



New Developments

The Urban Development Boom and Shifting Approvals Goal-Posts

John Thorogood, Managing Principal

Introduction

It's been a long time between drinks for Australia's urban developers, with the 'COVID' uplift in demand for peri-urban and regional housing showing no signs of slowing any time soon.

Savvy developers have been quick to recognise the emergence of a number of new agency interests, including:

- mosquito and biting midge management;
- waterway barrier risk mapping and fish passage;
- the ecology of ALAN; and
- nature-based shoreline restoration.

A failure to respond to these interests with 'deep thinking' can result in delays, increased cost and lost opportunity.

In this update, we highlight areas of practice where **frc environmental** offers industry-leading expertise.

Mosquito and Biting Midge Assessment and Management

Water is essential to the breeding ecology of mosquitoes and biting midge. Climate change has brought the threats posed by mosquitoes and biting midge to the fore.

Since the late 1980's, **frc environmental** has worked with local government and the development and fishing industries, assessing the threats posed by mosquitoes and biting midge on a site-by-site basis, developing practical means of mosquito and midge management, and assessing the environmental impact of mosquito management.

Notably, **frc environmental** has supported the development of mosquito control strategies by Redland City Council for the bay islands (Moreton Bay), and worked with developers including LendLease, Shoreline and Urban Pacific to develop survey-based Biting Insect Management Plans.

frc environmental can show you how to release the value of otherwise undevelopable land through effective mosquito and biting midge management.

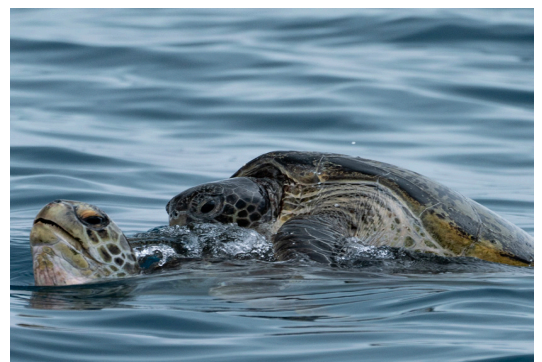


The Ecology of Artificial Light at Night

Artificial light may impact the ecology of fauna in varied ways and at varied life stages. Understanding the ecology of ALAN fundamentally requires an understanding of how a species interacts with their environment.

frc environmental has contributed to the drafting and review of conditions of approval for a number of coastal developments and undertaken lighting risk assessments (turtles, seabirds and migratory waders) for the City of Gold Coast and Port of Gladstone. Senior Principal Ecologist, Dr John Thorogood has served as an expert witness in relation to the potential impacts of direct and indirect lighting on turtle nesting and hatchling behaviour (on behalf of Sunshine Coast Regional Council).

*In collaboration with leading lighting engineers, **frc environmental** offers practical, cost-effective solutions to the threats posed by ALAN.*





Waterway Barrier Mapping and Fish Passage

To protect and manage fish passage and fish habitat in Queensland, waterway barrier works are regulated under both the Fisheries Act 1994 and Planning Act 2016. Constructing and raising waterway barrier works includes upgrading and replacement of culverts.

The accepted development requirements (ADRs) for waterway barriers describe forms of operational works for waterway barriers that don't require a development application. All other waterway barrier works are assessable development and require development approval.

For the purposes of the accepted development requirements, a waterway is tidal, if it is mapped as tidal, or if it has tidal characteristics, such as marine plants (mangroves, seagrasses, marine algae, or salt marsh), marine fauna, salt or brackish water, or tidal ebb and flow, regardless of salinity.

frc environmental has the understanding of fish passage, the State's waterway barrier risk mapping and the ADRs to help you navigate a cost-effective response.

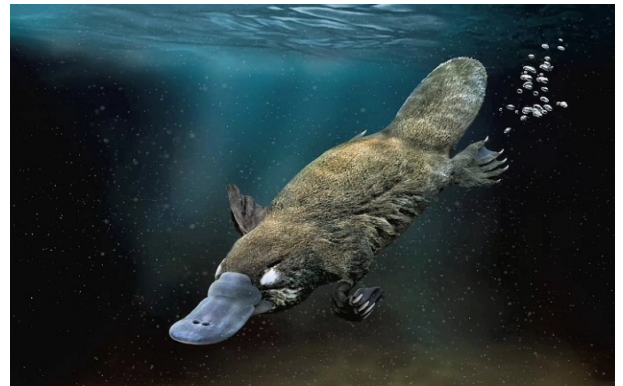


e-DNA

Environmental-DNA or e-DNA is simply DNA collected from a variety of environmental sources (rather than directly from the plant or animal). As fish, turtles, platypus and even mosquitoes swim through the water, they shed biological material – mucus, skin, faeces, etc. DNA is extracted from water samples, 'amplified' and sequenced. To identify which species are present the DNA sequences are compared with a reference database. Whilst a negative outcome is definitive, a positive outcome may only indicate that the particular species was recently there (and may have moved on) or perhaps is upstream of the sample site.

Whilst e-DNA based survey is unlikely to replace nets and traps anytime soon, it provides a highly cost-effective means of preliminary or supplementary survey, particularly where species of conservation significance (often by definition uncommon species) or biosecurity concern are a focus.

frc environmental partners with EnviroDNA to offer this cutting-edge science.



Nature-Based Shoreline Restoration

Examples of poorly planned armouring of the shoreline abound – and rarely stand the test of time. But it's not all bad news. These failing defences and shoreline eye-sores provide the opportunity to 'get it right' using 21st century engineering know-how and an understanding of the shore's ecology.

Responsible shoreline restoration considers not only protecting and restoring the beach, but also the ecosystem below the water's surface – be it seagrass meadows or fringing reef.

frc environmental partners with Queensland's leading coastal engineers to deliver 'turn-key solutions that readily gain agency approval, protect public and private assets and restore natural ecosystems.

