



### 滇池水-沉积物界面氮分布特点及其对控制蓝藻水华的意义

黄丽娟<sup>1</sup>, 常学秀<sup>1,2</sup>, 刘洁<sup>1</sup>, 王海龙<sup>1</sup>, 赵瑾<sup>1</sup>

1. 云南大学, 生态学与环境科学系, 云南, 昆明, 650091;
2. 中国科学院, 土壤与农业可持续发展国家重点实验室, 江苏, 南京, 210008

### The distribution characteristics of nitrogen across water-sediment interface and its significance for controlling algal blooms in Dianchi Lake

HUANG Li-juan<sup>1</sup>, CHANG Xue-xiu<sup>1,2</sup>, LIU Jie<sup>1</sup>, WANG Hai-long<sup>1</sup>, ZHAO Jin<sup>1</sup>

1. Department of Ecology and Environment Sciences, Yunnan University, Kunming 650091, China;
2. Nanjing Institute of Soil Science, Chinese Academy of Sciences, Nanjing 210008, China

- 摘要
- 参考文献
- 相关文章

全文: PDF (718 KB) HTML ( KB) 输出: BibTeX | EndNote (RIS) 背景资料

**摘要** 造成水体富营养化的污染源可以分为外源和内源,当湖泊的外源得到控制以后,内源营养盐的释放仍然可以发生富营养化,甚至爆发藻类水华.研究营养物质在水-沉积物界面的地球化学行为,对于控制水体富营养化和水华爆发具有重要意义.以滇池为研究对象,测定了间隙水和上覆水中总氮(TN)、氨态氮(NH<sub>4</sub><sup>+</sup>-N)、硝态氮(NO<sub>3</sub><sup>-</sup>-N)和有机氮(ON)的质量浓度.结果表明:①无论在草海还是外海,间隙水中TN,NH<sub>4</sub><sup>+</sup>-N和ON质量浓度均高于上覆水,说明底泥中的氮元素有向水体中扩散的趋势;②草海上覆水及间隙水中TN,NH<sub>4</sub><sup>+</sup>-N和NO<sub>3</sub><sup>-</sup>-N质量浓度均高于外海,其受污染的程度比外海高.研究揭示了滇池底泥中氮分布区域和垂直变化特征,阐明了内源氮负荷在湖泊富营养化中所起的作用.

**关键词:** 滇池 内源污染 间隙水 上覆水

**Abstract:** Lakes' eutrophication become a serious environmental problem in China, and the algae bloom is the challenge of all the eutrophicated lakes. Pollution sources of eutrophication lakes include external sources and internal sources. When the external pollution sources are controlled, eutrophication will still happen because of the existence and release of inner loading nutrient in sediments. Then nutrients become the leading factor of the lakes' eutrophication. The mass concentration of total nitrogen (TN), ammonia (NH<sub>4</sub><sup>+</sup>-N), nitrate (NO<sub>3</sub><sup>-</sup>-N) and organic nitrogen (ON) in interstitial water and overlying water of Dianchi lake was mensurated. The results are as following: ① No matter in Caohai or Waihai, the mass concentration of TN, NH<sub>4</sub><sup>+</sup>-N and ON are higher in interstitial water than those in overlying water, which indicates that the nitrogen in the sediment has been releasing into the water column and play an important roll in the eutrophication process of Dianchi Lake. So more attention should be paid to the internal pollution sources when controlling the eutrophication of Dianchi Lake. ② The mass concentration of TN, NH<sub>4</sub><sup>+</sup>-N and NO<sub>3</sub><sup>-</sup>-N are higher in Caohai than those in Waihai, so it can be conclude that the pollution degree of Caohai is more serious than that of Waihai. The spatial distribution characteristics of nitrogen and the rolls of internal sources in lakes' eutrophication are explained clearly from the research.

**Key words:** Dianchi Lake internal source pollution interstitial water overlying water

收稿日期: 2005-02-10;

基金资助: 国家重点基础研究发展规划课题(973)项目资助(2002CB412306); 土壤与农业可持续发展国家重点实验室开放基金资助(035112).

引用本文:

黄丽娟, 常学秀, 刘洁等. 滇池水-沉积物界面氮分布特点及其对控制蓝藻水华的意义[J]. 云南大学学报(自然科学版), 2005, (3): 256-260.

HUANG Li-juan, CHANG Xue-xiu, LIU Jie et al. The distribution characteristics of nitrogen across water-sediment interface and its significance for controlling algal blooms in Dianchi Lake[J]. , 2005, (3): 256-260.

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- ▶ 黄丽娟
- ▶ 常学秀
- ▶ 刘洁
- ▶ 王海龙
- ▶ 赵瑾

版权所有 © 《云南大学学报(自然科学版)》编辑部

编辑出版: 云南大学学报编辑部 (昆明市翠湖北路2号, 650091)

电话: 0871-5033829(传真) 5031498 5031662 E-mail: yndxxb@ynu.edu.cn yndxxb@163.com