

# Summary Report on **Managing what matters: The cost of environmental decline in South East Queensland**



**SEQ Catchments** is pleased to release the outcomes of a major piece of research it commissioned in 2009 - **Managing what matters: The cost of environmental decline in South East Queensland**. The work is part of our commitment to the quality natural resource management planning in Queensland and measures for the first time the social cost to the community and the impact on business of environmental decline in South East Queensland.

The research shows that if we 'do nothing more' than what is currently planned then the natural resource condition in South East Queensland will continue to decline.

The social cost of this decline is estimated conservatively to be \$5.2 billion over the next two decades. 90% of those that took part in the research believe that protecting the environment is equal to or more important than economic growth. There is also strong community support for taking region-wide action now to avoid long term costs with respondents indicating they would be prepared to pay almost \$300 per household per annum to avoid a decline in resource conditions from the current level.

The economic cost to industry will also be significant. A 'do nothing more' scenario will put at risk up to \$8 billion in potential turnover for the tourism industry in South East Queensland over the next 20 years. Our \$1.2 billion primary production industry will continue to suffer productivity and profitability risk from declining resource condition. The cost to governments at all levels is likely to continue to increase in direct

SEQ Catchments Ltd is a South East Queensland based not-for-profit business with a vision to deliver a sustainable future for our community. The organisation takes a lead role in the strategic direction of natural resource management (NRM) planning; development of appropriate partnerships and alliances; and securing funding for NRM outcomes that help maintain and restore South East Queensland's natural resources for the benefit of future generations.

Planning for the future growth and development of South East Queensland (SEQ) presents a unique set of challenges. Balancing population growth and continued economic development with the need to preserve our diverse natural resource assets is a priority.

A major achievement towards managing this challenge was the completion in 2009 of the SEQ Natural Resource Management Plan (SEQ NRM Plan). The Plan provides guidance to inform investment so that funding is directed to projects that help achieve the desired regional outcomes in the SEQ Regional Plan. To help further inform this process, SEQ Catchments commissioned the Managing what matters report.

## **SEQ Catchments – Key Priorities**

SEQ Catchments believes this significant research work will be valuable in informing stakeholders and government in relation to a wide range of policy areas. It is hoped that it will stimulate and contribute to a range of critical policy debates.

1. In the area of **infrastructure planning**, the Queensland Government recognised the pressure the additional population and economic activity will have on SEQ, and as a result developed the SEQ Infrastructure Plan. The Infrastructure Plan provides for in excess of \$124 billion in infrastructure investments between 2009 and 2026. The SEQ Catchments research highlights the importance of:

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- a. Recognition of the SEQ NRM Plan targets and detail of the impact of infrastructure investment on the NRM targets within the Infrastructure Plan.
  - b. Government recognising the community's strong views about prioritising the protection of the environment as part of our economic development plans.
  - c. Government intervening to ensure there is greater corporate social responsibility for environmental improvement (rather than the 'do nothing more' scenario) as part of infrastructure approval and funding processes.
2. The research will enable the Queensland and local governments to refine their policy thinking in relation to the potential impacts of **population growth**, **urban expansion** and the consequences for managing the natural resource condition. Existing targets such as the 35% remnant vegetation targets are potentially being threatened by continued urban expansion. There was strong endorsement for all future housing and other developments to be required to compensate for negative environmental impacts, through actions such as offsets. Greater awareness of community priorities and concerns should also lead to improved government planning processes and decisions.
  3. Government should urgently consider the **mitigation of the social cost** of continued natural resource asset decline as part of an integrated, planned approach, and concurrently consider the willingness of households to co-contribute towards this mitigation. Community concerns about declining natural assets were strongest in the areas of water quality (e.g. the health of Moreton Bay), remnant and woody vegetation, inland wetlands, critical habitat for plant and animal sustainability and welfare, and land for outdoor recreation.
  4. There is an increasing argument in favour of greater involvement, integration and alignment of the **Commonwealth Government policy and funding** processes impacting on the environment, climate change, natural resources and regional planning in SEQ. The Commonwealth Government is encouraging all States and Territories to have their own 30 year integrated plans by 2012, and will increasingly tie funding to those plans. Queensland is leading the way with its regional planning (including the SEQ NRM Plan), and in addition to funding, it needs the various Commonwealth agencies to also align their policies and programs to our regional plans.
  5. SEQ Catchments will continue to work with governments and the community to prioritise the funding and actions that support the delivery of the **SEQ NRM Plan** targets.
  6. It is hoped that the research findings will stimulate specific interests from the **key industry sectors** covered in this report and enhance their understanding and engagement in the SEQ NRM Plan.

## **Managing what matters: the cost of environmental decline**

### **Why we did the Research**

The SEQ NRM Plan was produced to respond to the challenges of population growth and economic activity on the natural resource base in SEQ. The Plan contains targets agreed by the key stakeholders (Queensland government and local governments within the region, the community, land managers, Traditional Owners, and local industry) for managing and enhancing our natural assets into the future.

These targets are based on the best available science and backed by the leading experts. They categorically state the minimum or critical requirements that the region must achieve to maintain and enhance the ability of our natural assets to provide the conditions required for the community, the environment and economy to prosper into the future.

To help inform future policy and investment into the SEQ NRM Plan, SEQ Catchments commissioned Marsden Jacob Associates to undertake research which is the basis of this report 'Managing what matters: the cost of environment decline in SEQ'. The purpose of the research was to analyse the targets established in the SEQ NRM Plan, and then identify, scope and assess the potential economic cost of environmental degradation if the targets are not achieved. It looked at the two broad sets of economic costs attributable to any decline in resource condition in SEQ:

1. The impacts relating to the social values (biodiversity, recreation, coastal condition etc).
2. The financial impacts on business, governments and households.

The absence of such information was seen to significantly increase the risk that NRM policies, programs and funding may be insufficient and/or potentially poorly targeted. This would ultimately result in a continuation in the decline in the extent and condition of our natural asset base, along with the substantial associated social and economic cost.

### **Major findings of 'Managing what matters'**

The NRM gains of the past need to be acknowledged. However, the research clearly indicates that maintaining the current level of existing and planned interventions (i.e. a 'do nothing more' scenario) will still result in a further decline in natural resource condition (albeit a slower rate of decline).

This research proves that there is a clear economic benefit to the SEQ community and economy of meeting the targets in the SEQ NRM Plan. Ultimately the economic benefit of meeting the SEQ NRM Plan Targets is the difference between the 'do nothing more' scenario and the investment required in achieving the targets. These benefits include the avoided cost of further degradation and the enhancement of the current condition for some assets.

From a public policy perspective, if the market has failed to deliver socially optimal natural resource management outcomes and the benefits of meeting the targets exceed the costs, there is an economic case for intervention by governments on behalf of the community.

The research identifies that there is potential to achieve \$7.1 billion of social benefits to the community through the implementation of the targets in the SEQ NRM Plan.

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## What concerns the Community?

The survey of 941 SEQ households, the largest of this type of study undertaken, showed that:

- 90% believed that protecting the environment is equal to (61.3%) or more important (29.2%) than economic growth.
- 68% stated that the natural environment (bushland, national parks, air quality etc) was what mattered to them and why they liked to live in SEQ.
- 54% considered that the condition of the environment was getting worse despite the efforts of government, industry and the community.
- Only 22% of respondents thought that the condition of the natural environment had improved in the past 10 years.

Community concerns about natural resource condition cut across many of the SEQ NRM Plan target areas including inland water quality, remnant and woody vegetation, inland wetlands, critical habitat and land for outdoor recreation.

The survey highlighted that clean beaches, good air and water quality, national parks and scenic landscapes are what matters most to the community. The quality of these natural assets underpins outdoor recreation opportunities, industries such as nature based tourism, and the community values the protection of those assets very highly.

## Community Preferred Solutions

The community has a strong economic preference in investing in effective and efficient actions that stop the current decline now, rather than try and fix it later. Survey results show:

- 60% endorsed taking a regional approach to achieving natural resource management where it is more efficient, even if their local rates were spent elsewhere in the region.
- 68% endorsed paying farmers to provide ecosystem services where it is the most efficient means to achieve environmental targets.
- 60% endorsed taking preventative action now to reduce the decline in resource condition, rather than rehabilitate later.
- 80% endorsement for all future housing and other development to be required to compensate for negative environmental impacts, through actions such as offsets.

## Social Costs

Overall, the survey results are slightly skewed towards a preference for protecting the environment as a higher priority, even if economic growth was constrained. The research concluded that the loss of natural habitat and critical regional ecosystems and increasing pollutant loads is threatening the region's biodiversity and the loss of open space is impacting on the community's ability to enjoy an outdoor lifestyle.

The quality of the SEQ natural resource base is expected to decline in the next 20 years, driven by factors such as population growth, climate change, uncoordinated planning and investment, increasing household consumption and waste. This is despite the current efforts to protect our natural assets by governments at all levels, industry and the community.

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The social costs to the community of a 'do nothing more' scenario and the loss of resource condition are very significant (in excess of \$5.2 billion between 2009 and 2031). The greatest costs relate to losses in river and stream and coastal condition. An investment now of up to an additional \$150 million per annum in today's terms is justified based on avoiding the social costs alone of damage to our natural assets.

The survey results indicate that SEQ households would be prepared to pay almost \$300 per annum via higher rates, taxes and costs for goods and services to maintain the current extent and condition of our natural assets. This clearly shows that the community wants to avoid further declines in condition from current levels.

The community is also prepared to pay for the achievement of targets in the Plan which seek enhancement in resource condition from current levels. The value of the investment the community is prepared to make is as high as \$1.9 billion over the life of the SEQ NRM Plan. Taking these benefits in conjunction, a total of \$7.1 billion of overall social benefit can be realised through the implementation of the targets in the SEQ NRM Plan.

The survey shows that the community wishes to avoid declines in condition from current levels much more so than gaining marginal enhancements of the same magnitude.

## **Costs to Key Sectors**

The costs of a decline in the natural resource condition or extent of our natural assets over the period 2009-2031 to key sectors was considered as part of the research undertaken by Marsden Jacob.

### **Tourism**

Approximately 28% of tourism in SEQ is attributable to visitation to natural areas. Continued threats to the natural resource would place this tourism at risk, particularly in coastal communities. The region's ability to continue to attract tourism activity and investment is highly reliant on the condition of the state of the natural resource base. Studies undertaken elsewhere (such as the Great Barrier Reef) have shown significant downturns in activity where resource condition declines.

The research suggests that decline in the condition of the natural assets which a considerable amount of tourism is based could result in an \$8 billion reduction in turnover in tourism over the life of the SEQ NRM Plan. Even a very modest decline in outdoor recreation participation rates by SEQ residents of 2% would result in a \$200 million decline in expenditure in that sector.

### **Agriculture**

Agriculture is an important contributor to the economic and society in SEQ. The total direct value of crops and livestock (2007-08) was in excess of \$1.2 billion.

The region's ability to maintain agricultural productivity and competitiveness is highly reliant on maintaining a quality natural resource base (highly productive soils and agricultural lands maintained in close proximity to markets) to underpin production. A loss in the capacity to produce food and fibre for the region would jeopardise the resilience of the society and economy to shocks such as climate change, peak oil and global food shortages. Threats to agricultural production and the NRM Plan targets include;

- Increasing salinity
- Declining soil health
- Loss of agricultural land to urban and industrial development
- Soil erosion

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- Lack of access to secure water supply

The SEQ Rural Futures Strategy (DIP 2009) recognises that a fall in agricultural production will have a serious impact on regional SEQ impacting on employment, social character and downstream logistics and manufacturing.

## *Other Industry to be seriously effected*

### **Recreational fishing**

An estimated 475,000 people in SEQ participate in recreational fishing each year (a participation rate of 22.6%). These figures show an annual total expenditure by SEQ resident anglers of approximately \$194.2 million; 98% occurring in the coastal local government areas. It is estimated that waterways degradation and the impact on fish stocks could lead to a reduction in recreational fishing.

### **Health**

Annual health costs directly related to insufficient physical activity in SEQ are estimated at around \$63 million per annum. Our regional landscapes provide space for outdoor recreation and provide inspiration and mental and physical wellbeing. Where outdoor recreation opportunities are lost, participation rates will decline, and the health costs associated with inactivity will increase. Even a very modest decline in outdoor recreation participation rates of 1% would increase health costs by \$10 million over the life of the Plan.

### **Water**

There are significant savings in water treatment costs that could be realised through improved water quality through catchment management. Water-based ecosystems, particularly wetlands and their components, alter impurities such as excess nutrients and sediments. The filtering of water aids in controlling pollution and improving water quality. There is significant experience worldwide that supports catchment management as the primary and first barrier in ensuring water quality for human consumption. Treatment savings can be substantial.

### **Commercial Fishing**

The commercial fishing sector is highly reliant on the natural resource base for its ongoing livelihood.

Analysis of historical fishing effort and catch data indicates a potential downward trend in catch rates in recent years. Some of this decline is likely to be attributable to declining resource condition including the wild fishery stock condition.

## **The Research Approach**

SEQ Catchments commissioned Marsden Jacob Associates to undertake this research. It is the most comprehensive study of its type ever undertaken for a regional NRM planning exercise in Queensland. The project draws on information available from public, government and corporate sources to paint the most accurate picture possible given information available. The choice modelling survey that forms the centrepiece of the research is the most comprehensive survey of its type ever conducted in SEQ.

The findings of the report provide important information to understand what is at stake if we do not protect what matters.

The study assessed two broad categories of economic costs of declining resource condition:

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1. Costs to business, governments and households from declines in resource condition represented by changes to key economic indicators such as industry turnover. This phase of the analysis was largely a desktop study that relied on existing industry data and economic modelling based on that data.
2. Community and social values which represent actual losses in economic welfare from reductions in the condition of key natural resource assets. Because these values cannot be observed from market transactions (i.e. the values are non-market in nature), a major choice modelling study was conducted to estimate households' willingness to pay to achieve different levels of natural resource condition in SEQ (including the current levels; the targets established in the SEQ NRM Plan; and the potential condition in 2031 under a 'do nothing more' policy scenario). To do this, the researchers undertook an extensive survey of 921 SEQ households. The techniques used were the same as those used for previous work undertaken for the Queensland Water Commission and Queensland Water Infrastructure to underpin water supply planning in SEQ.

## **The SEQ Natural Resource Management Plan**

The SEQ NRM Plan has received recognition through State and Commonwealth Ministerial Awards as a leading planning document for NRM. It articulates measurable targets for the condition and extent of environment and natural resources aligned to desired regional outcomes and policies in the South East Queensland Regional Plan 2009–2031 (SEQ Regional Plan).

SEQ continues to experience the fastest urban growth rate in Australia. By 2031, the population is expected to reach around four million people—an increase of more than one million people over two decades. The SEQ NRM Plan responds to the challenges of population growth and the accompanying economic pressures.

Developed in partnership with local and state government, Traditional Owners, industry, conservation groups and the research and education sector, the SEQ NRM Plan is significant for two reasons:-

1. It provides, for the first time, an agreed set of priorities and targets for planning, implementation, monitoring and reporting of NRM activities across the entire SEQ region.
2. It is endorsed by the Queensland Government's CEO's Committee for NRM as a key implementation document for the SEQ Regional Plan, the statutory framework to manage growth in the region to 2031.

The following table summaries the regional targets contained within the SEQ NRM Plan and provides a sense of the scope of the work involved in managing our regional natural resource through to 2031.

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## Summary of SEQ NRM Plan Regional Targets to 2031

Air and Atmosphere	Nature Conservation
<p>Atmosphere, air and climate are natural resources that play a key role in the health of the natural system. Factors such as continued population growth, the number of households and an increasing reliance on motor vehicles pose a threat to future air quality. Maintaining and enhancing the region's air quality is a key element when considering future land-use options and transport modifications.</p> <p><b>Greenhouse Gas Emissions</b> The region will make an equitable contribution to the national and regional targets for reduction in greenhouse gas emissions.</p> <p><b>Air Quality</b> The levels of air pollutants in the SEQ air shed will be at or below the quality objectives in the appropriate Schedule of the Environmental Protection (Air) Policy 2008.</p> <p><b>Thermal, Noise and Light Pollution</b> SEQ thermal pollution will be at or below 2003 levels; noise pollution will be at or below 1998 levels; and light pollution will be at or below 1998 levels.</p>	<p>The region has one of the richest diversities of animal and plant species in Australia. About 4000 plant species and 800 freshwater and terrestrial vertebrate species are native and distributed across a wide range of vegetation types and environments. The provision of all ecosystem services relies on supporting these habitats.</p> <p><b>Remnant and Woody Vegetation</b> The 2001 extent of regional vegetation cover – including both remnant vegetation (35%) and additional non-remnant woody vegetation (22%) – will be maintained or increased.</p> <p><b>Vegetation Fragmentation and Connectivity</b> There will be no net fragmentation of larger tracts (greater than 5000 ha), and 20% of priority smaller tracts (less than 5000 ha) will be better connected than the 2003 baseline.</p> <p><b>Wetlands</b> The 2008 extent and condition of SEQ wetlands will be maintained or increased.</p> <p><b>Vulnerable Ecosystems</b> At least 4% of the original pre-clearing extents of vulnerable regional ecosystems will be represented in protective measures.</p> <p><b>Native Species</b> The 2008 conservation status of native species will be maintained or improved.</p> <p><b>Habitat for Priority Species</b> The 2001 extent and condition of habitat for priority taxa will be maintained or increased.</p>
Coastal and Marine	Regional Landscape Areas
<p>People of the region are privileged to live near one of the most beautiful coastlines in the world. The natural resources of coastal areas and marine waters are vital to our way of life and are the basis for a valuable international and domestic tourism industry along with commercial and recreational fishing.</p> <p><b>Seagrass and Mangroves</b> The extent and condition of seagrass and mangrove ecosystems (including salt marsh) in bays and estuaries will be greater than or equal to that in 1988 and 2001 respectively.</p> <p><b>Coral</b> The condition and spatial distribution of soft and hard corals will be maintained at least at 2005 levels.</p> <p><b>Beaches</b> The condition of open coastlines (headlands, beaches and dunes) will be at or better than in 2006.</p> <p><b>Fish Stocks</b> Wild fishery stock condition will be sustained at sufficiently high levels to support commercial, recreational and indigenous cultural fisheries, based on the 1995–2005 benchmarks (ten-year rolling average).</p> <p><b>Key Species</b> The extent and condition of the habitat of bottlenose and indo pacific humpback dolphins, dugongs, sharks, turtles and wader birds will be equal to or greater than that in 2001 for each species.</p> <p><b>Coastal Algal Blooms</b> The extent and frequency of coastal algal blooms (CAB) will be reduced from the 2002–2005 benchmarks (five-year rolling average).</p> <p><b>Coastal Wetlands</b></p>	<p>The quality of life enjoyed by people in the region is supported by access to, and connection with, the unique landscapes of the region. These regional landscapes help to define the region's character and our sense of belonging.</p> <p><b>Landscape Heritage</b> At least 90% of the 2011 area of regionally important landscape heritage will be retained within each local government area.</p> <p><b>Outdoor Recreation Settings</b> The 2011 extent of regional outdoor recreation settings will be maintained or increased.</p> <p><b>Outdoor Recreation Demand</b> 90% of the demand for outdoor recreation will be met through a mix of public land, waterways and the voluntary provision of opportunities on private land.</p> <p><b>Regionally High Scenic Amenity</b> The area of regionally high scenic amenity will be maintained or improved from the 2004 baseline. Locally Important Scenic Amenity At least 80% of the 2004 area of locally important scenic amenity within each local government area will be retained.</p>
	Traditional Owners
	Recognition of Traditional Owners as natural resource

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## References

SEQ Catchments report - Managing what matters: The cost of environmental decline in SEQ

South East Queensland Regional Plan

South East Queensland Natural Resource Management Plan

South East Queensland Infrastructure Plan

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