Tully Murray floodplain Bruce Highway culvert fishways

PS04

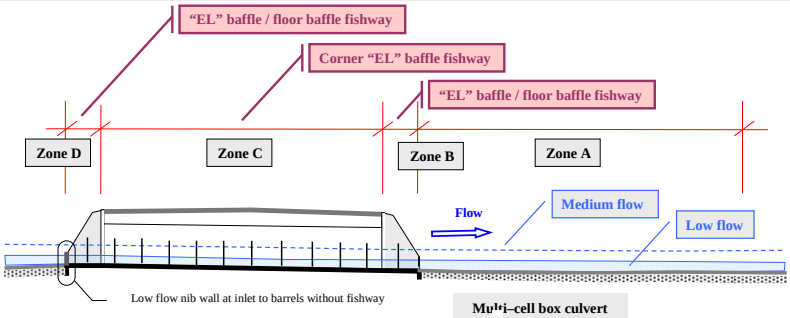
(Photo: Ross Kapitzke 10/11/05)

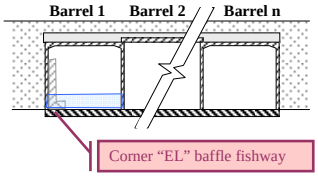
(Photo: Ross Kapitzke 29/09/05)

(Photo: Ross Kapitzke 24/03/06)

- Bruce Highway Corduroy Creek to Tully crosses major waterways on the Tully Murray floodplain in north Queensland
- Tully Murray floodplain and associated wetlands provide high value aquatic habitat for up to 56 native freshwater fish species
- the new highway section incorporates extensive 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 was completed in 2009

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 crossings	• develop mitigation measures for drainage design • maintain hydraulic capacity and crossing function
SCOPE OF WORK	• road corridor assessment of fish passage provisions • fish community and movement design assessment	• concept design and evaluation of mitigation options • design of fishway facilities for drainage crossings
CROSSING DESCRIPTION	• multi-cell 3600 span box culverts 15 m long • multi-cell 2100 span box culverts (existing road)	• box culvert slope 1 in 200 (0.5 %) • upstream and downstream aprons with wingwalls
MIGRATION BARRIERS	• lack of attraction flow for fish at culvert outlet • shallow water depth in barrel and apron at low flow	• high velocity in barrel and aprons at medium flow • regular culvert cross section and lack of rest place
MITIGATION MEASURES	• Zones B, D – corner “EL” / floor baffle fishway • Zone C – corner “EL” baffle fishway	• Zone D – low flow nib wall at no-fishway barrels • Zones B, D – low flow training walls on fishway
OTHER FEATURES	• access for hydraulic and biological monitoring	• corner “Quad” baffle fishway used in 1350 mm diameter pipe culvert farm access crossing
REFERENCES	• Kapitzke 2006, *Bruce Highway Corduroy Creek to Tully fish passage road corridor report*	• Kapitzke 2007, *Bruce Highway Corduroy Creek to Tully fish passage preliminary design report*





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.

CONTACT **Ross Kapitzke,** *Environmental Engineer* **Ph: 0402 316 404**
Web: http://www.jcu.edu.au/fishpassagedesign/ **E:** ross.kapitzke@jcu.edu.au