

Interactive comment on “Inter-annual variability of dissolved inorganic nitrogen in the Biobío River, Central Chile: an analysis base on a decadal database along with 1-D reactive transport modeling” by M. Yévenes et al.

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The authors would like to thank the reviewer 2 for the valuable comments and incorporate these two responses to the comments.

Table 2. Looks like ranges for water quality variables are give but this is not clearly stated in the caption. What do the errors represent? SD, SEM, CIs? This is sloppy. We clarify this term in the tableb 2, and we add the statistical parameter name in the Table 2. In terms of the total annual flux, it would be helpful if the authors could convert

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the 159 Mmol y-1 value into kg/y and kg/ha/y. Respond: we have expressed the 0.159 Gmol in kg/ha/year as the authors suggested. The new unit value is 19 kg/ha/year.

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Table 2: Chemical parameters for winter and summer for each station in the Biobio River. Total suspended solid, oxygen, biological oxygen demand, nitrate, nitrite and ammonium are expressed in mg L⁻¹. Temperature (T) in °C. Conductivity in $\mu\text{S}\text{C}$. Statistic: \bar{x} : refers to arithmetic media, SD: standard deviation, min: minimum, max: maximum.

ABBO	Season	T		Conductivity		TDS		S ₀		BOD		NO ₃		NO ₂		NH ₄	
		Winter	Summer	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
BB0	Winter	6.1(1)	7.4(18)	8.4(8)	7.4(38)	8.6(7)	10.6(7)	10.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)	12.6(7)
	Summer	6.2(0)	6.8(3)	8.1(18)	43.85	12.05	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)
	Winter	6.1(0)	6.8(0)	7.1(18)	47.89	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	6.2(0)	6.8(0)	7.1(18)	47.89	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB1	Winter	8.2(0)	9.1(1)	7.4(18)	74.8	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	9.1(0)	7.4(18)	75.64	12.05	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)	8.6(4)
	Winter	8.2(0)	9.1(0)	7.4(18)	53.40	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	9.1(0)	7.4(18)	53.40	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB3	Winter	8.2(0)	8.8(0)	7.4(18)	25	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.68	12.05	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)
	Winter	8.2(0)	8.8(0)	7.4(18)	42.68	12.05	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.68	12.05	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)	8.6(8)
BB4	Winter	8.2(0)	8.8(0)	7.4(18)	88	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.95	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Winter	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB7	Winter	8.2(0)	8.8(0)	7.4(18)	88	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.95	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Winter	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB8	Winter	8.2(0)	8.8(0)	7.4(18)	88	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.95	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Winter	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB9	Winter	8.2(0)	8.8(0)	7.4(18)	88	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.95	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Winter	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
BB13	Winter	8.2(0)	8.8(0)	7.4(18)	88	12.05	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)	8.6(5)
	Summer	8.2(0)	8.8(0)	7.4(18)	42.95	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Winter	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)
	Summer	8.2(0)	8.8(0)	7.4(18)	73.03	12.05	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)	8.6(7)

Fig. 1.