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 A4 – Marine Mammals inventory**

Action leader P18, Environmental Board

Action consists of three separate and independent sub-actions: Inventory of Harbour porpoises (*Phocoena phocoena*), Grey seal (*Halichoerus grypus*) survey and Ringed seal (*Phoca hispida*) survey.

Goal of actions:

- Detection of presence of Harbour porpoises;
- Following the use of marine habitat by Grey seals. Finding important areas in different periods of annual life cycle, finding role of coastal areas and offshore banks as foraging sites;
- Ringed seal abundance estimate.

Activities implemented:

1. Harbour porpoise inventory: Passive acousting monitoring devices (T-PODs) deployed to three main and one supplementary locations during the survey. Alltogether 2290 POD/days of data collected from arrays of 3 locations in 1 areas in Estonia (one transboundary with Latvia) and 1 Lithuania;

2. Grey seal survey: 6 seals (2 males and 4 females) taged with Fastloc/GSM tags;

3. Ringed seal survey: Absolute abundance survey (systematic aerial strip census) carried out 2006. Ice conditions in 2007 – 2009 were not suitable for aerial census method. Breeding habitat surveys in 2007 – 2009 conducted for finding key areas for the species. In 2008 total counts of moulting seals carried out in Väinameri area and northern part of Gulf of Riga in houlout sites. Telemetry applied for ringed seal habitat study with 4 Fastloc/GSM tags. Data about foraging places and seasonal importance of different sea areas was obtained from these investigations.

Results achieved:

1. Harbour porpoises: Porpoises are extremely rare in Eastern Baltic coast. No porpoises detected in study sites. Main known threat in the Baltic is by-catch in set nets (salmon,

turbot and cod). It is not feasible to apply special local restrictions when only vagrant individuals can pass the area. Special additional protection measures can not be applied for protection of the species in project areas.

2. Grey seals: behaviour and habitat use have large individual variation. They can change houlout places often (subadults and males), but can have strong site fidelity for breeding, resting and also for foraging areas (adult females). Foraging in summer is mainly in deep waters (water column 50 – 90 m), in cold season on coastal slopes and reefs. Regular migrations between most important houlout sites in Central Baltic Proper. Because of very large seasonal and individual variation much more study animals is needed for comprehensive overview of critically important habitat. These studies have to be made in whole core area of Baltic grey seal distribution, in cooperation with Finland and Sweden.

   Telemetry is only tool for detailed description of 3D environment. This must be essential part of any EIA dealing with marine areas' development where seals are present.

3. Ringed seal survey: Abundance estimate: Population size of ringed seals in the Gulf of Riga in 2006 was estimated to be about 1475+- 30% individuals. Alternative census from houlouts during ice-free spring (2008) give similar minimum population size, 1047 seals counted. Method is applicable when standard survey is not possible to carry out. Abundance is same as 10 years ago (1407 +- 42%). Normal healthy population should have been doubled during this time. There is acute problems in population.

   Breeding habitat surveys: ice conditions were generally favourable in 2007 and 2009, main breeding areas found in northern part of Gulf of Riga (2007) and in Väinameri (2009). Breeding failed almost 100% in 2008. Warmest winter of 100 years. All seals in Pärnu bay, extremely high eagle predation. In warming climate conditions population is in very high extinction risk. Habitat quality is the key factor.

   Most important foraging areas are in central and southern part of Gulf of Riga. Main prey is in deeper waters close to bottom (30 – 50 m depht. Shallow is avoided. Underwater reefs have no importance. Foraging areas change seasonally. Cold water period shift to coastal sea, specially to Väinameri. Very intensive migration between resting and foraging areas. Suur Strait has crucial importance as migration route. Resting site-fidelity is very high. Seals return almost always to the same place. Resting places are the same as for moulting during ice-free springs. New important site was found.

Conservation status and threaths for Grey and Ringed seals:

Grey seals: All major houl outs (resting places) in Eastern Baltic are protected. New small moulting places found but there is no need to apply new special protection measures, minor changes in protection regime for some places are necessary.

Baltic population is out of risk and have been increasing during the study period ca 7 % per year (from annual trend monitoring data, supplementary for current project). Main threat is by-catch in coastal fisheries. Technological modifications of fyke nets have

developed and application of this will reduce by-catch considerably. Offshore fisheries can have implication through over-exploitation of fish stocks in long term perspective.

Ringed seals: Ringed seal population in Gulf of Riga is endangered. No signs of recovery during last 10 years in Gulf of Riga and Gulf of Finland. Warming climate have very strong negative impact on breeding success. Animals are vulnerable on disturbance at breeding and resting sites.

Fisheries bycatch is main cause of human induced mortality

Large scale infrastructure development (e.g. bridge and wind parks) can have unforeseeable negative impact. There is no experience of influence of this kind of structures for Ringed seals habitat and species distribution range in the World.

Protection status of species and its habitats: proposals to Estonian and Latvian authorities:

- Changes in protection category (from II to I in Estonia);
- Changes of borders and times for public access of existing protected areas;
- Establish one more new special protection area;
- Make seal-safe fishing gears mandatory at least in Pärnu Bay and Väinameri;
- Monitoring and sustainable use of commercial and non-commercial fish resources in main foraging area, central and southern part of Gulf of Riga in Latvian and Estonian waters.

Main conclusions for seal surveys:

- Aerial survey is only method for now for population abundance estimate with confidence intervals.
- Telemetry in combination with aerial or other smaller scale spatial surveys is only tool for habitat study and -analyses.
- LIFE project was targeted on species and large areas. Marine mammals are utilizing their habitats in very variable seasonal and spatial scale. It is possible to protect marine mammals only in whole range of their main activities. Some sites inside of the range are more important for species' annual life cycle and then the others.