8. Coastal and Estuarine Flora and Fauna

8.1 Impact on Mangroves

In response to concerns raised about the viability of mangroves remaining between the shore line and the future development area/spoil disposal area, the proposed layout of the proposal has been modified. The new layout is provided in **Figure 1.1**. The new layout further minimises impact on denser, less disturbed and more viable stands of mangroves along Shute Harbour Road which partly connect with the more extensive mangroves of Campbell's Creek (note that these mangroves are not affected by the proposal).

The likelihood of successful re-establishment of mangroves adjacent to rock walls is difficult to predict. There are examples where such re-establishment has occurred, including on the Brisbane River where it passes through the Brisbane CBD. However, it is accepted that there are also examples where mangroves have not re-established, even if the conditions are suitable.

While it would be possible to preserve the mangroves inshore of the spoil disposal area, the requirement by Department of Main Roads to provide the main access to the site from Shute Harbour Road at Hermitage Drive means that an internal access road must cross this area, making it impossible to preserve these mangroves. This means a loss of an additional 0.75 ha of mangroves.

8.2 Birds

The Rufous owl (southern subspecies) *Ninox rufa queenslandica* is listed under the *Nature Conservation Act 1992* as vulnerable. It is not listed under the *Environmental Protection and Biodiversity Conservation Act 1999*. The Action Plan for Australian Birds 2000 (Garnett and Crowley) notes that this subspecies probably has a "small population but is in no imminent danger". The Plan also notes that this Rufous owl subspecies nests in eucalypts and melaleuca and that habitats include creeks, rainforests, mangrove edges and vine thickets.

Rufous owls have not been recorded in surveys undertaken at the marina site. It is unlikely that rufous owls are nesting in the mangroves immediately adjacent to Shute Harbour Road as mangroves are not the preferred nesting trees for the species and there is significant traffic noise and disturbance in this location.

Brahminy kites have been recorded in the study area (Burchill 1998). This species is not listed under either State or Commonwealth endangered species legislation. It is widespread in Australia and also occurs in Indonesia, Solomon Islands, Papua New Guinea and South-east and central Asia. It is known to roost and nest in mangroves and other trees close to the water. Brahminy kites may reuse the same nest more than once and if any nests are identified in mangroves to be cleared, it may be possible to relocate the nest. However, loss of an old nest is not considered to be a significant impact on this species.

Beach stone curlews have not been identified in flora surveys undertaken for the EIS (WBM in Burchill 1998) and Supplementary Environmental Impact Statement (Sinclair Knight Merz 2002). However there are anecdotal reports that a pair of beach

stone curlews nest along the Boathaven Bay coastline. Beach stone curlews are listed as vulnerable under Queensland State legislation and are not listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 2000*. Beach stone curlews are sensitive to disturbance when nesting and may abandon a nest even if it is not directly in the project footprint. However, it must be noted that the coastline between Campbell's Creek and Whitsunday Sailing Club is already subject to significant disturbance from vehicle traffic, boats pulled up on the shore of Boathaven Bay and other human activities and the pair observed in Boathaven Bay may be more resilient to human disturbance.

It is acknowledged that creation of habitat for birds that are tolerant to human activities does not provide matching compensation for loss of wader bird habitat but does make a small contribution to such compensation.

8.3 Water Mouse

Surveys undertaken as part of the Supplementary EIS preparation showed no indication of water mice using habitat within the footprint of the proposed Port of Airlie.

It is acknowledged that, if water mice are using habitat within Cambpells Creek that is not directly disturbed by the development, indirect impacts such as changes in water quality leading to reduction in crustacean numbers could affect the viability of this possible water mouse population.

A range of measures have been proposed to control water quality from the site during construction and operation (see Sections 7 of the Supplementary EIS and this Addendum). In addition, if subsequent surveys identify that acid sulphate soils (ASS) exist on the site, these will be managed such that there is no adverse impact on water quality in Boathaven Bay.

At this stage, further surveys to identify whether water mice might occur in Campbells Creek are proposed during the preconstruction stage of the project, when such surveys might form part of the package of compensation measures implemented by the proponent. If water mice are identified in Campbells Creek, a targeted monitoring and management program will be established to ensure that the excavation of ASS does not result in adverse impacts on the species.

8.4 Relocation of Species

In the event that any species of conservation significance, that have not been identified during the studies undertaken since 1997, are identified and which warrant relocation from the area, consultation will be undertaken with appropriate experts to identify the most appropriate means to relocate these species.