



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

## Executive summary: **Action A5– Fish community inventory** **Action leader P4, Estonian Marine Institute, University of Tartu**

Baltic marine fish populations are, in general, studied rather extensively. In all three Baltic States there are monitoring programs to collect ichthyologic data. However, these programs are financed by the fisheries administrations. So, the focus is totally on the commercially important species. The bulk of the effort is directed to gather data on cod, herring and sprat, and lesser extent to some commercially more important coastal stationary species. Concerning many small-sized fish important from the point of view of nature protection, there are no data collection mechanisms, since they are not catchable with sampling gear designed for fish stock assessment.

So, **the main aim of the action was to collect data (distribution, abundance etc.) about fish species most important from the point of view of nature conservation** like species listed in the Habitat Directive Annex II, Bern Convention, IUCN Red Data Book, National Red Data Books etc. These species of the highest interest (further: project species) were: twaite shad *Alosa fallax*, Asp *Aspius aspius*, Spined loach *Cobitis taenia*, Vendace *Coregonus albula*, Whitefish *Coregonus lavaretus*, Bullhead *Cottus gobio*, River lamprey *Lampetra fluviatilis*, Snake blenny *Lumpenus lampetraeformis*, Mud loach *Misgurnus fossilis*, Shorthorn sculpin *Myoxocephalus scorpius*, Ziege *Pelecus cultratus*, Sea lamprey *Petromyzon marinus*, Rock gunnel *Pholis gunnellus*, Longspined bullhead *Taurulus bubalis* and Fourhorned sculpin *Triglopsis quadricornis*. In aim to collect data about the project species three main methods were used in all 13 project areas: a) gill net fishing using a large variety of mesh sizes, b) hand seining in very shallow coastal areas, and 3) food analysis of predatory fish during regular commercial fish monitoring (small-sized species are often prey for larger predatory fish).

Since the Baltic States use somewhat different commercial fishing assessment, the comparability of data was the main concern before the start of the project. In aim to enable quantitative comparisons on abundance of fish, the action used fully standardized techniques (standard mesh sizes of gill nets etc.) over all project areas. Therefore, it can be argued that **the implementation of the action was the first comprehensive, simultaneous and standardized study of fish communities over three Baltic States**, as it covered both warm- and cold-water communities and applied different sampling methods to target both big- and small-sized fish species.

Comprehensive information about distribution, seasonal abundance and migrations of project species is stored in the databases of the respective partner institutes, and in the form of data-sheets attributed to all 13 project areas delivered to the national environmental administrations. From findings it might be noted that two new species for Lithuania, longspined bullhead and black goby *Gobius niger*, were scientifically documented. Also, it was found that two Habitat Directive Annex II freshwater species are actually abundant also in the brackish coastal sea of

Estonia (spined loach in area 3EST and bullhead in area 4EST). However, these species (and other species of nature protection interest) are already protected by existing conservation system.

The present study didn't confirm the widespread view that fishery has strong negative impact on the coastal fish. By compiling the inventory and commercial fisheries data, the study concluded that coastal fishing effort has steadily decreased during the last decade and now fishery has actually little if any impact on the fish species in need of protection. The most important threats are eutrophication and pollution, which unfortunately can not be beaten by independent acts on spatially restricted areas. Therefore, another important conclusion is that the most important tool to protect rare and endangered fish species is to preserve vulnerable coastal sea habitats.