Calculating status

TN and TP concentrations are described in terms of the nutrient classification shown in Table 1.

Table 1: *Classifications used to assess the status of TN and TP concentrations in monitored waterways*

Status	Total nitrogen (mg/L)	Total phosphorus (mg/L)
Very high	> 2.0	> 0.20
High	> 1.2 – 2.0	> 0.08 – 0.20
Moderate	0.75 – 1.2	0.02 – 0.08
Low	< 0.75	< 0.02

Depending on trends, chance sampling and sources of natural variation, the nutrient concentrations sampled from a monitored site will change. The nutrient status for a waterway is initially assigned using the median nutrient concentration for the first year of sampling. Subsequent status periods are assessed using the median and 90 per cent confidence interval. If the median or all or part of the confidence interval remains in the earlier classification band, then there is no change in status. Status only changes once both the median and entire 90 per cent confidence interval move to a different classification band.

Figure 1 shows how TP status at Mayfields Main Drain (in the Peel-Harvey catchment) was originally classified as high (the median was between 1.2 and 2.0 mg/L). By the 1992–94 period, the median had decreased and fallen within the moderate classification band (0.75–1.2 mg/L); however, part of the 90% confidence interval was still in the high classification band and so the status remained high. In the 1994–96 period, both the median and 90% confidence interval fell below the high classification and hence the status changed to moderate. During the 1996–98 period the median once again dropped to a lower classification band (<0.75 mg/L); however, it wasn't until the 1998–2000 period that the actual classification status changed to low.

In summary, the nutrient status for a waterway is assigned by using the median of nutrient concentration over a three-year period. The three-year period is used to diminish the influence of natural variation between years.

Change in status requires the median and whole 90% confidence interval to be within the new status concentration range.

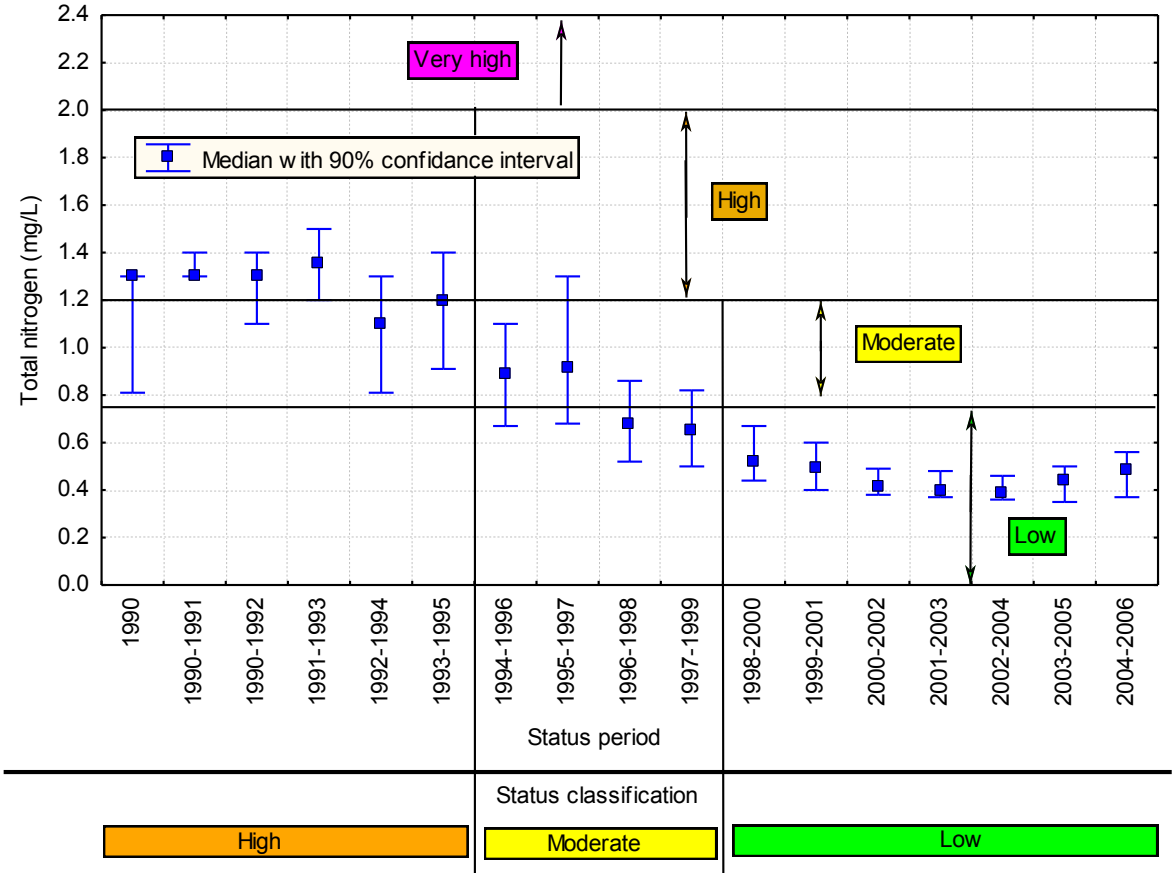

Figure 1: *Total phosphorus status classification for Mayfields Main Drain (AWRC 613031)*

References

Hall, J 2010, *Water quality management in urban catchments of the Swan Coastal Plain: analysis of the Bartram Road catchment*, Water Science Technical Series, report no. 22, Department of Water, Western Australia.