BraSIL

Water as a limiting resource: conservation and management

XXVI Congress of International Association of Theoretical and Applied Limnology

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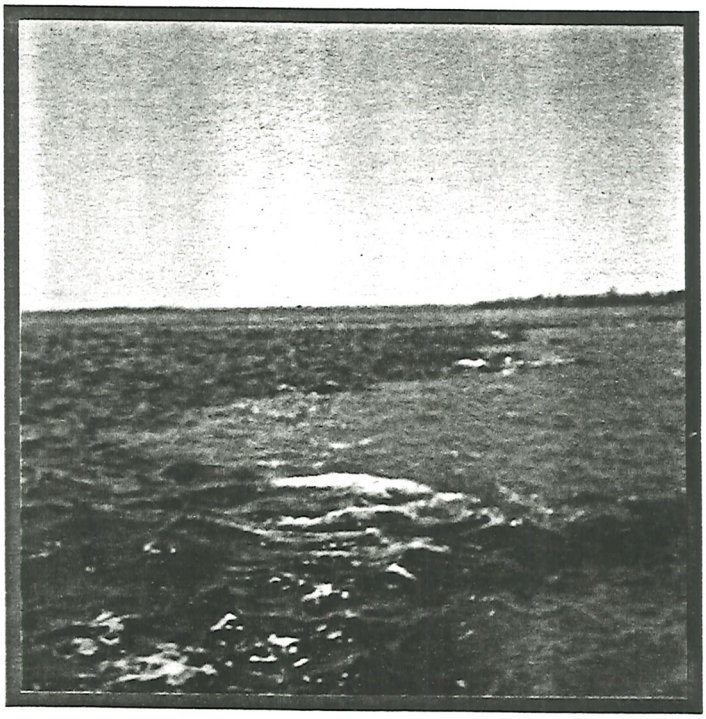
ABSTRACTS



Meeting of River Solimões and River Negro (Amazon)

Simultaneous event:
V Brazilian Limnological Congress (SBL)

INTRODUCTION

The abstracts of this book were reproduced by scanning the original, when it was possible and they were in the established pattern. Abstracts that were sent by FAX or without conforming with the pattern were retyped. We are aware that some unavoidable mistakes may have occurred, therefore we ask for your understanding.

The abstracts for oral presentation were grouped according with the sessions organized by the Congress and placed in alphabetical order of room (except for the Baldi, Kilham and Plenary Lectures). For each session the abstracts are enumerated in order of paper presentation.

The codes at the side of each abstract and at the titles of Contents indicate place (room), day of presentation, period of presentation in the day and order of paper presentation. Example: E-M-am-4 = room E, Monday, morning and fourth presentation.

The abstracts for posters have a code that indicate the row number, followed by the day of presentation and sequential number of paper. Example: II - Th - 4.

You may refer to the session title in the Contents or Author Index at the end of this book to find any given abstract. In the Author Index the name of author that will present the paper is underlined (whenever this information was available): A = first author, CoA = co-author.

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I-T-166 Davidsson, T. E., Leonardson, L. G., and Balkhag, P. Inst. of Limnology, University of Lund. S-223 62 Lund, Sweden.

SMALL-SCALE VARIATION IN DENITRIFICATION, NITRATE, DISSOLVED ORGANIC CARBON, AND NITROUS OXIDE IN A FLOODED WETLAND SOIL

The small-scale variability and distribution of denitrification and associated soil parameters was studied in a flooded grassland soil in southern Scania, Sweden. The size of areas with extremely high or low denitrification activity, and distribution of NO_3^-, DOC and the N_2O pool in the soil was measured on a 0,14 m grid in three study areas. Areas 1 and 2 were selected to represent high and low denitrification activity, respectively. Each of them had a surface area of 1.0 x 1.0 m. Area 3 described a gradient, and covered an area of 0.7 x 2.0 m. Spatial dependence was determined using geostatistical techniques. When autocorrelation existed, kriging was used to interpolate between sampling spots. Otherwise standard interpolation was made. Denitrification activity and soil nitrate concentration were both autocorrelated and the range was similar for both parameters (33-87 cm), within each of the studied areas. Isopleths drawn for each area illustrated the distribution patterns of denitrification activity and the studied soil parameters. Three denitrifying "hot-spots" were found, each with an area of less than 0.08 m^2. The patterns of denitrification activity and nitrate concentration agreed convincingly. The nitrous oxide pool and DOC in the soil on the other hand, did not show any covariance with denitrification. Hence, the results support the hypothesis that nitrate is the key factor controlling denitrification activity in this soil.

I-T-167 GIANOTTI, E.P., São Carlos (SP), CP 359, Brazil.

DENITRIFICATION IN FLOODPLAIN OXBOW LAKE ON MOGI-GUAÇU RIVER, INFERNÃO LAKE (JATAÍ ECOLOGICAL STATION, SÃO PAULO, BRAZIL)

Seasonal variations of denitrification (Acetylene Inhibition Technique) and denitrifying bacteria numbers were estimated in the sediments and aquatic macrophytes roots, *Sicirpus cubensis*, of Infernão Lake. The denitrification rates at "natural conditions" ranged from 0,43 nmol $N_2.g^{-1}.h^{-1}$ to 2,66 nmol $N_2.g^{-1}.h^{-1}$ for sediments. The "potential denitrification" rates ranged from 0,38 nmol $N_2.g^{-1}.h^{-1}$ to 0,13 µmol $N_2.g^{-1}.h^{-1}$ for sediments and 0,17 µmol $N_2.g^{-1}.h^{-1}$ to 1,08 µmol $N_2.g^{-1}.h^{-1}$ for macrophytes roots. The denitrifying bacteria numbers were about 105 bacteria $.g^{-1}$ for *Scirpus cubensis* and 103 bacteria $.g^{-1}$ for sediments. The highest denitrification rates and bacteria numbers were found in the rainy season, which was correlated to an increase of organic matter and nutrients as a result from higher seepage, surficial runoff and flooding of plain by Mogi-Guaçu River. Evidences suggests that the loss of nitrogen via denitrification is about 0,41% of the sediment nitrogen pool while the biological N_2- fixation contribution in the Infernão Lake sediments is responsible for about 2% of the sediment nitrogen pool.