



LIFE Nature project “Marine Protected Areas in the Eastern Baltic Sea”
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Executive summary: **Action D1 – Use of by-catch safe fishing gear in pilot project areas**

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Death of seabirds (e.g. wintering sea ducks) has been well documented from various fisheries in different regions of the world. In the southern Baltic (Lithuania and South West coast of Latvia) the most problematic issue is the bird by-catch caused by extensive cod fishery employing gill nets. In the northern areas of the Baltic Sea, in contrary, cod fishery is less extensive due to the very low abundance of cod. At the same time, in Estonia (and in some Latvian sites) trap net fishery generates unacceptably high seal by-catch on the one hand, and permanently increasing number of seals causes high economic losses to fishermen, on the other. So, the main goal of the action D1 was to design, construct and use several types of modified fishing methods/gears.

Long-lines were tested in aim to replace gill nets causing by-catch of birds in (mainly) cod fisheries in Lithuania. **Herring trap-nets** were tested in aim to reduce bird by-catch when catching herring, garpike and other species (e.g. perch) in Lithuania. **Seal-safe fyke-nets** (catching many different coastal fish species) were tested in aim to reduce seal by-catch and mitigate the seal-fishery conflict through increasing profitability of fishery by reducing seal damage to gear in Estonia. All tests were carried out, as planned, using the contracted commercial fishermen, under the supervision and guidance of scientists from the participating institutes.

Tested **long-lines** were effective in catching cod. Bycatch of fish under commercial landing limit (and of some non-target species) was analogous to gill nets. However, long-lines didn't cause any bycatch of birds. Seals can damage both long-lines and gill nets; however damage for long-lines is minor by means of costs if compared to the gill net damage.

Three **herring trap-nets** used in Lithuania were constructed by Latvian fishermen experienced in use of the gear at the open coastal waters in the western part of Latvia. After some learning period, Lithuanian fishermen learned to operate these rather sophisticated gears, and the traps proved to be efficient also under Lithuanian conditions. Besides herring, which was regarded as the main target at the start of the project, the gear caught effectively also some other fish species, e.g. garpike and perch. So, in future the traps can be used even during longer season than it was originally expected, which naturally increases the efficiency and fishing revenues.

The **seal-safe fyke-nets** proved to be as efficient as the traditional fykes. At the same time they did not create any bycatch, since the panels at entrance do not allow seals to enter. Extremely strong material (“Dyneema”) used to prevent seals to break holes into the fish-keeping chamber proved to sustain seal attacks; only few small holes were found during the three testing seasons. Additionally, the new material didn't overgrow with algae and so the modified gears were lighter and thus also easier to operate alone and from small boats.

In conclusion, all three tested methods proved to be usable and efficient. Concerning the seal-safe fyke-nets and herring trap-nets fishermen even started to build additional gears on their own expenses, which is definitely the strongest possible proof that gears have high practical value and will be used also in future. In Estonia it is already decided, that purchase of new environmentally more safe gears by commercial fishermen will be supported by the European Fisheries Fund in coming years. Analogous plans are under preparation also in Latvia and Lithuania. So, there is firm ground to believe that the usage of tested gears will be rather common in future, and the action has met its main aim.