Stuart Creek floodplain Townsville Port Access Road fishways PS05

(Photo: Ross Kapitzke 17/03/08)

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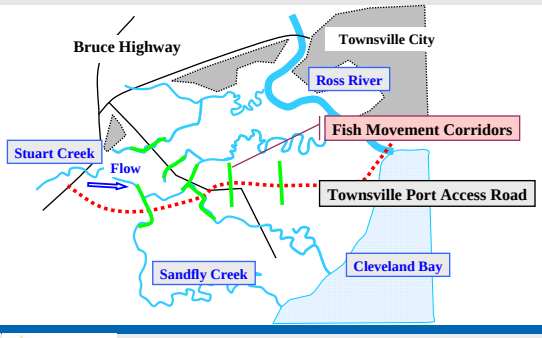
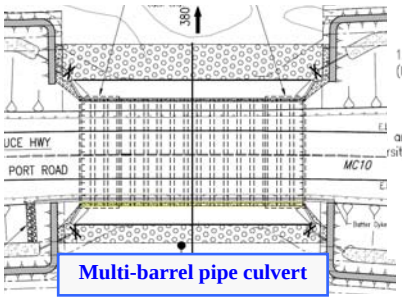
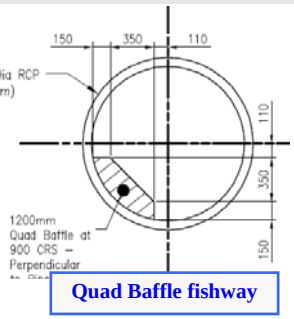
- Townsville Port Access Road crosses major waterways on the Stuart Creek and Ross River floodplain in Townsville
- Stuart Creek and coastal wetlands provide valuable freshwater and estuarine habitat for up to 25 native freshwater fish species
- the new road incorporates a number of bridge and culvert crossings of major waterways and fish movement corridors
- provisions for fish passage have been made at priority road-waterway crossings – the project is scheduled for completion in 2012

CLIENT AND PARTNERS	Queensland Government Department of Main Roads — **Department of Main Roads**	MAUNSELL AECOM
PROJECT OBJECTIVES	• establish priority road-waterway crossings for fish • provide for upstream fish passage at priority sites	• develop mitigation measures for drainage design • retain hydraulic capacity and function of crossings
SCOPE OF WORK	• aquatic fauna connectivity impact assessment: road corridor scale – fish movement corridor / structure	• concept design and evaluation of mitigation options • design of fishway facilities for drainage crossings
CROSSING DESCRIPTION	• options for multi-span bridges and multi-cell box or pipe culverts at major waterway crossings	• floodplain waterways experience flood flows (unidirectional) and tidal flows (bidirectional)
MIGRATION BARRIERS	• potential high velocities in box culvert crossings • velocities, no shelter, shallow flow in pipe culverts	• potential flow concentration / channel simplification at bridge crossings
MITIGATION MEASURES	• bridge crossings adopted at most major crossings for drainage, geotechnical and ecological reasons	• Quad Baffle fishway within (raised-invert) end culvert barrels within multi-barrel pipe culvert
OTHER FEATURES	• access for hydraulic and biological monitoring	• provide for aquatic fauna connectivity at fish movement corridor / road crossings / infrastructure
REFERENCES	• Kapitzke 2008, *Townsville Port Access Road fish passage – road corridor assessment report*	• Kapitzke 2010, *Townsville Port Access Road fish passage – Culvert WP10B design report*





Multi-barrel pipe culvert



Quad Baffle fishway

Fish passage planning and design for small waterway structures

JCU School of Engineering and Physical Sciences provides consulting and R & D services in fish passage planning and design, and development of fishway technology for small waterway structures (e.g. road culverts). Fish passage facilities (e.g. baffles, ramps) are designed to meet multipurpose requirements, overcome hydraulic barriers (e.g. high velocities, water drop), and mitigate connectivity impacts. Scope of services includes catchment prioritisation, corridor scale planning, site design and evaluation, product development.

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