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PROXIMATE CAUSES FOR A COLLAPSE OF *DAPHNIA LAEVIS* POPULATION IN PAMPULHA RESERVOIR, BRAZIL: A 24HS STUDY.

Pampulha Reservoir is a shallow water body (2.4 Km<sup>2</sup>) situated in Belo Horizonte city, Brazil. Since the seventies the reservoir has been suffering from an intense eutrophication process and, as a consequence, its zooplankton has been dominated by the cladoceran *Daphnia laevis*. This *Daphnia* population suffers large variations in numbers during the seasonal cycle. What are the major reasons that induce this population to collapse from time to time? Since we sample zooplankton from this lake on a weekly basis, at the beginning of September 1996, we knew that there was a high probability that this *Daphnia* population was large enough to collapse. The objective of this investigation was to verify if this mortality was affected by food limitation. So, we decided to investigate this population on a four hour basis. Following parameters were measured: water temperature, dissolved oxygen, inorganic suspended matter, organic suspended matter, particulate organic carbon, dissolved organic carbon, chlorophyll-a, zooplankton density and biomass, total lipid contents of zooplankton and level of gut content in daphnids. Chlorophyll-a values were very low and varied between 12 and 18 µg/l with lower values observed in 7. Sept, 0:00 hs. Particulate organic carbon varied between 0.5 (6. Sept., 14:00hs) and 3.5 mgC/l (7. Sept. 4:00 hs). Dissolved organic carbon varied between 4.5 (6. Sept, 10:00hs) and 11.4 mgC/L (7<sup>th</sup> Sept, 0:00 hs). As expected, *Daphnia* population was drastically reduced in the diel cycle studied. The population reduced from 55

ind/l (7. Sept., 0:00 hs) to 0 ind/l (7. Sept., 8:00 hs). Total lipids remained in low levels in all times (8-9 %) but we found significant variations in gut content with the highest index being found at 6. Sept., 17:00 hs. Since food levels and lipid content in daphnids were lower as usual, we concluded that food limitation was the proximate cause for this mass mortality of daphnids in Pampulha Reservoir.

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Date: February 14, 1997

Ricardo Motta Pinto Coelho  
UFMG  
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Re: Confirmation of ASLO 97 attendance and presentation

Session: C 35 - ZOOPLANKTON  
Oral Presentation: Thursday, Feb 13, 1997: 11:50 - 12:10 PM

Dear Dr. Pinto Coelho;

This is to confirm presentation of the above mentioned oral presentation. We thank you for your participation at the ASLO 97 conference in Santa Fé New Mexico, February 9-14, 1997 and look forward to your participation in future ASLO conferences.

Should you require further supporting documentation, please do **not** hesitate to contact me.

Sincerely,



Trudy D. Lewis  
President, Lewis International, Inc.  
Co-Ordinator, ASLO 97