



marine protected areas
in the Eastern Baltic Sea



LIFE Nature project “Marine Protected Areas in the Eastern Baltic Sea”
Reference number: LIFE 05 NAT/LV/000100

Executive summary: **Action A3 – Waterbird inventory** **Action leader P13, Institute of Ecology of Vilnius University**

Goal of the action

The main goal of this action was to gain comprehensive information about the abundance, distribution and conservation status of waterbirds in coastal and offshore areas of Estonia, Latvia and Lithuania during wintering, migration and breeding seasons. Such data was essential for identification of important breeding areas and areas of significant non-breeding aggregations of waterbirds, for revision of boundaries of the already proposed SPAs and for delineation of new SPAs.

Activities implemented

A variety of methods were used during the inventory in order to obtain as complete area coverage (both temporal and spatial) as possible. Methods used also differed among the three countries, primarily because of different physical characteristics of the project areas as well as different target species of waterbirds.

Survey methods included waterbirds counts from the coastline, surveys from ships (transect counts), surveys from aeroplanes (transect counts and total counts) and surveys of breeding birds on islands (in Estonia only). These surveys covered all the thirteen project areas several times in all the relevant seasons.

Waterbird inventory surveys were carried out during three seasons in 2006–2009. In Lithuania, nine ship surveys were carried out, with both Lithuanian project sites surveyed during eight of these surveys. In Latvia, eight ship surveys were carried out, covering each of the five Latvian project sites 4–8 times in different seasons. Six joint Latvian-Estonian ship surveys were carried out in the Irbe Strait, covering project areas both in Latvia and Estonia. Aerial surveys were used primarily in Estonia, where 15 surveys from airplanes were carried out in different project areas. Several special aerial counts and a number of occasional observations from aeroplanes were carried out in Latvia. Breeding bird survey in Estonia in 2006–2008 covered 226 small islands.

All the data collected during the waterbird inventory surveys were stored in GIS databases and used for the analysis of waterbird distribution and abundance. Identification/delineation of important areas for waterbirds was based on the Marine Conservation Criterion (MCC).

Results achieved

The project allowed to vastly improve our knowledge on species composition, abundance and distribution of waterbirds both during the breeding season and outside it – on migration and wintering, in the selected project areas in Estonia, Latvia and Lithuania.

Although no new sites for the protection of birds or expansion of the existing ones have been proposed in Estonia at this stage, a number of very important findings were revealed during this project in the existing SPAs. New concentrations of international importance (>1% flyway

population) were observed in Väinameri Sea for the Long-tailed Duck, Common Eider and Smew; in Irbe Strait for Velvet Scoter, Mute Swan and Northern Pintail; in Pakri area for Tufted Duck and Smew. New information was also obtained for the Steller's Eider and Little Gull – large concentrations of these birds were observed outside the Vislandi Archipelago SPA, therefore extension of this site or designation of a new one may be necessary there in the future. Breeding bird survey revealed that *ca.* 30 species of waterbirds breed on small islands in Estonia. For 10 of these species this is the primary breeding habitat, while it is also very important for another 12 species of waterbirds. Most abundant and diverse breeding waterbird fauna was recorded in Kahtla-Kübassaare site and Vislandi Archipelago.

Although overall waterbird numbers, observed during this project in Latvian waters, were considerably lower than those observed in the 1990's, data collected during the inventory resulted in the proposal of five new SPAs that broadly coincided with the previously identified Important Bird Areas (IBAs) in Latvian waters. Ainaži-Tūja site in the eastern part of the Gulf of Riga was found to be important for Little Gulls in spring (up to 9,000 birds estimated) and wintering divers. West Coast of Gulf of Riga – another proposed SPA in the Gulf of Riga, holds significant internationally important numbers of divers (up to 5,600 birds), Velvet Scoters (up to 27,000 birds), Long-tailed Ducks (up to 22,000 birds) and Little Gulls (up to 15,000 birds). The third proposed Latvian SPA is located in the Irbe Strait and it has the greatest variety of qualifying waterbird species – Velvet Scoter (up to 40,000 birds), Common Scoter (up to 20,300 birds), Long-tailed Duck (up to 22,000 birds), Black Guillemot (up to 1,400 birds), Little Gull (up to 3,000 birds) and divers (up to 1,800 birds). The last two proposed Latvian SPAs are located along the open Baltic Sea coast – Akmeņrags-Pāvilosta and Nida-Pērkone sites both hold significant numbers of Little Gulls migrating in late summer (up to 4,700 and 2,400 birds, respectively). Nida-Pērkone site is also important for wintering Goosanders, with up to 4,650 birds recorded in January.

Similarly to Latvia, numbers of waterbirds observed during the project in Lithuania were also considerably lower than the ones recorded during the surveys in the 1990s. Reasons for this decrease are unclear, but overall decrease in population numbers, climate change and fishery impact may be named as some of the possible contributing factors. Ship surveys revealed that abundant and dense aggregations of Velvet Scoters extend far beyond the borders of the present SPA along the Curonian Lagoon, thus clearly indicating the need for the extension of this SPA (or the establishment of a new one). Up to *ca.* 40,000 Velvet Scoters were estimated to winter in this area. The proposed site is also important for dense aggregations of Little Gulls, as well as numerous (although below threshold) concentrations of divers and Razorbills. Rather stable and dense aggregations of Velvet Scoters and, to a lesser degree, Razorbills were also observed at depths exceeding 30 m off the coast of Palanga. However, these aggregations did not meet the criteria for the delineation of new SPAs, since the absolute numbers of birds there were below the population threshold.

Main lessons learned

Overall, methods used for the surveys of waterbirds during this project proved to be robust and reliable, even though often labour intensive and sensitive to weather conditions and availability of suitable ships/airplanes. Site delineation methods and data analysis techniques were also straightforward and rather unambiguous, although bird density distribution analysis methods still have some room for improvement, particularly in terms of more advanced modelling techniques, including the addition of more environmental variables. Finally, despite the fact that waterbird inventory lasted for almost three seasons, weather conditions (particularly in winter) were rather mild during all of them, which did not allow to assess the previously (in the 1990s) observed importance of investigated areas for waterbirds in cold or severe winters.