



DEPARTMENT of
PRIMARY INDUSTRIES,
WATER *and* ENVIRONMENT



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Water Quality of Rivers in the Inglis – Flowerdale Catchment

PART 3ii

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the renewable energy business

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The Department of Primary Industries, Water and Environment

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The Water Resources Division provides a focus for water management and water development in Tasmania through a diverse range of functions including the design of policy and regulatory frameworks to ensure sustainable use of the surface water and groundwater resources; monitoring, assessment and reporting on the condition of the State's freshwater resources; facilitation of infrastructure development projects to ensure the efficient and sustainable supply of water; and implementation of the *Water Management Act 1999*, related legislation and the State Water Development Plan.

3.5.2 Catchment Surveys - Phosphorus

In contrast to TN, average TP concentration was generally higher throughout the catchment during the summer survey (Figure 3.26) than was found during winter (Figure 3.27). This result is unusual, as higher flows during winter generally result in greater transport of sediment, and hence TP. Upon further review of the data, the higher summer-time TP concentrations at some sites appears to be a result of slightly higher levels of dissolved reactive phosphorus (Figure 3.28), especially at sites in the headwaters of Blackfish, Seabrook and Camp creeks. These data support the conclusions from the nitrogen data that catchment activities in the Kellatier – Yolla – Henrietta area are causing impaired water quality in the streams draining that part of the catchment.

The two outliers in the summer survey data were the elevated TP concentrations recorded at IF14 (Inglis River 2km u/s Takone) and IF21 (Hardmans Creek). The TP concentration at these locations was 0.066 mg/L and 0.032 mg/L respectively, which was unexpected given their elevated position in the catchment. At IF21 this may have been due to recent stock access to the creek immediately above the site, although another factor may have been the disturbance upstream created by a newly established plantation. The high TP concentrations recorded at IF14 is less easily explained, as this site lies within a reasonable healthy and little disturbed patch of native forest. Both of these sites showed much lower TP concentrations during the winter snapshot survey, suggesting that the summer result may have been a short-term phenomenon.

3.5.3 Catchment Surveys - Bacteria

As well as the monthly monitoring of faecal bacteria that was carried out at the five sites lower in the catchment (see Section 3.5), bacteria were sampled at all 27 sites as part of the summer and winter catchment snapshot surveys. The data show that faecal contamination during the summer appears to be greatest at sites lower in the catchment (Figure 3.29), although contamination was also found in the headwater sites of Camp Creek and Seabrook Creek.

During the winter survey (Figure 3.30), faecal contamination at sites in the Inglis River and its tributaries was generally higher than was found during the summer, with colony counts in excess of 1000 per 100 ml recorded at 9 of the lower catchment sites. In the Flowerdale River and its tributaries, and at headwater sites in the Inglis catchment (IF12, IF13 & IF14), no faecal contamination was detected during the winter survey.

When the data from sites on the Inglis River is plotted on its own (Figure 3.31), it can be seen that during the summer there was a reasonably consistent increase in faecal contamination from the headwaters to the catchment outlet. During the winter survey, sites downstream from IF11 all showed similar levels of coliform contamination.

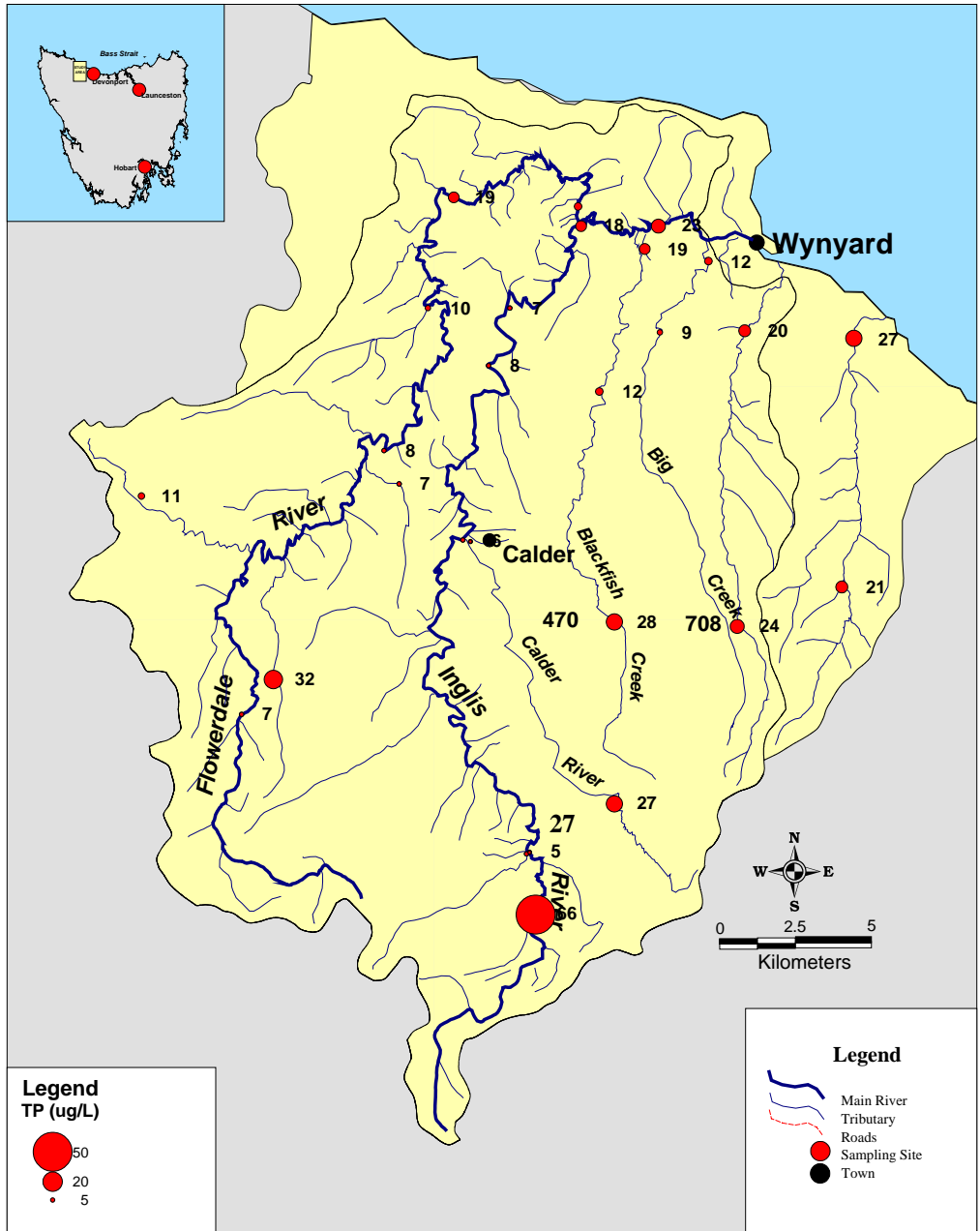


Figure 3.26: Snapshot of Total-P concentrations recorded in the Inglis-Flowerdale catchment on 22 March 2000.

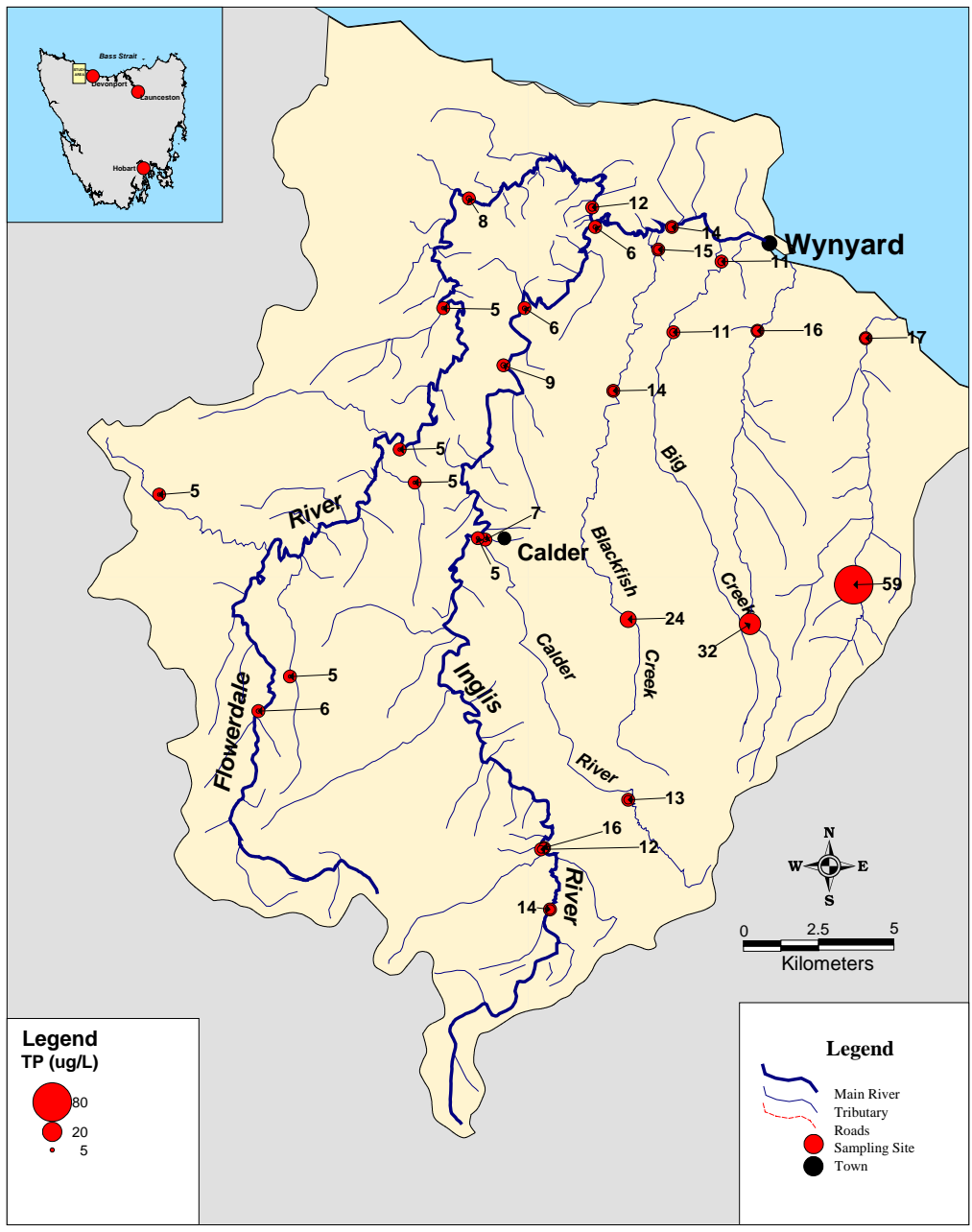


Figure 3.27: Snapshot of Total-P concentrations recorded in the Inglis-Flowerdale catchment on 29 August 2000.

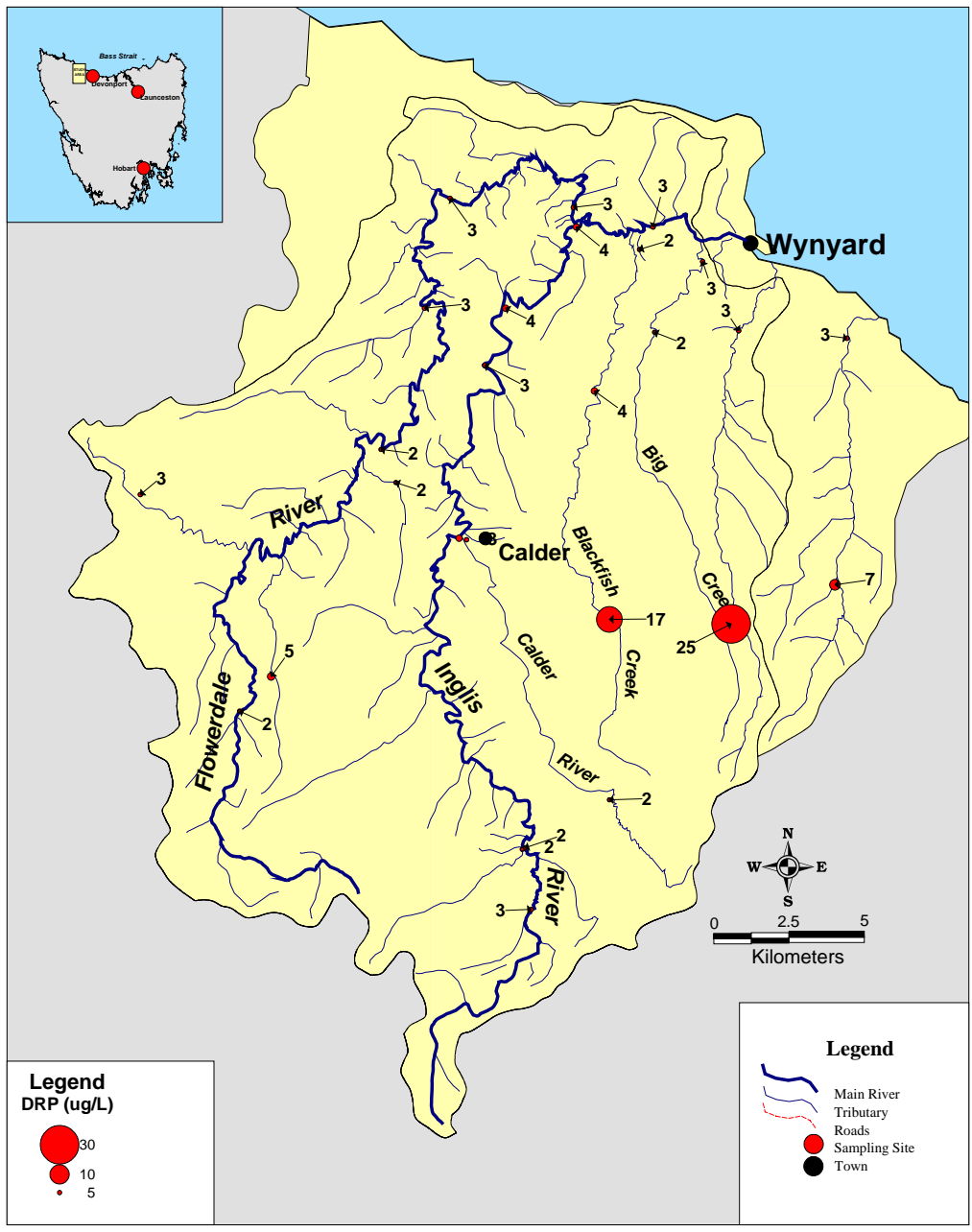


Figure 3.28: Snapshot of dissolved reactive phosphorus (DRP) concentrations recorded in the Inglis-Flowerdale catchment on 22 March 2000.

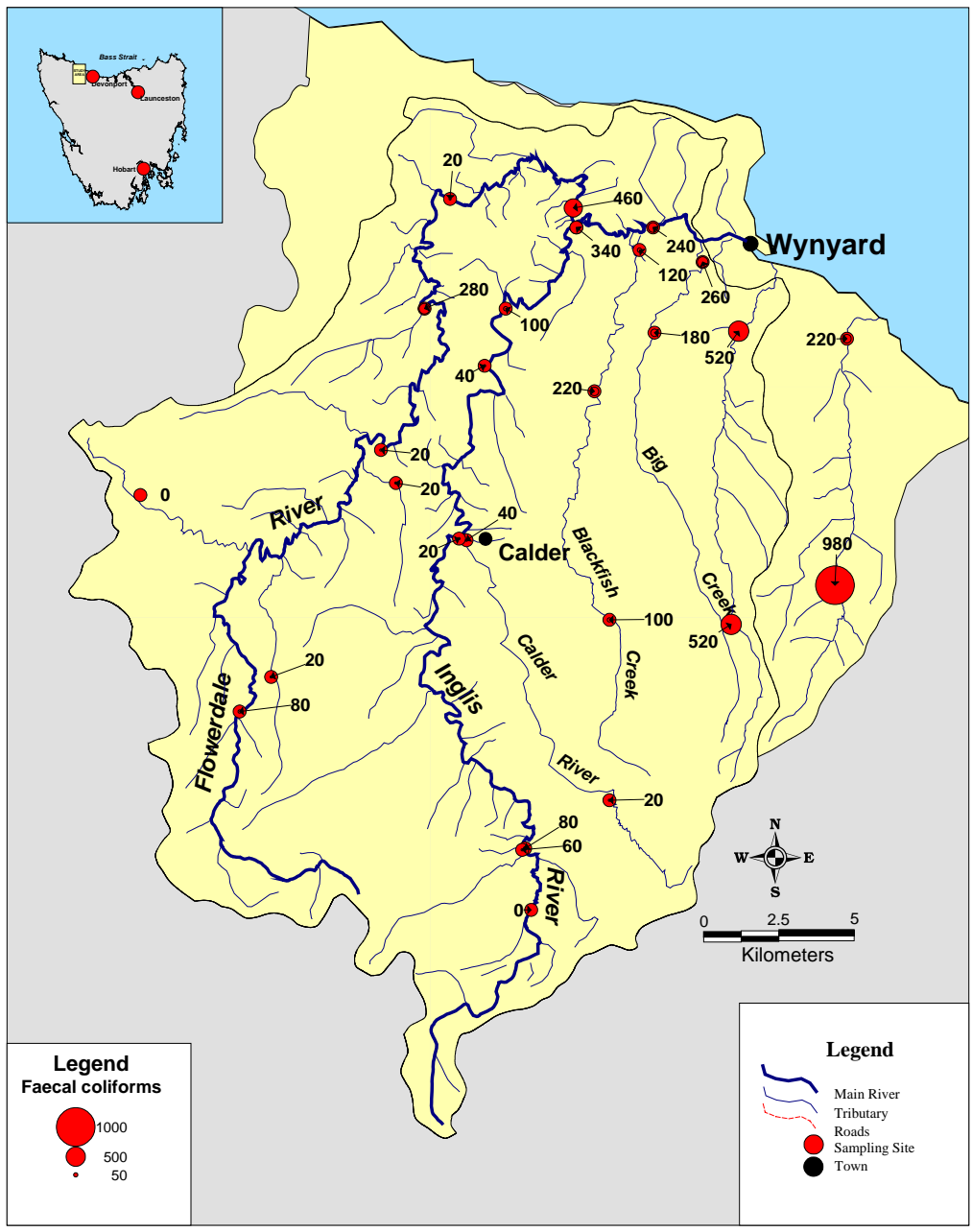


Figure 3.29: Snapshot of faecal coliform concentrations recorded in the Inglis-Flowerdale catchment on 22 March 2000.

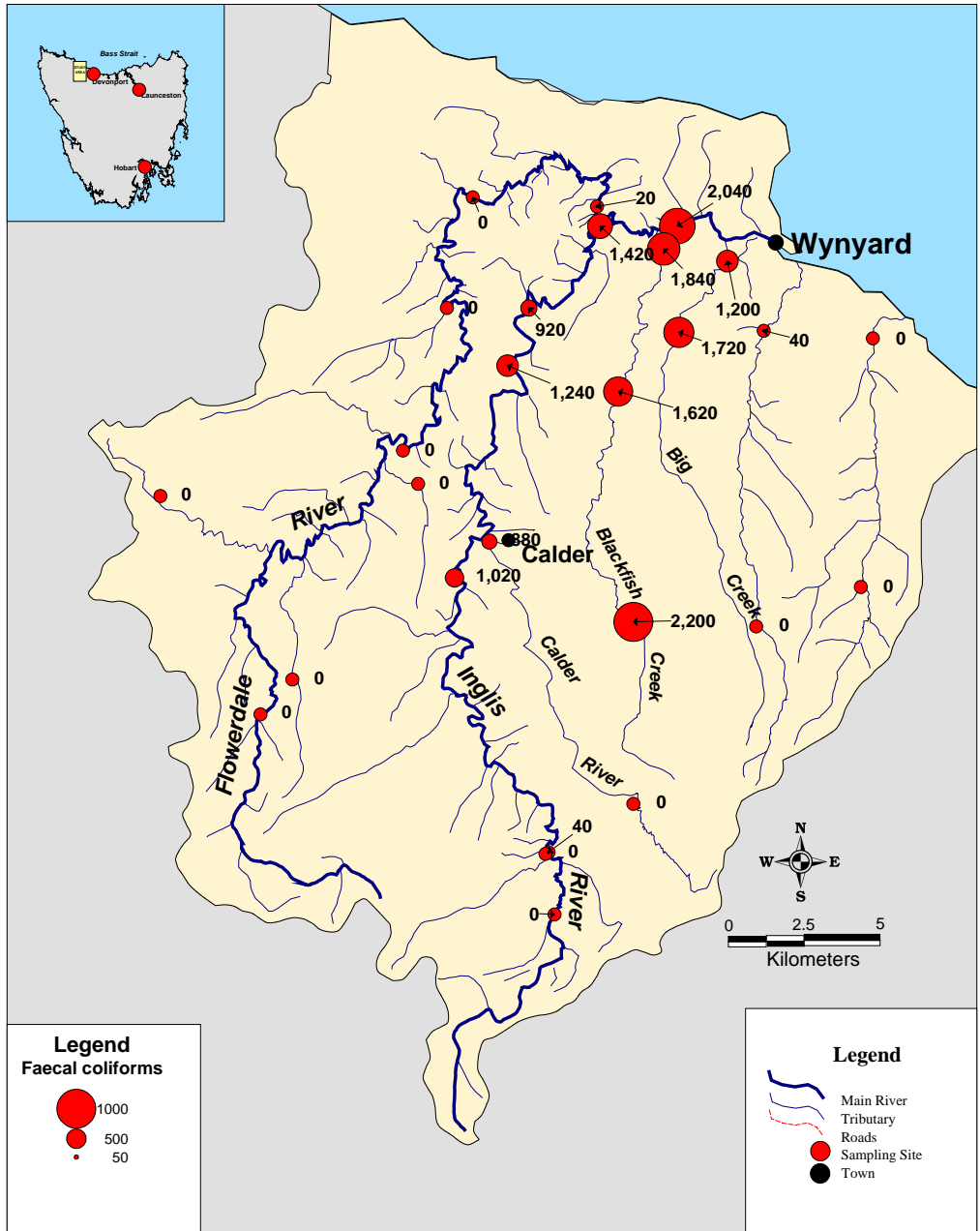


Figure 3.30: Snapshot of faecal coliform concentrations recorded in the Inglis-Flowerdale catchment on 29 August 2000.

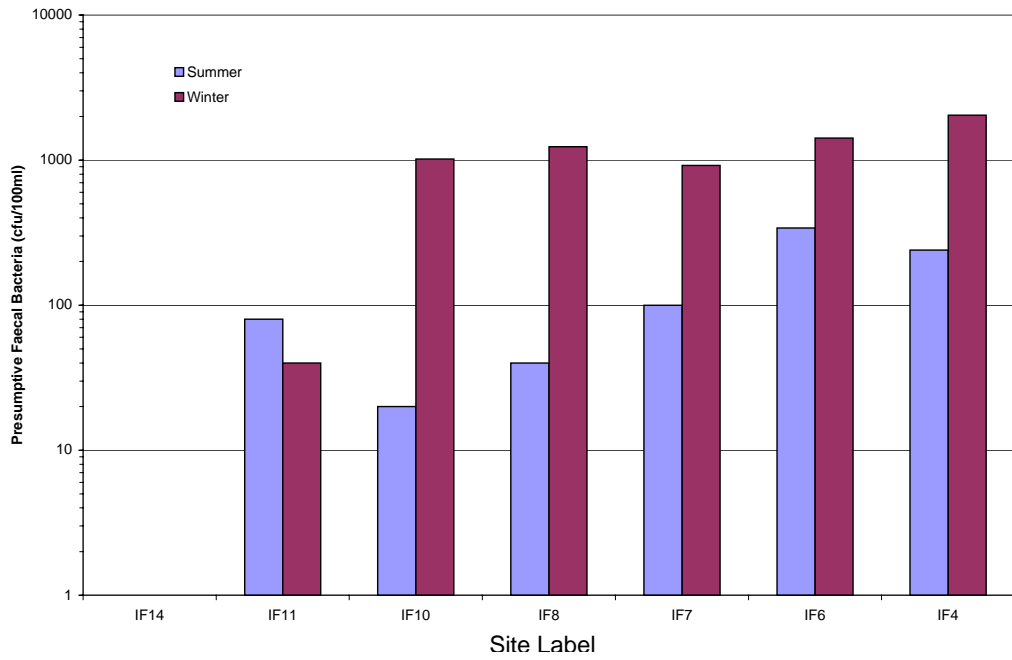


Figure 3.31: Longitudinal variation in faecal coliform concentration at sites in the Inglis River recorded during summer and winter surveys in 2000.