

Johnstone River Catchment

Catchment Information

Description

Area (km ²)	2325
% Gauged	59
Mean Discharge Yr (km ³)	4.7
Rainfall (mm)	2996
Runoff (mm/m ²)	2009
Runoff/Rainfall Ratio	67

Land Use

Population	13428
Clearing (km ²)	406
% Cleared	17
Area under Grazing (km ²)	493*
Area under Sugar (km ²)	394*
Area under Horticulture (km ²)	44*

Pesticide Application

(Kg Active Ingredient/Yr)

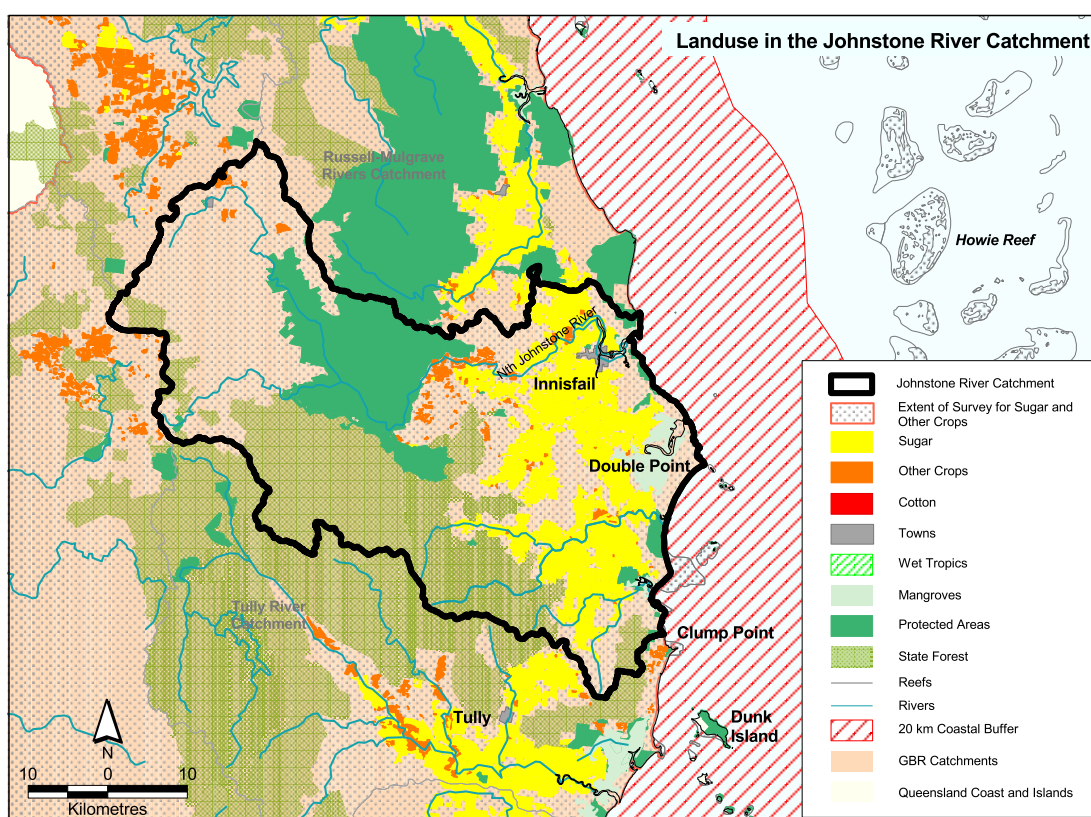
Atrazine	25284
Diuron	17353
2-4D	14938
Chlorpyrifos	6313
MEMC	251

Source: * Russell and Hales, 1997 ; Russell et al., 1996b ; Russell and Hales, 1993

Catchment Targets

	1850 T/yr	Current T/yr	Current T/ km ³	ratio	2011 % Red'n	2011 T/yr Target	2011 T/ km ³ Target
Sediment Export	10000	305142	65310	30.5	50	152571	32655
Total N Export	628	1849	396	2.9	50	925	198
Total P Export	31	196	42	6.5	50	98	21

Data Confidence Index = 3



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The Johnstone River catchment covers an area of 2325 km² which contains the North and South Johnstone Rivers. Approximately 985 km² of the catchment is in the Wet Tropics World Heritage Area. State forests and timber reserves occupy 613 km² and protected areas, including the Wet Tropics World Heritage Area, cover approximately 1000 km². Grazing occupies approximately 493 km², mainly occurring in central areas of the catchment. The lower river flood plain and coastal areas are used intensively for cultivation particularly sugarcane which occupies 394 km² and horticulture 44 km². Sediment, total nitrogen and total phosphorus exports are classified as high risk in the Johnstone River catchment.

Issues in the catchment:

- On grazing land erosion is reasonably stable with isolated areas of poor management causing erosion and weed infestation of pastures.
- Cropping land is prone to erosion due to the high intensity, long duration rainfall and steep slopes.
- High contribution of nutrients (particularly nitrates) and pesticides from cropping lands.
- The catchment has been put under pressure through changed and lost habitat with some species threatened.
- Approximately 43% of the catchment is within protected areas.
- Approximately 65% loss of coastal wetlands.
- Commercial and recreational fishery.
- Close proximity to inshore reefal areas.
- Recreation marine use.
- Commercial port.

AIMS conducted water sampling at a downstream site in the South Johnstone River from 1989-1992, with help from staff at QDPI Research Station. A high frequency of sampling maintained over significant rainfall events such as the “first flush” has provided valuable insights on nutrient dynamics in a wet tropical catchment. In 1992, DNR initiated a comprehensive water sampling program over the entire Johnstone catchment. This study continued until 1997. An AIMS river logger has been deployed on the highway bridge of the North Johnstone River for two years.

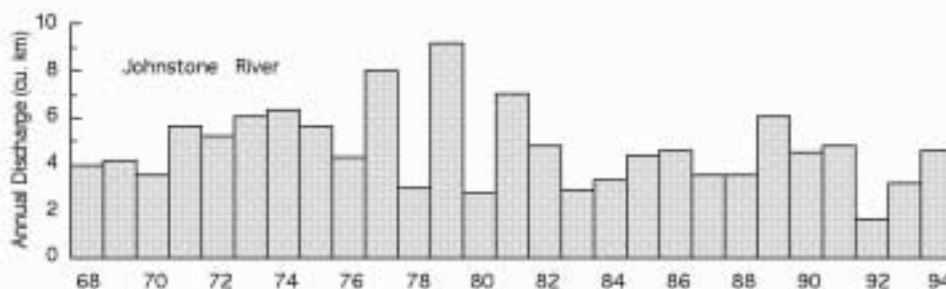


Figure 12. Water discharge patterns in the Johnstone River.