disturbances can be chosen freely. Changes in mean can be represented as constant disturbance, changes in variability as episodes of certain length and amplitude. The disturbances can also be extracted from GCMs with the help of Quantile-Quantile bias correction.

The anthropogenic transformation and restoration of biota of large water reservoir in the north-western part of Russia

Tekanova, E.V., Kalinkina ,N.M; Kulikova, T.P;Polyakova T.N; Ryabinkin A.V; Slastina Yu. L; Syarki M.T; Timakova T.M; Chekryzheva T.A & Berezina, N.A.
Northern Water Problems Institute of Karelian Research Center of the Russian Academy of Science, A. Nevsky St. 50, 185030 Petrozavodsk, Russia

The present work is devoted to biota response to pulp-and-paper mill effluents water pollution and subsequent recovery of environmental conditions in large (1149 km^2), darkwater and well-circulating (relative period of water exchange is about a year) Vygozero water reservoir of north-west Russia. Vygozero reservoir is very important region water body in many ways: it is the part of White Sea-Baltic Canal and it is the regional source of energy. Thus, the 50-year ecological monitoring that include quantitative, structural and functional indicators of planktonic and benthic communities state as well as toxicological investigations was carried out in Vygozero reservoir. In 1960-70s reduction of biota vital activity and growth of specific anaerobic microflora was observed due to organic pollution of water and toxification of environment. In 1980s changes in waste waters composition led to toxicity decrease and water body euthrophication that resulted in increase of quantitative and production endpoints and structural changes of planktonic and benthic biogeocenosis subsequently. In 1990s and 2000s decrease of anthropogenic load led to decrease of bio-productional characteristics of plankton and inertial benthic community correspondently. At present the processes of re-oligotrophication continues and structural changes in cenosis still takes place. Sediments in Vygozero reservoir still reveal toxic features.

Palaeolimnological reconstruction of the ecological evolution of Lake Neusiedl (Austria) since the end of the last "vanished-lake" stage (1871).

Tolotti, Monica[1], Milan, Manuela[1], Adriano[1], Boscaini, Gerhard [2], Soja, Herzig[3] ,Alois
[1]IASMA Research and Innovation Centre, Istituto Agrario di S. Michele all'Adige - Fondazione E. Mach, Sustainable Agro-ecosystems and Bioresources Department, Via E. Mach 1, 38010 S. Michele all?Adige, Trento, Italy.

The palaeolimnological reconstruction of secular evolution of Euroepan Lakes with key socio-economical relevance respect to large (climate change) and local scale (land use, tourism) environmental changes, represents one of the objectives of the project EuLakes (European Lakes Under Environmental Stressors, Supporting lake governance to mitigate the impact of climate change, Reg. N. 2CE243P3), launched in 2010 within the Central European Inititiative.
The project consortium comprises lakes of different morphology and prevalent human uses, including the meso-eutrophic Lake Neusiedl, the largest Austrian lake (total area 315 km2), and the westernmost shallow (mean depth 1.2 m) steppe lake of the Euro-Asiatic continent. The volume of Lake Neusiedl can potentially change over the years, in relation with changing balance between atmospheric precipitation and lake water evapotranspiration. Changing water budget, together with high lake salinity and turbidity, have important implications over the lake ecosystem. This contribution illustrates results of the multi-proxi palaeolimnological reconstruction of ecologial changes occurred in Lake Neusiedl during the last ca. 140 years, i.e. since the end of the last "vanished-lake" stage (1865-1871). Sedimentation rate, oragnic content, concentration of algal pigments, and diatom accumulation rate anticipate the increase in lake productivity of ca. 10 years (1950s) respect to what reported in the literature. Diatom species composition indicate a biological lake recovery in the late 1980s, and suggest a second increment in lake productivity since the late 1990s, possibly in relation with the progressive increase in the nitrogen input from agriculture. Stable abundance of diatoms typical of brackish waters indicated no significant long-term change in lake salinity, while variations in species toleranting dessiccation confirm the vulnerability of Lake Neusiedl toward climate-driven changes in the lake water balance. This fragility is aggravated by the the semi-arid climate conditions of the catchemnt area. Biodiversity changes, pollution, agricultural and touristic over-exploitation represent further risk factors.