – September). These birds migrate within NZ (although some Spoonbill migrate to Australia) in stages, from harbour to harbour from the South Island.
- 2.3 The birds which breed on the Manukau, Gulls, Terns, Variable Oystercatcher, Dotterell, Stilts, do nest along the coastline of Ambury Park and the sewage works. Their breeding would be affected by construction work from September to April.

#### 2.4 Migration Flights:

The Knot does not undertake flights as long as that of the Godwit, usually staging at sites on the west coast of Queensland. The Godwit however, covers great distances, usually non-stop. A typical bird (E7 – a female) in 2007 flew nonstop from Miranda to Yalu Jiang (China) a distance of 10,219 km in 8 days. She rested for 7 days then flew 6,459kms to Alaska in 4 days. After breeding, she flew non-stop from Alaska to NZ, 11,570 km in 9 days, a total of 28,248km in one year, carrying a GPS transmitter.

#### 2.5 Food Intake and Energy Expenditure:

After arriving in NZ, the Godwit cannot fold its wings properly for about 2 days. It is exhausted. It needs an immediate intake of food. Then it has to get itself ready for the return flight.

#### 2.6 The first thing it must do is renew its plumage. First it moults and renews its body feathers, then its wing feathers. This requires substantial intake of protein, which could be used for fattening. After moulting, the fattening process continues. Feeding must not be interrupted.

#### 2.7 Roost sites must be as close to the feeding areas as possible, to avoid expenditure of energy flying to and fro, which can be as high as 12% per day. If the birds are continually put up by intruders, this can amount to an average loss of up to 25% per day.

#### 2.8 Some roost sites become untenable during spring tides, so alternatives must be found, again using valuable energy. If a bird cannot get fat enough, it may not be able to breed or at worst, drop exhausted into the sea.

#### 2.9 Towards the end of fattening, the liver and kidneys shrink to save weight, to allow just that little bit more fat to be put on. The take off weight of a migrating Godwit is about 50% above its average.

#### 2.10 Food intake at the staging posts in China is becoming harder to obtain, as huge areas of mudflats are being reclaimed for ports, fish farms, etc so the undisturbed feeding in NZ is even more important. Feeding areas are also being rapidly reduced in NZ by the spread of mangroves over them, causing shellfish to be killed or driven out.

#### 2.11 The Knot is particularly threatened because it is a specialist feeder. Its particular food is found in sufficient quantities in very few places. In 1994 there were 58,000 NZ-based Knots. In 2011 there were only 32,000. The Knot has consequently had its status upgraded from Migrant to Native.

#### 2.12 Wading birds, Godwit, Knot, Oystercatchers, Wrybills, Dotterel, feed mainly on shellfish, invertebrates and worms. On 28-2-13 a "Bioblitz" was conducted at the Miranda Naturalists' Trust to find as many species of biota as possible in one day. They found 54 species of

Molluscs and 51 species of Crustaceans. They also found 195 species of Algae (including Diatoms) and 27 species of Annelids (worms) but the last two groups were combined totals from fresh and sea water. A similar number of Mollusc and Crustacean species would be present on the Manukau Harbour.

2.13 Although these shellfish can survive drying out between tides, they cannot survive continuous immersion in fresh water, and will quickly die. Birds do not eat dead shellfish.

2.14 Feeding areas have also been reduced by earthworks such as the bund on the foreshore at Frederick Street.

### 3.0 Effects on Fish

Large quantities of fresh water will kill plankton and disperse the food fish of pelagic species. Shellfish killed by fresh water will reduce the feeding of bottom-feeding fish, especially Snapper, which eat a lot of shellfish and Gurnard, which eat a lot of crab. Dead shellfish will also poison the water.

### 4.0 Conclusions

Large quantities of fresh water and raw sewage must not be allowed to run freely across mudflats, but must be piped into deep water in a properly constructed outfall.

4.1 Disturbance of bird life must be avoided. No construction work should be done in the Ambury Park and Mangere Bridges's Kiwi Explanade area from the middle of September to the middle of April, when the Godwit and Knot are present and the resident birds are nesting.

The Manukau Harbour must not be used as an aquatic dustbin.