



Water Quality Site Report

Alligator Creek Neighbourhood Catchment Daly Creek (DC1) Site Report – July 2008

Daly Creek is one of the many tributaries located in the Woodbury - Bungundarra area of the Alligator Creek Neighbourhood Catchment (NC). It drains the coastal range area of Woodbury and Bungundarra, just over the range from the precinct of Farnborough, and flows directly into Limestone Creek.

Land use in the Catchment area of Daly Creek is a mixture of grazing, horticultural cropping (tree, pineapple and vegetable crops) and native forest.

Daly Creek is one of four sites sampled by landholders in Alligator NC between January 2006 and June 2008 as part of a collaborative capacity building project on water quality and Catchment health with interested landholders. Samples were event based only.

Local landholders Clare and Steve Van Peype collected four (4) flow event samples from Daly Creek headwaters (Please refer to map overleaf for DC1 site). Samples were tested for Total Suspended Sediments (TSS), Total Nitrogen (TN), Total Phosphorus (TP) and Dissolved Nutrients (NH_3 , NO_x , FRP) and Pesticides.

Samples were taken from flow events on:

- 8th March 2006 after 35mm rainfall in previous 48hrs;
- 3rd September 2006 after 47mm rainfall in previous 48hrs;
- 7th September 2007 after 166mm in previous 48hrs; and
- 13th January 2008, and 141mm over previous 12 days.

Results

Figures 1 to 3 chart the 4 samples of Daly Creek with the flow event mean (average) of sediments and nutrients of other NC's in the FRCC sub-region and the Fitzroy Basin region.

For all charts, the lower results of Daly Creek are to be expected; Daly Creek samples were taken in the headwaters (1st order stream) and all other NC samples are taken at, or near the end of a NC.

Alligator, Styx, Raglan and Emu Creek NC's are located in the FRCC sub-region. Data management and sampling of Alligator NC was co-ordinated by FRCC, and our partner organisation, Fitzroy Basin Association (FBA), managed sampling and data for all other NC's listed. In both instances, all sampling is undertaken by landholders.

It must be kept in mind that each NC has very different soils, land uses and management, which produce very different water quality results.

The NC results have been compared with Queensland Central Coast (Qld CC) guidelines in Figures 1 to 3; however guidelines are based upon ambient data and not flow data, so it can be expected that flow events will produce results above the guidelines.

Sediments

Samples taken from Daly Creek were generally very clean and clear in relation to sediments with 3 of the 4 samples falling below the Alligator Creek average (mean) and well below that of the other NC's. The higher value of 60 mg/L sampled on 27/01/2006 may be attributed a drier year in 2006 with less ground cover upstream (and more sediment loss).

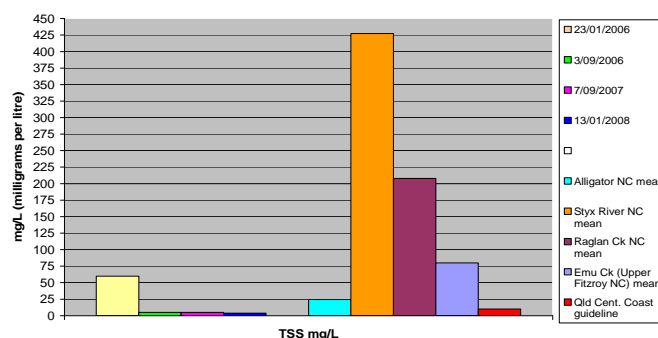


Figure 1: Comparison between TSS results for Daly Creek, FRCC NC means & Qld CC guideline



Nutrients – Nitrogen and Phosphorus

Samples for Daly Creek generally had low nutrient values with the exception of Total Nitrogen (TN).

TN results in [Figure 2](#) for the 3 Daly Creek samples (pale yellow, green & dark blue bars) are slightly above the Alligator Creek NC mean (light blue bars), within the mean range of other FRCC NC's, and below the FBA NC mean (bright yellow bars).

FBA's NC mean results for TN and TP are derived from samples predominantly taken in the Central Highlands during the 2005 and 2006 wet seasons; as can be identified in [Figure 2](#), the soils and land use in this area produce much higher levels of sediment and nutrient levels.

TN is a measure of both dissolved (nitrate & nitrite – NO_x and ammonia – NH₃) and organic nitrogen (attached to carbon and can include leaf litter) in the water column. TP is a measure of both dissolved (FRP – filtered reactable phosphorous) and organic phosphorus.

Comparing Daly Creek results for TN in [Figure 2](#), with the result for dissolved forms of Nitrogen (NH₃ and NO_x) in [Figure 3](#), suggest that the high TN results are derived from natural forms (large amounts of leaf litter in surrounding Melaleuca & Swamp Mahogany vegetation of Daly Creek).and not inorganic forms derived from fertilisers.

TP results in [Figure 2](#) for the 3 Daly Creek samples are below the Alligator Creek NC mean, below other NC means and below the Qld CC guideline (red bars).

Dissolved Nutrients results for the 4 Daly Creek samples in [Figure 3](#) are below or equal to the Qld CC guideline and below the Alligator Creek NC mean.

Dissolved Nutrients are available for use by plants and algae. No analyses for Dissolved Nutrients were undertaken in other NC areas in the FRCC sub-region or the FBA region.

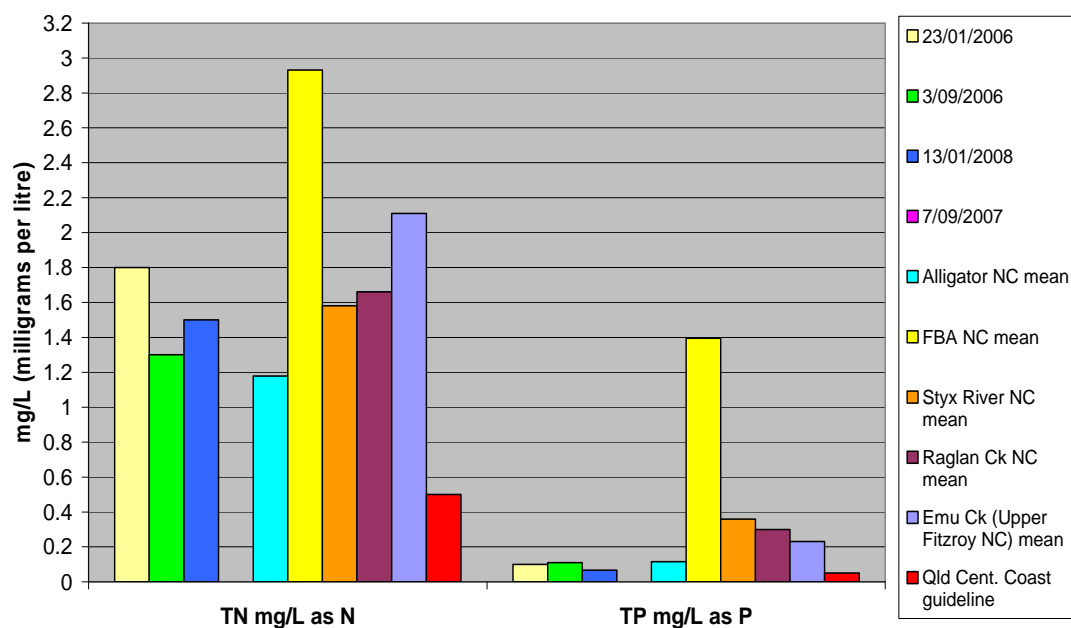


Figure 2: Comparison between Total Nutrient result for Daly Creek and FBA & FRCC NC means. Please note: No TN or TP samples were taken on the 07/09/2007.

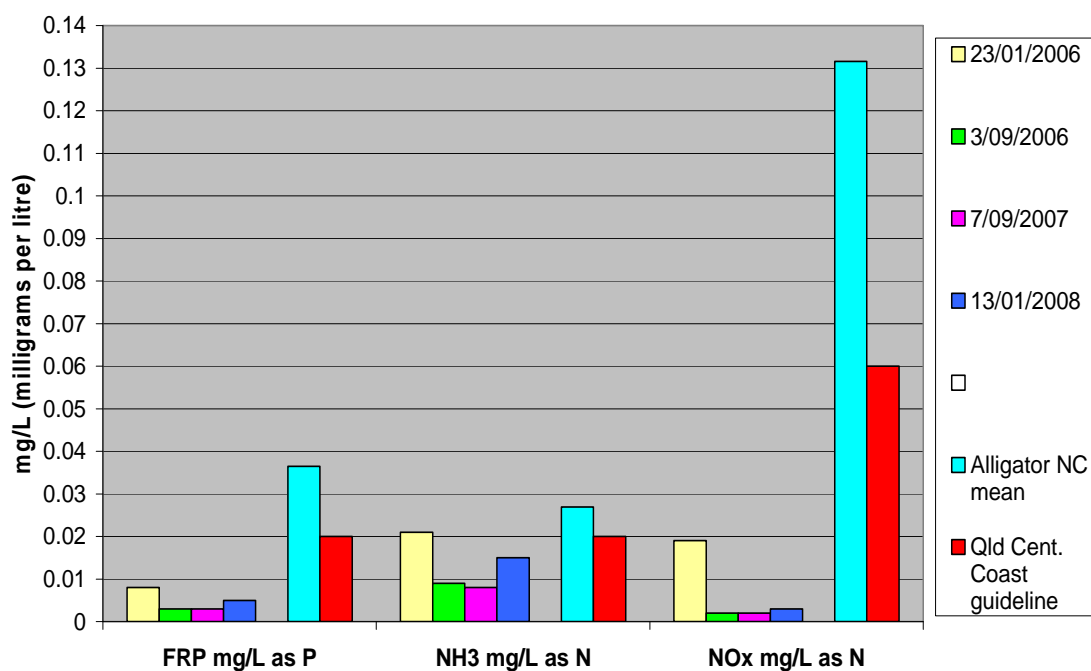


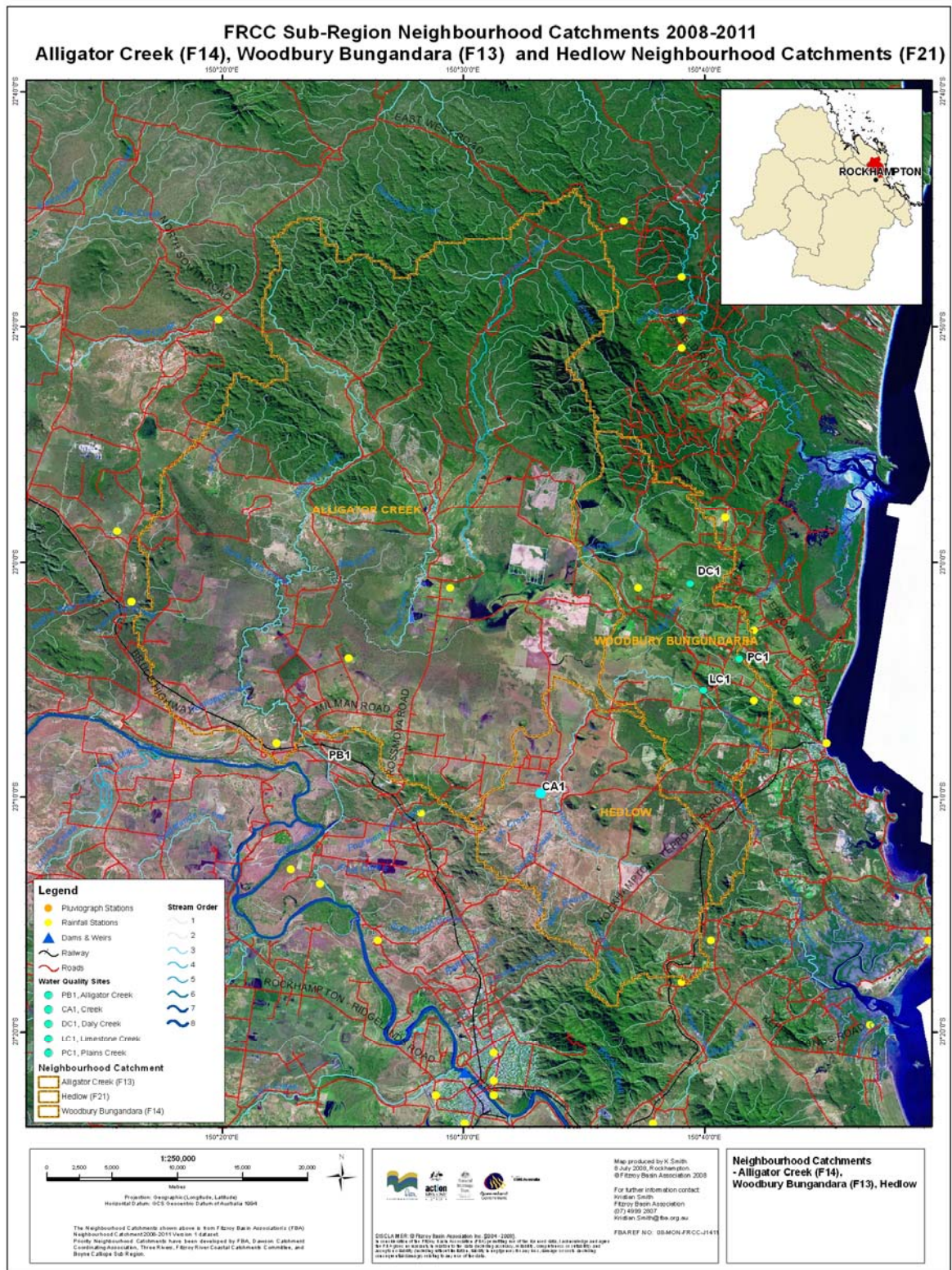
Figure 3: Comparison between Dissolved Nutrient analyses for Daly Creek, Alligator NC & Qld CC guideline

Pesticides

Analysis for Pesticides in Daly Creek was undertaken once only for the 26/01/2006 sample and no pesticides were detected. The analysis included a suite of 112 pesticides including Organochlorine, Organophosphorus, Synthetic Pyrethroids and other herbicides & pesticides.



Figure 4: Map of Alligator Neighbourhood Catchment with all FRCC water quality sampling sites. Plains Creek is PC1. Please note this map includes three areas; Hedlow, Woodbury Bungundarra and Alligator Creek.



Future water quality monitoring and reports

Phone the FRCC office on (07) 4921 0573 or refer to our website www.frcc.org.au for the most up to date information on monitoring in the FRCC sub-region.