



# Harmoni-CA

## **Preliminary Approach for Selecting Natura 2000 Areas into Protected Areas Register of Water Framework Directive**

### **Case Study of Lake Lentua, Northern Finland**

Ville Hokka, Seppo Hellsten

Finnish Environment Institute (SYKE)

Mechelininkatu 34a, PO Box 140, Helsinki, Finland

[ville.hokka@ymparisto.fi](mailto:ville.hokka@ymparisto.fi)

### **Abstract**

The Water Framework Directive (2000/60/EC) Article 6 (annex IV, v) requires that relevant Natura 2000 areas should be included in the register of protected areas. The constitution of relevancy from the protected biological values included in the Habitats Directive (92/43/EEC) and the Birds Directive (79/409/EEC), however, remain currently unclear. Similarly, the parallel objectives of the Water Framework Directive (WFD) and the Natura 2000 Directives, the former focusing on reaching the good

status of waters and latter ones requiring maintenance of the favorable conservational status of species and habitats, raise a number of unanswered questions.

Despite the non-clarified basis of Natura 2000 area inclusion into the WFD register of protected areas and the quickly proceeding WFD implementation, forcing monitoring programmes operational also for the protected areas by the end of 2006 (Articles 8 and 15 of WFD), the biological values in Natura 2000 areas influence significantly spatial planning, river basin management and catchment area practices. It is easy to predict that water managers and administrators alike need to address a number of issues stemming from the differing objectives of the WFD and Natura 2000 areas protection in practice. The overlapping directives have to be dealt also in the River Basin Management Plan of the WFD, finalized by the end of 2009.

To shed light into the interrelations of WFD and the directives governing Natura 2000 areas, the legally binding biological values recognized in the Birds Directive and the Habitats Directive for Finland were analyzed. A preliminary proposal of the relevant biological values acknowledged in the Natura 2000 Community legislation was produced in two phases. First, the legally binding habitats of the Habitats Directive were assessed for identifying water depended habitats. Then the legally binding species of the Birds Directive were assessed in order to create lists of a) water depended bird species belonging into the Finnish fauna and b) water depended bird species frequently migrating via Finland.

The identified biological values were applied in practice in a case study of pristine Lake Lentua, the largest (90 km<sup>2</sup>) unregulated lake of Oulujoki River basin in Northern Finland. Lake Lentua may become either the national reference lake or regional reference lake of the Finnish lake typology, which highlights the need of preliminary assessment of the current status of the lake. Main part of Lake Lentua, altogether 6591 hectares, is included in the Natura 2000 network. The protected area consists of thirteen recorded Natura habitats of Habitats Directive annex II and seven bird species recognized in the Birds Directive annex I.

The water monitoring data, ecological surveys and nature inventories of Lake Lentua were studied and the results were interpreted for harmonizing the WFD and Natura 2000 Directives in designing the future water management. The assessment showed that the water chemistry data of the long term monitoring stations showed signs of slightly increasing eutrophication noted also in diatom studies in the beginning of the 1990's. The littoral macrophyte data, however, did not support eutrophication, since the species indicative to oligotrophy have slightly increased from 1984-1987 to 2004. The chlorophyll a levels, that had decreased between 1990-1995, showed a slightly increasing trend in 2000-2004 data. However, the currently available macrophyte data and the chlorophyll a data from 2000-2004 allowed no reliable comparisons or conclusions due to differing methodology (macrophytes) and small sample size (chlorophyll a). The Natura 2000 values of Lake Lentua included three water depended habitats and four water depended bird species of which one, redshank (*Tringa*

*tetanus*), is migratory. Of the habitats, the oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) cover 72% of the protected area and natural dystrophic lakes and ponds, accounting for less than 1% of the habitats, are found only in the islands. Only few nature studies had been carried out for investigating Lake Lentua nature. The recent nature surveys, executed in June-August 2005, focus specifically on islands. The overall Natura 2000 values, therefore, seemed to be quite scarcely studied. It was concluded that the current monitoring programme seems to be insufficient in detecting the possible eutrophication in Lake Lentua.

The nutrient levels of Lake Lentua are discussed and human caused nutrient loading sources of were identified as forestry, agriculture and fish farming. The most of the annual loading of N and P originates from natural background loading. In all, the total annual loading has reached a level that cannot be increased.

Water protection guidelines and water management activities that streamline the objectives of Natura 2000 and WFD were produced for Lake Lentua. Studies and inventories of the late 1980's were used as background documents combined with the local expert knowledge of Regional Environment Centre of Kainuu, for suggesting more thorough ecological and chemical investigations in accordance with the WFD. Also a complete monitoring programme based on the requirements of WFD, stipulating inclusion of protected area specific monitoring in the water monitoring programmes, is suggested. The linkage between the WFD and spatial planning, in the form of restoration means as programme of measures, is identified and proposed. Current approach is a part of Interreg IIIB project "Principles, tools and systems to extend spatial planning on water courses - Watersketch".