

Ergebnisse der Limnologie Advances in Limnology

Herausgegeben von

Prof. Dr. H. KAUSCH
Hamburg

Prof. Dr. W. LAMPERT
Plön/Holstein

Heft 43

Impact of UV-B radiation
on pelagic freshwater ecosystems

edited by C. E. WILLIAMSON and H. E. ZAGARESE

With 88 figures, 29 tables and 2 appendices



E. Schweizerbart'sche Verlagsbuchhandlung
(Nägele u. Obermiller) Stuttgart 1994

Contents

SMITH, R. & PRÉZELIN, B.: Foreword	V
WILLIAMSON, C.E. & ZAGARESE, H.E.: Opening remarks: The impact of UV-B radiation on pelagic freshwater ecosystems	IX
Acknowledgements	XIII
Workshop participants	XV

Keynote Addresses

KIRK, J.T.O.: Optics of UV-B radiation in natural waters. (With 4 figures and 2 tables)	1-16
MADRONICH, S.: Increases in biologically damaging UV-B radiation due to stratospheric ozone reductions: A brief review. (With 10 figures and 1 table)	17-30

Synthesis papers

KARENTZ, D., BOTHWELL, M.L., COFFIN, R.B., HANSON, A., HERNDL, G.J., KILHAM, S.S., LESSER, M.P., LINDELL, M., MOELLER, R.E., MORRIS, D.P., NEALE, P.J., SANDERS, R.W., WEILER, C.S. & WETZEL, R.G.: Impact of UV-B radiation on pelagic freshwater ecosystems: Report of working group on bacteria and phytoplankton. (With 1 figure and 2 appendices)	31-69
KIRK, J.T.O., HARGREAVES, B.R., MORRIS, D.P., COFFIN, R.B., DAVID, B., FREDERICKSON, D., KARENTZ, D., LEAN, D.R.S., LESSER, M.P., MADRONICH, S., MORROW, J.H., NELSON, N.B. & SCULLY, N.M.: Measurements of UV-B radiation in two freshwater lakes: an instrument intercomparison. (With 15 figures and 3 tables)	71-99
SIEBECK, O., VAIL, T.L., WILLIAMSON, C.E., VETTER, R., HESSEN, D., ZAGARESE, H.E., LITTLE, E., BALSEIRO, E., MODENUTTI, B., SEVA, J. & SHUMATE, A.: Impact of UV-B radiation on zooplankton and fish in pelagic freshwater ecosystems	101-114

Research papers

DIAZ, S.B., BOOTH, C.R., LUCAS, T.B. & SMOLSKAIA, I.: Effects of ozone depletion on irradiances and biological doses over Ushuaia. (With 5 figures and 4 tables)	115-122
CABRERA, S. & PIZARRO, G.: Changes in chlorophyll <i>a</i> concentration, copepod abundance and UV and PAR penetration in the water column during the ozone depletion in Antarctic Lake Kitiash, 1992. (With 7 figures)	123-134
SCULLY, N.M. & LEAN, D.R.S.: The attenuation of ultraviolet radiation in temperate lakes. (With 8 figures and 5 tables)	135-144
LINDELL, M.J. & RAI, H.: Photochemical oxygen consumption in humic waters. (With 6 figures and 2 tables)	145-155
MOELLER, R.E.: Contribution of ultraviolet radiation (UV-A, UV-B) to photo- inhibition of epilimnetic phytoplankton in lakes of differing UV transparency. (With 7 figures and 2 tables)	157-170

MILOT-ROY, V. & VINCENT, W.F.: UV radiation effects on photosynthesis: The importance of near-surface thermoclines in a subarctic lake. (With 7 figures and 1 table)	171-184
HESSEN, D.O.: <i>Daphnia</i> responses to UV-light. (With 7 figures)	185-195
SIEBECK, O. & BÖHM, U.: Challenges for an appraisal of UV-B effects upon planktonic crustaceans under natural radiation conditions with a non-migrating (<i>Daphnia pulex obtusa</i>) and a migrating cladoceran (<i>Daphnia galeata</i>). (With 5 figures)	197-206
ZAGARESE, H.E., WILLIAMSON, C.E., MISLIVETS, M. & ORR, P.: The vulnerability of <i>Daphnia</i> to UV-B radiation in the Northeastern United States. (With 5 figures and 2 tables)	207-216
LITTLE, E.E. & FABACHER, D.L.: Comparative sensitivity of rainbow trout and two threatened salmonids, Apache trout and Lahontan cutthroat trout, to ultraviolet-B radiation. (With 1 figure and 7 tables)	217-226