

# ***Appendix H***

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## ***Issues Identified In Other Regional Planning Processes***

## Issues Identified In Other Regional Planning Processes

The following tables identify and summarise the main issues raised in other planning processes in the region. If further detail is required we recommend the reader reviews the source documents. (Note: Numbers in brackets refer to categorisation in the Issues summary table-Appendix J)

**Table H-1 - Burdekin Catchment Condition Study Phase 1-Draft August 2002**

Natural Resource Management Issues	Prioritisation		
	Production	Environment	Overall
<b>Water Quality</b>			
• Bedload events-instream sediment (26)	14	10	9
• Washload events-suspended sediments (22)	6	3	2
• Ambient water quality-normal, non-flood conditions (22)	4	1	1
• Groundwater contamination (20)	15	16	16
• Changes to flow regime (26) (27)	8	6	5
<b>Salinity</b>			
• Dryland salinity (15)	2	4	6
• Irrigation salinity (20)	3	9	12
• Seawater intrusion (21)	9	15	15
<b>Land Degradation</b>			
• Soil erosion (15)	1	2	3
• Soil acidity (15)	18	18	18
• Pasture condition (7)	5	7	8
• Terrestrial weeds (18)	11	11	11
• Loss of habitat (28)	12	12	10
• Tree clearing and tree thickening (fire regime change) (28) (6)	12	12	10
• Riparian vegetation (28) (30)	10	8	7
• Degradation and loss of wetlands (28)	7	5	4
• Aquatic weeds (18)	13	13	13
• Feral animals (17)	16	14	14
• Mining and extractive industry impacts (3) (1)	17	17	17
	<b>Production</b>	<b>Environment</b>	<b>Overall</b>
Ambient water quality-normal, non-flood conditions (22)	4	1	1
Washload events-suspended sediments (22)	6	3	2
Soil erosion (15)	1	2	3
Degradation and loss of wetlands (28)	7	5	4
Changes to flow regime (26) (27)	8	6	5
Dryland salinity (15)	2	4	6
Riparian vegetation (28) (30)	10	8	7
Pasture condition (7)	5	7	8
Bedload events-instream sediment ((26)	14	10	9
Loss of habitat (28)	12	12	10
Tree clearing and tree thickening (fire regime change) (28) (6)	12	12	10
Terrestrial weeds (18)	11	11	11
Irrigation salinity (20)	3	9	12
Aquatic weeds (18)	13	13	13
Feral animals (17)	16	14	14
Seawater intrusion (21)	9	15	15
Groundwater contamination (20)	15	16	16
Mining and extractive industry impacts (3) (1)	17	17	17
Soil acidity (15)	18	18	18

### GBRMPA Water Quality Action Plan

“The greatest threat to the Great Barrier Reef has been identified as land-based run-off resulting from agricultural activities (cattle grazing, vegetation clearance and intensive cropping) in the catchments” (Haynes 2001, p.66).

- Causal events - land management practices resulting in accelerated erosion, vegetation clearing, excessive and/or inappropriate use of pesticides and fertilisers, and destruction of wetlands and stream bank vegetation.
- Symptoms – increase in sediment, nutrients, pesticides and heavy metals (localised) in streams, estuaries and the Great Barrier Reef Lagoon. (Marine pollutants due to shipping activities)
- Main vectors – catchment run-off, first flush events, flood plumes and accumulation in sediments.

### Burdekin Water Resource Plan – Preliminary Draft Technical Assessment Reports

The reports focus on the stream and riparian areas with limited reference to the wider catchment:

- Grazing impact on hydrology i.e. reduced infiltration = increased run off and erosion (7)
- Downstream impacts of land use (31)
- Riparian zone disturbance-clearing and vegetation loss, cane fires, exotic plant species, and uncontrolled stock access (28)
- Instream modifications-river management works, sand and gravel extraction, pump station/pool excavation, fishing, and fish stocking (23)
- Water resource developments- U/S dam/weir, dam/weir, D/S dam/weir, sand dam, pumped extraction, and supplementation/regulation (27)
- Introduction of alien species - Elevated base flows maintained by irrigation and recharge schemes have contributed to the spread and proliferation of exotic species. Hymenachne and Para grass are prevalent in the lower catchment with no annual drying to keep them under control. The situation is exacerbated by the loss of riparian vegetation. Other significant weeds include castor oil bush, noogoora burr, rubber vine, guinea grass, parkinsonia and chinee apple. Other weeds across the wider catchment include; lantana, giant rats tail grass, mesquite, prickly acacia and introduced grasses (18)
- Vertebrate pests include; pigs,cats,fox and rabbits and canetoads (17)
- Exotic fish include; mosquito fish (*Gambusia holbrooki*), sailfin molly (*Poecilia latipinna*), guppy (*P. reticulata*), and gourami (*Trichogaster trichopterus*). Tilapia (*Oreochromis mossambicus*) has been reported in the Haughton River. All are indicators of impacted reaches as they do well in degraded environments (17)
- Translocated native species also occur in the catchment, mostly large piscivorous (fish eating) predators, and are expected to impact on native fishes. (Freshwater catfish, silver perch, yellowbelly, Murray cod, sleepy cod and barramundi) (17)
- ACTFR is concerned about the effects of weeds on aquatic systems and native fish species (creating hypoxia) (18)
- Unrestricted grazing stock access to waterways appears to have significant effects on aquatic habitat and macro invertebrates (7)
- Change in flow regimes, due to water from the Burdekin Falls dam, from ephemeral to perennial has disrupted macro invertebrate communities with a key issue being turbidity (27)
- Microbial growth and dissolved oxygen concentrations are also concerns. Conditions have changed dramatically downstream of the Burdekin Falls dam, and presumably in the Haughton River. Effects are multi-factorial and interactive. Major changes in macro invertebrate ecology have resulted from these changes (22)
- Wetlands, estuary and floodplain processes and connectivity. Detrimental impacts from water resource use on fish passage and barramundi nursery quality. Artificially high lagoon water levels in distributary channels increases weed growth and associated issues. Weeds create restrictions to movement both physically and due to lower dissolved oxygen levels. Physical barriers are also an issue e.g. weirs (24) (23)
- Riparian vegetation condition is assessed as moderate to very poor for the lower Haughton River (below Glendale) and Major Creek sub catchments (28)

**Townsville-Thuringowa Strategy Plan :Framework for Managing Growth and Development**

Key issues identified in the *Townsville-Thuringowa Strategy Plan: Framework for Managing Growth and Development* are:

- Population increase of 50,000 expected to 2020 with associated infrastructure p.7
- Consultation with indigenous community needs to be improved p.8
- Household size is decreasing so more and varied dwellings are required p.9
- Maintaining landscape and aesthetic values p.9 (map p.10)
- Protection of significant areas with high conservation values outside reserves p.11
- Protection of key natural resources including good quality agricultural land (GQAL), dam catchments, groundwater, grazing land, fisheries and extractive resources p.11-13
- Maintain and strengthen diverse regional economy p. 13-15
- Management of urban growth and commercial development p.15-17
- Maintenance of architectural character and cultural heritage p.17
- Cultural and community services p.18
- Management of water demand and recycling programs p.18
- Wastewater management (catchment approach) p.18
- Solid waste management –reduction, recycling and disposal p.19
- Energy production and management p.19
- Integrated transport system approach p.20

Note – page numbers refer to the document *Townsville-Thuringowa Strategy Plan: Framework for Managing Growth and Development*.

# ***Appendix I***

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***Issues Identified During the Haughton River ICMP Planning Processes***

## Issues Identified During the Houghton River ICMP Planning Processes

This Appendix details the Houghton River catchment issues and pressures identified during the development of the ICMP in late 2002. The issues were raised at meetings, discussions and through direct correspondence to Connell Wagner.

(Note: Numbers in brackets refer to categorisation in the Issues summary table-Appendix J)

**Table I-1 - Houghton Issues Identified From Stakeholders Meeting**

### Land Use

Count	Issue	Participants' comments
<b>Land use change</b>		
	Industrial development (1)	
	Residential development (1)	
	Impacts of change in land use (1)	How can they be addressed in ICM
	Rural residential development (1)	
	Hobby farms (1)	
	Cane expansion (1)	
	Identifying constraints (2)	
	Assessment criteria (2)	
<b>Protection</b>		
	Community amenity (4)	Recreation/fishing/walking
	Ecotourism (4)	
<b>Impacts</b>		
	Urban areas (3)	

### Land Management

Count	Issue	Participants' comments
<b>Management practices</b>		
5	Land capability as a basis for use (5)	Giru watertable, sustainable
4	Fire management (6)	Elliott Range
3	Grazing management (7)	
2	Land levelling (8)	
2	Funding for fencing and water (9)	No monitoring or problem recognition
	Management skills and knowledge (10)	
	Management for biodiversity (11)	
	Landscape ecology in management planning (11)	
	Property planning (11)	Leasehold land strategy will require planning
	Demonstration sites for BMP (12)	
	No legal requirement for BMP (13)	
	Aerial spraying (14)	
	Road and rail spills (14)	
<b>Soils</b>		
5	Sediment (15)	Overgrazing/GBR
	Acid sulphate potential (16)	
	Sodic soils (16)	

Count	Issue	Participants' comments
	Structural change (15)	Alteration of surface levels
<b>Pests</b>		
2	Pests (17) (18)	
2	Weeds (18)	
2	Feral animals (17)	Pigs, dingoes
2	Woody weeds (18)	Lantana/Parthenium
2	Giant Rats Tail grass (18)	
	Grasses (18)	GRT/Grader
	Hymenachne (18)	
	Parasites (18)	Snake vine/Mistletoe
	Monitoring needed for planning (19)	Property scale
	Tree thickening (19)	Sign of declining conditions

**Water Management**

Count	Issue	Participants' comments
<b>Salinity</b>		
5	Rising water tables (20)	Giru
	Salt water intrusion (21)	North of Houghton/Mt Elliott Range system
	Drainage outflows (22)	
<b>Water quality</b>		
2	Sediment loads (22)	
2	Nutrients (22)	
	Heavy metals (22)	
	Majors Creek (22)	
	Impact of Burdekin River water (22)	
	Monitoring (19)	Upstream from BRIA
	Chemicals (22)	
<b>Watercourse management</b>		
5	Structures-weirs/infrastructure (23)	Fish passage, flow disruption
3	Erosion (26)	Cungulla
3	Stream clearing (24)	In stream growth
3	Flood mitigation (25)	Levee banks outflow
2	Structures-levees (25)	Still licensing requirements under the Water Act for Houghton River and Majors Creek-Mal Johnson
2	Sedimentation (26)	Loss of waterholes
2	Pest species (18)	Healey's/Ironbark system
	Flood impacts (25)	Giru/CSR mill/rail/roads
	Recreation (3)	
	Habitat (30)	
	Sand and gravel extraction (26)	
	Impacts of alterations (26)	
<b>Water use management</b>		
4	Tail water run off (27)	
3	Water use efficiency (27)	
3	Ground water use (27)	
	Town water allocation (27)	
	Supplementation (27)	
	Natural yield (27)	

**Biodiversity And Vegetation**

Count	Issue	Participants' comments [facilitator's comments]
<b>Loss and degradation</b>		
4	Vegetation clearing (28)	One specific to roadside vegetation including fire and levelling of land
3	Fish habitat (28)	
2	Pressure on fisheries (28)	
	Biodiversity loss (28)	
	Habitat fragmentation (28)	Loss of fauna connectivity
	Wetland degradation (28)	Equals loss of tourism, weeds
	Loss of woodland and open savanna bird species (28)	Resulting from vegetation changes including 'cleaning' and thickening from lack of fire
	Horseshoe Lagoon –flooding (28)	
	Agricultural expansion (28)	
	Rangeland condition decline (28)	
<b>Protection</b>		
5	Wetland habitat (29)	Unique RAMSAR wetlands, aquatic
2	Vegetation remnant (29)	Long term, lowland
2	Riparian vegetation and habitat (29)	Bank stability. In stream processes
2	Key areas (29)	
	USL as conservation areas (29)	
	Biodiversity maintenance (29)	Variety/representative/connectivity/% land cover
	Habitat (29)	
<b>Management</b>		
4	Remnant vegetation (30)	
4	Wetlands (30)	Grazing as a management tool on seasonal coastal wetlands
2	Hymenachne (18)	Lagoons/channels/dams, Healeys Lagoon
2	Floating aquatic weeds (18)	
2	Biodiversity (30)	Control/management of threats e.g. feral animals
2	Pigs (17)	
	Riparian vegetation (30)	
	Regrowth (30)	
	Horseshoe Lagoon (30)	Future role?
	Chinee apple (18)	
<b>Downstream impacts</b>		
3	RAMSAR site (31)	Estuary/coast
2	Manufacturing (31)	
2	Supplementary flows (31)	Unnatural in stream growth, weed seed potential



**Information and communication, and NRM coordination**

Count	Issue	Participants' comments
<b>General</b>		
	Perspectives (32)	Many individuals involved
	Attitudes (32)	How to change behaviour and process
	Learning styles (32)	Graziers
	Rural leadership (33)	
	Successional planning (32)	Family relationships
	Planning process (34)	Validity of process
	Red tape hinders remedial action (34)	Erosion control in streams
	Here and now attitude hinders long term planning and implementation (32)	
<b>Knowledge and awareness</b>		
	Wetland management (33)	
	Ecosystem processes (33)	Lack of recognition
	Groundwater (33)	Lack of appreciation of the nature of
	Landscape level biodiversity (33)	Recognition of rather than arbitrary %
	Whole of catchment (33)	Lack of appreciation
	Catchment management (33)	Education required for all
	Soil mapping (33)	Lack of soil mapping
	Interpreted planning (33)	For NRM/practical guidelines
	Economic impact examples (33)	Lack of economic impact analysis
	Alternate crops and animals (33)	
	Collation of information (33)	The main prerequisite to planning
<b>Coordination</b>		
	Inter agency (34)	Lack of inter-agency coordination
	Number of agencies (34)	Pace of decision making
	Scale (34)	Many bodies
	Land and water management (34)	Needed
	No legislative requirement to be involved in the process (34)	All landholders need to be involved for it to work
<b>Socio economic</b>		
3	Sugar industry (35)	Low price, instability, sustainability
2	Funding (37)	For NRM implementation
	Rural towns viability (36)	
	Economic benefits need to be shown for environmental action (38)	
	Judicious spending required (37)	Not just because funds are available

**Haughton issues identified from public meetings****Giru 17/9/02****Weeds**

- Healeys Lagoon
- Instream vegetation-Haughton River-Para grass, Panics and other vegetation (18) (24) (which leads to increased siltation)

**Erosion and siltation**

- Silt build up in the Haughton (26)-sand extraction to overcome problems –e.g. sand island upstream of Giru bowling club
- Causes of siltation (31)-grazing pressure (7)-pigs (17) degrading areas-little contribution from the floodplain

- Roads and rail (8) on the floodplain have a significant impact on flood flow-damming and channelling
- Streambank erosion (26)-lost 15 metres of bank

#### Impacts of development

- Woodstock will make water downstream unfit for use (1) (31)

#### Social/economic

- Urban/rural divide (32)-clean water (22) is demanded in urban areas but degraded systems are 'alright' in rural areas from an urban perspective
- Asset protection-(as a result of worsening floods from silted rivers) (25) (26)
  - -implications include; increased insurance premiums, services affected (35) (36), historic studies aren't given due consideration (34) (unrest due to studies and no action), local experience should be taken more seriously when considering actions (34), Cungulla replenishment (what is the situation when considering removal of sand from the system) (26), extraction as an option for improving the situation (26), government regulations hinder the process (34), weirs have a major impact but how do we do without them? (27) (23), changed conditions mean that the issue is much more complex

#### Private input

- Access to the river for passive recreational use (4)
- Illegal sand dams reduce the overflow and create more overbank flow downstream (23)
- Hydraulics in Major Creek catchment/Serpentine Lagoon result in flow back to the Ross River catchment in some events i.e. when the Haughton system is 'full' (33)

#### The main issue at the Giru meeting;

- flooding exacerbated by silting and instream vegetation

#### The main concern;

- asset damage

#### The suggested solution;

- extraction of sand, and removal of vegetation

#### Impediments;

- government regulations and policy

#### **Woodstock 18/9/02**

##### Woodstock Industrial Estate

- validity of WIE report/information (33)
- potential impacts (1)
- water quality implications (20) (22)

#### ICM planning process

- Contribution of the ICMP into planning processes with a legislative base e.g. Coastal Protection and Management Act for coastal management plans (13).
- Bindal should be included not just the Gudjuda Reference Group (34).
- Integrated Planning Act is not a useful piece of legislation (32).

Weeds (18)

Riparian weeds	Other areas	Dunes and coastal areas
<ul style="list-style-type: none"> <li>• rubber vine</li> </ul>	<ul style="list-style-type: none"> <li>• bellyache bush</li> </ul>	<ul style="list-style-type: none"> <li>• lantana</li> </ul>
<ul style="list-style-type: none"> <li>• chinee apple</li> </ul>	<ul style="list-style-type: none"> <li>• snake weed</li> </ul>	<ul style="list-style-type: none"> <li>• rubber vine</li> </ul>
<ul style="list-style-type: none"> <li>• lantana</li> </ul>	<ul style="list-style-type: none"> <li>• grader grass</li> </ul>	
<ul style="list-style-type: none"> <li>• snake vine-potatoe vine</li> </ul>	<ul style="list-style-type: none"> <li>• Captain Cook bush</li> </ul>	
General		
<ul style="list-style-type: none"> <li>• parthenium (potential)</li> <li>• ornamentals</li> <li>• instream vegetation leading to siltation, change of flow and subsequent erosion (24).</li> </ul>		

Feral animals (17)

- pigs and rabbits, wild dogs and cats. Fish (exotics)?

Native vegetation

- Native vegetation dieback (28).
- Native vegetation degradation and subsequent erosion (28) (26).
- Inappropriate clearing/vegetation management (30).
- Vegetation-native-growing instream especially during dry years when there is no flushing (24).

Management coordination

- Coordination of pest management and revegetation (34).
- Management of State lands (34).
- Pest management coordination among landholders and Councils (34).
- Fire management (6).

Stream management

- Sand instream-Major Creek-could ride a horse under the bridge once upon a time (26).
- Sand dams and other 'illegal' works associated with streams, generally associated with horticultural development and management (23).
- Levees and structures and there effects (DNRM licensing?) (25).
- Major Creek seems to be the priority area (23) (26).
- Pesticides and other chemicals? (22)

The main issues at the Woodstock meeting (excluding Woodstock Industrial Estate);

- weeds and stream silting

The main concern;

- loss of native vegetation and management practices leading to further erosion and change of flow

The suggested solution;

- coordinated weed control program and stream management program

Impediments;

- lack of participation of all necessary to make it work

**Mingela 23/10/2002**

Issue	Count
<b>Weeds</b>	
Weeds-associated with creeks, after droughts (18)	3
Weed growth in lower Houghton (18)	1
Chinee apple (18)	2
Lantana-covers large areas no grass can grow (18) (7)	3
Rubber vine-taking over the creeks (18) (28)	3
Spread/introduction of weed e.g. Parthenium and trespassers (18)	2
<b>Fire</b>	
Fire control needs improving-vegetation destroyed (6) (28)	1
Unseasonal fire causing erosion (6)	1
Erosion on creek banks	
<b>Water Resources</b>	
Drought in upper catchment (7)	1
Land degraded due to dry years (7)	1
Drought (7)	1
Lack of grass because of drought (7)	1
<b>Water Management</b>	
Maybe illegal damming downstream (26)	1
Water management and salinity (downstream) (27) (20)	1
Possible overuse of water downstream (27)	1
Not enough surface water available (27)	1
<b>Pests</b>	
Feral animals-pigs x2, rabbits, cats, cane toads (17)	2
Kangaroo numbers (17)	1
Dingoes/wild dogs (17)	1
All the issues are known	1

**Houghton issues identified from sub regional strategies**

- Houghton River-riparian vegetation (28), water quality (22), stream bank and bed disturbance (26), impacts on fish populations (23) and (28)
- Majors Creek-riparian vegetation, stream bank and bed disturbance, water harvesting (13)
- St Margarets Creek- localised stream bank and bed disturbance, impacts on fish populations
- Spring and Double Creeks- impacts on fish populations
- Reid River – impacts of cattle (7) on riparian vegetation and stream bank and bed condition is marked as unknown.
- Current community involvement is marked as unknown for all sub catchments (33).

(Source: *T TLC*, p.68-Wetlands and waterways issues table)