Appendix 9. Hierarchical naming system for Queensland survey transects

1. A consistent system for naming Queensland waterways and allowing ready comparison of historical and future survey results was an essential part of systematising Queensland's crocodile survey data. The systematic names are also important for planning and naming transects for future surveys, hence extend more broadly than those needed for surveys conducted to date.
2. The starting point for achieving uniformity was to adopt waterway names used on the Queensland 1:100 000 map series where possible. Where small waterways were unnamed on the 1:100 000 series maps, they were coded alphanumerically. The first unnamed tributary would become Sidecreek A, its first tributary Sidecreek A1, and A1's first tributary (if likely to be surveyable) would become Sidecreek A1A. In some systems, side-channels running behind mud/sand banks formed separate transects identified at Waterway L2 or L3. Similarly, islands and cut-off meander loops were identified, named and included in transects as appropriate.
3. In the special case of river systems surveyed by Messel in 1979, for which river maps have been published (Messel et al 1981a), Messel's assigned names were used for otherwise un-named sidecreeks to reduce confusion when comparing historical and current survey results.
4. A hierarchical naming convention was applied to all Queensland survey data in the ARCGIS databse, consisting of:

    - Bioregion code and name: After Taplin (1987) (Figure 1).
    - Aggregation system: The name given to a conglomeration of waterways that have a shared entrance to the sea and can be treated conveniently as a unit from the viewpoint of crocodile conservation and management (e.g. the Port Musgrave system, the Albatross Bay system, the Escape River system).
    - Waterway Level 1 (L1): The principal waterway/s within an Aggregation System (e.g. the Wenlock and Ducie Rivers and Namaleta Creek in the Port Musgrave system).
    - Waterway Level 2 (L2): The 'Mainstream' of each principal waterway was referenced here, as were the names of the first-order tributaries branching from the mainstream.
    - Waterway Level 3 (L3): The third-order waterways were referenced here. (e.g. Ducie River/Dulhunty River/Sidecreek C – describing Sidecreek C which joins the Dulhunty River which in turn joins the mainstream of the Ducie River).
    - In some complex systems, a fourth or fifth level of tributary might be mapped if it had potential to be surveyed in future or had previously been surveyed. This was too infrequent to warrant additional database fields. The hierarchy of names was therefore constructed as shown in the table below for tributaries of the Ducie River:

WaterwayL1	WaterwayL2	WaterwayL3
Ducie River	Mainstream	
Ducie River	Dulhunty River	Mainstream
Ducie River	Dulhunty River	Sidecreek C
Ducie River	Sidecreek C	Sidecreek C1
Ducie River	Sidecreek C1	Sidecreek C1A

- This simple schema allowed for a more compact database while still conforming to the naming convention.