

Management of freshwater habitats in Queensland

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Queensland issues

Queensland is faced with a number of issues and challenges with respect to the protection, rehabilitation and management of freshwater aquatic resources. These include limited funding resources, and lack of baseline research data, as well as the large number of players involved with the management of the freshwater habitat and the need to coordinate the array of legislative and non-legislative management tools available. The great difficulty with freshwater habitat management has always been ensuring co-ordination among agencies, local government, private landholders and other key players in their development and management activities and aspirations.

Queensland activities

Protection and management of water flows

As part of the *Water Act 2000* the Department of Natural Resources, Mines and Energy (NRM&E) are developing Water Resource Plans (WRPs) for all Queensland regions. These represent the first legal provision for addressing the importance of adequate water flows for maintaining the health of freshwater ecosystems. A WRP recognises the environmental, social and economic requirements of a catchment.

Protection and management of water quality

Management of water quality in Queensland has been undertaken largely through a process of regulation and planning, and monitoring, evaluation and assessment, carried out by government and non-government bodies.

The *Environmental Protection Act 1994*, administered by the Environmental Protection Agency, is one of the principal mechanisms by which water quality is assessed and regulated in Queensland. Through this legislation,

- 'environmentally relevant activities' are identified and assessed.
- a 'duty of care' is placed upon individuals and organisations not to undertake or conduct activities that will result in harm or damage to the environment.
- voluntary Codes of Practice and compliance have been developed for industries as a method of addressing the environmental 'duty of care'.

The *Environmental Protection (Water) Policy 1997* provides for:

- management of local government wastewater and stormwater discharges;
- identification of Environmental Values and the setting of water quality objectives. Environmental Values are being developed in line with the Queensland Environmental Protection Policy (Water), the COAG water reform, and the National Water Quality Management Strategy, and are designed to involve community and local government in the determination and prioritisation of water resource management issues.

In Queensland, NRM & E administers the National Action Plan for Salinity and Water Quality, in association with other government agencies. The Fitzroy, Mary-Burnett, Burdekin, Lockyer-Bremer-Upper Brisbane, Condamine-Balonne-Maranoa-Moonie-Border Rivers have been identified as key areas and catchments where salinity and water quality pollution were high priority issues. Affected regions will develop integrated catchment and regional management plans to reach targets for salinity, water quality and water flows based on a national framework for natural resource management standards. This Action Plan is advisory, with no statutory force, and is given effect through various Acts and policies.

Gaps in water quality management

The Water Act 2000 does not specifically address downstream water quality impacts of expanded water allocation and associated developments. Currently no statewide program exists for the routine monitoring of the presence and abundance of pesticides or other chemical components in Queensland.

Protection and management of riparian habitat

NRM&E is responsible for administering the Water Act 2000, the principal legislation protecting the integrity of non-tidal water bodies and riparian environments of state-owned and privately owned lands. Under this Act, any disturbances or activities (including excavation, dredging and vegetation clearance) detrimental to the integrity of the bed or banks, or water quality of a waterway or waterbody, must be assessed to determine the potential impact on the riverine habitat. Queensland is one of the few states to consider the effects of cumulative impacts in their assessments.

The Water Act 2000 also includes a Code for Stock and Domestic Water Supply. According to amendments in the Water Act 2000, water uptake from a riparian water course for the purposes of stock watering and domestic use does not require an application for a permit, and is considered self-assessable under the Code for the Development of Riparian Water Access Works on a Watercourse, Lake or Spring. This latter code is designed to ensure that waterworks (i) are constructed with minimal damage to the banks of beds of a watercourse; (ii) are constructed with minimal damage to riparian vegetation (native vegetation can only be removed with approval of NRM&E); and (iii) are constructed to minimise their impact on flood conditions. One requirement is that the site is returned to a condition similar to that before construction. Any damage to bank or waterway beds has to be repaired.

The *Vegetation Management Act 1999* provides: (i) legislative controls for the protection of vegetation on freehold land, including areas of high conservation value and areas vulnerable to land degradation; (ii) regulations for the preservation of remnant endangered ecosystems. Clearing activities on freehold land are also

controlled under this Act to protect against land degradation, maintain or increase biodiversity, protect the integrity of ecological processes, and also allow for the ecological and sustainable use of land resources.

The *Land Act 1994* provides regulations for vegetation management on leasehold and other State land including the control of tree clearing in critical and endangered habitats (riparian habitat included), as well as addressing the clearance of regrowth and non-native vegetation.

In terms of the management of freshwater habitat, the Land Act and Vegetation Management Act both provide for protection against tree clearance in the riparian zone (with respect to the requirements of the Broad-scale Tree Clearing Policy for State Lands and the State Policy for Vegetation Management on Freehold Land). Riparian vegetation is considered important in order to provide a buffer zone to protect the watercourse from adjoining land-based activities. The functional width of this zone will depend upon the physical attributes of the watercourse (size, depth, flow) and the buffering requirements, in terms of the type and intensity of adjoining land use or activities.

The *Land Protection (Pest and Stock Route Management) Act 2002* includes provisions for owner responsibility to ensure that riparian zones are kept free of certain classes of weeds.

Department of Primary Industries and Fisheries (DPI&F)

The *Fisheries Act 1994* and *Fisheries Regulations 1995* include legislation for:

- declaration and management of Fish Habitat Areas in both marine and freshwater habitat, to protect habitat and resources important to fish. (As yet no Fish Habitat Areas have been established for the protection of freshwater environments.)
- restoration of damaged and destroyed habitats, where the quality or integrity of the fish habitat has been adversely impacted, or the value of the fishery has been compromised. Restoration notices may be issued.
- *Fisheries Act 1994* also incorporates a buffer zone policy, which provides advice and guidelines on the establishment of appropriate and effective riparian buffer zones.



Environmental Protection Agency (EPA)

The *Nature Conservation Act 1992* provides protection and management of Queensland's native flora and fauna, through the implementation of recovery plans, species conservation plans and voluntary conservation plans. Under this Act, riparian vegetation is recognised as providing an important habitat for the life-cycles of many native flora and fauna species.

The Environmental Protection Act 1994 is the main legislation protecting Queensland's environmental values. It addresses environmentally relevant activities, i.e. those activities that could impact on the health of the environment (including the riparian habitat).

The Environmental Protection (Water) Policy 1997 forms part of the Environmental Protection Act 1994 and establishes a framework for the protection of the environmental values of waterways, including protection of the riparian zone.

The Department of Communication, Information, Local Government, Planning and Sport (DCILGPS) administers the *Integrated Planning Act 1977*, which is the principal legislation used by Queensland's local governments for land use planning. This Act identifies riparian buffer zones as 'valuable features' and enables local government to control development by declaring and imposing constraints on harmful activities. As development can include the subdivision of land, riparian zones are potentially impacted.

Gaps in vegetation management

Neither the Land Act nor Vegetation Management Act includes regulations or controls on the clearance of native grasses, or comprehensive controls on regrowth, with the result that such vegetation in the riparian zone may be cleared without the need for a permit. In addition, neither the Vegetation Management Act or Land Act addresses the need for grazing controls to protect the integrity of the riparian vegetation.

Vegetation management reforms

The main initiatives occurring in the management of vegetation in Queensland include the development of Vegetation Management Plans addressing the management of vegetation and providing policies on tree clearing for State and freehold land. Regional Vegetation Management Plans have also been established under the Vegetation Management Act 1999, identifying the regional needs of ecosystems. Codes of practice are also being developed to control clearing activities

In March 2004, the *Vegetation Management Act and Other Legislation Amendment Bill 2004* was introduced. This combines the Land Act 1994 and the Vegetation Management Act 1999 in one piece of legislation to phase out broad-scale clearing of Queensland's remnant vegetation by December 2006.

Protection and management of fish passage

DPI&F performs a number of roles to maintain and improve fish passage through a waterway. The *DPI Fisheries Act 1994* and *Fisheries Regulation 1995* include the provision of legislation and technical advice for development proposals, which could potentially impact on fish habitat, e.g. dams and weirs, aquaculture and mining activities.

Approval for waterway barriers is required for any barrier (including the building of modifications to dams, weirs) across a waterway (any watercourse including a river, creek, stream). DPI&F are also developing self-assessable codes (currently in draft form) for the construction or raising of waterway-barrier works.

Fishways

A State-funded program has succeeded in the retrofitting of fishways to 12 major structures in Queensland waters. Funding for this program ceased in 2001.

DPI&F provides guidelines for the passage of fish in streams, the development of fish passage strategies, and the implementation of waterway-barrier works, and there is provision in its fisheries legislation for fishways. DPI&F is also involved in monitoring the effectiveness of established fishways, and researching the improvement of fishway design, e.g. the design of vertical-slot fishways.

Under the new amalgamated *Integrated Planning Act 1997/Fisheries Act 1994* the provision of a fishway is a mandatory requirement for any waterway barrier constructed in Queensland. Fishway exemptions may be granted where fish passage can be demonstrated to be either not environmentally significant, or 'not desirable for the best management, use, development or protection of fisheries resources or fish habitat', such as in the event of a lack of fish habitat upstream of the proposed waterway barrier, or where construction is occurring in the vicinity of a natural barrier (e.g. a waterfall) where fish movement or migration is prevented.

Gaps in management of connectivity for fish in Queensland

In-stream research of the effectiveness of constructed fishways post-construction is conducted; however, laboratory modelling of fishway hydraulics and design prior to installation is an area that would potentially provide greater insight and success in the assistance of future fish passage.

Additional research on migratory fish behaviour and life cycles is still required to provide essential information to form the basis of future fishway design. This research will all depend on the allocation of significant resources and funding by federal and State fisheries organisations.

Another action that could be considered to improve fish passage is the removal of redundant weirs or other barriers to fish movement. This is being considered by other States but requires a full environmental assessment of in-stream conditions and careful removal, due to the accumulation of silt upstream of the barrier.

The future for Queensland's freshwater habitats

The *Native Fish Strategy for the Murray-Darling Basin (2003–2013)* has been launched, and a Native Fish Strategy Coordinator has recently been appointed to address the condition of freshwater fish habitat within the Queensland region of the Murray-Darling Basin. This Initiative involves a cooperative arrangement between government, Catchment Management Associations, natural resource management organisations and the community. The overall goal of the Strategy is to rehabilitate native fish communities in the Murray-Darling Basin back to 60 per cent of their estimated pre-settlement levels, through habitat rehabilitation projects, management of pest fish and the establishment of demonstration reaches.

DPI Freshwater Fisheries is in the process of developing a Strategy for the Management of Freshwater Fisheries and Aquatic Habitats in Queensland. This addresses the need for a clear Habitat Framework under which Queensland's freshwater fish habitats are managed, recognising the broad scale of issues (from a State and regional perspective), key players and management tools and options in freshwater habitat management.

Through the identification of key State and regional threats to aquatic freshwater habitat, and the identification of management and information gaps, Queensland Freshwater Fisheries will be able to clarify its roles and responsibilities in addressing these gaps, either as a lead agency or through coordination and facilitation with other involved agencies, organisations or community representatives. Subsequently, a Fisheries Action and Implementation plan will be developed which will focus on the sorts of actions that are possible for Fisheries to implement, given the budget and staffing constraints.

