

6 CONCLUSIONS

Based on the objectives of the monitoring project, results from three wet seasons of runoff events and three flood plumes provide the following conclusions:

Total suspended solids, nutrients, pesticide residues and organic compounds from event flows were measured from dominant land-use sub-catchments and mixed land-use catchments. In comparison to forest sub-catchments:

- Sugar cane dominated sub-catchments exported high concentrations of nutrients, particularly dissolved inorganic nitrogen (DIN; median 624 µg N/L) and filterable reactive phosphorus (FRP; 203 µg P/L) and some herbicides (particularly diuron; 3.2 µg/L), and moderate to low concentrations of total suspended solids (TSS; 46 mg/L),
- Grazing dominated sub-catchments exported moderate concentrations of TSS (82 mg/L), nutrients and low concentrations of some herbicides.
- Urban sub-catchments exported high concentrations of total phosphorus (TP; 292 µg P/L), and FRP (185 µg P/L), and moderate concentrations of trace organics (some herbicides and petroleum hydrocarbons).
- Two developing urban sub-catchments produced very high TSS concentrations (median and maximum of 278 and 6000 mg/L, respectively).

With respect to pollutants discharging to the inshore areas of the GBR lagoon, the monitoring program found:

- Three events that discharged from the Pioneer River to the inshore area (total flow 702,000 ML) had an event mean concentration of 198 mg/L for TSS (load of 139,100 tonnes), 390 µg N/L for DIN (274 tonnes), 1.12 µg/L for diuron (786 kg) and 0.58 µg/L for atrazine (407 kg).
- High concentrations (exceeding known effect levels and guidelines) of a number of herbicides in flood plumes.
- High concentrations of nutrients in flood plumes resulted in a massive phytoplankton bloom in January 2005.
- A visible flood plume (algal bloom) persisted in coastal waters and surrounded the inshore reef systems for up to 10 days in January 2005, and diuron persisted above detection levels for at least 9 days in February 2007.
- Inshore marine ecosystems were subjected to multiple effects (synergistic or antagonistic) of a mixture of herbicides, nutrients, TSS, low salinity and organic matter.

Significant baseline information to support local and regional target-setting, and water quality improvement plans was collected in the monitoring program, and showed that:

- Sugar cane sub-catchments produced low TSS concentrations similar to forest sub-catchments, in part as a result of the adoption of green cane trash blanketing and improved farm management practices. Hence, the sugar industry is well placed to meet any future TSS water quality targets. In developing urban and grazing sub-catchments, there is greater potential for improvements in TSS concentrations.
- Sugar cane sub-catchments generated greater nutrient and herbicide concentrations than forest sub-catchments. The soluble inorganic forms of nutrients that are more bioavailable and have a greater potential to impact on

riverine, coastal and marine ecosystems are constituents that require water quality targets to be set.

This has been the first study to comprehensively examine herbicide concentrations in flood plumes within the GBR. The data show that herbicide application in GBR catchments is an important management issue. The data also show that, for the flood plumes monitored, offsite transport from agricultural catchments poses a significant risk to the health of inshore corals, seagrass and mangroves.

7 RECOMMENDATIONS

1. *Issue:* Persistent herbicide detections (particularly atrazine, diuron, and hexazinone) in sugar cane sub-catchments, but also in grazing and urban sub-catchments, and throughout the plumes

Recommendations:

- Follow Australian Pesticides and Veterinary Medicines Authority (APVMA) Atrazine and Diuron Review recommendations
- Use of risk assessment tools (e.g. Safe Gauge) in identifying potential environmental risks in the timing and application of herbicides
- Devise and deliver an educational campaign targeting the appropriate use of herbicides in urban and rural areas
- Continue the adoption of green cane trash blanketing and reduced tillage

2. *Issue:* High losses of dissolved inorganic nutrients (especially nitrate and filterable reactive phosphorus) from sugar cane areas

Recommendations:

- Promote further adoption of nutrient management plans and improved management practices to reduce dissolved inorganic nutrient losses from sugar cane farms
- Explore the potential to retain runoff water on-farm (dams and artificial wetlands) for retention and reuse
- Determine sources and levels of catchment phosphorus to differentiate between natural and applied sources

3. *Issue:* Tebuthiuron detections in the Andromache and O'Connell Rivers, and resulting plumes

Recommendations:

- Investigate tebuthiuron use and label recommendations for use

4. *Issue:* Very high soil erosion rates from some developing urban sub-catchments (e.g. Airlie and Waite Creeks)

Recommendations:

- Enforce, install, monitor and regulate the use of sediment control structures in developing urban sub-catchments
- Improve planning (including risk assessment modelling and urban sensitive design) and works on steep slopes, particularly prior to and during the wet season
- Maintain and/or improve riparian vegetation buffers and grass filter strips along waterways and vegetation on steep slopes

5. *Issue:* Moderate levels of soil erosion exported from grazing sub-catchments

Recommendations:

- Monitor cattle pasture utilisation rates to maintain adequate ground cover levels to reduce soil erosion

6. *Issue:* Transfer of knowledge and understanding of local and regional water quality issues

Recommendations:

- Provide feedback to volunteers and the community by providing interim reports and a short summary publication
- Presentation of results through release of reports, public forums, press releases, presentations at scientific and land management meetings, and scientific publications
- Collaborate with industry and other stakeholders, and incorporate the project findings into the Sustainable Landscapes Program and Water Quality Improvement Plan
- Integrate and link with the state and federal components of the Reef Water Quality Protection Plan, particularly Strategy I4 (Implement a water quality and ecosystem health long-term monitoring program) and I5 (Implement a coordinated water quality monitoring program in high-risk catchments to track long-term trends in water quality)

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9 UNITS OF MEASURE

µg	microgram (one-millionth of a gram)
µg/L	micrograms/litre
µm	micron (one-millionth of a metre)
µS/cm	micro-Siemens per centimetre, a unit measure for conductivity (a measure of the water's ability to conduct an electrical current, where conductance increases with the amount of dissolved salts in the water)
kg	kilogram
L	litre
m³/s	cubic metres/second (cumec) (a cubic metre is equivalent to one thousand litres) (1000 L/sec = 1 cumec) (1 cumec = 86.4 ML/day)
m	metre
mg	milligram (one-thousandth of a gram)
mg/L	milligrams/litre
mL	millilitre (one thousandth of a litre)
ML	megalitres (one million litres) (1 million litres or 100 mm over 1 hectare)
ML/day	megalitres/day
mm	millimetre (one-tenth of a centimetre)
ng	nanogram (one thousand millionth of a gram)
ng/L	nanograms/litre
psu	practical salinity unit (similar to parts per thousand)

10 ACRONYMS

ACTFR	Australian Centre for Tropical Freshwater Research
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agricultural and Resource Management Council of Australia and New Zealand
AUS-IFD	Australian Intensity Frequency Duration
BoM	Bureau of Meteorology
DIN	Dissolved Inorganic Nitrogen
DON	Dissolved Organic Nitrogen
DOP	Dissolved Organic Phosphorus
EPA	Environmental Protection Agency
FRP	Filterable Reactive Phosphorus
GBR	Great Barrier Reef
LANDSAT	Land Remote-Sensing Satellite
MCC	Mackay City Council
MODIS	Moderate Resolution Imaging Spectroradiometer
MWNRM	Mackay Whitsunday Natural Resource Management Group
NATA	National Association of Testing Authorities, Australia
NHT	National Heritage Trust
NRW	Queensland Department of Natural Resources and Water
PN	Particulate Nitrogen
PP	Particulate Phosphorus
QA	Quality Assurance
QC	Quality Control
QHSS	Queensland Health Scientific Services
RWQPP	Reef Water Quality Protection Plan
SeaWiFS	Sea-Viewing Wide Field-of-view Sensor
TFN	Total Filterable Nitrogen
TFP	Total Filterable Phosphorus
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
WQ	Water Quality
WQIP	Water Quality Improvement Plan

11 GLOSSARY

adsorption

The attachment, or attraction, of ions or compounds to the surface of a solid, namely in this context, a soil or organic particle

allochthonous

Derived from outside a system, such as leaves of terrestrial plants that fall into a stream

alluvium

Soil or sediment deposited by floodwaters

ambient

Conditions or concentrations normally occurring in the environment

AUS-IFD

Intensity/frequency/duration software that calculates the design average rainfall intensities and temporal patterns for any location in Australia using the procedures described in Australian Rainfall and Runoff, 1987.

available nutrient

The amount of nutrients in the soil that can be taken up by plants. In the case of this study available nutrients are nitrate, nitrite and ammonia (nitrogen source) and filterable reactive phosphorus (sometimes referred to as orthophosphate) (phosphorus source)

baseflow

Low-water flow in a river or stream sustained by non-seasonal rainfall inputs to headwater catchments and groundwater inputs

bedload

Course sediment carried along the bed of a stream or river by the current

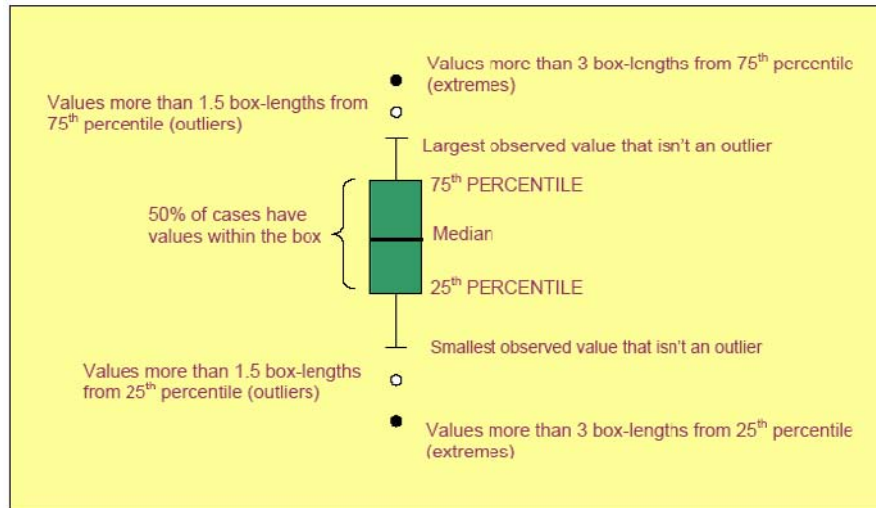
benthic

Associated with the river or sea bottom

bioavailability

In a form that is readily consumed or assimilated by organisms

boxplot



catchment

The total area, or portion of that area, drained by a river or other water body

chlorophyll

Green pigments in plants that facilitate photosynthesis

denitrification

The biochemical formation of gaseous nitrogen and or oxides of nitrogen from nitrate or nitrite by some bacteria during anaerobic respiration (microbial conversion of nitrate (NO_3^-) to inert di-nitrogen gas (N_2) in order to obtain the oxygen for metabolism). Denitrification is only carried out by specialised bacteria under anoxic (oxygen free) conditions. This process only occurs in anaerobic or hypoxic conditions, i.e. when oxygen supply is limited as in a waterlogged soil.

detritus

Non-living organic matter once apart of or produced by living organisms

ecosystem

A community of organisms and their physical environment that interact as an ecological unit

eutrophic

Characterised by elevated nutrients, organic matter and plant productivity

eutrophication

The enrichment of a water body or ecosystem with organic matter or nutrients (e.g. N, P), generally leading to an increase in biological activity

event

A period of rainfall that results in enough runoff from the catchment to cause a significant rise in the water level of a river

event mean concentration

The flow weighted mean pollutant concentration (total load/total flow) recorded during runoff events

flux

In the context of this report, it is defined as the amount of material (e.g. N, P, and TSS) that has been carried in a discharge over a given period of time

fringing reef

Coral reef growing along the coastline or margin of an island or continent

Green Cane Trash Blanketing (GCTB)

A now-common sugar cane harvesting practice where the mature cane is not burnt before harvesting. During harvesting, the cane leaves are mechanically stripped from the stalks and left to lie in the paddock, forming a blanket of leaf trash

groundwater

Water held in saturated sub-surface and porous rock

hard coral

A solitary or colonial coral species producing a hard skeleton of calcium carbonate

hydrograph

A particular flow event, i.e. relating flow discharge to time

igneous

Rock formed directly from volcanic activity or solidified magma (e.g. granite)

in situ

Occurring or formed in place

load

What is carried or borne

loading

Load carried per unit area

median

Middle value in a data set, where exactly half of the data set will have greater values than that quantity. In contrast to the mean or average value of the data set, the median is used where the data set is not normally distributed, i.e. non-parametric

metamorphic

Igneous or sedimentary rock transformed by intense heat and pressure to a different form (e.g. marble formed from limestone)

nearshore zone

Shallow marine waters, generally within 10-15 km of the coastline

nitrification

The biochemical oxidation of ammonia to nitrate and then to nitrite by certain bacteria. This process is strictly aerobic, or requires the presence of an oxygenated environment.

nitrogen fixation

The microbial conversion of inert di-nitrogen gas (N₂) to metabolically useable forms of nitrogen. Nitrogen fixation is only carried out by specialised bacteria

no-tillage cultivation

Farming practice where the land is not ploughed or tilled between crops in order to maintain the natural soil structure. When a new crop is planted, seeds are sown directly into the ground. In the case of sugarcane, the next crop (ratoon crop) grows from the cut bases of the previous crop.

pH

A shorthand measure of acidity. The pH of a water sample = -1 times the base-10 logarithm of the hydrogen ion (H⁺) concentration. A neutral solution has a pH of 7. A low pH (<7) indicates acidity while a high pH (>7) denotes an alkaline sample

phaeophytin

A non-photosynthetic accessory pigment present in algae

photosynthesis

The process by which plants convert water and carbon dioxide into carbohydrates, using sunlight as the source of energy and the aid of chlorophyll

photosynthetic inhibition

A process that constrains the photosynthetic process

photosystemII

A photosystem is a discrete unit of organisation of chlorophyll and other pigment molecules embedded in the thylakoids of chloroplasts and involved in light-requiring reactions of photosynthesis

phytoplankton

Plant plankton; generally microscopic single-celled algae and photosynthetic bacteria

plankton

Bacteria, plants and animals which live drifting in marine and freshwaters. Many types of plankton can swim, but do so to move about the water rather than stay in one location. Many benthic plants, animals and fish have spores or larval stages which live, drift and develop for days to months in the plankton before settling to the bottom and maturing

recruitment

A life process of many organisms when a larval or juvenile stage matures and is considered to be part of the adult population. For many reef and benthic species, recruitment refers to the changes occurring when planktonic larvae or juveniles attach to or take up residence on the bottom

riparian

The zone immediately adjacent to a stream or other water body. Describing vegetation adjacent to a stream or water body

seagrass

One of a group of flowering plants (angiosperms) which have adapted to live submerged in the ocean

sedimentary

Rock formed from deposited sediment (e.g. sandstone)/ a rock forming from the consolidation of loose sediment

sessile

Non-mobile or physically attached to the bottom

SILO

A patched point meteorological dataset, using original Bureau of Meteorology measurements for a particular meteorological station, but with interpolated data used to fill ("patch") any gaps in the observation record. Developed by NRW (<http://www.nrw.qld.gov.au/silo/>)

soft coral

A solitary or colonial coral species lacking a hard carbonate skeleton. Soft corals are in a different family (octocorals) than hard corals

standard deviation

A statistical measure of variability in a group of measured values

stoichiometry

Calculation of the quantities of reactants and products in a chemical reaction

trophic status

The relative position occupied by an organism in a food chain or web

turbidity

Opacity or muddiness caused by particles of extraneous matter; not clear or transparent

zooplankton

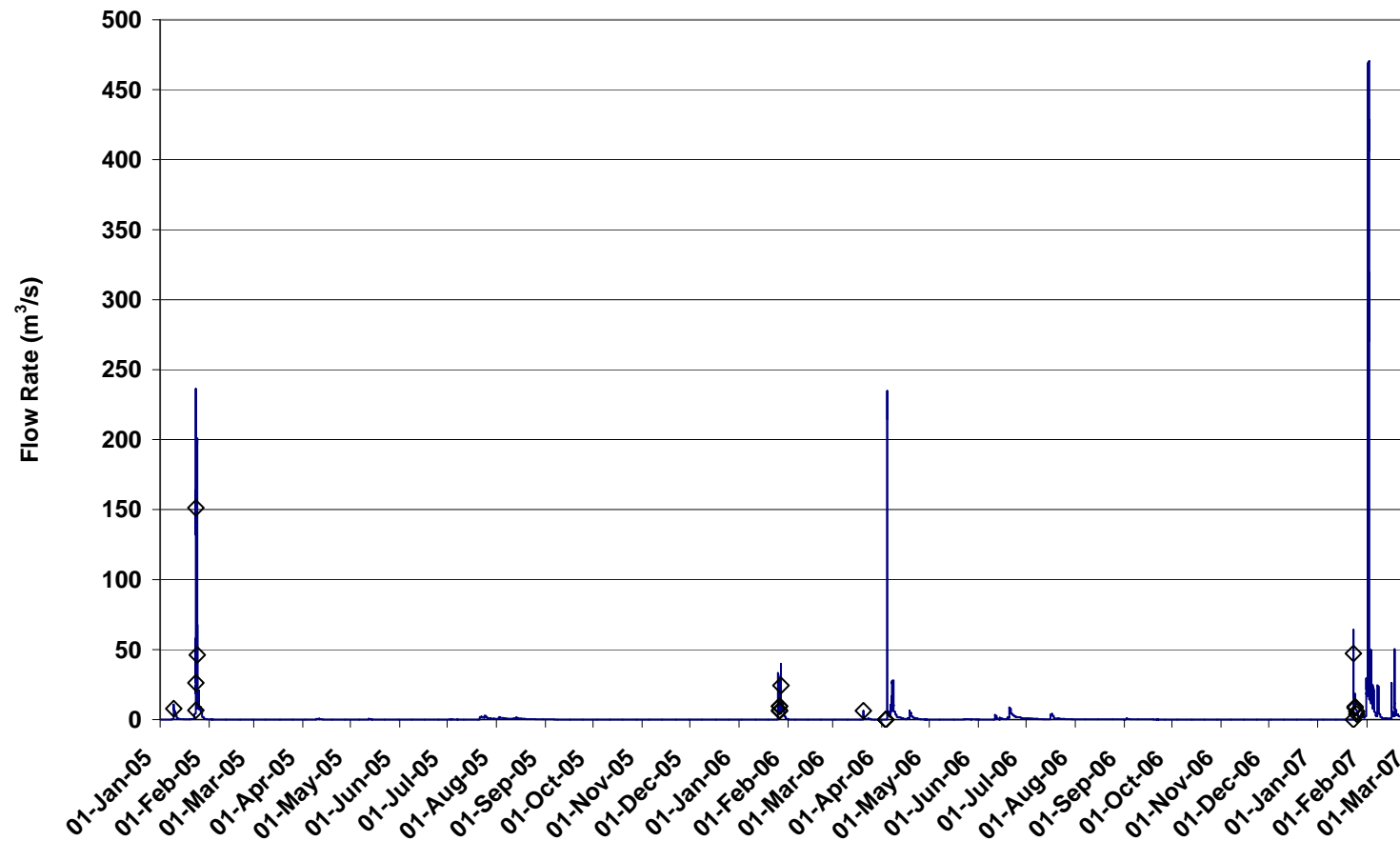
Animals living drifting with the water. Some animals spend their entire life in the plankton, while others spend only part of their cycle drifting

zooxanthellae

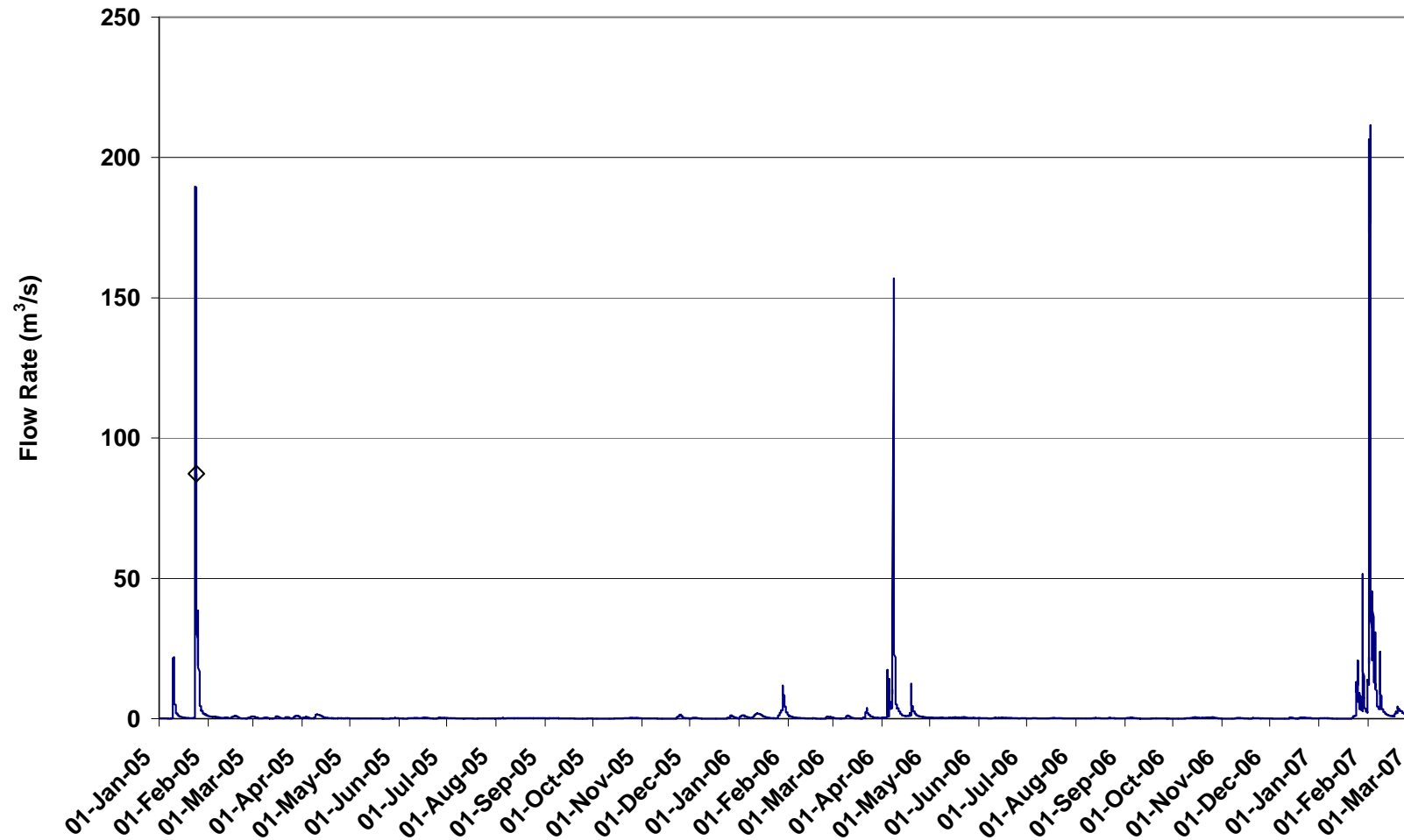
Specialised microalgae within the tissues of corals, giant clams and other reef organisms

APPENDIX A – Flow hydrographs indicating sample collection times

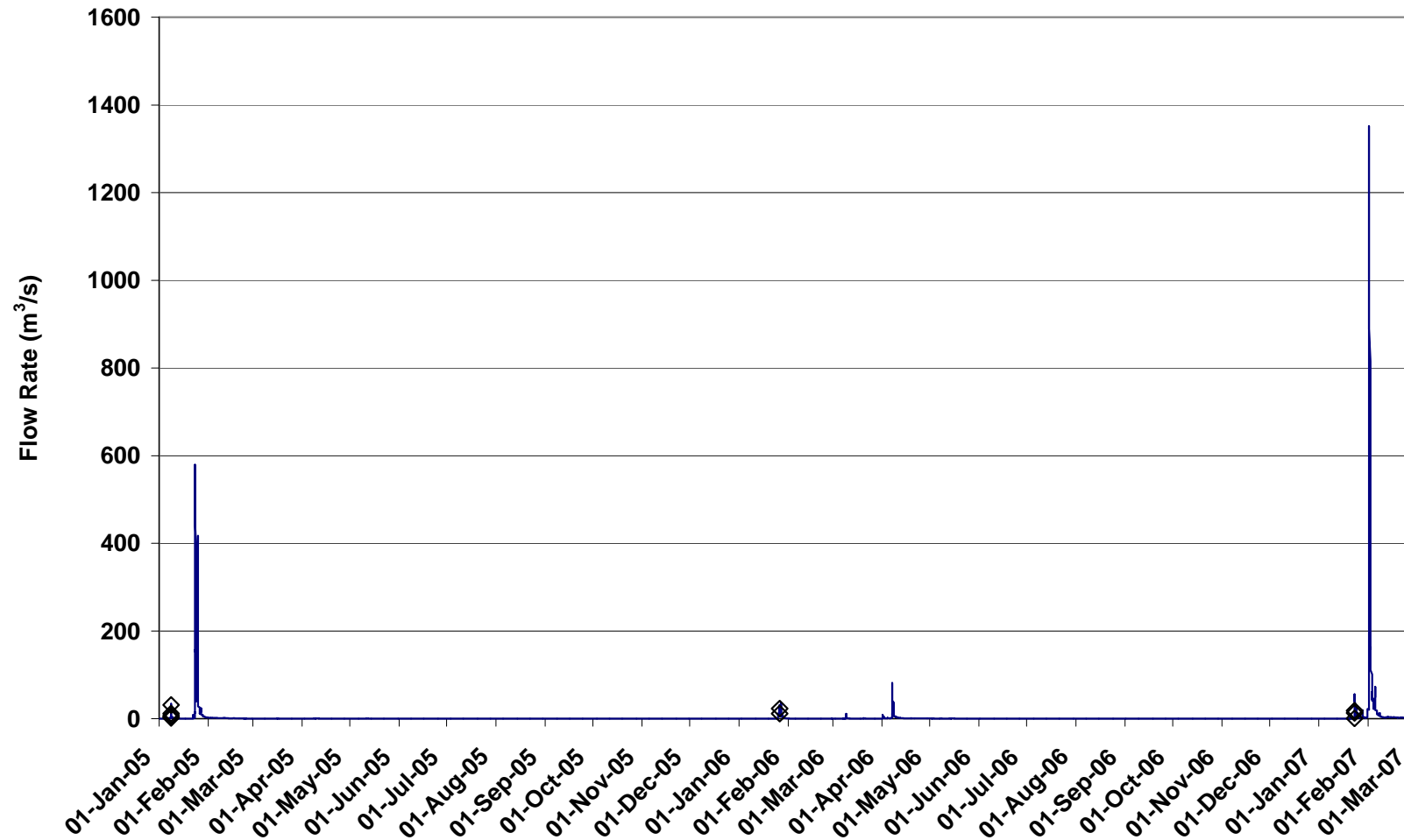
A.1 Gregory River



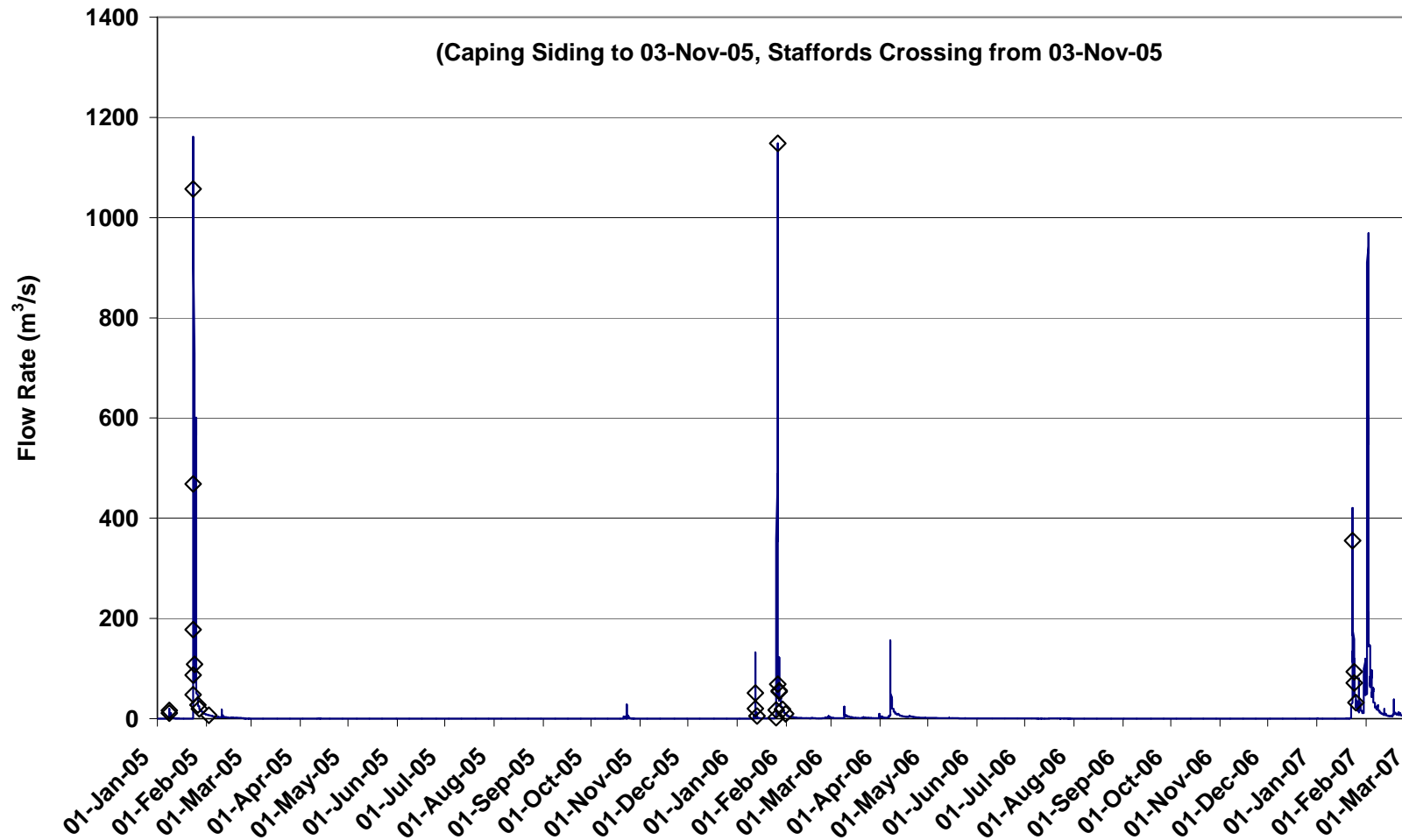
A.2 Proserpine River



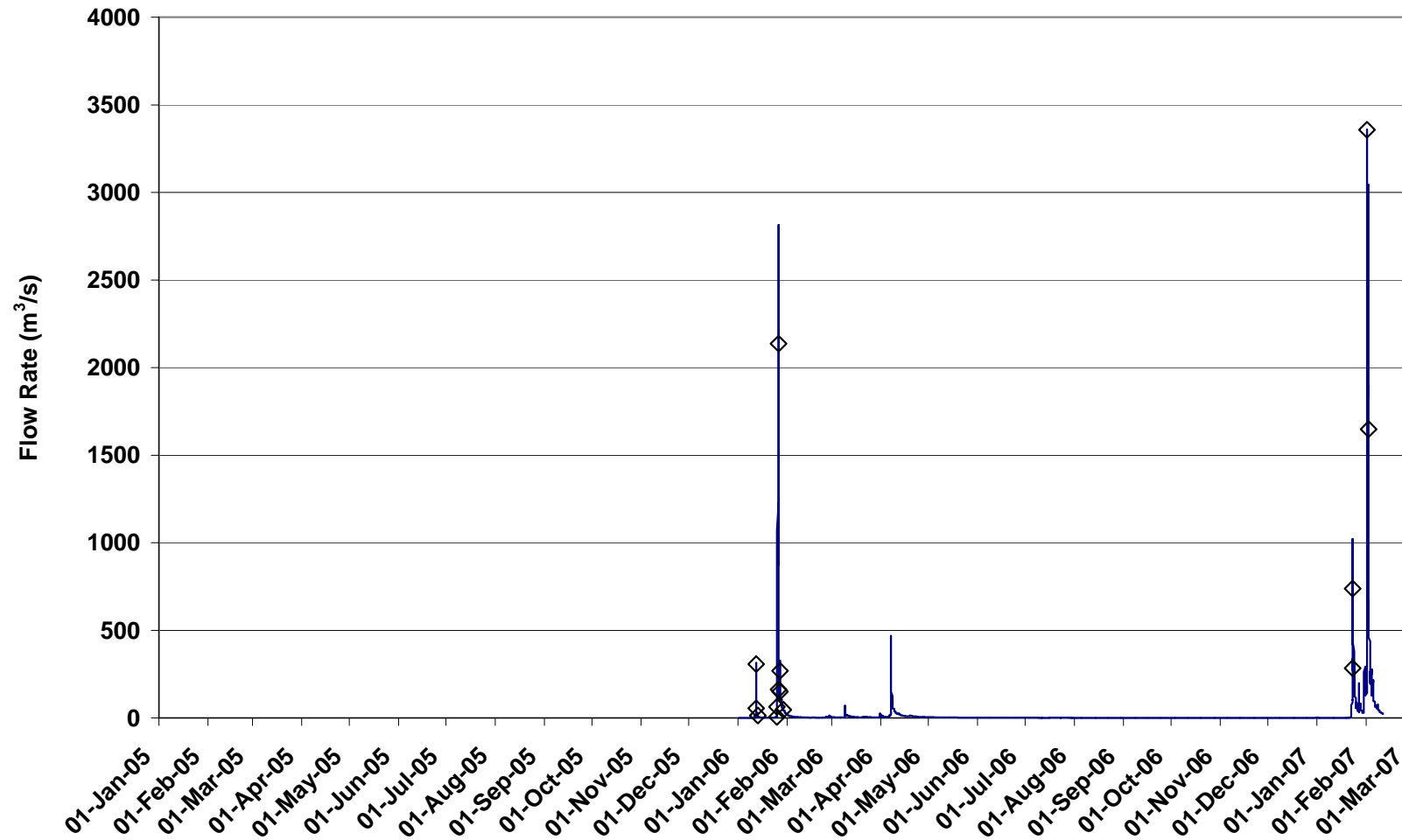
A.3 Andromache River (upper)



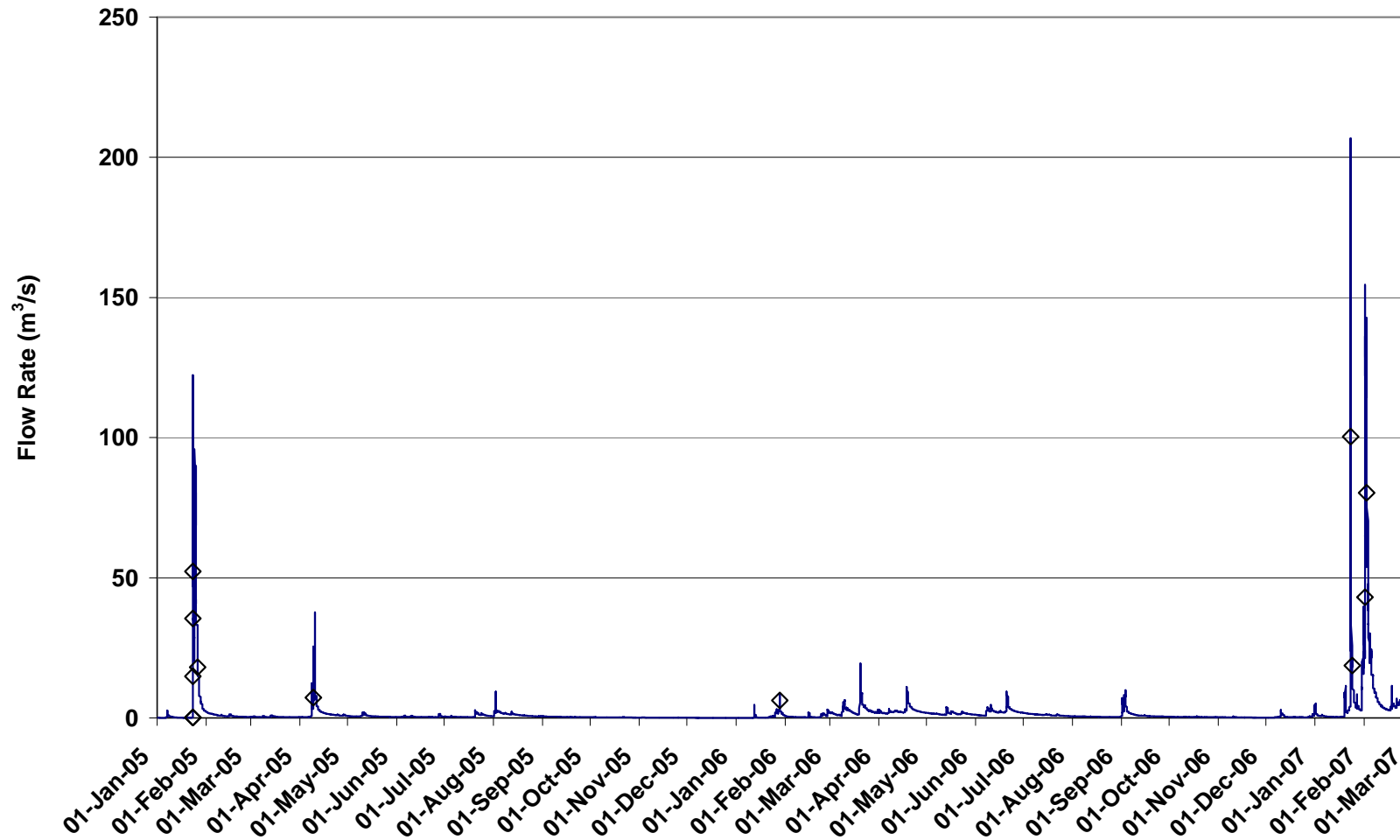
A.4 O'Connell River (Caping Siding/Staffords Crossing)



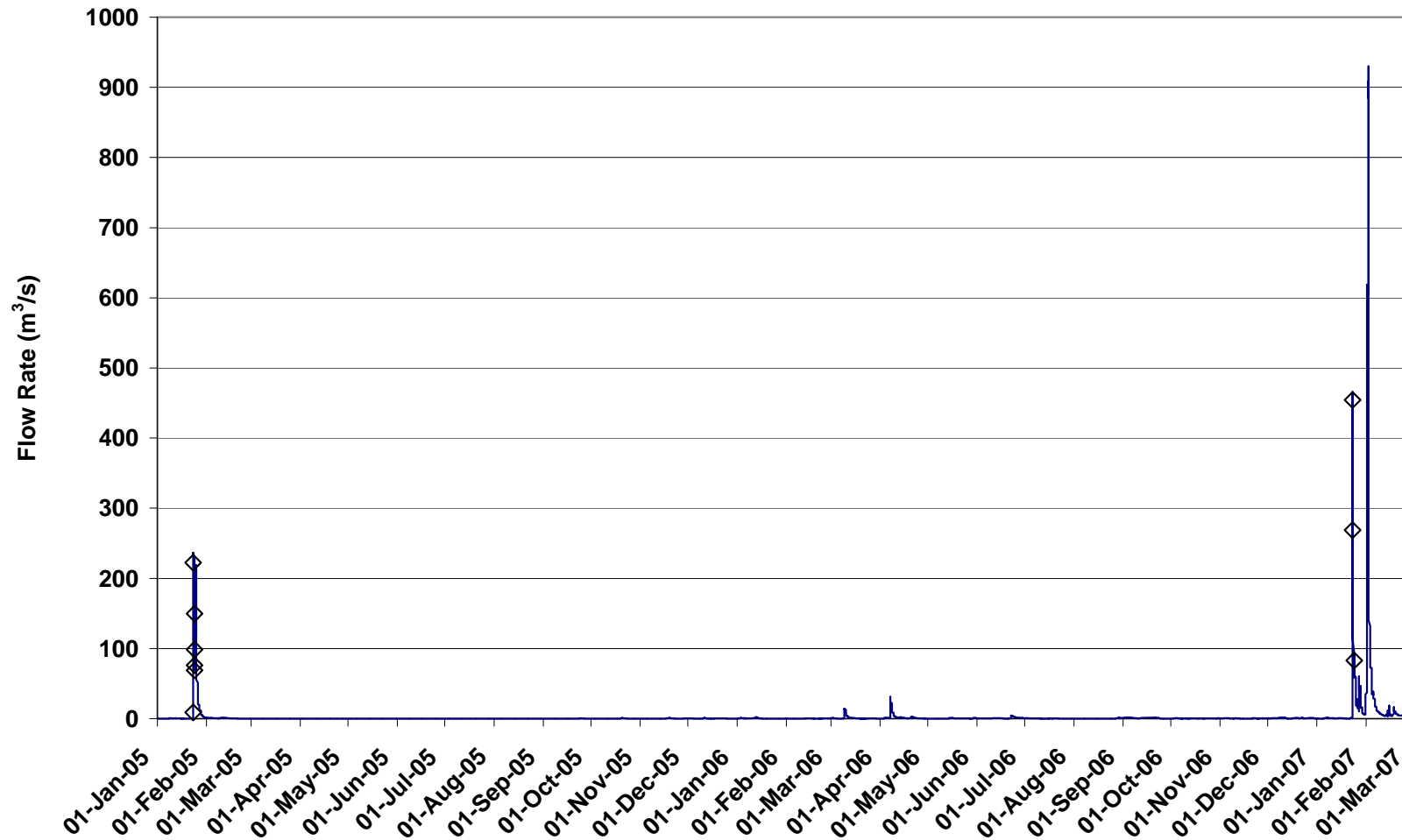
A.5 O'Connell River (Caravan Park)



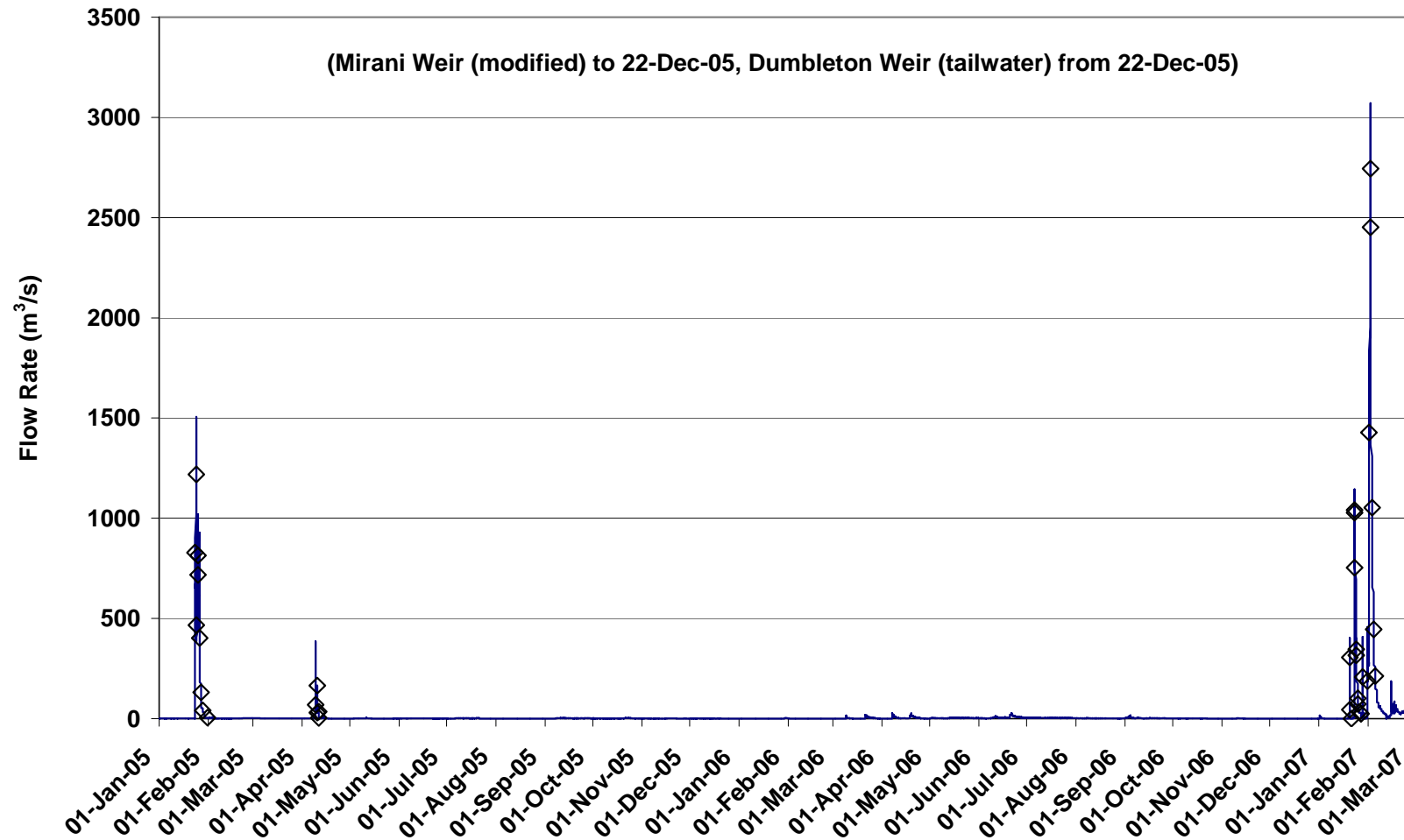
A.6 Finch Hatton Creek



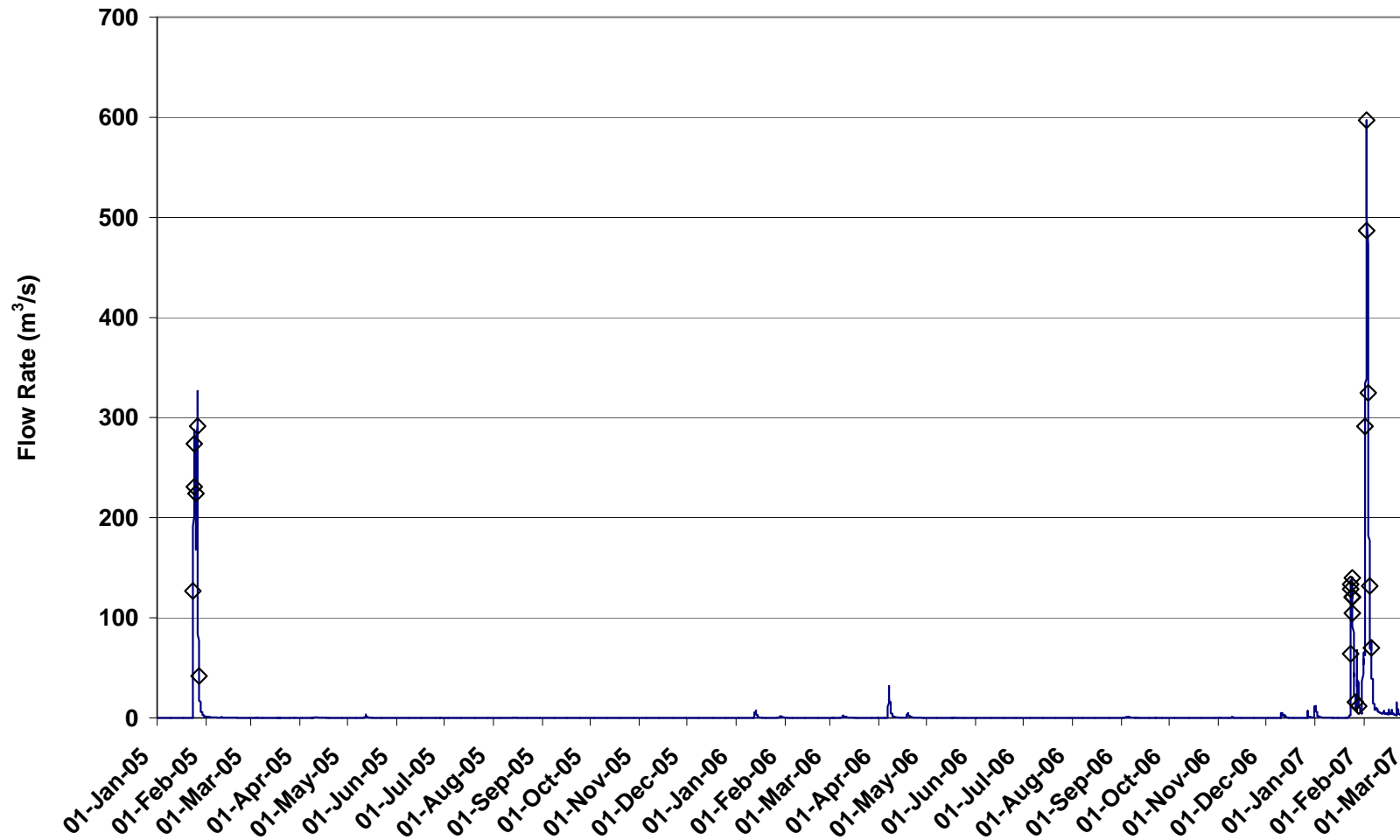
A.7 Blacks Creek



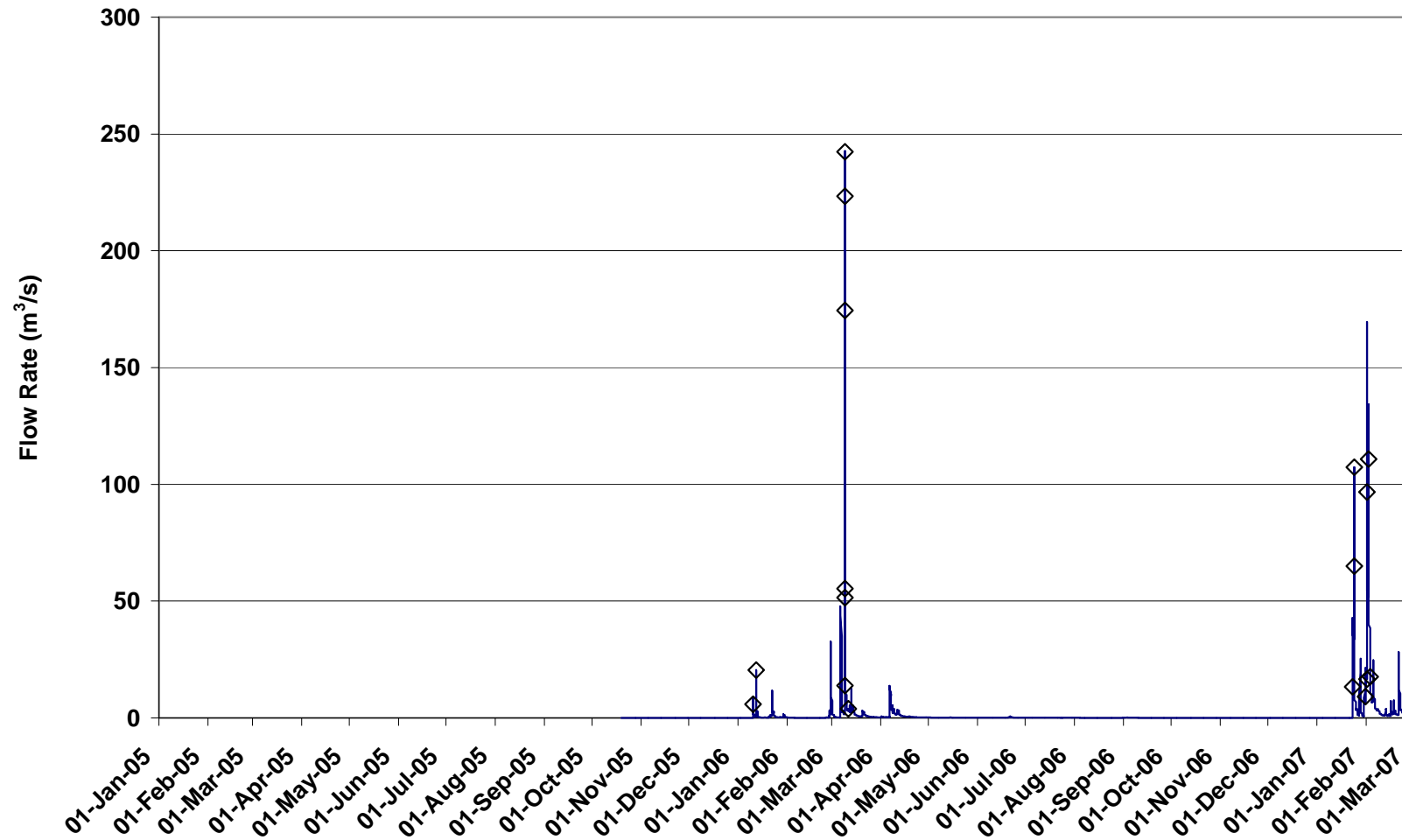
A.8 Pioneer River



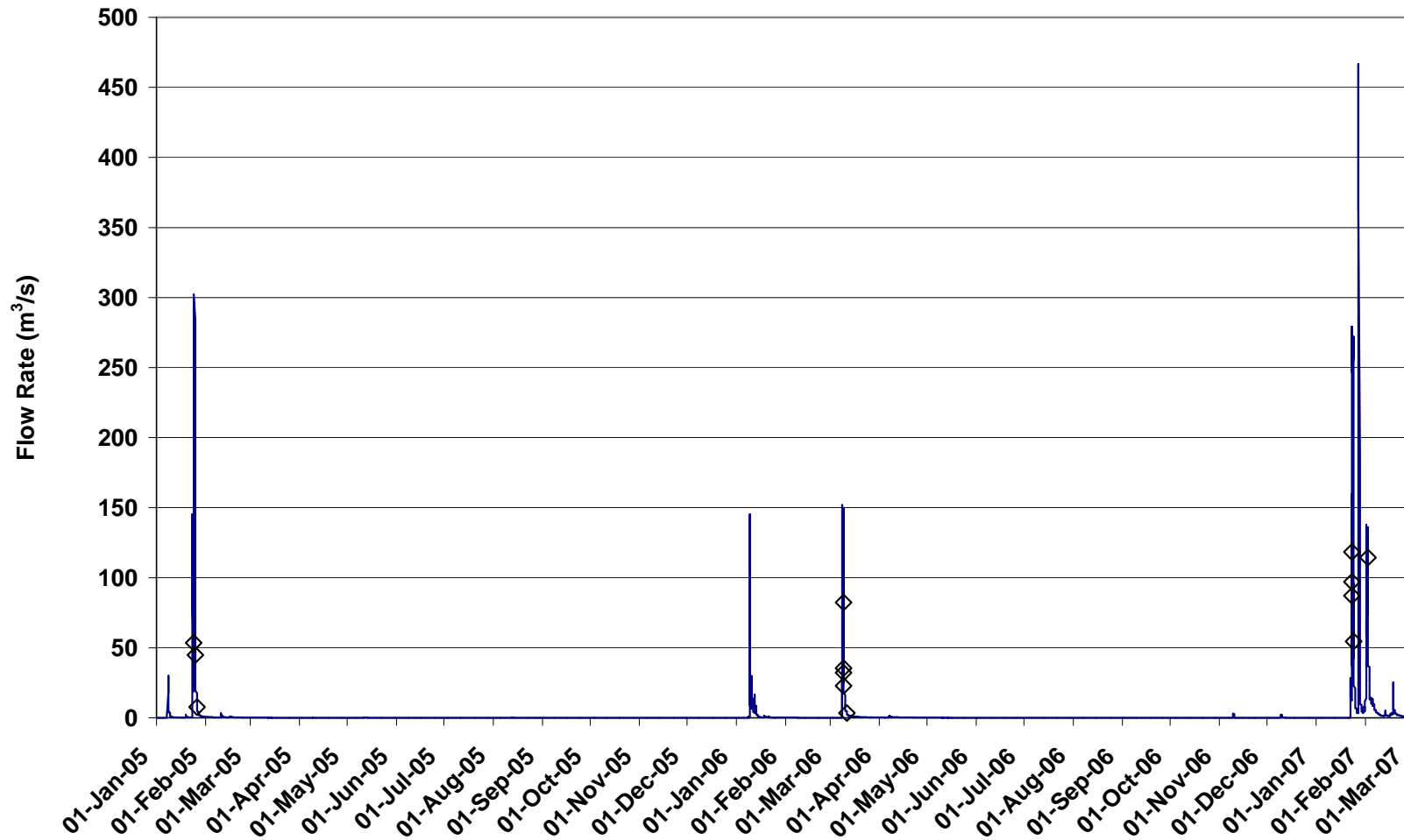
A.9 Sandy Creek



A.10 Rocky Dam Creek



A.11 Carmila Creek



APPENDIX B – Freshwater Results

B.1 Electrical conductivity, TSS, TOC and nutrients

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)			
Airlie Creek	1220047	9/01/05 4:40	193	189																	
		23/01/05 15:15	126	4330																	
		23/01/05 16:15	110	2560																	
		23/01/05 17:15	120	424																	
		6/04/05 13:00	97	122																	
		6/04/05 14:00	154	86																	
		6/04/05 15:00	191	55																	
		6/04/05 16:00	196	57																	
		6/04/05 16:45	234	17																	
		28/11/05 17:00	82	683																	
		12/01/06 11:15	119	233																	
		25/01/06 20:05	127	3060																	
		25/01/06 21:40	180	471																	
		25/01/06 23:10	208	278																	
		27/01/06 8:20	165	668																	
		27/01/06 12:20	193	1234																	
		27/01/06 16:25	190	136																	
		4/04/06 3:40	64	3210																	
		4/04/06 5:00	135	1693																	
		4/04/06 6:25	117	6000																	
		4/04/06 10:55	197	149																	
		4/04/06 13:34	201	944																	
		10/11/06 7:00	210	1160																	
		10/11/06 8:00	313	734																	
23/01/07 8:00	204	1300																			
23/01/07 9:20	25	104																			
23/01/07 13:20	119	1300																			
31/01/07 10:00		149																			
1/02/07 9:30		662																			
5/02/07 11:30		226																			
Andromache R. (upper)	124003A	8/01/05 6:00	76	558		3170	1230	1940	439	40	11	1450	1501	958	471	487	9	478			
		8/01/05 9:30	63	353		827	220	607	521	31	3	52	86	203	51	152	23	129			
		8/01/05 11:30	81	208		714	309	405	367	5	3	30	38	293	155	138	4	134			
		8/01/05 13:30	133	114		742	160	582	485	26	4	67	97	344	108	236	25	211			

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
Andromache R. (upper)	124003A	8/01/05 16:00	162	78		691	203	488	454	5	3	26	34	198	50	148	24	124
		26/01/06 10:15	96	301		1170	451	719	455	9	4	251	264	344	210	134	29	105
		26/01/06 18:35	121	106		846	169	677	450	7	3	217	227	228	96	132	30	102
		23/01/07 9:30	437	62		1050	367	683	551	18	1	113	132	212	66	146	83	63
		23/01/07 14:00	181	350		916	284	632	521	10	3	98	111	252	136	117	24	93
		23/01/07 17:00	155	45		850	178	672	483	4	4	182	189	147	43	104	14	90
Andromache R. (tram bridge)	1240055	24/01/05 17:10	77	161		857	311	546	393	6	3	144	153	118	55	63	20	43
		25/01/05 6:30	69	184		860	465	395	242	7	3	143	153	233	160	73	7	66
		25/01/05 17:00	92	91		800	254	546	394	4	3	145	152	125	53	72	25	47
		27/01/05 17:00	187	26		572	230	342	202	5	3	132	140	92	35	57	1	56
		2/02/05 8:30	327	6.4		230	74	156	146	3	1	6	10	59	10	49	4	45
Basin Creek	1260003	24/01/05 6:30	72	94		597	238	359	300	9	3	47	59	74	59	15	12	3
		24/01/05 8:30	57	124		627	177	450	386	14	3	47	64	89	73	16	13	3
		24/01/05 10:30	56	80		475	96	379	321	7	4	47	58	45	26	19	14	5
		24/01/05 12:30	63	66		508	80	428	343	18	3	64	85	42	23	19	15	4
		24/01/05 14:30	52	129		567	162	405	351	12	4	38	54	60	41	19	15	4
		9/03/06 5:45	50	142		628	304	324	294	5	4	21	30	88	79	9	8	1
		9/03/06 8:30	41	84		613	270	343	319	3	2	18	24	74	63	11	10	1
		9/03/06 9:30	40	51		501	177	324	307	4	3	10	17	68	52	16	12	4
		9/03/06 10:40	56	56		528	159	369	317	3	3	46	53	53	39	14	12	2
		9/03/06 12:30	64	43		556	128	428	369	9	3	47	59	42	27	15	12	3
		9/03/06 15:30	71	32		496	137	359	308	4	4	44	51	40	30	10	9	1
		9/03/06 20:50	83	15		420	44	376	326	2	3	46	50	29	18	10	9	2
		11/03/06 10:50	115	3.6		280	5	275	252	3	3	17	23	20	10	9	8	1
		23/01/07 15:45	51	200		508	152	356	308	9	1	38	48	50	37	13	5	8
		23/01/07 19:00	42	89		510	64	446	420	6	1	20	27	55	37	18	12	6
		24/01/07 6:00	55	49		439	71	368	305	5	1	56	63	29	19	10	7	4
		1/02/07 8:00	43	319		610	363	247	236	< 1	2	9	11	128	120	8	4	4
		1/02/07 10:30	38	48		407	112	295	284	4	1	6	11	54	45	9	6	3
		1/02/07 13:30	40	42		421	120	301	287	3	2	10	14	45	34	11	9	2
1/02/07 17:30	42	45		384	179	205	189	4	2	11	16	41	34	8	5	3		
2/02/07 6:00	39	78		384	172	212	197	3	1	11	15	42	36	5	1	4		
Blacks Creek	125005A	23/01/05 16:07	66	726		1080	675	405	319	8	5	73	86	687	494	193	1	192
		23/01/05 20:30	56	520		1530	923	607	473	31	6	97	134	630	486	144	17	127
		24/01/05 6:15	74	84		1410	619	791	428	10	6	347	363	173	90	83	15	68
		24/01/05 10:45	80	40		1160	290	870	376	50	6	438	494	157	67	90	21	69
		24/01/05 15:00	86	39		1370	469	901	420	15	6	460	481	144	76	68	13	55
		24/01/05 18:10	127	14		801	109	692	309	3	5	375	383	93	29	64	23	41
		23/01/07 16:00	106	780		3850	3060	790	533	45	5	208	257	737	693	44	11	33
		23/01/07 18:30	70	280		1600	797	803	535	29	6	234	268	388	288	100	83	17

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Blacks Creek	125005A	24/01/07 18:30	97	30															
Carmila Creek	126003A	24/01/05 14:20	86	36		1280	305	975	346	2	6	621	629	101	47	54	13	41	
		25/01/05 10:15	110	20		1290	120	1170	167	9	6	988	1003	75	25	50	17	33	
		26/01/05 11:00	166	2.8		2230	190	2040	181	10	9	1840	1859	48	20	28	6	22	
		9/03/06 6:20	79	118		1300	465	835	506	7	6	315	329	137	90	47	20	27	
		9/03/06 9:10	65	100		1420	430	990	554	9	5	423	436	163	88	75	19	56	
		9/03/06 16:25	96	15		1100	137	963	429	8	4	523	534	83	37	46	16	30	
		9/03/06 20:15	118	25		1230	160	1070	434	12	5	620	636	81	37	44	14	30	
		11/03/06 12:10	200	8.2		1240	110	1130	239	13	9	869	891	52	25	27	12	15	
		23/01/07 8:05	85	135		1550	550	1000	504	14	3	479	496	175	133	42	13	29	
		23/01/07 10:10	83	75		1480	773	707	391	14	3	299	316	173	113	60	19	41	
		23/01/07 14:50	90	55		1370	340	1030	516	13	4	497	514	124	78	45	6	40	
		24/01/07 9:00	99	17		899	99	800	381	11	3	405	419	75	28	48	9	39	
		2/02/07 6:40	77	43		656	126	530	307	7	2	214	223	79	44	35	6	29	
Finch Hatton Creek	1250043	23/01/05 4:30	49	4.2		254	47	207	144	44	3	16	63	25	6	19	11	8	
		23/01/05 6:30	39	101		1380	660	720	605	19	3	93	115	94	73	21	14	7	
		23/01/05 8:30	39	116		1240	773	467	327	14	3	123	140	141	118	23	10	13	
		23/01/05 10:30	36	47		827	384	443	322	26	2	93	121	40	22	18	10	8	
		23/01/05 12:30	35	68		932	518	414	301	26	2	85	113	90	70	20	9	11	
		26/01/05 16:15	38	0.8		191	31	160	91	5	2	62	69	13	4	9	3	6	
		9/04/05 10:30	38	2.6		253	22	231	164	4	1	62	67	22	10	12	6	6	
		28/01/06 10:10	42	3.8		291	108	183	156	2	1	24	27	14	7	7	6	1	
		23/01/07 9:00		210															
		24/01/07 9:00		56															
		1/02/07 9:00		2.1															
		2/02/07 9:00		3.3															
		3/02/07 9:00		58															
Gregory River	122004A	9/01/05 7:15	155	38		967	334	633	493	22	5	113	140	212	82	130	18	112	
		23/01/05 6:25	193	48		852	315	537	490	36	3	8	47	143	71	72	26	46	
		23/01/05 15:00	88	37		1760	280	1480	426	18	6	1030	1054	168	66	102	17	85	
		23/01/05 20:00	65	62		1240	210	1030	424	8	5	593	606	133	39	94	16	78	
		24/01/05 6:00	90	6.4		865	15	850	603	10	3	234	247	64	17	47	11	36	
		26/01/06 6:00	135	16		2230	180	2050	439	12	9	1590	1611	141	39	103	20	82	
		26/01/06 8:30	138	10		2030	780	1250	0	23	8	1220	1250	122	56	66	5	61	
		26/01/06 15:00	146	4.6		1890	230	1660	538	7	5	1110	1122	87	29	58	22	36	
		26/01/06 16:35	145	5.8		1790	150	1640	445	9	6	1180	1195	81	24	57	22	35	
		27/01/06 18:00	94	17		1420	380	1040	370	48	3	619	670	158	52	106	18	88	
		19/03/06 8:45	198	6.9		489	131	358	259	6	3	91	99	63	29	34	14	20	
		3/04/06 9:15	63	113		1530	625	905	488	11	4	402	417	302	157	145	25	120	
		3/04/06 11:45	81	69		1230	239	991	484	9	6	492	507	254	82	172	26	146	

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
Gregory River	122004A	3/04/06 16:00	107	39		860	140	720	270	9	5	437	451	121	46	74	6	69
		23/01/07 12:30	148	25		2420	200	2220	665	47	9	1500	1555	146	39	108	18	90
		23/01/07 17:45	95	41		1950	490	1460	781	44	3	632	679	211	93	118	40	78
		24/01/07 6:30	137	14		1730	350	1380	338	26	6	1010	1042	115	33	82	21	62
		24/01/07 18:00	133	3.4		1450	380	1070	133	13	5	920	938	103	32	71	28	43
		25/01/07 6:00	159	1.8		1350	80	1270	285	18	6	962	985	58	16	42	4	38
		25/01/07 18:00	168	2.9		1230	477	753	350	22	3	378	404	60	21	38	11	28
Impulse Creek	1220041	23/01/05 9:00	152	12		819	309	510	371	10	3	126	139	72	41	31	6	25
		23/01/05 10:10	142	8.4		830	373	457	234	8	3	212	223	69	36	33	3	30
		23/01/05 11:10	135	14		989	329	660	424	5	3	228	236	75	37	38	9	29
		23/01/05 12:00	116	63		1600	812	788	465	10	3	310	323	141	96	45	13	32
		23/01/05 17:20	67	120		1960	1064	896	437	10	4	445	459	314	232	82	7	75
		27/01/05 14:30	130	0.7		316	95	221	90	5	1	125	131	32	4	28	6	22
		26/01/06 13:00	146	2.3		1350	140	1210	421	7	4	778	789	50	13	36	18	18
		27/01/06 14:00	110	7.5		1200	213	987	520	5	3	459	467	79	26	53	17	36
		27/01/06 17:05	103	5.2		1080	168	912	637	7	3	265	275	65	23	42	22	20
		28/01/06 11:30	121	0.8		642	11	631	399	4	2	227	233	31	1	31	13	18
Mackay – Campbell Street	1250044	23/01/05 18:00	79	17	30	821	240	581	261	16	5	299	320	286	43	243	12	231
		24/01/05 7:30	95	9.2	9.1	903	104	799	400	21	10	368	399	466	77	389	2	387
		8/04/05 11:00	51	23	2.7	525	285	240	3	17	2	218	237	225	35	190	5	185
		21/10/05 5:40	572	116	22	2492	470	2022	1019	592	14	397	1003	658	190	468	151	317
		17/11/05 3:00	188	113	15.9	1950	620	1330	790	225	7	307	540	511	132	379	85	294
		8/01/06 10:10	306	227		1760	630	1130	638	220	7	265	492	1140	807	333	32	301
		9/01/06 5:40	93	55		1000	257	743	324	86	6	327	419	380	124	256	36	221
		10/01/06 3:35	82	64		1220	324	896	480	89	5	321	416	333	130	203	17	186
		22/01/06 10:45	158	60		817	289	528	323	104	5	97	206	270	123	146	23	123
		9/11/06 18:45	396	23														
Mackay – Macalister Street	1250044	24/01/05 21:30	26	14	1.9	232	38	194	113	17	2	62	81	122	23	99	2	97
		9/04/05 12:45	24	27	2.4	448	206	242	127	63	2	50	115	113	69	44	0	44
		21/10/05 6:15	102	78	30	4329	216	4113	2827	898	28	360	1286	1066	126	940	91	849
		17/11/05 2:30	58	74	23.0	4010	440	3570	2760	559	13	238	810	745	103	643	150	492
		8/01/06 9:40	77	154		5250	2390	2860	2295	309	5	251	565	921	283	639	124	515
		9/01/06 5:20	18	25		684	297	387	176	49	3	160	211	149	61	88	11	76
		10/01/06 3:20	104	27		1520	240	1280	716	190	11	363	564	303	94	209	19	190
		22/01/06 10:35	19	25		814	358	456	325	58	2	71	131	186	62	124	15	109
		9/11/06 18:20	105	43														
				11/05/05 15:45	104	110												
		11/05/05 16:30	141	159		1180	90	1090	887	11	5	187	203	395	90	305	67	238
		9/03/06 3:55	100	202		1540	360	1180	796	34	8	343	384	666	219	447	70	378
		9/03/06 6:10	156	54		1570	300	1270	834	27	7	402	436	452	133	319	42	277

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
McCready's Creek	1250044	24/01/07 5:50	92	76		830								411				
Myrtle Creek	1220035	8/01/05 10:00	213	172		3010	520	2490	665	115	30	1680	1825	537	252	285	38	247
		8/01/05 13:15	170	62		2910	1100	1810	16	75	29	1690	1794	362	93	269	22	247
		9/01/05 8:15	94	184		1600	0	1600	180	35	15	1370	1420	341	16	325	43	282
		11/01/06 18:00	660	11		3720	640	3080	467	302	121	2190	2613	241	114	127	77	50
		26/01/06 11:35	217	42		6010	960	5050	416	89	45	4500	4634	777	171	606	43	563
		26/01/06 17:10	218	33		5690	400	5290	985	72	53	4180	4305	770	142	628	90	539
		27/01/06 13:00	199	64		4320	430	3890	849	76	26	2940	3041	564	127	436	51	385
		27/01/06 16:30	181	48		3650	770	2880	584	55	22	2220	2297	649	156	493	37	456
		28/01/06 9:00	142	22		2360	180	2180	884	38	18	1240	1296	605	71	534	63	471
		20/03/06 1:30	560	44		597	176	421	294	105	4	18	127	279	159	120	36	85
		20/03/06 11:30	251	69		1710	510	1200	709	47	8	437	491	481	196	285	46	239
		20/03/06 20:30	221	38		1190	120	1070	492	28	8	542	578	415	20	396	6	389
		21/03/06 20:15	243	18		1310	290	1020	850	23	6	142	170	522	121	401	50	351
		23/03/06 19:00	285	17		1290	368	922	713	34	6	169	209	388	128	260	43	217
		26/03/06 19:00	336	21		1290	363	927	763	89	7	68	164	426	118	308	70	238
		19/04/06 18:45	105	137		967	291	676	595	13	3	65	81	446	167	278	43	236
		21/01/07 11:30	619	11		7500	1200	6300	7	315	248	5730	6293	502	45	457	95	362
		23/01/07 18:30	281	110		6430	940	5490	2984	230	67	2210	2506	778	264	514	58	456
		24/01/07 6:45	202	34		4280	760	3520	2915	185	2	419	606	732	609	123	57	66
		24/01/07 18:30	199	24		2130	330	1800	654	160	27	959	1146	552	50	502	148	354
		31/01/07 17:45	224	44		1710	340	1370	1172	19	6	174	198	576	256	320	118	202
		1/02/07 6:45	148	27		1520	630	890	619	26	5	240	271	548	258	290	0	290
		2/02/07 6:15	45	43		726	233	493	308	12	3	169	185	451	133	318	90	228
3/02/07 12:30	89	40		795	41	754	570	22	6	155	184	388	28	359	77	282		
4/02/07 17:45	105	22		810	296	514	403	16	2	94	111	499	206	293	35	258		
O'Connell R. (Caping Siding)	124001A	8/01/05 13:20	221	104		1190	241	949	694	5	6	244	255	148	71	77	27	50
		8/01/05 15:25	293	58		1060	222	838	479	5	7	347	359	119	53	66	21	45
		23/01/05 9:50	222	478		979	600	379	306	14	3	56	73	176	155	21	1	20
		23/01/05 12:30	139	260		1200	532	668	405	15	4	244	263	180	131	49	9	40
		23/01/05 14:35	86	181		1040	426	614	324	9	5	276	290	194	142	52	10	42
		23/01/05 17:35	69	263		1270	566	704	393	32	3	276	311	211	155	56	9	47
		23/01/05 19:50	77	111		1020	228	792	419	47	4	322	373	139	81	58	11	47
		24/01/05 11:40	86	73		981	250	731	412	9	4	306	319	118	65	53	12	41
		26/01/05 19:00	182	7.7		739	183	556	95	6	4	451	461	50	18	32	1	31
		27/01/05 17:30	218	3.2		774	135	639	95	6	5	533	544	41	11	30	1	29
		2/02/05 9:25	320	1.1		611	100	511	54	7	5	445	457	20	3	17	6	11
		12/01/06 10:00	114	448		1190	421	769	560	16	7	187	209	247	152	95	24	71
		12/01/06 20:20	133	91		2090	290	1800	500	86	15	1200	1300	201	80	121	32	90
		13/01/06 8:25	238	200		2090	450	1640	506	46	18	1070	1134	143	74	70	21	49

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
O'Connell R. (Caping Siding)	124001A	25/01/06 5:45	358	169		624	205	419	384	2	2	31	35	88	57	30	14	16
		25/01/06 18:30	247	96		955	316	639	579	6	3	52	60	124	65	59	28	31
		26/01/06 8:25	53	328		1500	739	761	380	15	5	361	381	409	330	79	19	60
		26/01/06 17:40	105	57		1230	256	974	410	14	6	544	564	134	68	66	21	45
		27/01/06 6:30	115	192		1080	316	764	408	19	4	334	356	130	75	55	16	38
		27/01/06 15:30	111	53		962	173	789	437	6	2	344	352	100	43	57	18	40
		29/01/06 11:00	199	4.2		1130	263	867	261	3	5	598	606	56	16	40	10	30
		31/01/06 14:35	252	2.6		860	88	772	273	1	4	494	499	47	14	33	13	20
O'Connell R. (Staffords Crossing)	124001B	12/01/06 10:50	58	456		1610	320	1290	559	39	9	683	731	134	80	55	22	33
		26/01/06 8:00	39	219														
		23/01/07 14:00	84	250		2290	1319	971	842	8	3	118	129	365	313	52	32	19
		24/01/07 12:07	87	220		1140	396	744	622	7	4	112	122	125	82	42	20	22
		24/01/07 17:50	82	103		930	237	693	528	10	3	152	165	131	82	49	12	37
25/01/07 6:00	169	7.6																
O'Connell R. (Caravan Park)	1240062	24/01/05 17:40	92	120		763	83	680	421	8	3	248	259	125	64	61	17	44
		25/01/05 6:15	68	174		942	396	546	377	8	3	158	169	207	130	77	20	57
		25/01/05 16:45	100	71		680	87	593	386	3	2	202	207	116	52	64	25	39
		27/01/05 16:30	278	25		695	197	498	147	12	5	334	351	78	34	44	3	41
		2/02/05 9:00	649	6.1		353	79	274	189	6	3	76	85	33	19	14	1	13
		12/01/06 11:45	269	786		2140	900	1240	486	35	8	711	755	299	254	45	21	24
		12/01/06 19:00	223	168		1850	390	1460	516	30	13	901	944	191	92	100	30	70
		13/01/06 7:00	1049	51		1870	270	1600	470	42	18	1070	1130	139	59	80	20	60
		25/01/06 7:00	4680	5.7		319	72	247	246	< 1	< 0.5	< 1	1	37	20	16	13	3
		25/01/06 19:00	405	167		976	377	599	524	9	3	63	75	120	81	39	16	22
		26/01/06 9:10	68	359		1770	996	774	394	11	5	364	380	374	295	78	22	56
		26/01/06 18:15	119	99		1130	213	917	450	8	6	453	467	138	74	65	22	43
		27/01/06 7:00	156	171		1420	590	830	496	21	4	309	334	133	84	49	16	33
		27/01/06 15:55	113	81		966	194	772	489	9	4	270	283	114	57	57	22	35
		29/01/06 11:30	307	13		912	165	747	366	4	4	373	381	74	26	48	12	36
		23/01/07 8:00	199	205		2240	1190	1050	474	23	6	547	576	406	336	70	10	60
		23/01/07 14:00	193	63		884	98	786	351	13	6	417	435	62	12	50	12	38
		1/02/07 18:00	80	239		2410	1450	960	410	159	9	382	550	675	499	177	2	174
		2/02/07 9:00	58	150		568	196	372	274	17	2	79	98	153	100	54	12	41
		Pioneer River	125013A	23/01/05 22:15	101	351		2600	890	1710	677	140	6	887	1033	68	11	57
24/01/05 6:30	70			285		2270	730	1540	567	99	9	865	973	348	255	93	23	70
24/01/05 17:40	76			59		1430	220	1210	956	43	1	210	254	238	113	125	93	32
25/01/05 6:30	84			68		1310	80	1230	534	53	7	636	696	197	78	119	22	97
25/01/05 17:50				69		977	169	808	421	25	5	357	387	184	77	107	27	80
26/01/05 8:00	65			114		1080	210	870	491	51	5	323	379	294	163	131	15	116
27/01/05 7:00	87			35		942	106	836	365	39	5	427	471	125	40	85	12	73

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)	
Pioneer River	125013A	28/01/05 8:00	102	13		886	36	850	403	42	5	400	447	95	20	75	13	62	
		31/01/05 8:00	119	10		931	8	923	494	12	8	409	429	110	53	57	20	37	
		9/04/05 19:00	192	5.7		889	180	709	388	147	2	2	172	321	53	34	19	11	8
		10/04/05 8:00	210	5.3		479	173	306	298	2	1	5	8	42	25	17	9	8	
		10/04/05 17:30	256	11		670	134	536	330	70	3	3	133	206	50	28	22	14	8
		11/04/05 8:10	188	17		689	86	603	297	41	4	4	261	306	74	37	37	3	34
		11/04/05 15:00	112	27		980	148	832	375	33	6	6	418	457	103	48	55	12	43
		11/04/05 15:00	113	27		933	91	842	390	30	6	6	416	452	93	37	56	13	43
		11/04/05 15:00	113	29		925	73	852	399	31	7	7	415	453	101	43	58	18	40
		20/01/07 8:30	243	8.6		506	32	474	361	95	1	1	16	113	41	16	24	10	14
		20/01/07 16:00	247	12		683	177	506	319	74	4	4	110	187	65	48	17	13	4
		21/01/07 7:50	235	8.6		737	125	612	309	113	3	3	187	303	78	56	22	8	14
		23/01/07 15:30	142	306		3670	1240	2430	1337	146	17	17	930	1093	573	532	41	15	26
		23/01/07 16:20	128	540		5020	3370	1650	708	134	14	14	795	942	878	837	40	20	20
		23/01/07 23:00	63	280		1840	871	969	472	76	6	6	415	497	469	373	96	23	73
		24/01/07 8:00	89	109		1260	308	952	445	80	6	6	421	507	191	107	84	20	64
		24/01/07 17:30	88	58		1180	170	1010	564	55	6	6	385	446	197	73	124	29	95
		25/01/07 8:00	91	25		1030	196	834	366	47	6	6	415	468	173	52	121	19	102
		25/01/07 14:30	99	21		1010	58	952	490	55	6	6	402	463	143	29	114	24	90
		26/01/07 8:00	110	10		942	181	761	347	53	5	5	356	414	127	36	91	16	75
		27/01/07 8:00	120	10		883	546	337	0	63	5	5	302	369	120	49	72	7	65
		28/01/07 8:00	129	7.5		739	80	659	306	58	5	5	290	353	99	31	68	14	54
		31/01/07 15:30	124	30		890	88	802	537	43	4	4	219	265	147	38	109	32	77
		1/02/07 18:00	67	416		2800	2154	646	407	69	3	3	167	239	766	695	71	18	53
		2/02/07 8:00	49	350		1670	1133	537	313	103	3	3	119	225	1010	966	44	9	35
		2/02/07 15:15	46.0	234		655	243	412	215	89	2	2	105	197	147	91	55	8	48
		3/02/07 8:30	64	95		532	78	454	320	19	1	1	114	134	138	65	73	14	59
		4/02/07 8:30	85	20		575	24	551	293	25	2	2	231	258	118	40	78	16	63
		5/02/07 10:30	111	11		540	25	515	205	26	2	2	283	310	67	13	54	5	49
		Plane Creek	126002A	23/01/05 10:25	285	41	7.2	673	236	437	340	27	3	67	97	157	107	50	19
24/01/05 10:25	104			36	41	1300	80	1220	610	21	7	582	610	194	60	134	21	113	
24/01/05 16:20	105			34		1230	100	1130	599	12	7	512	531	195	47	148	30	118	
25/01/05 9:25	92			30	8.0	924	123	801	410	7	5	379	391	167	38	129	27	102	
25/01/05 15:00	104			28	7.2			898	493	7	5	393	405			121	27	94	
26/01/05 9:40	122			11	18	1090	158	932	421	17	6	488	511	145	34	111	23	88	
9/03/06 8:00	114			242		1520	470	1050	700	48	4	299	350	333	249	84	30	54	
9/03/06 11:45	109			89		1650	420	1230	741	33	10	446	489	400	232	169	42	127	
9/03/06 15:45	119			54		1640	340	1300	704	25	9	562	596	298	142	156	30	126	
11/03/06 9:10	188			12		1190	225	965	522	4	9	431	443	173	63	110	26	84	
6/04/06 17:30	266			80		867	328	539	357	30	4	148	182	418	268	150	20	130	

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
Plane Creek	126002A	7/04/06 9:30	107	88		1380	350	1030	788	25	4	213	242	350	150	199	45	154
		23/01/07 11:15	343	38		1150	254	896	549	341	1	4	347	209	114	95	47	47
		23/01/07 14:00	314	13		857	292	565	399	153	2	11	166	127	82	45	20	26
		23/01/07 16:40	250	65		1340	388	952	546	35	5	365	406	186	107	80	25	54
		23/01/07 22:00	136	75		1910	620	1290	667	35	7	581	624	461	268	193	10	184
		24/01/07 3:45	89	220		2430	1340	1090	638	40	5	408	452	502	323	179	29	150
		24/01/07 9:45	100	38		1200	401	799	339	21	5	434	460	280	106	174	56	118
		24/01/07 16:45	125	19		1170	202	968	501	18	4	445	467	209	64	145	13	132
		1/02/07 20:30	79	87		1050	434	616	393	15	4	204	223	265	116	150	17	132
Proserpine River	122005A	24/01/05 13:00	87	28		744	138	606	582	8	8	8	24	130	50	80	15	65
Proserpine - Urban	1220046	8/01/05 20:40	19	77	5.3	535	216	319	223	18	4	74	96	283	42	241	3	238
		8/01/05 21:10	42	11	5.9	680	77	603	405	24	8	166	198	621	12	609	33	576
		8/01/05 21:40	61	8.3	9.7	769	91	678	445	15	9	209	233	804	138	666	19	647
		28/11/05 16:15	29	41		885	246	639	234	169	6	230	405	187	24	163	22	141
		19/03/06 18:30	57	17		493	179	314	217	26	4	67	97	126	27	99	14	85
		19/03/06 22:30	31	3.0		182	143	8	1	31	39	75	1	74				
		20/03/06 2:00	47	13		873	247	626	481	35	6	104	145	725	30	695	159	536
		20/03/06 7:30	66	2.7		215	64	151	123	10	1	17	28	81	11	71	6	65
Rocky Dam Creek (Bienke)	1260033	24/01/05 12:30	81	208		1680	240	1440	593	29	9	809	847	153	93	60	26	34
Rocky Dam Creek (GS)	126007A	10/01/06 14:50	180	134		3670	640	3030	847	134	29	2020	2183	384	174	210	64	146
		12/01/06 12:20	192	258		4090	810	3280	1085	248	27	1920	2195	413	242	171	51	119
		9/03/06 4:50	137	105		1210	292	918	697	22	4	194	221	121	72	49	29	20
		9/03/06 7:50	58	290		1820	833	987	594	37	7	349	393	236	176	60	20	41
		9/03/06 10:00	62	220		1670	410	1260	643	32	7	579	617	260	185	76	27	49
		9/03/06 12:30	63	232														
		9/03/06 12:30	64	201														
		9/03/06 12:30	63	182														
		9/03/06 12:30	63	183														
		9/03/06 12:30	64	214														
		9/03/06 12:30	64	229														
		9/03/06 14:40	72	128		1710	380	1330	638	32	8	653	692	216	135	81	27	53
		9/03/06 21:30	110	56		1640	260	1380	585	30	12	752	795	155	91	64	28	36
		11/03/06 10:05	235	14		1420	110	1310	526	32	7	744	784	72	38	34	14	20
		23/01/07 18:00	607	55		1620	410	1210	6	58	6	1140	1204	69	49	20	13	7
		24/01/07 6:00	110	190		2850	450	2400	571	78	11	1740	1829	146	40	106	89	17
		24/01/07 11:30	105	80		2350	620	1730	95	65	11	1560	1636	158	43	114	25	89
31/01/07 18:35	165	26		1360	180	1180	887	19	4	270	293	122	56	66	28	38		
1/02/07 6:00	142	34		1430	210	1220	926	24	3	267	294	142	72	69	24	46		
1/02/07 13:30	94	220																
2/02/07 6:30	65	99		1160	339	821	501	11	4	306	320	169	93	76	16	60		

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
Rocky Dam Creek (GS)	126007A	3/02/07 9:30	118	32		1000	164	836	454	16	3	364	382	106	47	59	15	44
Sandy Creek	126001A	23/01/05 20:30	212	426		3300	720	2580	611	124	15	1830	1969	337	200	137	17	120
		24/01/05 2:40	136	140		3570	380	3190	2116	92	22	960	1074	366	167	199	16	183
		24/01/05 9:15	108	87		2700	40	2660	642	80	18	1920	2018	314	59	255	27	228
		25/01/05 8:00	98	52		2080	450	1630	622	23	11	974	1008	386	78	308	24	284
		26/01/05 8:15	71	38		1100	226	874	565	14	6	289	309	342	91	251	16	235
		27/01/05 8:00	103	38		928	139	789	565	10	5	209	224	373	26	347	20	327
		23/01/07 15:30	173	330		3130	1530	1600	772	81	10	737	828	752	478	274	79	195
		23/01/07 20:00	131	170		3690	1410	2280	756	115	19	1390	1524	552	417	135	28	106
		23/01/07 21:15	182	190		3850	1620	2230	589	82	19	1540	1642	394	243	151	37	114
		24/01/07 3:00	166	84		3240	840	2400	884	48	18	1450	1516	508	212	296	44	252
		24/01/07 7:30	138	72		2280	530	1750	1126	28	8	588	624	421	82	339	136	203
		24/01/07 9:15	140	66		2530	650	1880	690	33	17	1140	1190	521	150	371	52	320
		24/01/07 21:00	76	97		2120	950	1170	198	19	12	941	972	476	130	345	48	297
		26/01/07 7:30	171	18		1390	230	1160	969	23	6	163	191	519	52	467	79	388
		28/01/07 18:45	211	22		1550	310	1240	832	61	7	340	408	488	204	284	10	274
		1/02/07 19:30	81	193		2410	1762	648	302	27	5	314	346	675	543	132	2	130
		2/02/07 8:15	51	47		551	47	504	350	39	2	113	154	182	30	152	4	148
		2/02/07 15:30	56	20		648	104	544	414	15	2	113	130	302	102	200	13	187
		3/02/07 7:00	61	30		587	145	442	348	8	2	84	95	350	150	200	1	199
		4/02/07 7:30	94	26		675	163	512	379	13	3	118	133	394	198	196	1	195
5/02/07 7:45	127	40		910	235	675	482	15	3	175	193	371	187	184	8	176		
Sandy Creek - Replicate	126001A	23/01/05 20:30	214	438														
		24/01/05 2:40	136	132														
		24/01/05 9:15	110	91														
		25/01/05 8:00	99	47														
		26/01/05 8:15	71	38														
		27/01/05 8:00	103	34														
Sarina - Urban	1260034	10/01/06 10:00	69	22		944	80	864	505	15	6	339	359	370	65	305	18	288
		25/01/06 15:55	123	80		1050	498	552	210	35	6	301	342	258	125	134	3	130
		27/01/06 13:50	276	62		807	215	592	507	23	4	59	85	145	53	92	42	50
		15/02/06 15:05	75	141				509	316	24	5	165	193			147	34	113
		23/02/06 12:05	45	136		631	323	308	178	10	3	116	130	298	199	99	5	94
		23/01/07 10:45	126	23		693	202	491	416	17	3	55	75	191	77	113	22	91
		23/01/07 13:35	69	22		847	76	771	642	12	3	115	129	220	51	170	71	99
		23/01/07 16:10	75	33		717	173	544	393	13	3	135	151	200	36	164	29	135
		24/01/07 10:20	134	6.0		1010	210	800	517	13	4	266	283	432	76	356	18	338
St Helens Creek	1240061	23/01/05 6:30	47	172		1080	455	625	358	16	5	246	267	94	66	28	13	15
		23/01/05 9:10	46	208		913	254	659	353	8	2	296	306	69	40	29	11	18
		23/01/05 14:30	44	231		1340	615	725	410	11	2	302	315	142	103	39	12	27

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Elec. Cond. (µS/cm)	TSS (mg/L)	TOC (mg/L)	TN (µg N/L)	PN (µg N/L)	TFN (µg N/L)	DON (µg N/L)	Ammonia (µg N/L)	Nitrite (µg N/L)	Nitrate (µg N/L)	DIN (µg N/L)	TP (µg P/L)	PP (µg P/L)	TFP (µg P/L)	DOP (µg P/L)	FRP (µg P/L)
St Helens Creek	1240061	23/01/05 16:30	45	127		838	151	687	297	7	2	381	390	66	28	38	12	26
		24/01/05 17:30	41	16		415	33	382	197	4	2	179	185	28	8	20	9	11
		27/01/05 7:00	65	0.4		440	9	431	42	3	2	384	389	25	3	22	11	11
		28/01/06 9:15	60	9.6		560	97	463	181	3	1	278	282	29	14	15	7	8
		1/01/07 6:45	64	25		571	75	496	290	8	1	197	206	33	17	16	2	14
		23/01/07 6:30	44	95		778	335	443	295	5	1	143	149	100	66	34	6	28
		23/01/07 7:15	44	91		695	191	504	293	18	1	193	211	95	47	48	29	19
		23/01/07 9:35	41	1626		1630	1096	534	331	23	3	178	203	1420	1361	59	11	48
		23/01/07 13:50	61	110		508	114	394	147	5	1	241	247	72	46	26	1	25
		25/01/07 17:15	76	3.2		275	31	244	52	5	1	187	192	25	7	18	0	18
		1/02/07 15:50	35	198		432	188	244	146	4	1	93	98	112	89	24	3	21
		2/02/07 6:25	37	94		283	43	240	128	4	1	107	112	48	27	21	4	17
		2/02/07 8:35	51	46		291	2	289	113	5	1	170	176	38	12	26	5	21
		Waite Creek	1220045	8/01/05 19:00	408	20		2910	590	2320	473	23	24	1800	1847	231	62	169
9/01/05 4:00	310			120		2420	670	1750	755	44	19	932	995	342	117	225	5	220
23/01/05 17:30	79			177		2030	490	1540	540	16	7	977	1000	351	126	225	20	205
24/10/05 17:45	139			1524		3032	995	2037	781	115	17	1124	1256	851	550	301	18	283
12/01/06 11:00	267			2094		1060	203	857	562	42	12	241	295	554	530	24	17	7
25/01/06 21:00	104			952		3560	1220	2340	762	57	11	1510	1578	696	397	299	28	271

B.2 Herbicides and hydrocarbons

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Airlie Creek	1220047											
Andromache River (upper)	124003A	8/01/05 6:00	< 0.01	0.04	< 0.01	0.57	< 0.01	0.01				
		8/01/05 9:30	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		8/01/05 11:30	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		8/01/05 13:30	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		8/01/05 16:00	< 0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		26/01/06 10:15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02			
		26/01/06 18:35	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03			
		23/01/07 9:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05			
		23/01/07 14:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.24			
		23/01/07 17:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.27			
Andromache River (tram bridge)	1240055	24/01/05 17:10	< 0.01	< 0.01	0.03	< 0.01	< 0.01	0.47				
		25/01/05 6:30	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.24				
		25/01/05 17:00	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.51				
		27/01/05 17:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.17				
		2/02/05 8:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.15				
Basin Creek	1260003	24/01/05 8:30	< 0.01	0.04	0.11	< 0.01	< 0.01	< 0.01				
		9/03/06 5:45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		9/03/06 8:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		9/03/06 10:40	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		9/03/06 15:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		9/03/06 20:50	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		11/03/06 10:50	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
		23/01/07 15:45	< 0.01	0.03	0.09	< 0.01	< 0.01	< 0.01	< 0.01			
		23/01/07 19:00	< 0.01	0.20	0.38	< 0.01	< 0.01	< 0.01	< 0.01			
		24/01/07 6:00	< 0.01	0.18	0.45	< 0.01	< 0.01	< 0.01	< 0.01			
		1/02/07 8:00	< 0.01	0.05	0.17	< 0.01	< 0.01	< 0.01	< 0.01			
		1/02/07 10:30	< 0.01	0.02	0.07	< 0.01	< 0.01	< 0.01	< 0.01			
		1/02/07 13:30	< 0.01	0.02	0.07	< 0.01	< 0.01	< 0.01	< 0.01			
		1/02/07 17:30	< 0.01	0.06	0.22	< 0.01	< 0.01	< 0.01	< 0.01			
		2/02/07 6:00	< 0.01	0.06	0.16	< 0.01	< 0.01	< 0.01	< 0.01			
Blacks Creek	125005A	23/01/05 20:30	< 0.01	< 0.01	0.03	0.22	< 0.01	< 0.01				
		23/01/07 16:00	< 0.01	0.01	0.31	0.10	< 0.01	< 0.01	< 0.01			
		23/01/07 18:30	< 0.01	< 0.01	0.05	0.03	< 0.01	< 0.01	< 0.01			
		24/01/07 18:30	< 0.01	< 0.01	0.05	0.03	< 0.01	< 0.01	< 0.01			
Carmila Creek	126003A	25/01/05 10:15	< 0.01	0.02	0.20	0.04	< 0.01	< 0.01				
		9/03/06 6:20	< 0.01	0.04	0.23	0.03	< 0.01	< 0.01	< 0.01			

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Carmila Creek	126003A	9/03/06 9:10	< 0.01	0.08	0.49	0.06	< 0.01	< 0.01				
		9/03/06 16:25	< 0.01	0.06	0.24	0.05	< 0.01	< 0.01				
		9/03/06 20:15	< 0.01	0.04	0.20	0.04	< 0.01	< 0.01				
		11/03/06 12:10	< 0.01	0.03	0.11	0.05	< 0.01	< 0.01				
		23/01/07 8:05	< 0.01	0.10	1.4	0.77	< 0.01	< 0.01				
		23/01/07 10:10	< 0.01	0.07	0.81	0.50	< 0.01	< 0.01				
		23/01/07 14:50	< 0.01	0.08	0.80	0.46	< 0.01	< 0.01				
		24/01/07 9:00	< 0.01	0.03	0.41	0.19	< 0.01	< 0.01				
		2/02/07 6:40	< 0.01	0.04	0.27	0.14	< 0.01	< 0.01				
Finch Hatton Creek	1250043	23/01/05 8:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		28/01/06 10:10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
Gregory River	122004A	9/01/05 7:15	< 0.01	4.2	6.5	0.45	0.03	< 0.01				
		23/01/05 6:25	< 0.01	0.44	0.92	0.10	< 0.01	< 0.01				
		23/01/05 15:00	< 0.01	0.05	0.87	0.13	< 0.01	< 0.01				
		23/01/05 20:00	< 0.01	0.04	0.20	0.05	< 0.01	< 0.01				
		24/01/05 6:00	< 0.01	0.04	0.33	0.04	< 0.01	< 0.01				
		26/01/06 6:00	< 0.01	0.03	0.22	0.02	< 0.01	< 0.01				
		26/01/06 8:30	< 0.01	0.04	0.26	0.03	< 0.01	< 0.01				
		26/01/06 16:35	< 0.01	0.02	0.14	0.03	< 0.01	< 0.01				
		27/01/06 18:00	< 0.01	0.03	0.33	0.03	< 0.01	< 0.01				
		19/03/06 8:45	< 0.01	1.4	0.84	0.09	< 0.01	< 0.01				
		3/04/06 9:15	< 0.01	0.12	0.65	0.07	< 0.01	< 0.01				
		3/04/06 11:45	< 0.01	0.41	0.89	0.06	< 0.01	< 0.01				
		3/04/06 16:00	< 0.01	0.08	0.31	0.02	< 0.01	< 0.01				
		23/01/07 12:30	< 0.01	0.69	1.2	0.13	< 0.01	< 0.01				
23/01/07 17:45	< 0.01	0.82	1.6	0.27	< 0.01	< 0.01						
		24/01/07 6:30	< 0.01	0.44	0.95	0.20	< 0.01	< 0.01				
Impulse Creek	1220041	23/01/05 17:20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		26/01/06 13:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
Mackay – Campbell Street	1250044	23/01/05 18:00	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01	5	15	16	< 0.5
		24/01/05 7:30	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	11	17	52	< 0.5
		8/04/05 11:00	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01				
		21/10/05 5:40	< 0.01	0.01	0.03	< 0.01	< 0.01	< 0.01	630	1800	850	
		17/11/05 3:00	< 0.01	< 0.01	0.72	< 0.01	< 0.01	< 0.01	27	130	160	
		8/01/06 10:10	< 0.01	< 0.01	0.13	< 0.01	< 0.01	< 0.01	28	96	110	
		9/01/06 5:40	< 0.01	< 0.01	0.13	< 0.01	< 0.01	< 0.01	27	23	30	
		10/01/06 3:35	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	21	34	33	
		22/01/06 10:45	< 0.01	< 0.01	0.01	< 0.01	< 0.01	23	41	38		
Mackay – Macalister Street	1250044	24/01/05 21:30	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 5	< 5	49	
		9/04/05 12:45	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01				

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Mackay – Macalister Street	1250044	21/10/05 6:15	< 0.01	0.01	0.03	< 0.01	< 0.01	< 0.01	29	450	280	
		17/11/05 2:30	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	24	300	240	
		8/01/06 9:40	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	43	880	630	
		9/01/06 5:20	< 0.01	< 0.01	0.18	0.03	< 0.01	< 0.01	21	25	30	
		10/01/06 3:20	< 0.01	0.01	0.03	< 0.01	< 0.01	< 0.01	43	360	150	
		22/01/06 10:35	< 0.01	< 0.01	0.09	< 0.01	< 0.01	< 0.01	27	86	91	
		9/11/06 18:20	< 0.01	0.01	0.03	< 0.01	< 0.01	< 0.01				
McCready's Creek	1250044	11/05/05 16:30	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01				
		9/03/06 3:55	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		9/03/06 6:10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
Myrtle Creek	1220035	8/01/05 13:15	0.37	2.9	4.9	0.84	< 0.01	0.04				
		9/01/05 8:15	0.76	2.8	5.0	0.82	< 0.01	0.03				
		11/01/06 18:00	2.6	4.2	6.6	1.6	0.02	< 0.01				
		26/01/06 11:35	0.32	4.9	9.4	1.4	0.02	< 0.01				
		26/01/06 17:10	0.25	3.7	8.8	1.4	0.01	< 0.01				
		27/01/06 13:00	0.15	1.9	4.1	1.2	< 0.01	< 0.01				
		27/01/06 16:30	0.16	1.7	3.9	0.69	< 0.01	< 0.01				
		28/01/06 9:00	0.12	1.6	3.8	0.71	< 0.01	< 0.01				
		20/03/06 1:30	0.06	0.09	0.82	0.45	< 0.01	< 0.01				
		20/03/06 11:30	0.05	0.84	3.5	0.05	< 0.01	< 0.01				
		20/03/06 20:30	0.04	0.79	4.4	0.45	< 0.01	< 0.01				
		21/03/06 20:15	0.03	0.91	2.2	0.33	< 0.01	< 0.01				
		23/03/06 19:00	0.04	0.55	4.2	0.31	< 0.01	< 0.01				
		26/03/06 19:00	0.04	0.49	3.2	0.23	< 0.01	< 0.01				
		19/04/06 18:45	< 0.01	0.11	0.34	0.06	< 0.01	< 0.01				
		21/01/07 11:30	1.4	5.3	19	3.2	0.03	< 0.01				
		23/01/07 18:30	0.70	3.0	8.1	1.5	0.01	< 0.01				
		24/01/07 6:45	0.52	2.0	5.6	1.0	0.01	< 0.01				
		24/01/07 18:30	0.46	1.7	4.4	0.89	< 0.01	< 0.01				
		31/01/07 17:45	0.41	0.90	1.7	0.62	< 0.01	< 0.01				
1/02/07 6:45	0.18	0.63	1.3	0.48	< 0.01	< 0.01						
2/02/07 6:15	0.10	0.36	1.1	0.37	< 0.01	< 0.01						
3/02/07 12:30	0.11	0.38	0.88	0.51	< 0.01	< 0.01						
4/02/07 17:45	0.07	0.37	0.84	0.38	< 0.01	< 0.01						
O'Connell River (Caping Siding)	124001A	8/01/05 13:20	< 0.01	0.77	1.3	< 0.01	< 0.01	0.40				
		8/01/05 15:25	< 0.01	0.87	1.5	< 0.01	< 0.01	0.40				
		23/01/05 9:50	< 0.01	0.05	0.13	0.03	< 0.01	1.4				
		23/01/05 12:30	< 0.01	0.16	0.48	0.08	< 0.01	0.51				
		23/01/05 14:35	< 0.01	0.09	0.41	0.07	< 0.01	0.67				
		23/01/05 17:35	< 0.01	0.07	0.43	0.07	< 0.01	0.29				

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
O'Connell River (Caping Siding)	124001A	23/01/05 19:50	< 0.01	0.05	0.23	0.02	< 0.01	0.20				
		24/01/05 11:40	< 0.01	0.05	0.25	0.02	< 0.01	0.15				
		26/01/05 19:00	< 0.01	0.02	0.12	0.01	< 0.01	0.11				
		27/01/05 17:30	< 0.01	0.02	0.06	0.01	< 0.01	0.11				
		2/02/05 9:25	< 0.01	0.01	0.02	< 0.01	< 0.01	0.04				
		12/01/06 10:00	< 0.01	0.14	0.39	0.06	< 0.01	0.89				
		12/01/06 20:20	< 0.01	0.43	2.1	0.28	< 0.01	0.12				
		13/01/06 8:25	< 0.01	0.28	1.8	0.36	< 0.01	0.39				
		25/01/06 5:45	< 0.01	0.14	0.49	0.15	< 0.01	0.29				
		25/01/06 18:30	< 0.01	0.07	0.12	0.03	< 0.01	0.50				
		26/01/06 8:25	< 0.01	0.11	0.58	0.08	< 0.01	0.03				
		26/01/06 17:40	< 0.01	0.09	0.32	0.06	< 0.01	0.06				
		27/01/06 6:30	< 0.01	0.05	0.20	0.04	< 0.01	0.26				
		27/01/06 15:30	< 0.01	0.07	0.34	0.07	< 0.01	0.13				
		29/01/06 11:00	< 0.01	0.02	0.14	0.04	< 0.01	0.09				
31/01/06 14:35	< 0.01	0.02	0.07	0.03	< 0.01	0.07						
O'Connell R. (Staffords Crossing)	124001B	12/01/06 10:50	< 0.01	0.56	2.0	0.38	< 0.01	0.03				
		23/01/07 14:00	< 0.01	0.87	1.2	0.09	< 0.01	< 0.01				
		24/01/07 12:07	< 0.01	0.70	1.8	0.07	< 0.01	< 0.01				
		24/01/07 17:50	< 0.01	0.73	1.1	0.16	< 0.01	< 0.01				
		25/01/07 6:00	< 0.01	0.34	0.44	0.08	0.05	< 0.01				
O'Connell River (Caravan Park)	1240062	24/01/05 17:40	< 0.01	0.06	0.25	0.07	< 0.01	0.27				
		25/01/05 6:15	< 0.01	0.03	0.12	0.02	< 0.01	0.18				
		25/01/05 16:45	< 0.01	0.02	0.11	0.02	< 0.01	0.4				
		27/01/05 16:30	< 0.01	0.01	0.06	0.01	< 0.01	0.17				
		2/02/05 9:00	< 0.01	0.01	0.02	0.01	< 0.01	0.13				
		12/01/06 11:45	< 0.01	0.43	2.0	0.35	< 0.01	1.1				
		12/01/06 19:00	< 0.01	0.46	1.8	0.17	< 0.01	0.19				
		13/01/06 7:00	< 0.01	0.40	2.0	0.29	< 0.01	0.91				
		25/01/06 7:00	< 0.01	0.16	0.43	0.20	< 0.01	0.37				
		25/01/06 19:00	< 0.01	0.08	0.35	0.12	< 0.01	1.6				
		26/01/06 9:10	< 0.01	0.09	0.49	0.10	< 0.01	0.12				
		26/01/06 18:15	< 0.01	0.08	0.31	0.10	< 0.01	0.27				
		27/01/06 7:00	< 0.01	0.06	0.32	0.11	< 0.01	0.36				
		27/01/06 15:55	< 0.01	0.06	0.35	0.11	< 0.01	0.40				
		29/01/06 11:30	< 0.01	0.05	0.23	0.10	< 0.01	0.37				
23/01/07 8:00	< 0.01	1.3	1.8	0.49	0.01	< 0.01						
23/01/07 14:00	< 0.01	0.75	1.2	0.19	0.07	0.07						
1/02/07 18:00	< 0.01	0.14	0.28	0.05	0.04	0.10						
2/02/07 9:00	< 0.01	0.12	0.23	0.03	0.03	0.06						

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Pioneer River	125013A	23/01/05 22:15	0.14	1.2	3.3	0.41	< 0.01	< 0.01				
		24/01/05 6:30	< 0.01	0.57	1.9	0.25	< 0.01	< 0.01				
		24/01/05 17:40	< 0.01	0.45	1.6	0.23	< 0.01	< 0.01				
		25/01/05 6:30	< 0.01	0.44	1.5	0.25	< 0.01	< 0.01				
		25/01/05 17:50	< 0.01	0.21	0.87	0.15	< 0.01	< 0.01				
		26/01/05 8:00	< 0.01	0.21	0.88	0.14	< 0.01	< 0.01				
		27/01/05 7:00	0.01	0.17	0.55	0.10	< 0.01	< 0.01				
		31/01/05 8:00	< 0.01	0.09	0.32	0.06	< 0.01	< 0.01				
		9/04/05 19:00	0.01	0.07	0.20	0.08	< 0.01	< 0.01				
		10/04/05 8:00	< 0.01	0.06	0.16	0.06	< 0.01	< 0.01				
		10/04/05 17:30	< 0.01	0.03	0.48	0.05	< 0.01	< 0.01				
		11/04/05 8:10	< 0.01	0.04	0.45	0.05	< 0.01	< 0.01				
		11/04/05 15:00	< 0.01	0.04	0.36	0.05	< 0.01	0.01				
		11/04/05 15:00	< 0.01	0.03	0.34	0.04	< 0.01	0.01				
		11/04/05 15:00	< 0.01	0.03	0.27	0.03	< 0.01	0.01				
		20/01/07 8:30	0.12	1.9	3.1	1.4	< 0.01	< 0.01				
		20/01/07 16:00	0.05	2.0	1.7	0.63	< 0.01	< 0.01				
		21/01/07 7:50	0.07	2.5	2.2	0.77	0.03	< 0.01				
		23/01/07 15:30	0.24	7.6	7.2	1.9	0.05	< 0.01				
		23/01/07 16:20	0.15	3.4	4.1	1.1	0.02	< 0.01				
		23/01/07 23:00	0.13	1.2	2.4	0.60	< 0.01	< 0.01				
		24/01/07 8:00	0.07	1.1	1.9	0.41	< 0.01	< 0.01				
		24/01/07 17:30	0.07	1.3	2.0	0.53	< 0.01	< 0.01				
		25/01/07 8:00	0.07	1.4	4.0	0.58	< 0.01	< 0.01				
		25/01/07 14:30	0.06	1.2	2.6	0.46	< 0.01	< 0.01				
		26/01/07 8:00	0.05	0.75	1.1	0.34	< 0.01	< 0.01				
		27/01/07 8:00	0.05	0.53	0.83	0.25	< 0.01	< 0.01				
		28/01/07 8:00	0.03	0.49	0.55	0.19	< 0.01	< 0.01				
		31/01/07 15:30	0.04	0.74	1.2	0.58	< 0.01	< 0.01				
		1/02/07 18:00	0.05	0.44	0.53	0.31	< 0.01	< 0.01				
2/02/07 8:00	0.02	0.19	0.58	0.12	< 0.01	< 0.01						
2/02/07 15:15	0.02	0.18	0.45	0.11	< 0.01	< 0.01						
3/02/07 8:30	< 0.01	0.15	0.39	0.09	< 0.01	< 0.01						
4/02/07 8:30	0.01	0.16	0.41	0.11	< 0.01	< 0.01						
5/02/07 10:30	< 0.01	0.09	0.22	0.07	< 0.01	< 0.01						
Plane Creek	126002A	24/01/05 10:25	< 0.01	0.34	0.95	0.26	< 0.01	< 0.01	< 5	< 5	53	< 0.5
		9/03/06 8:00	< 0.01	0.07	0.45	0.19	< 0.01	< 0.01				
		9/03/06 11:45	< 0.01	0.06	0.02	0.09	< 0.01	< 0.01				
		9/03/06 15:45	< 0.01	0.09	0.28	0.10	< 0.01	< 0.01				
		11/03/06 9:10	< 0.01	0.04	0.09	0.06	< 0.01	< 0.01				

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Plane Creek	126002A	6/04/06 17:30	< 0.01	< 0.01	0.15	0.09	< 0.01	< 0.01				
		7/04/06 9:30	< 0.01	< 0.01	0.10	0.04	< 0.01	< 0.01				
		23/01/07 11:15	< 0.01	1.2	0.97	0.85	< 0.01	< 0.01				
		23/01/07 14:00	< 0.01	1.2	0.94	0.86	< 0.01	< 0.01				
		23/01/07 16:40	< 0.01	0.56	1.7	0.50	< 0.01	< 0.01				
		23/01/07 22:00	< 0.01	0.59	1.6	0.37	< 0.01	0.01				
		24/01/07 3:45	< 0.01	0.32	0.68	0.21	< 0.01	0.01				
		24/01/07 9:45	< 0.01	0.23	0.75	0.17	< 0.01	< 0.01				
		24/01/07 16:45	< 0.01	0.24	0.69	0.19	< 0.01	< 0.01				
		1/02/07 20:30	< 0.01	0.06	0.19	0.08	< 0.01	< 0.01				
Proserpine River	122005A	24/01/05 13:00	< 0.01	0.10	0.39	0.04	< 0.01	< 0.01				
Proserpine - Urban	1220046	8/01/05 20:40	< 0.01	0.20	< 0.01	< 0.01	< 0.01	< 0.01	< 5	20	43	< 0.5
		8/01/05 21:10	< 0.01	0.01	0.03	< 0.01	< 0.01	< 0.01	< 5	15	17	< 0.5
		8/01/05 21:40	< 0.01	0.03	0.04	< 0.01	< 0.01	< 0.01	< 5	15	15	< 0.5
		28/11/05 16:15	< 0.01	0.09	0.09	< 0.01	< 0.01	< 0.01	6	100	230	
		19/03/06 18:30	< 0.01	0.02	0.02	< 0.01	< 0.01	< 0.01				
		19/03/06 22:30	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01				
		20/03/06 2:00	< 0.01	0.01	0.02	< 0.01	< 0.01	< 0.01				
20/03/06 7:30	< 0.01	0.06	0.02	< 0.01	< 0.01	< 0.01						
Rocky Dam Creek (Bienke)	1260033	24/01/05 12:30	0.05	0.19	1.9	0.79	< 0.01	< 0.01				
Rocky Dam Creek (GS)	126007A	10/01/06 14:50	1.4	1.7	22	5.0	< 0.01	< 0.01				
		12/01/06 12:20	0.21	1.2	16	4.8	< 0.01	0.01				
		9/03/06 4:50	0.02	0.38	0.86	0.47	< 0.01	< 0.01				
		9/03/06 7:50	0.01	0.03	1.1	0.31	< 0.01	< 0.01				
		9/03/06 10:00	0.02	0.54	1.5	0.37	< 0.01	< 0.01				
		9/03/06 14:40	0.01	0.37	1.0	0.28	< 0.01	< 0.01				
		9/03/06 21:30	0.01	0.31	0.93	0.31	< 0.01	< 0.01				
		11/03/06 10:05	0.02	0.21	0.69	0.31	< 0.01	< 0.01				
		23/01/07 18:00	0.01	0.03	3.6	2.1	< 0.01	< 0.01				
		24/01/07 6:00	0.04	0.76	5.2	1.6	< 0.01	< 0.01				
		24/01/07 11:30	0.03	0.61	3.8	1.2	< 0.01	< 0.01				
		31/01/07 18:35	0.29	0.88	1.3	0.86	< 0.01	< 0.01				
		1/02/07 6:00	0.62	0.59	1.3	0.88	< 0.01	< 0.01				
		1/02/07 13:30	0.12	0.51	1.3	0.80	< 0.01	< 0.01				
2/02/07 6:30	0.03	0.25	0.91	0.65	< 0.01	< 0.01						
3/02/07 9:30	0.03	0.16	0.60	0.55	< 0.01	< 0.01						
Sandy Creek	126001A	23/01/05 20:30	0.13	0.92	3.4	0.62	< 0.01	< 0.01				
		24/01/05 2:40	0.07	1.0	6.3	1.6	< 0.01	< 0.01				
		24/01/05 9:15	0.07	0.9	3.9	0.76	< 0.01	< 0.01				
		25/01/05 8:00	0.04	0.62	2.8	0.58	< 0.01	< 0.01				

Fresh and Marine Water Quality in the Mackay Whitsunday Region 2004/05 to 2006/07

Site Name	Gauging Station Number	Date/time	Ametryn (µg/L)	Atrazine (µg/L)	Diuron (µg/L)	Hexazinone (µg/L)	Simazine (µg/L)	Tebuthiuron (µg/L)	TPH C ₁₀ - C ₁₄ (µg/L)	TPH C ₁₅ - C ₂₈ (µg/L)	TPH C ₂₉ - C ₃₆ (µg/L)	PAHs
Sandy Creek	126001A	26/01/05 8:15	0.04	0.64	2.5	0.35	< 0.01	< 0.01				
		27/01/05 8:00	0.04	0.61	2.5	0.31	< 0.01	< 0.01				
		23/01/07 15:30	0.18	3.3	8.5	2.2	0.01	< 0.01	< 0.01			
		23/01/07 21:15	0.04	2.1	6.8	4.5	< 0.01	< 0.01	< 0.01			
		24/01/07 3:00	0.03	1.2	4.5	1.4	< 0.01	< 0.01	< 0.01			
		24/01/07 9:15	0.03	1.3	4.1	1.2	< 0.01	< 0.01	< 0.01			
		26/01/07 7:30	0.06	2.3	5.2	1.6	0.01	< 0.01	< 0.01			
		1/02/07 19:30	0.01	0.40	1.5	0.58	< 0.01	< 0.01	< 0.01			
		2/02/07 8:15	0.01	0.16	0.59	0.25	< 0.01	< 0.01	< 0.01			
		2/02/07 15:30	< 0.01	0.14	0.54	0.20	< 0.01	< 0.01	< 0.01			
		3/02/07 7:00	0.01	0.33	1.2	0.27	< 0.01	< 0.01	< 0.01			
		4/02/07 7:30	0.01	0.35	0.81	0.30	< 0.01	< 0.01	< 0.01			
		5/02/07 7:45	0.01	0.28	0.61	0.33	< 0.01	< 0.01	< 0.01			
Sarina - Urban	1260034	10/01/06 10:00	< 0.01	< 0.01	0.34	0.16	< 0.01	< 0.01				
		25/01/06 15:55	< 0.01	0.01	0.12	0.02	0.01	< 0.01	< 0.01			
		27/01/06 13:50	< 0.01	0.02	0.09	0.06	< 0.01	< 0.01	< 0.01			
		15/02/06 15:05	< 0.01	0.02	0.07	0.01	0.01	< 0.01	< 0.01			
		23/02/06 12:05	< 0.01	< 0.01	0.05	< 0.01	0.01	< 0.01	< 0.01			
		23/01/07 10:45	< 0.01	0.02	0.33	0.02	< 0.01	< 0.01	< 0.01			
		23/01/07 13:35	< 0.01	0.01	0.20	< 0.01	< 0.01	< 0.01	< 0.01			
		23/01/07 16:10	< 0.01	0.02	0.27	< 0.01	< 0.01	< 0.01	< 0.01			
24/01/07 10:20	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01					
St Helens Creek	1240061	23/01/05 16:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		28/01/06 9:15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		1/01/07 6:45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		23/01/07 6:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		23/01/07 7:15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		23/01/07 9:35	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		23/01/07 13:50	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		25/01/07 17:15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		1/02/07 15:50	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
		2/02/07 6:25	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01				
2/02/07 8:35	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01						
Waite Creek	1220045	8/01/05 19:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 5	12	8	< 0.5
		9/01/05 4:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 5	28	19	< 0.5
		23/01/05 17:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 5	< 5	22	< 0.5
		24/10/05 17:45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 5	18	93	
		12/01/06 11:00	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
25/01/06 21:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01					