Take me to the River

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2014 Update of the SEQ Natural Resource Management Plan (2009-2031)
Natural Assets are important for community wellbeing and economic prosperity.

Natural assets are provided by the natural environment and can include:

• rivers, creeks and wetlands
• farmland
• islands, reefs and the ocean
• bushland, forests and other wild places
• beaches
• native animals and plants
• sand, gravel and timber
• clean air and good climate.

Other important assets are our people and heritage, both Indigenous and other, which are important factors in creating a community that works together.
Natural Assets are important for community wellbeing and economic prosperity.

Natural Assets provide benefits or services important for community wellbeing and the economy such as:

- Food
- Water
- Recreational opportunities
- Habitable Climate
- Habitat for flora and fauna
IPSWICH:
A thriving region of opportunity where our communities enjoy a vibrant lifestyle.
A region with safe, strong and inclusive communities

SOMERSET:
The natural environment and rural lifestyle are valued and protected
Integrated and welcoming, with something for everyone
We embrace economic opportunities
Planning and design look to the future while respecting the past
An active place which values participation

SCENIC RIM:
A Region of:
- Scenic views and natural environment
- Friendly, caring and connected communities
- Country heritage and rural lifestyle
- Vibrant, creative, productive and diverse communities
Important services we need from Natural Assets to achieve these Visions:

**IPSWICH:**
- Habitable Climate
- Knowledge Systems
- Water Quality
- Recreational Opportunities
- Reduced Pests and Disease
- Arable Land
- Therapeutic Landscapes
- Transport Infrastructure

**SOMERSET:**
- Transport Infrastructure
- Habitable Climate
- Reduced Pests and Disease
- Knowledge Systems
- Recreational Opportunities
- Therapeutic Landscapes
- Water Quality
- Arable Land
- Buffering against Extremes

**SCENIC RIM:**
- Habitable Climate
- Knowledge Systems
- Recreational Opportunities
- Transport Infrastructure
- Buffering Against Extremes
- Reduced Pests and Disease
- Therapeutic Landscapes
- Aesthetic Values
- Arable Land
- Food Products
- Inspiration
- Noise Abatement
- Sense of Place

www.ecosystemservicesseq.com
A habitable climate provides:

- water and heat to maintain life
- food for animals and humans and
- promotes community cohesion and mental and physical health.

Even a modest decline in outdoor recreation participation rates by SEQ residents of 2%:

$200 million decline in expenditure
(Managing What Matters)

Key NRM Plan Targets:
NC 1 – Bushland
NC3 - Wetlands
W6 - Waterways
Knowledge Systems – Education and Innovation

Services needed to achieve the Vision for Ipswich Mid Brisbane Scenic Rim

Education and training: $319M per annum (ABS 2011)

Key NRM Plan Targets:
• NC1 - Bushland
• W6 - Waterways
• L2 - Farmland
Natural Assets contribute to the purification of water that provides good water quality:

- Every $1 invested in catchment management saves between $7.50 and $200 in costs for new water treatment plants
- Removing one kg of nitrogen through conventional STP - $242
- Removing one kg of nitrogen through riparian restoration - $14.50

Key NRM Plan Targets:
- L2 - Farmland
- NC1 - Bushland
- NC3 - Wetlands
- W6 - Waterways
Services needed to achieve the Vision for the Ipswich Mid Brisbane Scenic Rim

Recreation – Tourism - Landscape Settings - Greenspace

Accommodation and food services employment $73.7M per annum (ABS 2011)

A loss of natural assets could result in:
• $8 billion reduction in turnover in SEQ tourism to 2031 (Managing What Matters).

Even a modest decline in outdoor recreation participation rates by SEQ residents of 2%:
• $200 million decline in expenditure. (Managing What Matters)

Key NRM Plan Targets:
L1- Farmland
NC 1 - Bushland
RLA – Outdoor Recreation Areas
W6 – Waterways
Services needed to achieve the Vision for Ipswich Mid Brisbane Scenic Rim

Reduce Pests and Disease - Biological Control

Integrated Pest Management:

The role of landscapes and non crop habitat, windbreaks etc. that shield crops etc. from disease spores - contributes to a more pest and disease resistant landscape.

Key NRM Plan Targets:
NC 1 – Bushland
L2 - Farmland
NC3 - Wetlands
W6 - Waterways
Services needed to achieve the Vision for Ipswich Mid Brisbane Scenic Rim

Arable Land - Productive Soils - Food Products

Agriculture, fisheries and forestry:
$43.7 M per annum (ABS 2011)

$1.2 billion primary production industry will suffer productivity and profitability risk from declining resource condition (Managing What Matters)

Soil health and biodiversity and the role it plays in food production and carbon storage.

Key NRM Plan Target:
• L2 Farmland

Indicators:
• L1 Salinity
• L6 - Soil Erosion
• L3 - Soil Acidity
• L4 - Soil Organic Matter
• L5 - Acid Sulfate Soils
• L7 - Grazing Land
Services needed to achieve the Vision for Ipswich Mid Brisbane Scenic Rim

Aesthetic Values - Therapeutic Landscapes - Scenic Amenity

It has been estimated that maintaining these areas will save at a minimum $10 million in health costs for SEQ (to 2031) (Managing What Matters)

Key NRM Plan Targets:
L1 - Farmland
NC1 – Bushland
NC3 - Wetlands
W6 - Waterways
Services needed to achieve the Vision for Ipswich Mid Brisbane Scenic Rim

Transport Infrastructure - Waterways

Annual total expenditure by SEQ resident anglers is approximately $194.2 million. (Managing What Matters)

An estimated 475,000 people in SEQ participate in recreational fishing each year (a participation rate of 22.6%). (Managing What Matters)

Port of Brisbane - spend $30 million annually on dredging to keep shipping lanes open. (Cost does not include disposal)

Key NRM Plan Targets:
W6 - Waterways
Services needed to achieve the
Vision for Ipswich Mid Brisbane Scenic Rim

Buffering against Extremes - Disturbance

Regulation

Cyclone Tracy:
Newer suburbs suffered more damage—attributed to protection by mature vegetation in older suburbs (Cameron et al (1983) Cyclone Tracy, Darwin).

Floodplains can provide a cost-effective alternative or supplement to structural mitigation approaches with additional ecosystem service and ecological benefits. Healthy Waters, Department of Environment and Heritage Protection.

Natural flood storage would reduce peak discharge by 64 per cent. Estimated net social benefit value at US$500 million (Hey et al (2009)- USA)

Key NRM Plan Targets:
L1 - Farmland
NC1 – Bushland
W6 – Waterways
NC3 – Wetlands
Qld Government State Interests

- Housing and liveable communities: amenity and community wellbeing
- Economic Growth: Agriculture, Tourism, Development and construction, Mining and extractive resources
- Transport and infrastructure: water supply catchments and infrastructure
- Hazards and safety: Natural hazards
- Environment and heritage: biodiversity, cultural heritage, healthy waters, coastal

Producing a prosperous Queensland
5 Priority Areas

1. Encourage a Shift in the Region’s Employment Profile Towards more Professional and Technical Jobs Employing People with a Higher Level of Qualifications and Skills
2. Support industries and services for growth in Defence and Aeronautical Industry
3. Enhance food and agricultural productivity in the Region
4. Value the Region’s Ecosystem Services
5. Enhance the regional community’s social development opportunities
What has changed in the last 10 yrs that might affect community’s vision for Ipswich Mid Brisbane Scenic Rim
Loss of Bushland

SEQ Region: Loss between 2001-2010: 14,626 ha

Ipswich:
• Change in Remnant Vegetation (Bushland) - loss of 1,893 ha leaving 21.4% of LGA – target is minimum 23.1% by 2031 or 3.1% of bushland in SEQ Region.

• Change in Woody Vegetation - loss of 2,033ha (2001-2010)

Regional targets for Bushland in Ipswich by 2031 (percentage cover as at 2001):
• Remnant vegetation 23.1%
• Non remnant woody 22%
Annual SEQ Regional Score - Freshwater

Assessment Year

Annual Regional Score


Annual 2012

Annual 2013

Lower

Higher

Lower
Annual SEQ Regional Score – Estuaries

Report card score

Year

2008 2010 2012 2014

Report Card Score

0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

C C C C C C+
Annual Score – Moreton Bay
What happened?

Extreme events – drought followed by floods in 2011, 2013
2011 – Some Issues

Approximately 7 rainfall events leading up to the 10th January, 2011
Eyewitness accounts and landholder rainfall data estimated that 50mm of rain fell in 30 minutes during many of these events.
Rainfall on the 10th January 2011 was in excess of 115mm over a day.

- Significant and lengthy erosion of stream banks
- Large riparian vegetation destroyed.
- Bank slumping
- Gully erosion
- Fencing and infrastructure loss (i.e. pumps)
- Levee breaches
- Infrastructure damage – i.e. culverts washed away.
Areas around Cunningham’s Gap and Mt Castle reportedly experienced falls of up to 1200mm (30 inches) resulting in a noticeable series of steep long slumps down the side of the Main Range National Park.

In the mid-Warrill (near Harrisville) landholders measured about 200mm (8 inches).
2013 – Some Issues

• Severe damage to cultivated paddocks and stream banks
• River changed course /badly eroded adjacent cultivation
• Riparian area adjacent to farms badly eroded
• Levee bank breeched major loss of fencing
• Damage to cultivation, fencing, stock and farm crossings
• Damage to spillways and fencing damaged
• Rosevale wetlands project withstood flows well
Rainfall in the mid-Brisbane catchment averaged between 200 to 300mm over a 3 day period.

The resilience of the mid-Brisbane catchment tested by peak flows from major tributaries such as the Lockyer, Black Snake, Pryde and Englands Creeks.

- Bank slumping in the mid-Brisbane
- Severe scouring is also evident at numerous sites along the river.
Ipswich, Somerset and Scenic Rim are planning for a Total Water Cycle Management Plan (TWCM) which will provide a single reference point for all aspects of water management.
What might happen in the future?

Bushland (Remnant Vegetation):
14.8% remaining or a potential loss of 7,143ha

Target for Bushland in Ipswich Mid Brisbane Scenic Rim by 2031 (percentage cover in 2001):
Remnant vegetation 23.1%
Non remnant woody 22%

Positive – revegetation and action already occurring
Return period for extreme rainfall event in one day
(Source: SimCLIM Michael Dan 2014).

<table>
<thead>
<tr>
<th>Location</th>
<th>Extreme rainfall in one day</th>
<th>2030</th>
<th>2050</th>
<th>2070</th>
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<tbody>
<tr>
<td>Gatton</td>
<td>220mm 29/1/2013</td>
<td>same</td>
<td>3X</td>
<td>6X</td>
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<tr>
<td>Gold Coast</td>
<td>279.5mm 29/01/2013</td>
<td>3x more likely</td>
<td>7X</td>
<td>10X</td>
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Note: Six major floods occurred in Brisbane between 1885 and 1910, followed by more than 60 years without a major flood.
Return period for extreme temperature of 42 degrees

(Scenario sourced: SimCLIM Michael Dan 2014).

<table>
<thead>
<tr>
<th>Location</th>
<th>2030</th>
<th>2050</th>
<th>2070</th>
</tr>
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<tbody>
<tr>
<td>Gatton</td>
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<td>6 x</td>
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<tr>
<td>Gold Coast</td>
<td>2 x</td>
<td>8 x</td>
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</tbody>
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Future water quality - Bremer

• If current management practices are not changed (business as usual), sediment loads are *predicted* to *increase from 26,000 t per year to 71,000 t per year* with nitrogen and phosphorus increasing slightly.

• sediment loads could be *reduced to 5000t per year* if there was maximum investment in catchment and Sewerage Treatment Plant (STP) upgrades.

Future water quality - Mid Brisbane and Lockyer

- sediment loads could increase from 12,000 t per year to 21,000 t per year if current management remains the same.
- maximum investment in catchment and Sewerage Treatment Plant (STP) upgrades could reduce sediment loads to 6,000 t per year.

Where to from here?

- ICC Community Plan
- ICC Plans, Policies and Programs
- Community strategies and action
- SEQ Natural Resource Management Plan