

Figure 1: Hurunui River Catchment and Surface Water Quality Monitoring Sites referred to in evidence

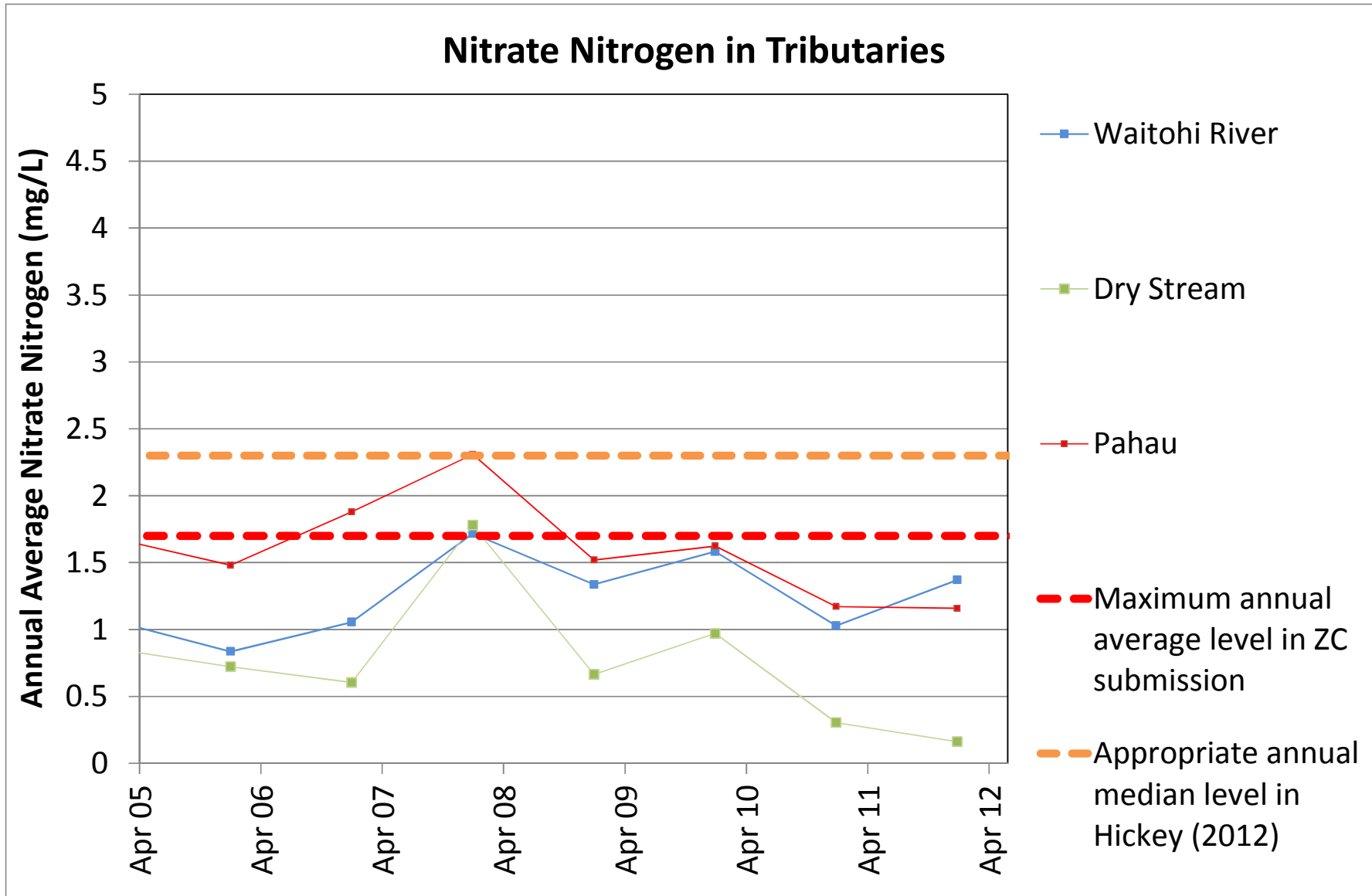
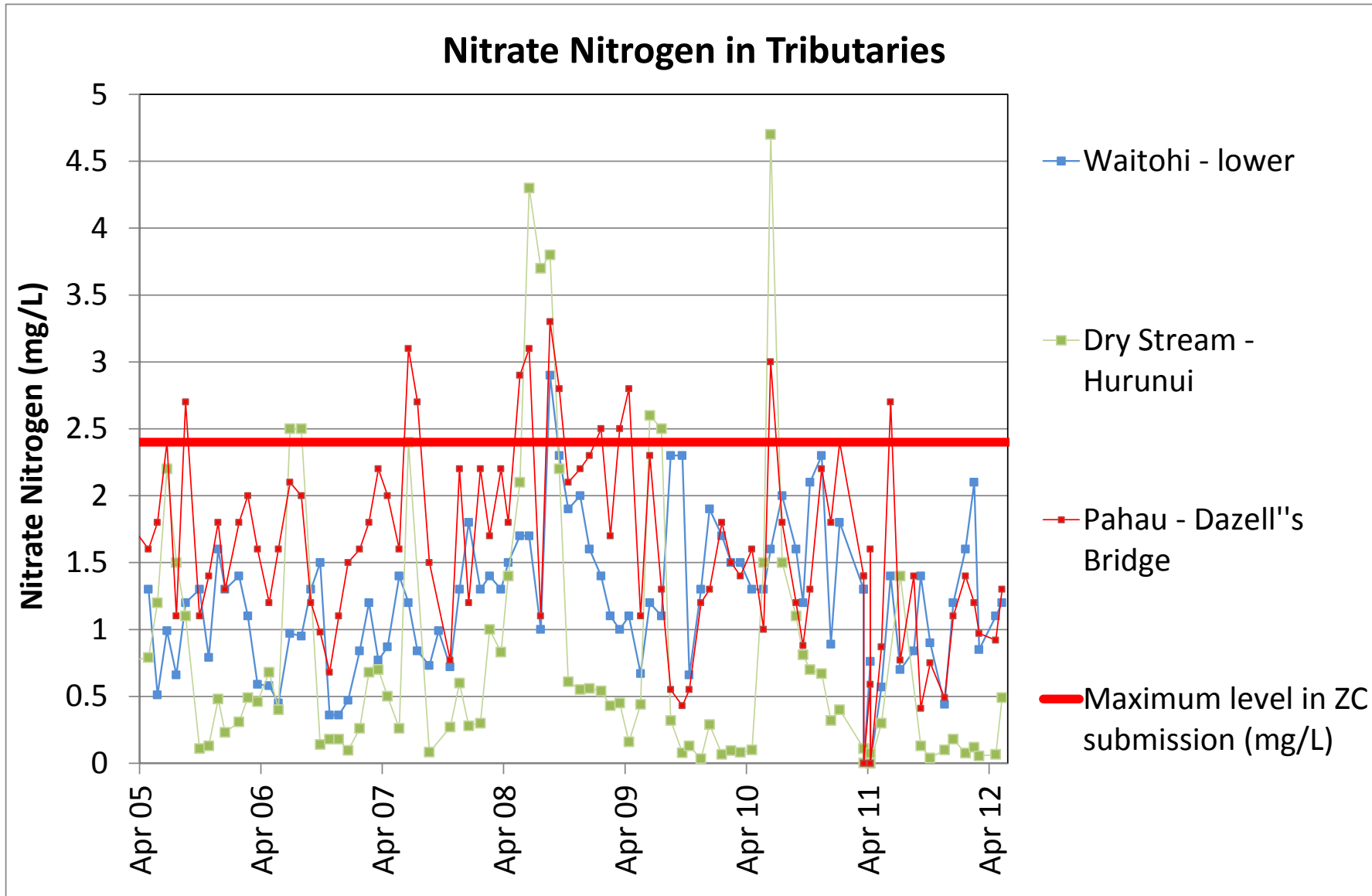


Figure 2: Annual average measured concentrations in three tributaries in the Culverden Basin compared with the Hurunui Waiau Zone Committee's proposed maximum annual average concentration



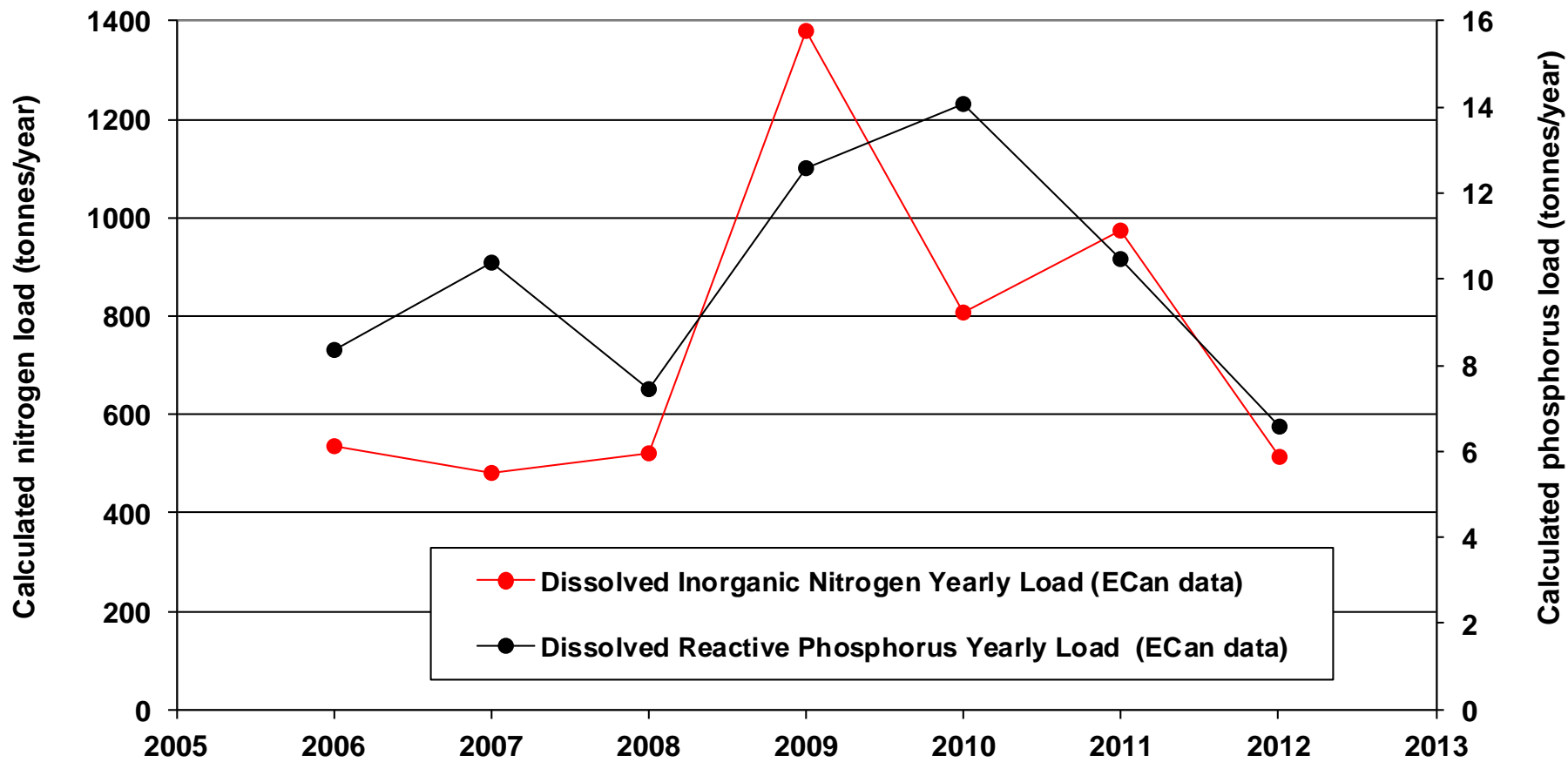


Figure 4: Yearly estimated nutrient loads at State Highway 1 (using ECan data and averaging method in Norton and Kelly (2010))

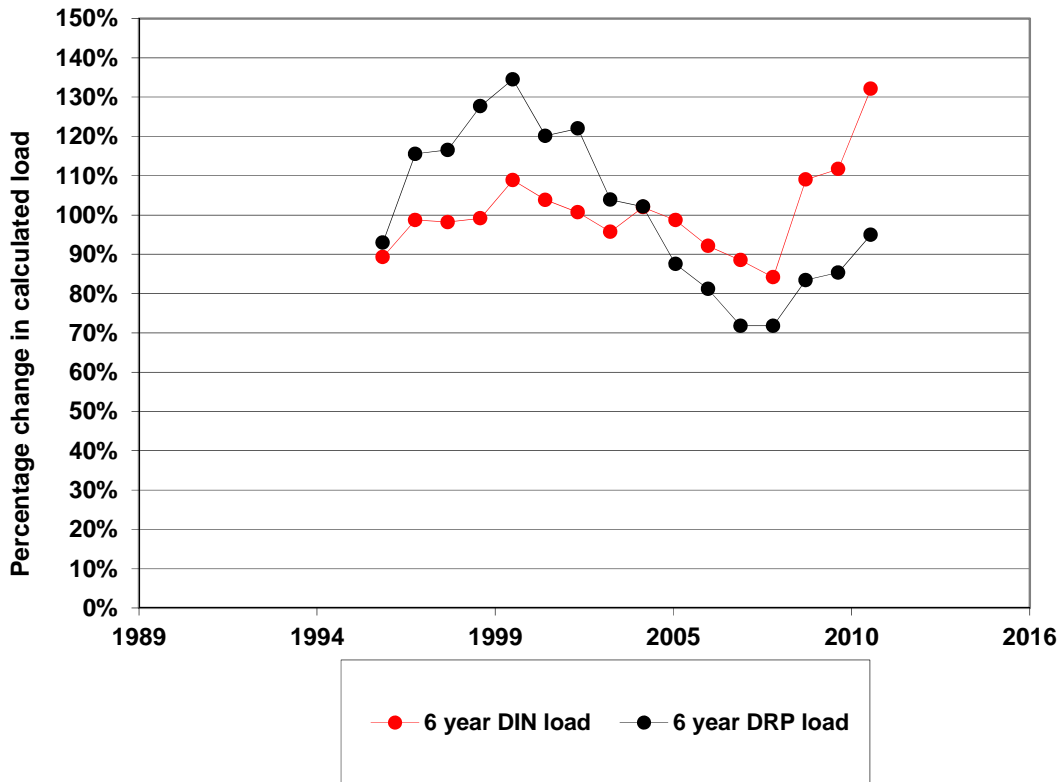
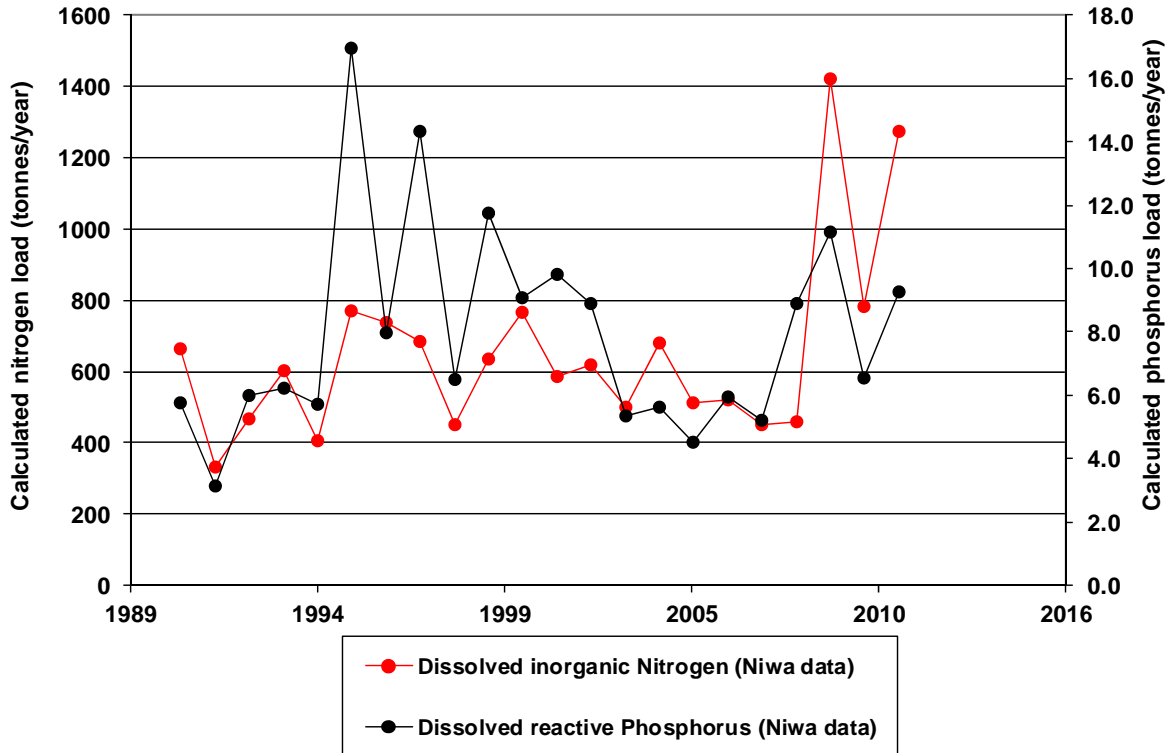


Figure 5: Yearly estimated nutrient loads at State Highway 1 based on NIWA data (top graph) (using averaging method in Norton and Kelly (2010)) and percentage fluctuations in 6 yearly average load relative to the long term average load (lower graph)

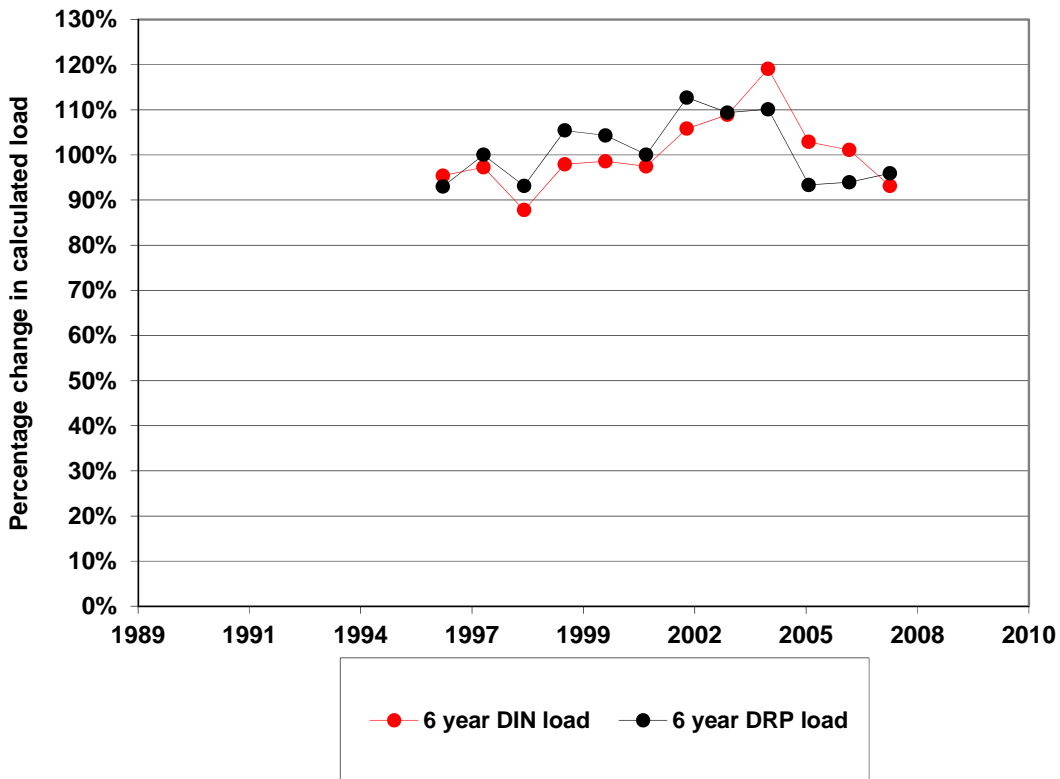
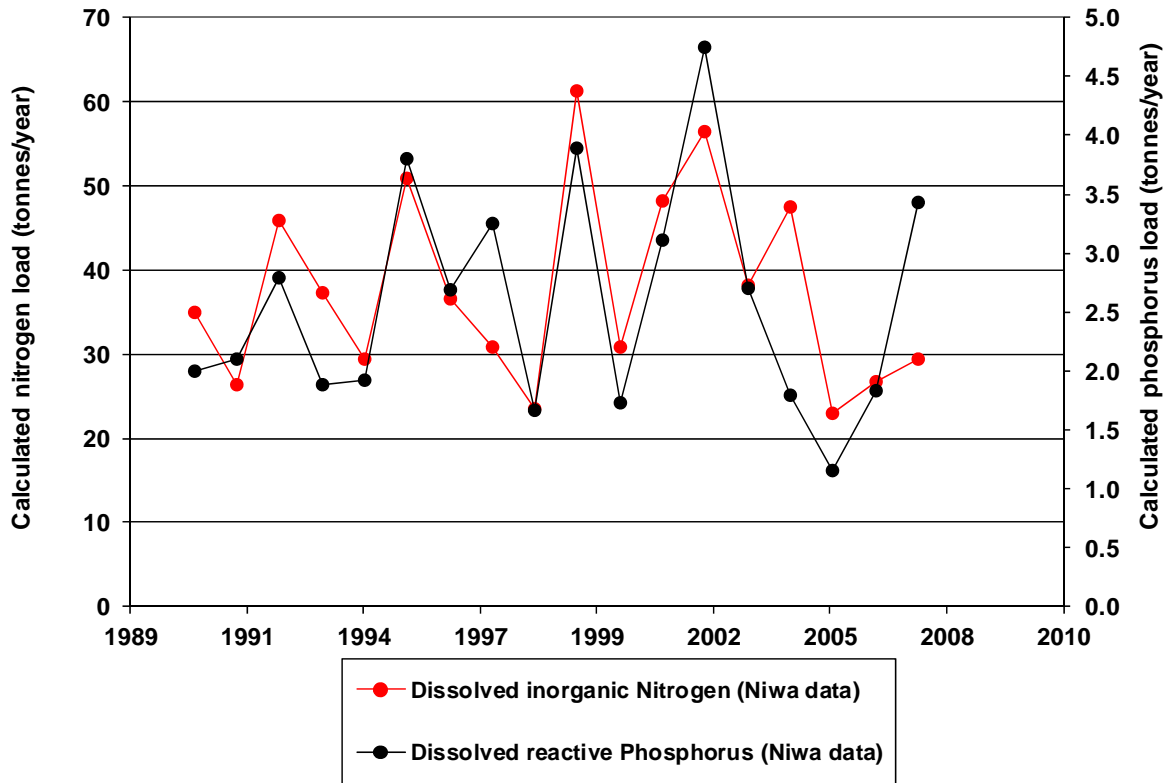


Figure 6: Yearly estimated nutrient loads at Mandamus based on NIWA data (top graph) (using averaging method in Norton and Kelly (2010)) and percentage fluctuations in 6 yearly average load relative to the long term average load (lower graph)

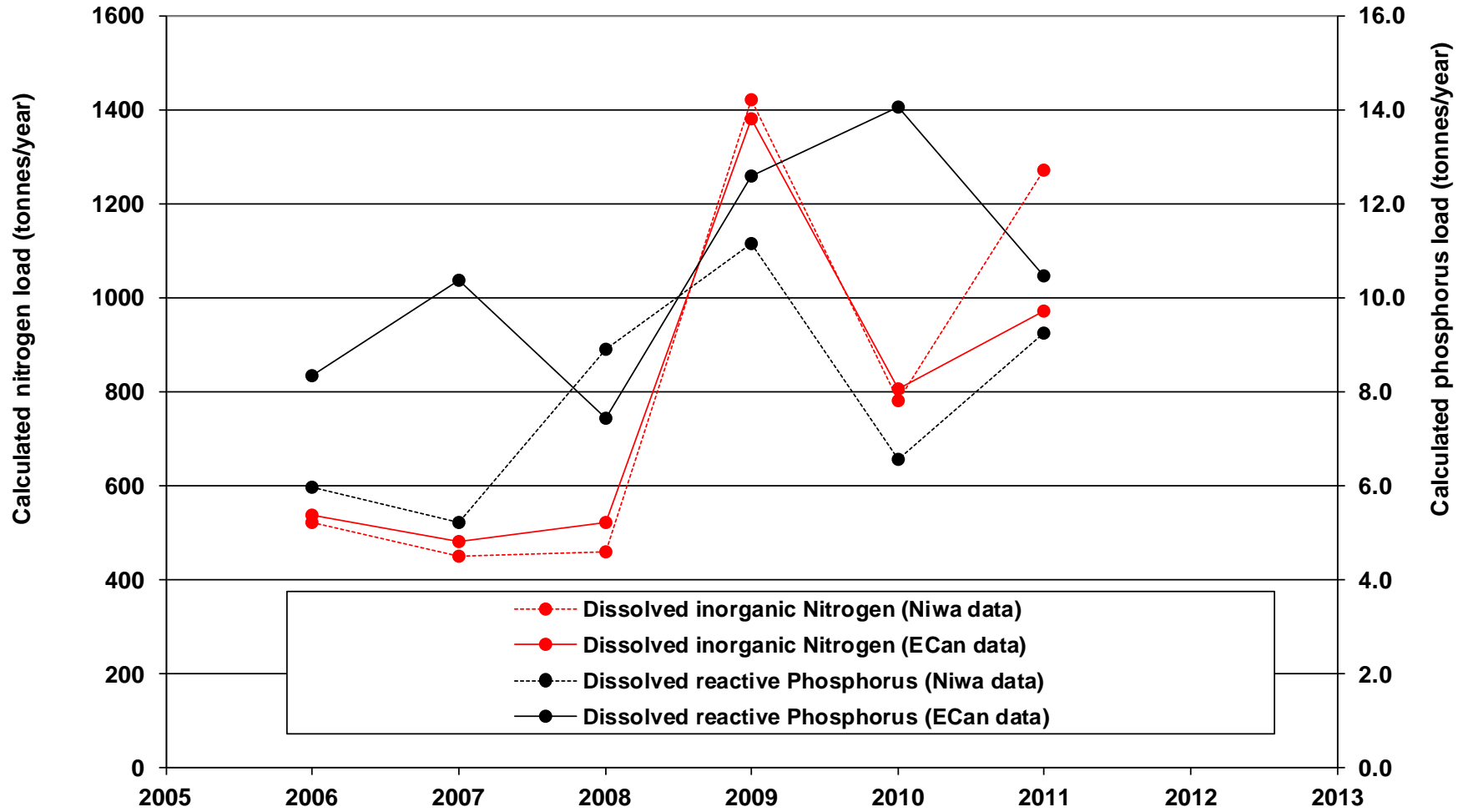


Figure 7: Comparison of yearly estimated nutrient loads at State Highway 1 with different monthly datasets (using averaging method in Norton and Kelly (2010))

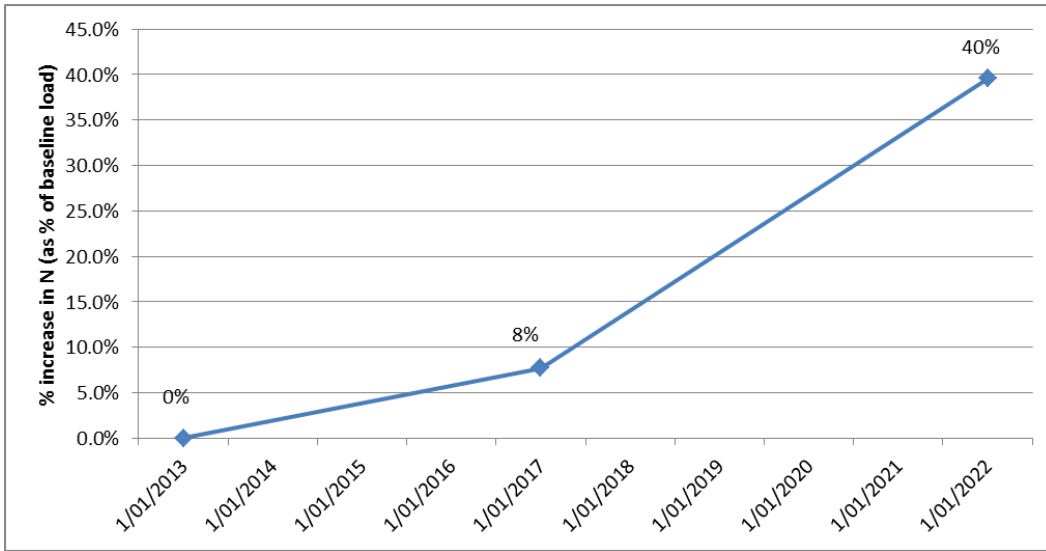


Figure a: Total increase in N load as a % of current load

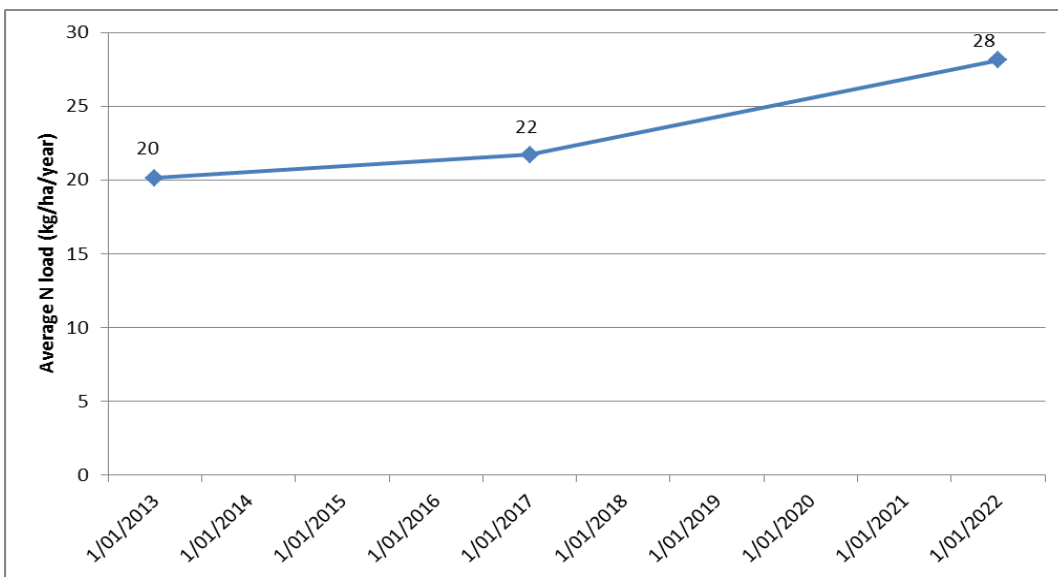


Figure b: Annual average nitrogen load over the irrigable area for the three modelled scenarios

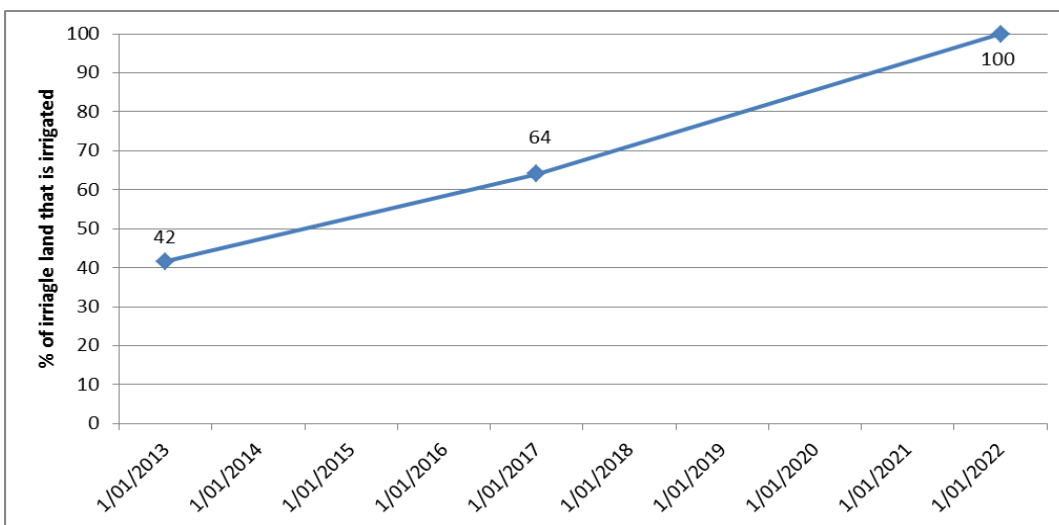


Figure c: Percentage of irrigable land that is irrigated

Figure 8: Modelled results for no change in land use by October 2013, Stage 1 development by October 2017 (with 35 kg/ha/year limit) and Stage 2 development and all of Balmoral Forest by October 2022 (with 30 kg/ha/year limit)

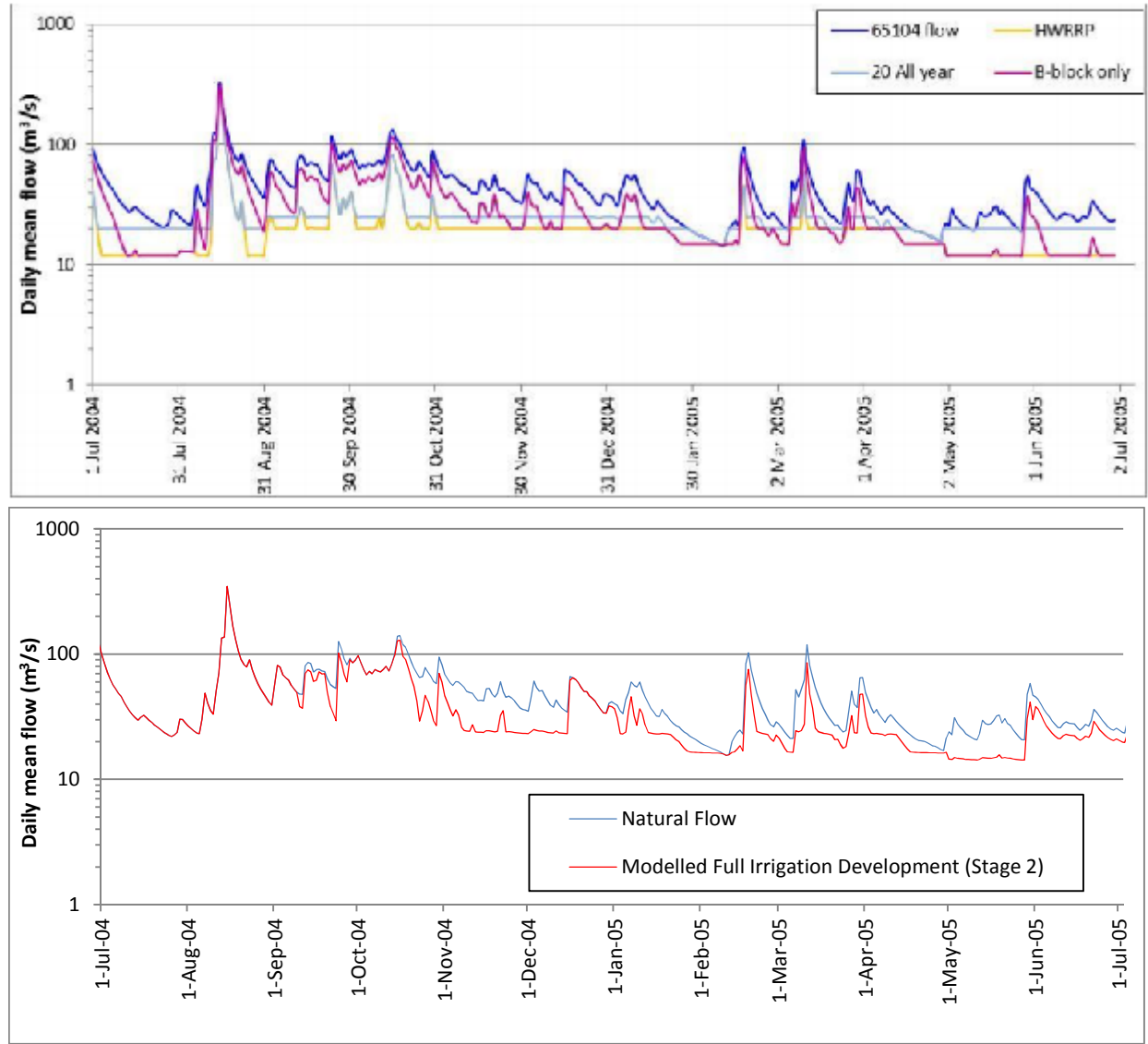


Figure 9: Estimated flows at Mandamus under full HWP development (lower graph) compared with Dr Smith’s simulated flows under full allocation of A, B and C blocks (HWRP – yellow line).

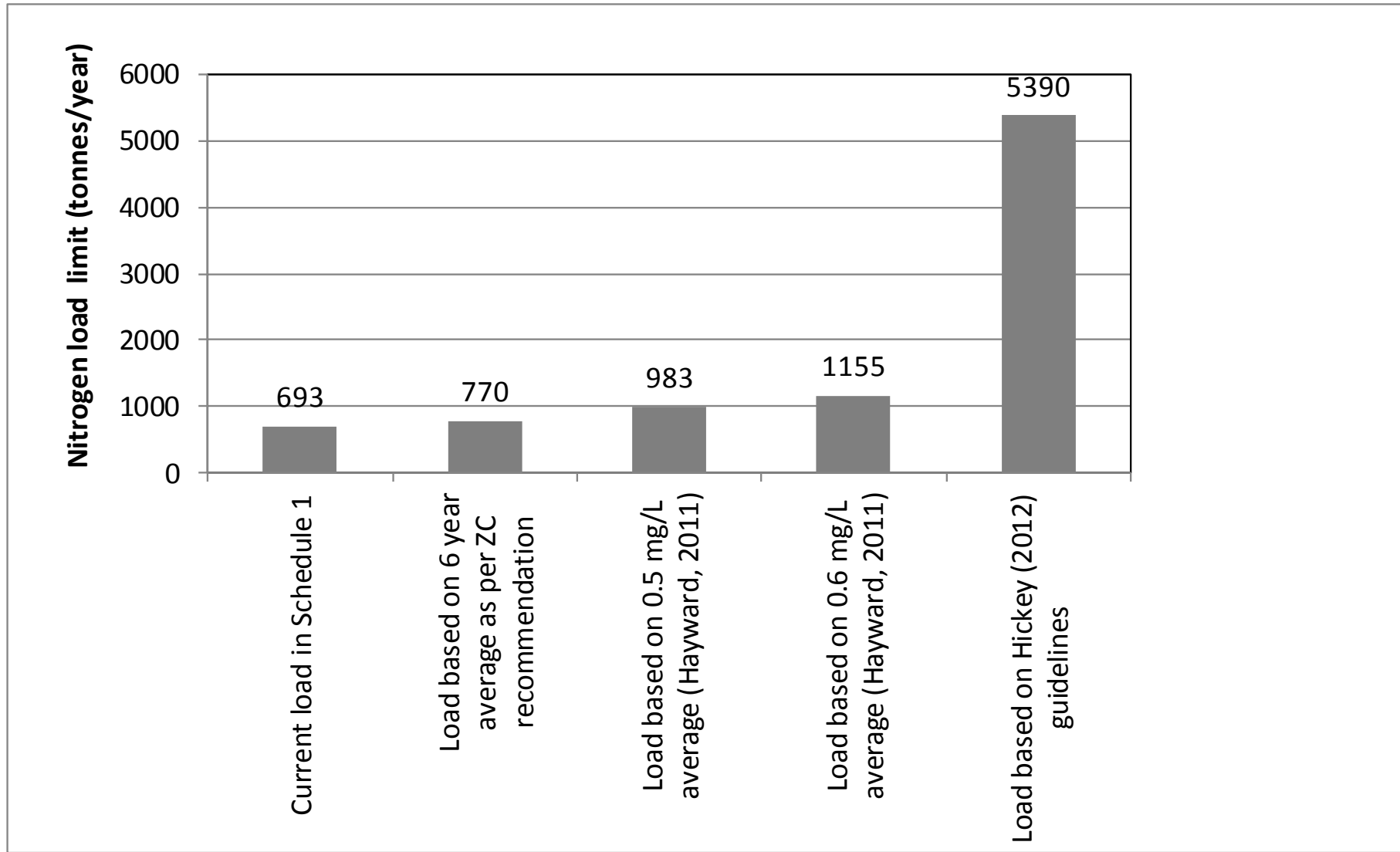


Figure 10: Comparison of load limit options