Great Barrier Reef Study
Productivity Commission
Locked Bay 2, Collins St East
MELBOURNE VIC 8003

17 September 2002

To Whom It May Concern:

RE: Industries in the Great Barrier Reef Catchment and Measures to Address Declining Water Quality

The Nature Conservation Council of NSW (NCC) would like to thank you for the opportunity to comment on Industries in the Great Barrier Reef Catchment and Measures to Address Declining Water Quality.

NCC would like to express support for the World Wide Fund for Nature's (WWF) submission made in September relating to this issue and recommends (in the following pages) further key points that need to be considered. These will help ensure industries are environmentally sustainable in the Great Barrier Reef (GBR) catchment and declining water quality is addressed.

To reverse the annual increases in pollutant loads to the GBR lagoon, substantial outlays of government funding will be required. Jon Brodie, of the Australian Centre for Freshwater Research, and previously of Great Barrier Reef Marine Park Authority (GBRMPA), identified the cost of restoring riparian areas and wetlands within the catchment at around $300 million, which is only one of the measures required.

It should be noted however, that annual income generated from the Great Barrier Reef is much greater than this, and NCC supports WWF's statement that investment in protection and repair will produce long-term economic benefits to Queensland and Australia.

Please find enclosed recommendations and comments we have made in relation to some of the issues that the research study will address.

For discussion of this submission, please contact Sally Steele (Water Policy Officer) or Megan Gallagher (Fisheries and Coastal Officer) on (02) 9279 2466.

Yours sincerely,

Kathy Ridge

Executive Officer

To what extent might Australia's economic, social and cultural values and international obligations be affected by deterioration in the health of the GBR?

The NCC would like to reinterate that Australia is already in breach of our international and national obligations under the World Heritage Convention which require State Parties to conserve, protect, present and transmit the natural heritage of listed properties to future generations, and where necessary, rehabilitate degraded sites.

The ongoing degradation of inshore reef ecosystems will affect our economic, social and cultural values. Degradation of inshore reefs, if allowed to continue, may cause a decline in international visitation (the bulk of Reef tourism), and non-GBR catchment tourism.

Social and cultural values are likely to be affected by continuing Reef degradation. The Reef has traditionally been perceived as a pristine wonderland. Increasingly, the public is beginning to become aware of the inshore Reef as polluted and degraded. This is likely to lower its status as an icon within Australia. It is socially and culturally important to our identity as Australians that we restore and maintain the Reef as a great cultural icon.

Should the Commission undertake a more detailed investigation of a few regions or catchments as part of its study to highlight important regional and local issues? If so, which areas are suggested and for what reasons?

NCC recommends that the the Commission undertake more detailed investigations of the the Herbert River catchment, Whitsunday Islands and the Proserpine and O'Connell River catchments to identify regional and local issues.

ECONOMIC AND SOCIAL IMPORTANCE OF MAIN INDUSTRIES

What data sources should be used for recreational fishing, taking note of the need for consistent comparisons across industries?

The National and State Anglers Survey is being completed by NSW Fisheries and should provide some figures for comparison across industries. NSW Fisheries Research Institute at Cronulla can be contacted for the details of these surveys via (02) 9527 8411.

CURRENT MANAGEMENT APPROACHES

What are the principal activities of the main industries that have the potential to change water quality in the GBR lagoon, and how do these industries currently manage these?

NCC agrees with WWF that the principal activities associated with intensive cropping, which have the potential to change water quality in the GBR lagoon are:

- The clearing of native vegetation, particularly riparian vegetation;
- The clearing and draining of natural wetlands;
- Inappropriate irrigation and drainage systems;
- The inappropriate use of pesticides (type of pesticide, quantity, timing of application, location, application technique). Of particular concern are pesticides that are persistent, bio-accumulative and/or toxic;

- The inappropriate use of fertiliser (as above);
- Development of acid sulphate soils, and;
- Lack of on-farm water quality management actions and strategies.

With respect to the grazing industry, WWF identified three principal activities affecting water quality in its "*Clear? … or present danger"* report:

- The clearing of native vegetation;
- Stock access to streambanks, and;
- Overgrazing and soil compaction.

Although there are excellent examples of 'best practice' at a property level within each of the major agricultural industries in the GBR catchment (grazing, sugar, horticulture), the decline in water quality is due to the low level of uptake of these practices throughout these sectors. NCC recommends these sectors must be adequately resourced and facilitated (via government and industry-specific funding) to implement 'best practice' management techniques.

To what extent are management approaches like precision fertiliser application or revegetation being used to limit reductions in water quality, and what are the key incentives behind their use/non-use? Are there significant regional variations in the adoption of such practices?

Agricultural land use can have a great impact upon water quality, and we recommend that a whole of government process is established to ensure land use planning and management is improved and is consistent with environmental best practice.

Further, we recommend that the following measures are implemented:

- Mandatory set back limit such as 20 metres, when fertilisers are being applied in the vicinity of rivers;
- Mandatory soil conservation measures to avoid nutrients attached to soil particles being washed into waterways, and;
- Tax incentives provided by the government to fence and/or revegetate the areas beside waterways and wetlands to create a nutrient buffer strip. This program should be properly implemented and audited and appropriate incentives given.

The extent of past loss of natural capital that maintains water quality (riparian vegetation, wetlands) is so great that current revegetation or wetland restoration efforts are disproportionately small to the task. Investment in restoration activities needs to be massively increased and needs to be much more targeted (eg at high-risk catchments). Financial and other incentives to adopt improved farming practices are either not present or not powerful enough to drive change.

POLICY OPTIONS

Are there policy options which should be given priority for analysis by the Commission? If so, why are the nominated policy options of particular interest?

Environmental Flows

The NCC recommends that the Commission consider that following guiding principles in managing surface water:

- Natural flow regimes should be replicated at all times;
- Natural peak flows should be restored to reconnect and reconfigure channel and floodplain habitats;
- Environmental flows should sustain and restore longitudinal connectivity, encourage vertical exchanges (i.e. surface and ground water exchanges), and maximise dam passage to allow recovery of fish populations;
- Environmental assessment should be undertaken for any new projects that may alter the flow regimes in any river;
- During no flow periods, pools and wetlands should be protected;
- Natural low flow, and conversely, natural high flows should be protected as much possible;
- Natural drying periods should be allowed, and;
- The impact on downstream water quality of water storages should be minimised.

The NCC recommends the following:

- Allocate at least 66% of the natural flow of water sources to the environment. This figure is consistent with the level recommended for a healthy working river from the Cooperative Research Centre for Freshwater Ecology. Further, extraction should not exceed 30% within any flow sharing class;
- Prevent further degradation of rivers and wetlands due to extraction or regulation of water;
- Embargo new entitlements to water for irrigation or other extractive uses in over-allocated systems. Further, a 10% reduction in entitlement applying to permanent and temporary transfers of annual entitlement will bring extraction rates back to a sustainable level;
- Set mandatory and publicly accountable targets for the reduction of:
    - The overall demand for rural and urban water; and,
    - The total annual volume of water use for irrigation.

Protection Of Existing Natural Habitat

Wetlands

NCC strongly recommends that the Commission examine policy mechanisms that could be used to prevent the further loss of native vegetation in the GBR catchments. In addition, we recommend the Commission examines policy mechanisms that could be used to prevent the further loss of natural wetlands in the GBR catchments.

This includes the following:

- No further loss of wetlands, and encouraging ecologically sustainable and adaptive management, projects and activities that will restore the quality of wetlands;
- All Queensland wetlands to be mapped by 2004;
- All Ramsar wetlands to have management plans in place within five years of formal designation with funded targets set for implementation;
- All wetlands on Crown Land to be fully catered for in a formal plan of management by 2005;
- Local government to be required by statute to prepare plans of management for wetlands under their care and control;
- Funding for on ground works only to be made available to wetlands that have a prior plan of management;
- All natural resource plans (estuary, water, native vegetation, bush fire, etc) to be required by statute to ensure that wetland values are enhanced and maintained;
- Incentives schemes for promoting wetlands protection and enhancement on private lands to be introduced by 2003;
- Dedicate 20% of wetlands in the region within a comprehensive and representative reserve system within 5-10 years. This will assist in Acid Sulphate Soil management, water quality and salinity management, also providing habitat for commercial fish recruitment.
- Develop a more integrated approach to wetland conservation and management by taking steps to ensure that wetlands issues are given equally appropriate consideration by all government agencies during their assessment of development applications, and;
- Reinstate a proportion of the natural drying phases in the core areas of terminal wetlands.

Floodplains

NCC supports increased emphasis on the integrated and strategic management of floodplains, considering the ecological, social, economic, and cultural factors. This includes an emphasis on maintaining and enhancing the riverine and floodplain environments, with consideration of the needs of threatened species, populations and ecological communities, as part of flood modification measures.

The NCC recommends the following:

- Development of floodplain risk management plans that address existing, future and continuing flood risk for flood prone land on a strategic rather than an *ad hoc* or individual proposal basis;

- Incorporation of the principles of Ecologically Sustainable Development when managing risks associated with human occupation of the floodplain;

- Consideration of the Aboriginal and European cultural significance on the floodplain;

- Recognition of the potential implications of climate change on flooding behaviour (global warming);

- Prohibition of waste disposal on floodplain land;

- Consideration of local overland flooding in the management process;

- Acknowledgment that flood mitigation may require tidal influx and re-inundation of areas that were once underwater;

- Removal of redundant weirs and floodgates and investigation into modification of design where these structures are still required;

- Preservation and restoration of natural water courses, shifting away from flood mitigation measures;

- Incorporation of flow control facilities near stormwater outlets, with design mimicking natural ecosystems in order to provide environmental and recreational amenities to the community and to attract native wildlife and vegetation;

- Reduction of flood damage by ensuring that future urban and rural developments take account of natural and regulated water flows;

- Flood management which does not involve the removal of riparian vegetation or stream straightening;

- Active maintenance and conscientious management of all remaining floodgates, utilising the principles of ecological sustainable development;

- Prevention of acid sulfate soil activation and a management strategy which includes 100% offset achieved against any acid drainage resulting from new development in mapped acid sulfate soil hot spots;

- Local government and relevant agencies develop and implement management plans and strategies for all Acid Sulfate Soils areas that are already disturbed and/or producing pollution of waterways. Such strategies may include closing or modifying drains or other remedial works, and ensuring that all development applications identify there is no disturbance to or impact on Acid Sulfate Soils or the Groundwater Ecosystem.

- Strategic consideration of flood risk related development policies within the framework of the floodplain risk management plan, rather than on an *ad-hoc* basis at the development consent stage. This enables the effective consideration of cumulative impacts; and,

- Recognition of the need to amend planning controls with respect to new types of development activity in flood prone land outside those identified as appropriate in the existing floodplain risk management plan.

Strategic Reef Revegetation Program

We recommend that there should be no further clearance of native vegetation or riparian vegetation for any purpose.

Ideally, all riparian areas throughout the GBR catchment should be revegetated. However, for the purposes of an achievable Reef Protection Plan that could be implemented in full over the next ten years, NCC highly recommends targeting of the GBRMPA identified high risk catchments and areas of the GBR catchment with high sediment/nutrient losses. A major Reef Revegetation Program should commit funding for the improvement and co-ordination of vegetation management and regeneration programs.

The NCC recommends the following:

- Require all Public Land Managers (including Councils) to have policies to rehabilitate or restore riparian areas on both community and operational public lands;
- Councils to consider riparian vegetation and aquatic values in determining stormwater and flood mitigation works;
- Promote riparian areas for their natural values and ecological importance;
- Protection of riparian zones around all rivers, coastal lakes, lagoons, wetlands and estuaries to 200 metres;
- Allow existing structures within this 200 metre riparian zone to be given 'existing rights', but permit no further construction within this zone, and;
- Effectively prevent the clearing of native vegetation within 200 metres of foreshores by strengthening and enforcing the relevant legislation.

Widespread adoption of best management practice

The Commission needs to examine policy tools that facilitate the widespread uptake of best management practice for improving Reef water quality. This includes development of industry specific best management practices.

Phase out inappropriate incentives

There is a range of inappropriate programs that still result in negative outcomes for the environment, eg the Sugar Industry Infrastructure Package, shire-based River Improvement Trusts and the low cost of water in Queensland. The Commission should identify these incentives, programs or structures and recommend their rapid phase out or substantial modification.

Further, the Commission should examine the National Competition Council findings in relation to water pricing in Queensland and the other states. The water pricing process is not transparent and makes it difficult for community participation in pricing decisions and for the inclusion of externalities in water prices. Water infrastructure decisions in Queensland also have a history of non-compliance with COAG Water Resource Policy principles. The impact of water policy in Queensland on the inappropriate use of water, and poor water quality outcomes should be investigated.

Facilitate the greater uptake of organic farming

Organic products are in high demand in many overseas markets, particularly Europe. Given the problems of nutrient and pesticide pollution in inshore Reef waters, organic farming is an ecologically sustainable option for the GBR catchment. After conversion to organic farm systems, farmers can experience higher gross margins than conventional farmers, however, the transition period can be economically difficult.

Additional points for consideration:

Pollution reduction strategies

Pollution reduction strategies should be implemented to assist in approving the water quality of the GBR.

Water Quality

The NCC recommends the following:

- Incorporation of water quality objectives into the planning process which should be consistent with community agreed Interim Environmental Objectives and/or the "guideline trigger values" contained in the current ANZECC Guidelines. Water quality management should ensure that water quality targets are met in relation to pH, Total Nitrogen and Total Phosphorus, Dissolved Oxygen, chemical contaminants and faecal contamination;
- Minimisation of water contamination to the greatest extent possible, including mitigation measures to prevent the spread of contaminated water by excluding water extraction within a one kilometre radius of a contaminated site;
- Allocation of sufficient research funding to establish the relationship between factors such as water extraction and the presence of arsenic in coastal aquifers;
- Implementation of sufficient adaptive management provisions within the planning process in order to respond to new water quality information as it arises;
- Compliance with the Australian Drinking Water Guidelines (1996), published by the National Health and Medical Research Council for all water distributed and intended for potable uses, and;
- Assurance that the above guidelines be regularly reviewed and updated in line with current scientific and community concerns.

Pollution and Sedimentation of Waterways

Pollution of aquatic ecosystems is widespread, comes from point and non-point sources, is generated by rural and urban landuse activities, generates significant and often severe economic threats to sustainability, lessens the quality of life and presents an increasing threat to the viability of a diverse array of ecosystems.

The NCC recommends the following:

- Widespread adoption of management practices which make certain that no chemical load (including urban, heavy metals, pesticides) enters river systems;
- No pollution of groundwater or groundwater sources;
- Licensing of industrial operators that encourages progressive reduction of discharges and polluted run-off from all industrial sites. The concept of load-based licensing to provide incentives for polluters to reduce inputs to rivers is supported;
- Implementation of managed systems ensuring safe disposal of chemical containers and establishment in close co-operation with local government, other government agencies, industries and the public;
- New developments for residential, industrial, recreational and commercial purposes to minimise erosion risks, avoid pollution of stormwater run-off and enable treatment of run-off;
- Councils to identify and implement means of achieving the above aim in relation to storm run-off from existing urban areas; and,
- The impact of endocrine disruptors on waterways decreased.

Pesticides and Herbicides

The NCC makes the following comments:

- All urban and rural land mangers should be encouraged and assisted to understand and apply relevant ecological principals, in order to minimise use of pesticides and herbicides and the consequent risk of water pollution,
- The community has a right-to-know about all pesticide applications that are taking place in their vicinity.

Sewerage

The NCC recommends the following:

- All Sewage Treatment Plants (STPs) are licensed, monitored and audited;
- STPs do not discharge to rivers, estuaries or the ocean;
- STPs are based on biological rather than chemical processes;
- Small scale ‘green’ STPs including artificial wetlands and waterless sewage composting systems are encouraged;
- Treated sewage is de-watered and made available for beneficial reuse. The development of effluent reuse schemes should be encouraged for industrial and agricultural purposes;
- The community is encouraged to reduce entry of chemicals and unbiodegradable matter to sewers;
- Illegal dumping of chemicals and unbiodegradable matter to sewers does not occur;
- Sewage treatment plants that impact on aquatic ecosystems and floodplains are upgraded;
- Stormwater and other urban run-off is channelled separately, and;
- Siting and design of septic tanks is subject to stricter development control standards.

Algal Threats to Lakes, Rivers and Waterways

The NCC recommends the following:

- A public register of algal blooms in waterways, rivers and lakes, stating location, date, extent, species and dangers, and;
- Public risk warnings whenever there is contamination of waterways with toxic algae and cyanobacteria.

Improved Land Use Management

The NCC recommends the following:

- Joint strategies should be developed and financial incentives provided for landholders to protect and conserve private wetlands;
- Sustainable land use practices should be developed and promoted;
- There must be concerted action to reduce the run-off of nutrients, sediment and other pollutants from urban, rural and industrial land-based activities;
- Floodplain, ASS, coastline, wetland and estuary management manuals should be combined for an ecosystem management approach; and
- Development proposals must undergo a public exhibition and consultation process. Approval of development proposals and licenses must require the development and implementation of an Environmental Management System (EMS), including mitigation measures and controls that are independently audited.

Dredging

The NCC recommends that dredging of any aquatic ecosystem for gold or other minerals should not be permitted as this releases heavy metals.

Farming practices

The NCC emphasises that all agricultural pursuits in Queensland should be managed in a way that protects the biological and ecological integrity of inland and coastal hydrological systems and so make an essential contribution to sustainability of agriculture into the distant future.

The NCC recommends ecologically sustainable management of water is a statutory requirement and a fundamental determinant of land use.

Further, all extractions and discharges by users should be licensed and charged at a rate reflecting full environmental and management costs, while an exemption from charges is allowed for environmental flows for river health and nature conservation.

Rural Water Sources

The NCC recommends the following:

- Restrict access by stock to rivers and streams, with watering points as far away from water sources as possible. Run-off from watering points should be directed into diversion ponds or artificial wetlands;
- Audited tax incentives for fencing and/or revegetation of riparian areas, creating a nutrient buffer strip.

- Moratorium on the licensing of new feedlots built near aquatic ecosystems (pending introduction of national guidelines which require zero nutrient contribution to waterways);
- All feedlots, fish farms, piggeries, poultry and other intensive animal husbandry adjoining or likely to impact on aquatic ecosystems should be licensed, and;
- Develop a policy to manage nutrient discharge to waterways from farm run-off.