Attachment 5 – Page 8-94 for insertion

Home ranges of radio-tracked males and females in the wild did not overlap (Flakus 2002), and captive Mary River Turtles are reported to be aggressively territorial (Cann 1998).

Populations within the area affected by the proposed action

The Mary River Turtle has been surveyed extensively within and adjacent to the inundation area by Ecotone, the Environmental Protection Agency (EPA) Turtle Group and the Australian Freshwater Turtle Conservation and Research Association (AFTCRA). The location of Mary River Turtle records within the study area are shown on **Figure 8.20.**

Of the areas investigated for the EIS, the reach of the Mary River where the highest densities of Mary River Turtles were recorded is the stretch of river between the Vic Olson Bridge near Carter's Ridge, and Traveston Crossing.

Mary River Turtles occur throughout the Mary River within the inundation area, and to a lesser extent in Yabba Creek. Other tributaries within the inundation area have neither sufficient flow nor the critical instream habitat features (especially deep pools) required to support the species. Mary River Turtles occur in a range of habitat types within the inundation area, but the selection of habitats that afford minimal exposure to predation appears to be a common element and highlights the reclusive nature of the species. Mary River Turtles occur in highest densities in pools >3m deep where there is cover available such as submerged and emergent logs and snags or macrophyte beds. The species is often encountered in pools downstream of riffles however this is not always the case, and the species can also be encountered in shallower pool habitats away from riffles. The predominant association of the species with submerged logs and below riffles may be related to the greater availability of potential food items such as freshwater sponges, and diverse macrophytes beds that occur in association with these habitat features.

Some adult and juvenile individuals apparently occupy different habitat types at different times of the year. In particular, adult females gather near traditional nesting banks in October prior to laying and may occupy sub-optimal habitat such as shallow pools or within riffles during that period. Aggregations of juveniles were recorded on a number of occasions including 16 individuals (and only a single adult) recorded in a deep pool at the confluence of Belli Creek. Adult male individuals appeared to be more sedentary apart from occasional large (presumably old) males that were recorded in sub-optimal habitat.

A total of 179 individuals were recorded during the Ecotone turtle field surveys. Juveniles accounted for 42% of the overall number of individuals recorded compared to 32% adult females and 26% adult males.

The estimated population size of Mary River Turtles within the inundation area is between 895 and 3,580 individuals. This is based on an assumed detectability of individuals during surveys of 5-20% of the actual number of individuals present and should be regarded as indicative only.

Current pressures on the species

The Mary River Turtle population was subjected to intense, unsustainable rates of egg harvest to supply hatchling turtles to the pet trade up to 1974. This is regarded as responsible for an estimated 95% decline in the breeding population of the species in the lower Mary catchment, and it appears that the population in that area has not recovered from this population decline. Based on the population structure of free-ranging populations considered by the EPA in the lower catchment (which exhibit a low proportion of immature individuals), the Mary River Turtle in this area is recognised as having very low recruitment to the adult life history phase. This occurs despite most females successfully laying viable eggs each year.