



## Queensland Murray-Darling Committee Inc. Submission on the *Proposed Basin Plan* (2011)

16 April 2012

### Submission to:

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This submission is presented by the Chief Executive Officer, Geoff Penton, on behalf of the Queensland Murray-Darling Committee Inc. (QMDC). QMDC is a regional natural resource management (NRM) group that supports communities in the Queensland Murray-Darling Basin (QMDB) to sustainably manage their natural resources.

### 1.0 Background

QMDC'S core business enables the organisation to work within diverse catchments and across all land tenures. QMDC is assisting changes to water management practices in the QMDB; we are contributing key service abilities to fill knowledge gap, whilst advocating for NRM policy and legislative improvement at regional, state, national levels. This assistance involves facilitating both greater access to, scientific and technical information; and to wider social networks for rural and regional communities, including businesses and industry.

QMDC has made submissions and deputations to both the Australian and Queensland Governments seeking improvement to legislation, policies, and planning to both, prevent or manage impacts on the water resources in the catchments of the QMDB. These submissions and deputations have raised issues integral to regional governance, community engagement, water use efficiency, water resource planning, the protection of watercourses and aquatic ecosystems, CSG water management, and floodplain management, for example:

- **The Environmental Protection and Biodiversity Conservation Amendment (Protecting Australia's Water Resources) Bill 2011**
- **Temporary State Planning Policy 2/11 Planning for stronger, more resilient floodplains - September 2011**

MDBWP

Submission



Funded by:





- **The Guideline for Underground Water Impact Reports and Final Reports**
- **Climate Change: Adaptation for Queensland Issues Paper**
- **The Inquiry into management of the Murray Darling Basin – impact of mining coal seam gas;**
- **Feedback on the Queensland Murray Darling Authority’s Position paper on localism;**
- **The *Guide to the proposed Basin Plan 2010***
- **Water and Other Legislation Amendment (WOLA) 2010 Bill**
- **Water and Other Legislation Amendment (WOLA) 2010 Exposure Draft Bill**
- **The Basin Plan: A concept statement July 2009**
  
- **Development of Sustainable Diversion Limits for the Murray-Darling Basin Issues Paper November 2009**

QMDC welcomes the opportunity to submit feedback on the *Proposed Basin Plan*. We would also like to be able to add more to this submission at a later date should it be necessary to qualify statements with more current information both of a technical and socio-economic nature. QMDC recognises the intent of the *Proposed Basin Plan* and believes it shares QMDC’s vision to work towards the equitable, efficient and sustainable use of water, land and other environmental resources of the QMDB.

## **2.0 Key Issues**

The following are key issues for consideration in the development of the *Proposed Basin Plan*:

### **2.1 Alignment with regional planning**

QMDC recommended in all its submissions on the above listed policies, Bills etc. the need for planning processes that empower communities in the QMDB to sustainably manage their natural resources. Regional planning instruments, such as the Regional Natural Resource Management Plan, Maranoa-Balonne Regional Plan, Surat Basin Regional Planning Framework, Local government Community Plans etc. have either referred to or documented communities’ visions and objectives for NRM.

QMDC asserts that in order to fulfil the purpose of section 10 of the *Water Act 2000* “to advance sustainable management and efficient use of water and other resources by establishing a system for the planning, allocation and use of water” the *Proposed Basin Plan* must be consistent with already identifiable community regional planning objectives and targets, for example, developing environmental value and water quality guidelines for both surface and groundwater. Many of these have been considered within the current and future climates of socio-economic and environmental challenges facing the natural resources of the region and those communities that currently depend on or may in the future depend on the natural resources in the region. QMDC reiterates that regional NRM targets would add to the *Proposed Basin Plan*’s integrity as a tool to protect the Basin water resources.

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## 2.2 Sub-catchment planning

QMDC has invested much of its time and efforts to improve catchment health, water quality and soil condition. Sub-Catchment Planning (SCP) achieves landscape level practice change and, through this process, landholders have identified the need to protect the region's water resources.

SCP supports groups of landholders working together to identify NRM issues and implement local solutions. Throughout the QMDB, SCP provides opportunities for people to share ideas, gather information, support one another through difficult times, and (most importantly) tackle water resource issues in a coordinated way.

Supporting SCP and other landscape planning initiatives are a major part of QMDC's business; a primary means of engaging land managers and delivering national, state and regional NRM priorities. In conjunction with Landcare Coordinators throughout the region, QMDC provides technical and financial support to landholders as part of the SCP delivery model. SCP delivers on-ground results through collaborative landholder engagement. Across the QMDB, landholders have been working with QMDC to develop NRM solutions since 2004. Works done from 2007 to 2009 complemented previous soil conservation works resulting in subcatchment scale runoff management plans.

One example illustrating the benefits of SCP is the successful coordination by QMDC and Waggamba Landcare, working with landholders in the Talwood SCP Group, about 80km northwest of Goondiwindi in the Back Creek and Upper Boogera subcatchments. This partnership between QMDC and Waggamba Landcare has led to the completion of soil conservation plans in these subcatchments. These plans focused on the design and construction of contours and waterways to manage runoff and mobilised sediment across entire subcatchments.

Soil conservation works are targeted as priority activities by many SCP groups. Soil conservation reduces the amount of sediment and adsorbed pollutants that reach streams and other wetlands in the receiving catchment. Stream sediment loads are associated with diminished aquatic ecological function.

Without contour banks, hundreds of thousands of tonnes of eroded material could reach stream networks, resulting in poor water quality (turbidity), diminished native fish habitat and reduced stream carrying capacity. The results of the work by the Talwood SCP Group have therefore been extremely positive. QMDC asserts that model estimates indicate contour banks will trap about 150,000 tonnes per year of sediments previously delivered to watercourses in the Weir and Moonie river catchments.

Although flooding events in 2011 and this year have had a major impact on SCP groups and the implementation of on ground works in the QMDB, the above examples of works completed by landholders highlight how SCP enables successful effective engagement in relation to water resources.

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For more detail see <http://www.ewater.com.au/h2othinking/?q=2010/08/soil-conservation-benefits-stream-health>

The value of the SCP approach to NRM is outlined in the *Performance Story Report: The contribution of NRM investment in Sub-Catchment Planning in the QMDC Maranoa-Balonne region towards regional level water quality outcomes* prepared in 2008.

As part of the evaluation process, it was discovered most land managers involved in SCP had either already changed or would shortly change their NRM practices due to their involvement in their sub-catchment planning group. In fact, on average, the land managers recorded six practice changes with regard to improved property management for soil condition, vegetation and riparian outcomes because of their involvement with SCP.

Significantly, while financial incentives were found to be an important reason for becoming involved, feedback from the land managers also suggested group interaction, involvement with Landcare groups and training were also important.

Additionally, attitude change also occurred. The most significant attitude changes related to management practices including approaches to decision making, awareness of the links between productivity and environmental benefits and understanding impacts of management actions. World view attitude changes included broadened outlooks, appreciation of role in larger landscape, reduced feeling of isolation (not alone with problems) and taking on a longer term view.

QMDC recognises that the water resources of a catchment are a direct product of the land use and management of the catchment and not just an in-stream function. The *Proposed Basin Plan* therefore needs to embrace the aspirations of landscape planning and Landcare groups in the QMDB in an effort to address whole catchment effects on water resources. Making water available for aquatic environments does not necessarily mean an environmental outcome is achieved.

Other catchment health issues such as barriers to fish migration, water quality, timing of flows, water weeds, pest fish and degradation of riparian areas can diminish the intent of the environmental water being provided. QMDC submits that these issues are identified in SCP and need to be considered in determining water for environmental values. Provisions in the *Proposed Basin Plan* must be provided to enhance the effectiveness of environmental flows in a holistic way.

### **2.3 Sustainable management and migration of aquatic fauna**

QMDC continues to recommend consideration of sustainable management strategies within the *Proposed Basin Plan*, such as removal of road/track infrastructure or the installation of fish ladders. An emphasis in ecosystem management and sustainable design solutions for road and waterway infrastructure would further regional and national commitment to sustainable planning and design for migration of aquatic, terrestrial and arboreal fauna.

Queensland's Department of Primary Industries and Fisheries assessment of the barriers to native fish movement/breeding found that certain structures, some redundant, have an impact on river health.

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Migration of fish and other aquatic fauna is often obstructed at these structures by adverse hydraulic conditions such as high velocities, water surface drops and shallow water depth.

*The Culvert Fishway Planning and Design Guidelines (the Fishway Guidelines)*, which have been supported by the Queensland Department of Transport and Main Roads, are, for example, an important step toward improving aquatic fauna connectivity at road culverts and other waterway structures in the QMDB.

The suitability of culvert fishway facilities in meeting fish passage and other multipurpose design requirements are being demonstrated for many waterway types and structure configurations, and particularly for retrofit facilities. The *Proposed Basin Plan* should therefore play an essential role to enable and support natural resource managers, landholders, environmental scientists and design engineers to increase their interest in aquatic fauna connectivity and take account of fish passage requirements at road crossings and other waterway structures.

Integrated policy, planning and legislation must face the challenge of how best to incorporate fish passage provisions with other multipurpose design requirements relating to transport, drainage function, amenity and environmental values. QMDC believes the *Proposed Basin Plan* serve as a tool to educate and inform design practitioners and managers so they - integrate fish passage planning and design within development project activities; apply mitigation measures that are appropriate to provide for fish passage in particular situations; and monitor how these measures are performing over time.

The *Proposed Basin Plan* by addressing aquatic fauna connectivity aspirations and requirements for road and waterway projects presents a framework for incorporating science into planning and design protocols for these projects. Design solutions could then be conceptualised for local and regional QMDB conditions, which are different in many respects. Depending on aquatic habitat and fish movement corridor values and other site characteristics, use of culvert fishways may for example, preclude the need to adopt over-conservative and unnecessarily expensive designs using bridges.

In QMDC's opinion, the *Proposed Basin Plan* could strengthen both the implementation of the *Fishway Guidelines* but also encourage innovative solutions to address aquatic fauna connectivity barriers based on sound scientific and technical theory and the practical application of hydraulic and ecological principles.

QMDC believes that the Narran Fish Passage Project provides important local knowledge to ecosystem management within the *Proposed Basin Plan*. This project has been progressed by QMDC considerably during the July to November 2011 period, with the following activities completed during this period:

- NSW Department of Primary Industries contracted to remove the two priority barriers identified by the Steering Committee.
- Barrier 1 (Bil Bil Weir) offsets have been identified, negotiated and accepted by the structure owner. State government approvals and construction are now only subject to recession of flood flows for geomorphological assessments and works.
- Fisheries Queensland (DEEDI) has been contracted to undertake surveys and conceptual designs for barriers in the Queensland section of the Narran River.

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- Fisheries Queensland (DEEDI) has undertaken surveys for barriers in the Queensland section of the Narran River.
- Fisheries Queensland (DEEDI), supported by the QMDC Aboriginal Rangers program have undertaken indicative fish population surveys at barrier sites to enhance desktop reviews of fish populations and population dynamics in the Narran River.

QMDC identified the following immediate outcomes from project activities:

- Contracts current for removal of two barriers.
- Contract current for conceptual designs of Queensland section of the Narran River.
- Traditional Owner involvement enabled indicative fish survey in addition to other works in the Queensland section of the Narran River. This was through the Working on Country Commonwealth funded QMDC Aboriginal Rangers program. Involvement of QMDC Aboriginal Rangers enhanced the project due to local knowledge, technical knowledge and enhanced onsite capacity which allowed simultaneous barrier surveys, indicative fish population surveys and some Carp trapping.

Lessons learned from the Project include:

- The ongoing floods in the Narran River have limited public engagement in the project. Consequently, project activities have not yet been given a high public profile.
- Ongoing floods are also hampering final approval of works for removal of Bil Bil Weir.
- Negotiations with the owner of Bil Bil Weir were complex and protracted and the negotiation process resulted in the owner requiring extra funds to secure the agreement. A commitment of additional funds was secured from the Western CMA to meet the cost of additional offset infrastructure (adding to the cash contributions to the project from other stakeholders).
- Preliminary observations highlight the very high proportion of the fish population represented by Carp. This has led to increased efforts to introduce Carp management activities in the Narran River through the Aboriginal Ranger program and ongoing funding applications.
- Involvement of the Aboriginal Rangers added greater value to the total knowledge base on native fish movement and the Narran River.

QMDC asserts that encapsulating the above outcomes and lessons within the *Proposed Basin Plan* provides it with integrity, namely that it is: consistent with already identifiable community regional planning objectives and targets; it is committed to improve catchment health; and it clearly identifies the need to protect the region's water resources by way of environmental values and provisions that enhance the effectiveness of environmental flows in a holistic way.

## 2.4 Flow regimes

QMDC submits that the Basin Plan needs to consider further the Plan's objectives when water is abundant. The Authority would be well aware that the northern Basin Rivers when in flood have the capacity to generate a lot of water. Whilst QMDC supports the need for most of the consideration in the planning process to focus on how to manage a scarce resource, consideration should be given to whether or not the same 'rules' or a modified set of 'rules' apply in times of flood. Queensland has adopted a flow event management system in the Condamine-Balonne that is relevant for such conditions.

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In the Border Rivers Catchment stream flow changes through buy-back are unlikely to significantly improve existing environmental values and the functionality of this river system as evidenced by the moderate rating provided in the *Proposed Basin Plan*. The current condition of the Border Rivers system is reasonably sound even with the current level of development and emphasis should be given to complimentary measures such as carp removal.

## 2.5 Responsive landscape management for salinity

Salinity remains a key risk to the northern Murray-Darling Basin, therefore the long term planning for management and prevention of this salinity is critical aspect of the *Proposed Basin Plan* in order to prevent increased in-stream salt levels in the future. QMDC supports the Authority's commitment to test for salinity in the Basin.

QMDC asserts that the results of such testing, if analysed in conjunction with Biggs AJW, Watling KM, Cupples N and Minehan K (2010). *Salinity Risk Assessment for the Queensland Murray-Darling Region*. Queensland Department of Environment and Resource Management, Toowoomba (the *Salinity Risk Report*) will provide invaluable information to assist landholders in prioritising investment with regards to salinity in their region.

The *Salinity Risk Report* has already identified salinity risk areas and responsive landscape management strategies. It provides a better informed future of salinity in the region; and has developed extension materials. The *Salinity Risk Report* provides the *Proposed Basin Plan* the foundations for determining both the inherent salinity hazard in a landscape, and the effects of past, present and future land management practices. Equipped with this information about where salinity currently is, and where it may occur in the future, allows the *Proposed Basin Plan* to promote management options to both prevent, and remediate, salinity. QMDC asserts the emphasis of the *Proposed Basin Plan* should always be on management to prevent future salinity and to apply regional scale data to inform water use decisions.

## 2.6 River Health Monitoring

QMDC submits that there is a need for an effective river health monitoring system. The *Proposed Basin Plan* needs to put in place a monitoring program that can confidently demonstrate, or otherwise, if the environmental objectives are being met. Familiarity with and a better comprehension of the technical data and methodology used by the Authority to inform the *Proposed Basin Plan* are likely to shed some light in this area. QMDC identifies this as an area where we seek the opportunity to make further submissions on.

QMDC submits that the *Proposed Basin Plan* needs to provide certainty that appropriate and adequate data will be collected to assist a comprehensive review of the *Proposed Basin Plan* in the future.

## 2.7 Water Use Efficiency

QMDC submits that water use efficiency (WUE) should be the primary and first option for achieving a reduction in consumptive use of water. WUE measures have multiple benefits including reducing salinity risk and increased production efficiency.

A long term investment program is required to enable large scale rural water use efficiency in the QMDB. Significant improvement in irrigation infrastructure effectiveness by way of adoption of best management practices within the region could realise hundreds of GL of water savings.

To achieve significant large scale outcomes and significant water savings to be returned to the river, large scale on ground projects need to be implemented. QMDC estimates that by implementing on-ground water use efficiency projects across the QMDB with over 120 landholders on 60,000 Ha the following could be achieved:

- Rural water savings of up to 200 GL
- Enhanced food production through applying best management practice
- Environmental initiatives applied to achieve river health outcomes
- Increased environmental flows for downstream river benefits
- Sustained rural communities
- Reduced salinity risk in priority areas (BRS Lower Balonne AEM project and salinity river basin audits)
- Adaption to and mitigation of climate change effects.

Increases in environmental flows will result from reallocation of savings and reduced extraction demand through adoption of practice change and infrastructure improvements, and allocation adjustments. Water extraction will reduce through infrastructure investment returning 200 GL back to the environment.

QMDC suggests a flexible range of investment for achieving traded water to the environment from 60% to 80% public investment for up to 50% of the saved water is also needed. This sort of investment would be best served by separating the roles between regulator and allocation administrator and voluntary incentive manager.

The application of solar technology, energy savings and adoption of continual improvements in production systems will increase the region's capacity in rural areas to manage climate change.

Water use efficiency outputs returned as environmental flows will contribute to an improved river health outcome. The increased environmental flows will be made effective with in-stream activities, such as off stream watering systems. Changes in land use practices will result in aquatic ecosystems being protected from threats such as salinity, sedimentation, contaminant loading, and aquatic weeds.

The program's intrinsic results would not just be water savings – it is a continuation of food production and land management by landholders, all aimed at improving river health ensuring the viability of rural communities.

Integrating research dedicated to the types of cropping and produce that may be geographically better suited to different regions within the QMDB could be considered by the Authority. Subsequent research outcomes followed up by studies on the feasibility and adaptive uptake of such productivity frameworks are likely to better inform current available science incorporated in the *Proposed Basin Plan*.

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Across the QMDB region many positive developments and adaptations in WUE (and quality) undertaken by landholders and industry, have emerged such as:

- Research and development of best management practices within industry groups;
- Riparian and river management guidelines produced, with on-ground works in cropping areas and grazing areas, such as tail-water retention and off stream;
- Stock-watering, creation of healthy buffer zones;
- Irrigation management, actions to reduce seepage from water storages and improve water use efficiency; and
- Significant reductions in chemical use, and minimisation of pesticides occurring in rivers.

## 2.8 Impacts of Mining and Energy

QMDC submits it is crucial that the *Proposed Basin Plan* must address the current and future impacts of mining and energy developments on surface and groundwater resources in the QMDB.

QMDC has made numerous submissions to relevant government agencies on draft TOR, EIS, EA applications and proposed CSG water management policies and procedures seeking the development of best practices for the CSG industry.

QMDC's has therefore been actively working over the last 3 1/2 years with DERM and the CSG industry to reach agreement on future actions needed so that CSG mining activities and associated infrastructure will avoid adverse impacts whether site specific or cumulative on surface water, aquatic ecosystems, groundwater, springs and groundwater dependent ecosystems. These natural assets are identified by the Regional NRM Plan as being at risk to the impacts caused by CSG mining activities.

QMDC supported the relocation and expansion of the existing regulatory framework for managing the groundwater impacts of the petroleum industry from the *Petroleum Act 1923* and *Petroleum & Gas (Production and Safety) Act 2004* (Petroleum Legislation) into the *Water Act 2000* (Water Act).

QMDC however still believes mechanisms by which the currently amended Water legislation attempts to deliver on the commitment in the LNG Blueprint to protect groundwater resources are both commendable and inherently flawed.

QMDC continues to assert that legislation that allows a petroleum tenure holder's right to take unlimited groundwater should be amended. Any use or extraction of groundwater must be managed to not only protect bore owners and natural spring ecosystems which are comparatively vulnerable in these circumstances but also to protect the QMDB, and the Great Artesian Basin (GAB). The tenet that water is consequential to the extraction of petroleum or gas allows for unsustainable practices that should not be perpetuated in light of this region's current state of environment. The conductivity between large scale groundwater extraction and surface water flows should not be overlooked.

QMDC asserts that the *Proposed Basin Plan* should promote and encourage sustainable use of QMDB and GAB water and ensure that practices relating to the exercise of water “rights” by CSG and petroleum projects will ensure high-quality stewardship of QMDB and GAB resources; minimise disturbances to those resources; and protect those resources for future human and environmental purposes.

## 2.9 Social and economic impacts and Sustainable Diversion Limits

QMDC in its previous 2009 and 2010 submissions submitted that the *Proposed Basin Plan* has “the potential to have significant social and economic impacts (along with environmental)” and that it was “critical that a full and proper assessment of potential impacts is undertaken during the planning process”.

QMDC supported the importance the *Guide* placed on a balanced and long term approach to sustainability of not only the environment, but also the social and economic foundations of the region. Sustainable Diversion Limits (SDL's) are a key component to achieving this balance. However what is obvious to QMDC is that what is deemed “sustainable” is fraught with conflicting views.

QMDC believes assessing SDL's within the context of local and regional circumstances taking into account associated scientific including social science research data will help the *Proposed Basin Plan* reach a balance. Indeed the science behind the SDLs derived by CSIRO has not been ratified at regional or local scales. The lack of balance is still being expressed through a very public display of lack of support for the *Proposed Basin Plan* and its triple bottom line outcomes by community members and industry representatives.

It is crucial that regional scale evidence be provided to catchment communities so as to inform these communities of the basis for change in extractions. This is particularly relevant to the Borders Rivers Catchment as the current condition of its water resources are considered to be sound. Consideration should be given to other options such as the application of water use efficiency measures and carp removal activities.

## 2.10 Voluntary Buybacks

QMDC is concerned that the voluntary buyback scheme currently proposed by the Authority is not based on WUE and best available science and will therefore not produce the best outcome for rivers and communities.

If the voluntary buybacks are not able to achieve such an aim - is there some other form of acquisition that is needed for the quantity of water needed? QMDC submits that any buyback scheme the Authority promotes should be based on a methodology that is strategically planned and not some scheme that merely focuses on random pockets of water along the rivers.

QMDC asserts that the high conservation value of riverine and adjacent wetlands downstream of St George (Beardmore Dam) need to be highlighted in the *Proposed Basin Plan*. Of these, the Balonne, Balonne-Minor and Narran Rivers (the main stream downstream of St George and the Eastern most streams after the bifurcations) will all carry any Environmental Water destined for the Narran Lakes.

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In valley aquatic ecosystem associated works will increase the potential benefits of water delivered to the Narran Lakes for migratory birds. In particular, building on the Narran Fish Passage CfoC project and CfoC funded weed and Carp management work plus support for enhanced stock management is likely to provide as much in valley benefit as further buyback purchases. (T:\Water\QMDB\_ACA\Maps – file QMDB\_ACA\_LandcareRegions\_WarrooBalonne)

## 2.11 Community consultation

The successful ownership of the *Proposed Basin Plan* requires a robust community consultation process to achieve several outcomes:

- A strong sense of community/industry engagement in whatever the outcomes for the Basin Plan are.
- The development of a Plan that meets a wide range of community expectations.
- An opportunity to participate for a wide range of interests.
- Assurances that the Basin Plan initiative is being integrated with other regional, state and national NRM programs to maximise cost benefit ratios.

A commitment to localism and consultation is essential for effective acceptance by regional communities.

## 2.12 Aboriginal values

Attempts by the Authority to incorporate Aboriginal interests in the *Proposed Basin Plan* are supported by QMDC. QMDC raised in previous submissions the need to incorporate cultural aspirations for the MDB. The integrity of the *Proposed Basin Plan* requires an active commitment by the Authority to ensure cultural identity and heritage is respected and honoured. The Proposed Basin Plan however in order to avoid a tokenistic approach to Aboriginal interests must articulate an informed position on: the traditional and contemporary connection the Aboriginal people have with the rivers, wetlands, springs and other water sources of the MDB; the impact of colonisation on those connections; and the roles and responsibilities, Aboriginal communities have in relation to ensure the physical and spiritual health and wellbeing of the MDB, today and in the future.

Australian Government initiatives relating to Aboriginal interests in water and wetland systems have provided in the QMDB:

- Administrative support for the *Regional Caring for Country Plan* development
- Administrative support for the Regional Aboriginal Advisory Group through Caring For our Country (CfoC)
- The establishment of an Aboriginal Rangers Program and its ongoing support (Working on Country)
- Aboriginal Rangers participation in the QMDC community water quality and river health monitoring (CfoC funded) program
- Aboriginal Rangers participation in the QMDC Carp management pilot projects
- Aboriginal Peoples' representation on the Narran Fish Passage (CfoC) Project

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QMDC believes that the Authority must address further how it will engage Aboriginal communities to contribute to the development of the *Proposed Basin Plan*.

Some areas of concern for QMDC are:

- An apparent disconnect between the Authority and other programs relating to water and wetland health – for example, there is no integration between flow management and barriers or pest fish, and, the *Proposed Basin Plan* seeks to increase the frequency of inundation of some wetlands but nothing done about the accelerated draining of the same waterholes due to stock and domestic water use (see Police Lagoon conceptual model)
- A constant reference to priority sites. To Aboriginal People the river (and adjacent non-riverine wetlands) is a whole, making it difficult to break it up into site specific sections and then apply different ecological values to particular wetlands or river sections (other than specific sites with known historic significance).
- Cultural flows concept is ambiguous and limiting.
- Limits on the capacity of Aboriginal communities to contribute to the *Proposed Basin Plan* development due to a mono-cultural stakeholder engagement process which is a combination of quick fire public meetings and large complicated documents. Supporting culturally appropriate engagement methods will facilitate greater involvement and build relationships with other key stakeholders and representative groups
- No recognition of history of effort in Aboriginal People's interests in water and wetlands such as in the Regional NRM Plan and the *Regional Caring for Country Plan*

QMDC recommends extending the consultation period to facilitate Aboriginal engagement and participation such as the Regional Aboriginal Advisory Group. It will allow time to consider how the *Regional Caring for Country Plan* and other key Aboriginal planning instruments and or cultural aspirations, strategies and actions can be incorporated into the *Proposed Basin Plan*. This action alone will illustrate that the Authority is serious about its commitment to Aboriginal interests in MDB and will further the opportunity to promote integrated aquatic ecosystem management within the *Proposed Basin Plan*.

### 2.13 Best Available Science

QMDC continues to state our expectation is that the *Proposed Basin Plan* makes use of best available science and information to determine SDL's for the environment and to do so with the best available information from, for example, Aquatic Conservation Assessment (ACA) data, water monitoring, impact assessments on communities and their economy. The Authority has already recognised that they have yet to acquire adequate information of this type and that it should be sought as a priority. Without this part of the picture a high level of confidence in decision outcomes is unlikely.

QMDC recognises that the Authority has attempted to explain the technical basis for the *Proposed Basin Plan* and associated nominal reductions in SDLs. This has resulted in communities being provided with generic policy and hydrological information with reference to the *Proposed Basin Plan* and SDLs. At a regional scale QMDC has received an explanation for the hydrological targets and key (flow) monitoring points. A commitment to localism in technical assessment is essential for effective acceptance by regional communities.

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However the Authority has not in QMDC's opinion been able to explain at local or wider scale the ecological benefits anticipated from the *Proposed Basin Plan* other than to quote the generic statements in the documents about fish spawning and nutrient cycling and to highlight the intent of the *Proposed Basin Plan* to target medium flows where there is currently the greatest difference between modelled pre and post development flow durations.

QMDC asserts that to date a coherent response has not been offered by the Authority to concerns such as:

- Current buybacks in specific locations e.g. the Border Rivers do not include allocations that could reasonably be delivered in the target flow range
- There is no indication that mechanisms are being considered to ensure future water recovered will contribute to flows in the target flow range
- There is no cost benefit consideration given to alternative or complementary methods of achieving the fish spawning or nutrient cycling objectives such as:
  - Barrier mitigation or removal works
  - Improvements in catchment management for water quality and riparian function outcomes
  - Mitigation of salinity threat which could conceivably undermine benefits of environmental flows
  - Weed and feral animal management
  - Pest fish management
  - Stock and domestic water access changes to enhance persistence of waterholes between natural or augmented filling events
- Delivery of more water in the target flow range does not have a clear or measurable ecological outcome within the valley
- Delivery of more water in the target flow range does not have a clear or measurable ecological outcome in the Barwon-Darling system
- There is no documented M&E strategy to allow the 2015 review to assess ecological benefits of Plan implementation in the Border Rivers or the Barwon-Darling system
- There is no mechanism being considered to quantify and credit the "History of effort" achievements of the WRPs and ROP which, from anecdotal evidence, has reduced diversions – particularly in the half bankers which are in the target flow range.

Another key area of concern is the lack of rationale for water quality zone boundaries in the *Proposed Basin Plan*. These boundaries do not align with the boundaries developed by local/regional experts (i.e "localism" stakeholders) in the drafting of "water types" associated with Water Quality Management Plans and associated Local Water Quality Guidelines. "Localism" in spite of submissions on this issue is clearly in QMDC's opinion not a part of the development of the *Proposed Basin Plan* despite the rhetoric. Additionally there is no evidence that the *Proposed Basin Plan* will have any aquatic ecosystem benefits for the Border Rivers or the Barwon-Darling system.

ACA shows many high conservation value assets in the Calandoon floodplain. Many of these wetlands receive excess flows due to irrigation releases and due to funnelling effect of levies upstream of Goondiwindi.

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It is likely that environmental flows for these wetlands are likely to have minimal benefits and that priority issues in this area are: irrigation salinity, barriers, stock impact, weeds and pest fish. If the *Proposed Basin Plan* is to benefit these High conservation value wetlands it is suggested that it could best do so by: water buyback from irrigators in this area, WUE incentives and buybacks, supporting other works such as barrier mitigation, Carp management, weed management and enhanced stock management.

(T:\Water\QMDB\_ACA\Maps – file QMDB\_ACA\_LandcareRegions\_Inglewood)

The ACA shows high conservation value riverine wetland reaches downstream of Glenlyon Dam. Glenlyon Dam is likely to hold significant proportions of Commonwealth Environmental Water Holder's Environmental Water for the Border Rivers. There is concern among leading scientists that cold water pollution from Glenlyon Dam is an issue for tens or even hundreds of kilometres downstream of Glenlyon Dam. Works at the Dam to allow multi-level off takes – to mitigate temperature pollution – should be regarded as a critical co-component of any Environmental Water entitlements purchase or held in Glenlyon Dam (T:\Water\QMDB\_ACA\Maps – file QMDB\_ACA\_LandcareRegions\_Waggamba)

QMDC also argues that although the *Water Act* framework manages impacts on water supply bores and springs from the extraction of groundwater by coal seam gas and petroleum tenure holders, it should also clearly define when activities or the level of impacts affecting groundwater resources and other sources of water is too high, requiring a threshold to be met. QMDC recommends the inclusion of a threshold limit approach in the *Proposed Basin Plan*. This approach would provide greater clarity and certainty because thresholds limits would help to define those natural water resource assets identified as being both nationally and regionally at risk to the impacts caused by activities and infrastructure associated with all industry, commercial business and domestic water resource use.

Setting threshold limits for water resources will help the *Proposed Basin Plan* to identify whether a new development or existing industries or businesses can operate without causing unacceptable impacts on those assets within the defined threshold limits. It will then be able to define and provide for: “no go” zones; clear and predetermined standard environmental practices acceptable under the *Proposed Basin Plan*; and efficient water management administrative processes.

This will mean that activities where the impacts are known to exceed the trigger threshold limits and cause decline for example, for environmental flows, stock and domestic or irrigation supply bores, and which will impact on surface and groundwater quality, quantity and pressures in the MDB and GAB, will not be permitted.

Threshold limits should also consider pollutant concentrations and discharge volumes and be set so that unacceptable pollutant load risks are not permitted for both individual site and cumulative impacts of all industry and commercial businesses on aquifers.

The Authority needs to be wary of the results of modelling presented by CSG companies indicating that the removal of water from the coal seams will generally have no significant effect on the quantity or quality of water in overlying aquifers. Specifically these results show no indication of a risk associated with inter aquifer water transfer due to CSG activities. It is suggested that this is not a safe assumption on the grounds that:

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- Time frames for impacts may be longer than those presented in model outputs.
- Modelling presumes initial and ongoing integrity of all aquifers and aquacludes.

The initial integrity and homogeneity of geological structures should be increasingly better informed by on-going drilling information. It is important that this information is reviewed regularly from a system integrity risk angle as well as from economic/production perspectives.

QMDC believes the science informing the *Proposed Basin Plan* must assess risks associated with aquifer and aquaclude integrity and whether that integrity is compromised by drilling, fracking and repatriation activities. This information needs to be accounted for in modelling and reporting on aquifers and water sources in the MDB. It is now public knowledge in the QMDB that aquifers neighbouring the coal seams have been compromised by CSG activities and that remediation only occurred after public alerts were raised. It must be assumed that aquifers have been compromised on other occasions but that they have been undiscovered, undisclosed, or possibly, remediated without public disclosure. With the number of holes to be drilled in the QMDB and other regions it is worth acknowledging and quantifying the risks to groundwater quantity associated with aquifer and aquaclude integrity being compromised by drilling hydraulic fracturing (fracking) and repatriation activities.

QMDC does not support as a management or mitigation strategy the re-injection of associated water into aquifers because it has not been able to be done successfully during current trials and there is no peer reviewed scientific data or certainty that there will be no impact to the water quality of receiving or other connected aquifers.

In areas where the controversial fracking process is used, there is serious and unquantified risk of groundwater being contaminated, either by fracking fluids, by saline associated water contaminated with the chemicals naturally present in the coal seam entering a freshwater aquifer, and / or by the gas itself.

QMDC recommends greater attention being given to the impacts of the mining industry on the MDB and both surface and groundwater resources and seeks peer reviewed scientific research to create better knowledge and intelligence locally and regionally. There is in our opinion a major gap in the science informing the Authority in this area, as well as other areas.

The issues QMDC has raised above highlight that effective “technical exchange” is still pending and that the 16<sup>th</sup> April close for feedback on the *Proposed Basin Plan* cannot reasonably be assumed to have captured an informed consideration of local stakeholders.



### 3.0 Recommendations

3.1 That the *Proposed Basin Plan* must be consistent with community regional planning objectives and targets, for example, regional NRM Plans regional environmental value and water quality guidelines for both surface and groundwater.

3.2 That the *Proposed Basin Plan* supports SCP and other forms of landscape planning and the role of community groups such as Landcare and SCP groups in the QMDB to address whole catchment effects on water resources such as barriers to fish migration, water quality, timing of flows, water weeds, pest fish and degradation of riparian areas.

3.3 That the *Proposed Basin Plan* implements the *Fishway Guidelines* and encourages innovative solutions to address aquatic fauna connectivity barriers based on sound scientific and technical theory and the practical application of hydraulic and ecological principles.

3.4 That the *Proposed Basin Plan* includes a full consideration of how its provisions will be modified in times of flood.

3.5 That the *Salinity Risk Report* is adopted by the *Proposed Basin Plan* and management options to both prevent, and remediate, salinity are based on regional information and formulated within its provisions.

3.6 That the *Proposed Basin Plan* needs put in place a monitoring program that can confidently demonstrate, or otherwise, if environmental objectives are being met.

3.7 That integrated research dedicated to the types of cropping and produce that may be geographically better suited to different regions within the QMDB be considered to better inform the *Proposed Basin Plan*.

3.8 That the *Proposed Basin Plan* is strengthened so that it requires:

- Best practice responses to the specific impacts of CSG operations and activities;
- Best practice responses to the cumulative impacts of the CSG mining industry;
- Alignment with Regional NRM Plans and other relevant regional policies and plans;
- The CSG industry clear guidance on how it must primarily avoid impacts or risks on the MDB's water resources and ecosystems; and
- Long term effective management or mitigation strategies for the MDB's water resources and ecosystems.

3.9 That the assessment of SDL's is done within the context of local and regional circumstances taking into account associated scientific research including social science research data.



**3.10 That the voluntary buyback scheme is based on WUE and best available science.**

**3.11 That the high conservation value of riverine and adjacent wetlands downstream of St George (Beardmore Dam) be highlighted in the *Proposed Basin Plan*.**

**3.12 That a robust community consultation process is supported.**

**3.13 That the consultation period to facilitate Aboriginal engagement and participation be extended to consider how the *Regional Caring for Country Plan* and other key Aboriginal planning instruments and or cultural aspirations, strategies and actions can be incorporated into the *Proposed Basin Plan*.**

**3.14 That the *Proposed Basin Plan* promotes an informed position on: the traditional and contemporary connection the Aboriginal people have with the rivers, wetlands, springs and other water sources of the MDB; the impact of colonisation on those connections; and the roles and responsibilities, Aboriginal communities have in relation to ensure the physical and spiritual health and wellbeing of the MDB, today and in the future.**

**3.15 That the *Proposed Basin Plan* makes use of best available science and information to determine SDL's for the environment and to do so with the best available information from ACA data, water monitoring, regional water quality guidelines, impact assessments on communities and their economy.**

**3.16 That the ACA data algorithms are included in the *Proposed Basin Plan* as an expression and a model of "localism" based on the knowledge of local and regional stakeholders, including expert scientists, industry representatives and community group representatives.**

**3.17 That greater attention being given to the impacts of the mining industry on the MDB and both surface and groundwater resources and that peer reviewed scientific research on these impacts is supported by the Authority to create better knowledge and intelligence locally and regionally.**