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# Comment on the fisheries management reform in Queensland green paper

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The Australian Coral Reef Society (ACRS) applaud the Queensland Government's effort to refocus outdated management practices and achieve long-term sustainability and resilient fisheries stocks, as well as healthy ecosystems that all Australians can enjoy now and into the future. We highlight four areas of the reform that we feel are important to fisheries and coral reefs in Queensland.

### REFORM 1: Managing Target Stocks

*Questions: Do you agree that there is a need to rebuild fish stocks to higher levels? If yes, do you agree that 60% of the unfished population is a suitable target? If no, do you think current stock levels are suitable, or do you have an alternative proposal?*

The ACRS agrees there is a critical need to rebuild fish stocks. The current criterion for a fish stock to be classified as *'sustainable'* when only 30-40% of the unfished biomass remains is fraught with danger. A number of fisheries stocks that would be classified as 'sustainable' under this criterion were recently identified as 'high risk' or 'overfished', or equally worrying as 'data-deficient' [(1)]. Below are issues the ACRS highlight as important to managing target stocks:

- Setting a blanket target of 60% of the unfished stock will not guarantee sustainability of all stocks. There is considerable variation in the growth rates, survivorship, and reproductive outputs among fish species, and hence the productivity of fish stocks. **We recommend that 60% of the unfished stock be the minimum target level, and that figure be reviewed for specific species (or groups of species, e.g. sharks) with life histories that make their populations sensitive to over exploitation.**
- Many fisheries populations, including coral reef fish species, lack long-term comprehensive analysis of population trends, especially comprising the full temporal extent of their exploitation [(1, 2)]. Further, much of the catch by recreational fishers is not reported. In the absence of long-term data it is difficult, if not impossible, to assess the true condition and trend of a population**. It is critical that the proposed reforms be accompanied by a long-term monitoring program of fisheries independent data to assess the status and trends of fished stocks and facilitate adaptive management strategies.**
- For species in which there is insufficient data to establish a reliable estimate of the unfished stock, **we recommend that the target be raised to 70–80% of the unfished stock.**

### REFORM 2: Managing impacts on the ecosystem including non-target species

*Do you agree that a structured risk based approach should be used to guide management of the broader ecosystem impacts of fishing? If no, do you have an alternative suggestion for the management of the broader ecosystem impacts of fishing?*

While a number of management reforms have been enacted, including bycatch reduction devices, total allowable commercial catch limits, and seasonal closures, the effects of fishing remain one of the major threats to the future vitality of Queensland's aquatic ecosystems, including the Great Barrier Reef. These effects not only include the direct removal of target individuals, but also the incidental catch of species of conservation concern, mortality of discarded species, impacts of fishing gears and boat anchors on habitats, and ecosystem imbalances due to the removal of key species (e.g. predators) [(1)]. These direct and indirect effects of fishing on aquatic ecosystems are being greatly compounded by multiple

other stressors including climate change, coastal development, declining water quality and pollution. **The ACRS recommends that structured risk-based approaches should be mandatory to inform and guide management of the broader ecosystem impacts of each and every fishery. Importantly these impacts of fishing need to be considered in the context of the cumulative impacts of other stressors impacting these ecosystems.**

**While the proposed structured risk-based assessments are definitely a step in the right direction, they alone are not going to adequately reduce the potential impacts of fishing on aquatic ecosystems.** There are many areas that remain data-deficient and hence the true impact is unknown, and there is a clear need to invest in the development and implementation of new/improved technologies to reduce the impacts of fishing activities on the environment. For example, preliminary analyses provided in The Great Barrier Reef Outlook Report 2009 suggested the non-retained catch by commercial fisheries is likely higher than the retained catch, especially in trawl fisheries. Most fisheries currently have no data on bycatch and discards, as such there is still high uncertainty regarding the quantity of non-retained catch in Queensland's marine waters [1, 3]. In light of these concerns, the ACRS recommends:

- **Investment in the development of target specific fishing techniques that reduce bycatch is urgently required**
- **Policy on 'best practice' to increase the survivorship on discarded catch**
- **Mooring systems/networks in recreational fishing hotspots to reduce impacts of anchor damage**

**REFORM 4: Access to the resources**

*Do you agree that fisheries management should be reviewed on a fishery-by-fishery basis to determine what management arrangements are required for each fishery? If yes, do you agree that a policy is required to ensure consistency in the management arrangements that are developed for each fishery, including the future allocation of commercial fishing access entitlements? If no, what alternative strategies do you propose to manage future access to Queensland's fisheries resources?*

The ACRS agrees that **management should be reviewed on a fishery-by-fishery basis**, and where possible should be largely consistent across fisheries (i.e. commercial, recreational, indigenous). This will not always be the case as indigenous communities have unique fisheries interests that are distinct to those of the commercial and recreational fisheries. **We support the development of a simpler system of size and bag limits for recreational fishers, provided it does not compromise the overall target of 60% of unfished stocks for any species.** Further, Queensland recreational fishers do not currently pay for access to the fishery (e.g. licenses) and thus do not support the management of fisheries resources. Several states (e.g. WA, NSW) have licenses for particular fisheries stocks that are medium- or high-risk species or for fisheries methods (i.e. using a boat). **We recommend annual recreational fishing licenses should be introduced in Queensland, with funds generated being used to contribute to the management of fisheries, and conservation of aquatic environments.**

**REFORM 6: Harvest strategies**

*Do you support the proposal to manage Queensland's fisheries resources in accordance with harvest strategies which will provide biological, social, cultural and economic targets for each of Queensland's fisheries? Are there any key issues the Government would need to consider in the development of a harvest strategy that have not been outlined in the green paper?*

ACRS fully supports a more holistic harvest strategy and management approach to fisheries including biological and ecological targets as well as socio-economic targets. Below are issues of importance to developing harvest strategies:

- Fisheries and fish populations are not isolated entities, they interact within other organisms and ecosystems, and changes in fish populations can have cascading effects across trophic levels and to ecosystems. As such, not only will fish stock levels need to be monitored/assessed but also ecological or ecosystem functioning. For example, reductions in herbivorous fishes on coral reefs can cause a shift from coral- to seaweed-dominated reefs, especially following disturbances [4]. Similarly, the removal of top predators can initiate changes that cascade through the entire ecosystem (i.e. trophic cascade). **We recommend that a shift in management is necessary for the future resilience and sustainability of Queensland fisheries, particularly identifying and managing keystone**

**species in ecosystems. A possible shift in management strategy could be to group fisheries management efforts by functional groups (e.g. benthic filter feeders, herbivores, piscivores) that have similar ecosystem roles.**

- **Where possible, monitoring strategies should aim to use historical data to provide more realistic baselines for fisheries stock assessment**. Exploitation of many fisheries species has occurred for decades beyond the boundaries of modern fisheries data gathering and management, leading to 'shifting baselines' [(2)]. **There is an urgent need to incorporate any available historical data to re-align stock assessments and management action to historical baselines.**

**OVERALL FISHERIES REFORM**

*Do you support the vision, goals and areas of reform proposed? If no, what is your proposed vision for the reform of Queensland's fisheries? What are the challenges in achieving this vision?*

The ACRS supports the Queensland Governments overarching vision, goals and areas for reform proposed for Queensland fisheries. Challenges arising from achieving these pertain to:

- Effective and successful performance of fisheries management. It should take a precautionary approach, especially in the absence of data
- Reducing the uncertainty in data-deficient targeted stocks, as well as for bycatch and unretained catch
- Keeping management and policies responsive and adaptable alongside increasing and compounding pressures to fisheries and marine ecosystems
- Keeping fisheries management current and up- to-date with the growing body of fisheries literature and scientific data, as well as with continually improving fishing technologies (e.g. fishing gear, navigational equipment)
- Including robust ecological data in harvest strategies and enforcing strict limits on the harvest of key fisheries species, including top predators and herbivorous fish
- Developing education programs that will promote compliance in recreational and commercial fishers
- Increasing funding and resources for compliance and enforcement, especially of illegal fishing, which remains high risk in Queensland marine waters
- Clear and timely communication of the Queensland Governments reforms and strategies to commercial, recreational and indigenous fishers and fishing groups, as well as to the scientific community including the ACRS.

Kind regards

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