

Interactive  
Comment

## ***Interactive comment on “Carbon and nitrogen isotope variations in the water column of Lake Bled (NW Slovenia)” by A. Bratkič et al.***

### **Anonymous Referee #1**

Received and published: 25 October 2011

Comments on Carbon and nitrogen isotope variations in the water column of Lake Bled (NW Slovenia) Author(s): A. Bratkič et al. MS No.: bg-2011-301 MS Type: Research Article

This is a well-written manuscript which described both carbon and nitrogen cycling in the water column of Lake Bled using stable isotopes. I recommend it for publication with minor revision. Major Comments: 1. Page 8526, line 18-21: Atmospheric CO<sub>2</sub> invasion is only possible when pCO<sub>2</sub> in water is lower than pCO<sub>2</sub> in the air. The authors have not demonstrated why this is possible by providing data for pH, CO<sub>2</sub>, pCO<sub>2</sub>, Chl a and primary productivity. Since the lake was significantly influenced by anthropogenic inputs and might have been a net sink for organic matter, this lake is not likely a sink for atm CO<sub>2</sub>. It might be a sink for CO<sub>2</sub> during the summer algal bloom but in he

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

Interactive  
Comment

remaining months with low temperature are expected to be a source of CO<sub>2</sub>. 2. The authors did not provide an explanation on the lower C-13POC and higher DIC-13 at the bottom water in September than other months especially in December. 3. Page 8530: line 15 to 19: The authors should explain why they expected the N-15 of NH<sub>4</sub> is lower than that of NO<sub>3</sub>. If NO<sub>3</sub> is derived from NH<sub>4</sub>, then the substrate (NH<sub>4</sub>) should have the higher values. Unless NO<sub>3</sub> is used intensively as the substrate for denitrification. Minor comments: 1. Please give the latitude and longitude of the location 2. I suggest a table with major limnological variables be added to the MS. Such a table will give the readers a better understanding of the biogeochemical features of the study lake. 3. Page 8517: line 22: “import” should be “important”. 4. Page 8518: line 20: spell out “OECD” 5. Page 8523: line 14: Figure 2 showed the lowest C-13POC in September but here it was said in August. 6. Page 8526: “utilized” should be “utilize” 7. Page 8532: line 1: change “weather” to “whether” 8. Page 8534: line 19: This reference should be Gu, B., and V. Alexander. 1993. Estimation of N<sub>2</sub> fixation based on differences in the natural abundance of <sup>15</sup>N among freshwater N<sub>2</sub>-fixing and non-N<sub>2</sub>-fixing algae. *Oecologia* 96: 43-48.

---

Interactive comment on Biogeosciences Discuss., 8, 8515, 2011.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)