

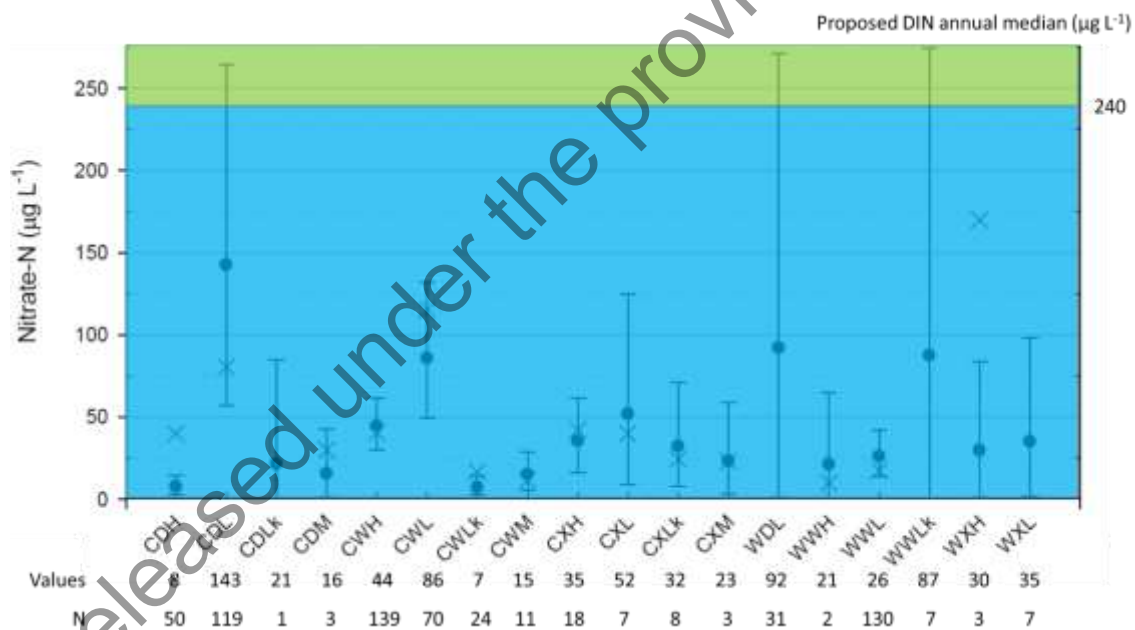
# Technical material – proposed DIN and DRP bottom lines in relation to modelled minimally disturbed condition

Prepared for the Science and Technical Advisory Group (STAG) meeting.

Agenda item 2: Nutrients

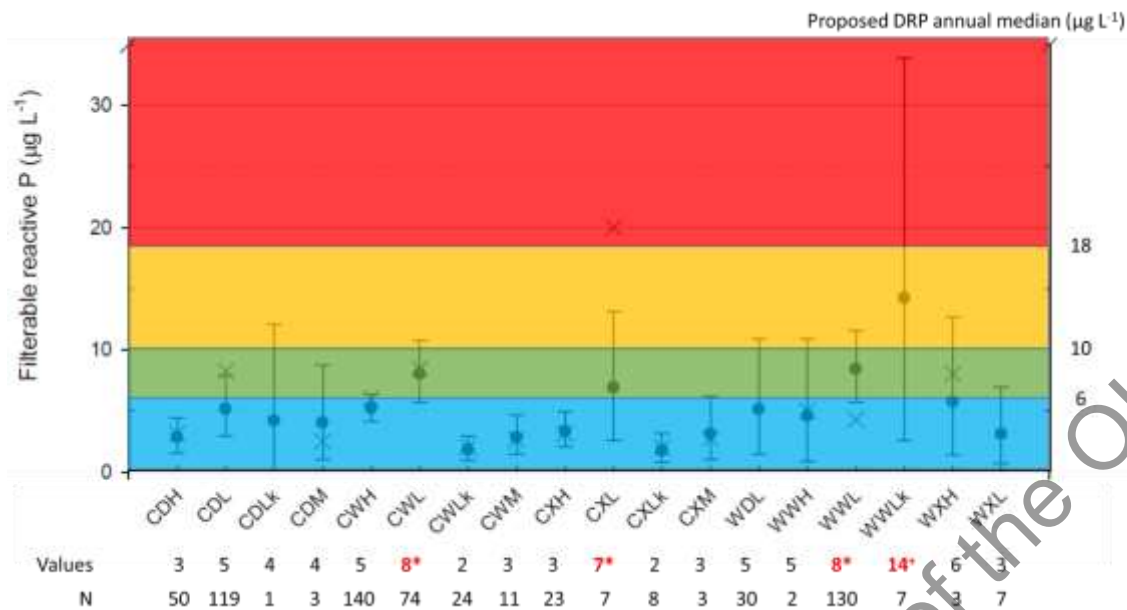
Wednesday, 27 November 2019

The figures below show the modelled median minimally disturbed condition (McDowell et al. 2018<sup>1</sup>) by REC (2<sup>nd</sup> level) class, in relation to the STAG's proposed dissolved inorganic nitrogen (DIN) and dissolved reactive phosphorus (DRP) attribute state boundaries. We used nitrate-N ( $\text{NO}_3\text{-N}$ ) and filterable reactive P (FRP) as proxies for DIN and DRP.



**Figure 1.** Estimated reference median nitrate-N concentrations for sites grouped by REC (2<sup>nd</sup> level) classes are shown as the circles with  $\pm$  95% confidence interval whiskers. The numbers at bottom ("Values") show exact median values for each classes. The cross indicates the median values for a known minimally disturbed condition-reference site within a class while the number of sites used for this analysis is indicated at the bottom as N. The filled colour bands show rough boundaries of the proposed DIN attribute states boundaries.

<sup>1</sup> <http://www.mfe.govt.nz/publications/fresh-water/establishment-of-reference-conditions-and-trigger-values-chemical-physical>



**Figure 2.** Estimated reference median filterable reactive P concentrations for sites grouped by REC (2<sup>nd</sup> level) classes are shown as the circles with  $\pm 95\%$  confidence interval whiskers. The numbers at bottom (“Values”) show exact median values for each classes. The cross indicates the median values for a known minimally disturbed condition-reference site within a class while the number of sites used for this analysis is indicated at the bottom as N. The filled colour bands show rough boundaries of the proposed DRP attribute states boundaries.

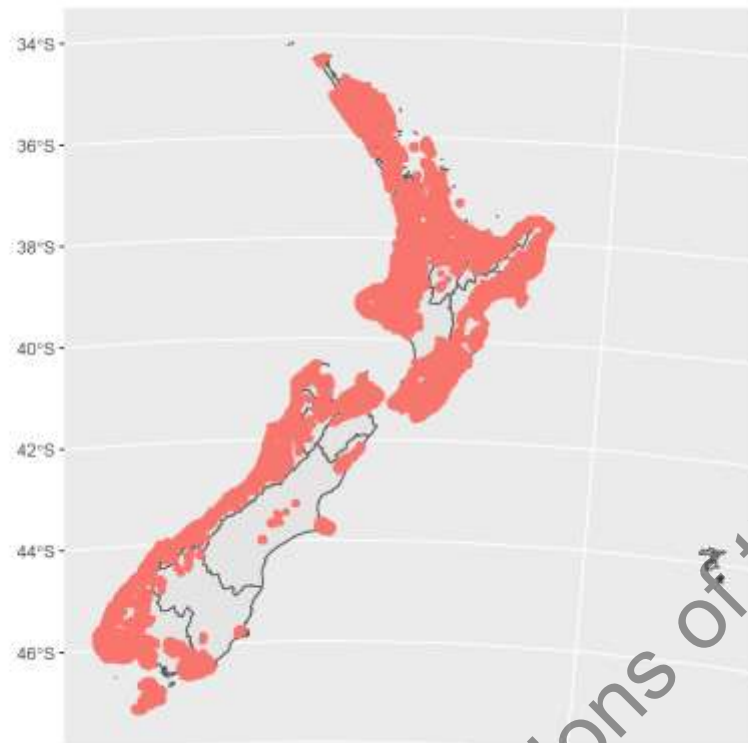


Figure 3. River segment distribution of REC (2<sup>nd</sup> level) classes where the median reference FRP values exceeded the proposed DRP “A” band.

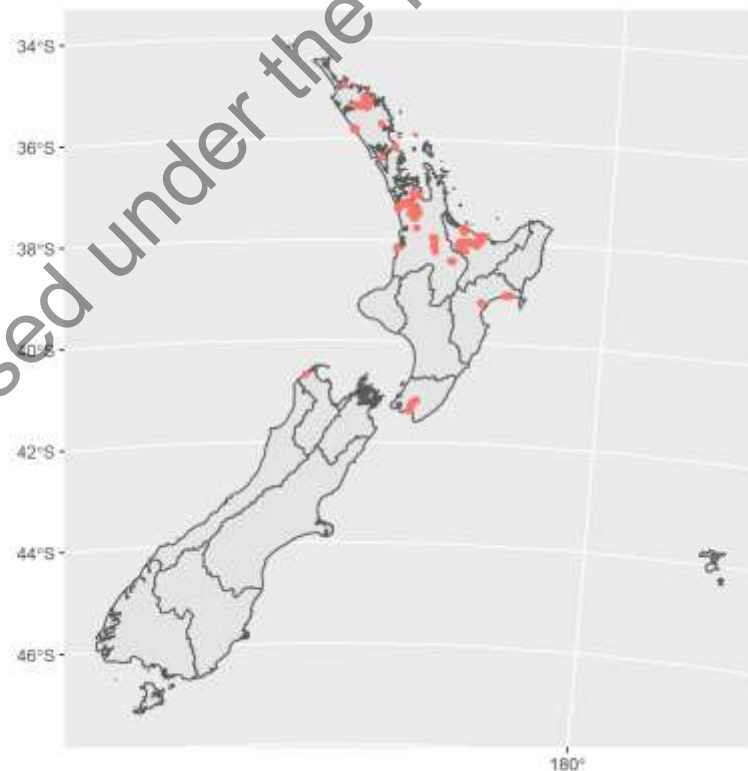


Figure 4. River segment distribution of the REC (2<sup>nd</sup> level) classes where the median reference FRP values exceeded the proposed DRP “B” band (i.e., the WWLk class).