

NE of the Gulf of Riga (Baltic Sea) coastal fish trawling manual

1. Motivation:

Coastal fish monitoring based on fisheries independent surveys are or have been undertaken in all countries around the Baltic Sea. Data for assessing coastal fish community status should hence preferentially be based on this source of data. In some region of the Baltic Sea, however, data from fisheries independent surveys are lacking. A potential solution to this is to make use of the data collected of coastal fish species in the data collection program that is nowadays implemented in all EU countries.

MONITORING METHODS

2. General

One of the main objectives in marine and coastal management and conservation is to retain a natural abundance and species composition of the fish community. Most methods for monitoring changes in fish abundance catch several species, and information on changes in the species composition of the community can thus also be extracted. The absolute density of a species or population can, however, not be measured directly. Instead, focus is on changes in the relative measure catch per unit of effort and in the species composition. For fishery independent data, information on the effort is readily available, but for fisheries-dependent data sources the reliability of the information on efforts is usually highly variable and relies heavily on the interest and accuracy of individual fishermen (Lappalainen 2014).

3. Temporal coverage:

- SPRING: ice brake until mid-June
- FALL: early-September until formation of thin ice (end of December).

The main intention is to perform three experimental trawl per period (spring/fall) with the monthly frequency, making altogether six trawls per annum as minimum. We aim to cover eight (Fig. 1) spatially separated transects (Table 1).

Table 1. Fish trawl survey coordinates in Pärnu Bay (Ne of the Gulf of Riga).

TRANSECT	COORDINATES	N	E	FIRST YEAR
T1	Beginning	58,35697	24,45692	2009
T1	End	58,33538	24,43467	
T2	Beginning	58,32403	24,42453	2009
T2	End	58,29977	24,41707	
T3	Beginning	58,2761	24,38202	2009
T3	End	58,25178	24,38667	
T4	Beginning	58,25733	24,3794	2009
T4	End	58,235	24,36258	
T5	Beginning	58,2165	24,34767	2009
T5	End	58,19275	24,33498	
T6	Beginning	58,28745	24,45117	2009
T6	End	58,26303	24,44593	
T7	Beginning	58,32302	24,3707	2009
T7	End	58,29812	24,37193	
T8	Beginning	58,34212	24,37221	2017
T8	End	58,32416	24,37193	

4. Trawl and ship characteristics:

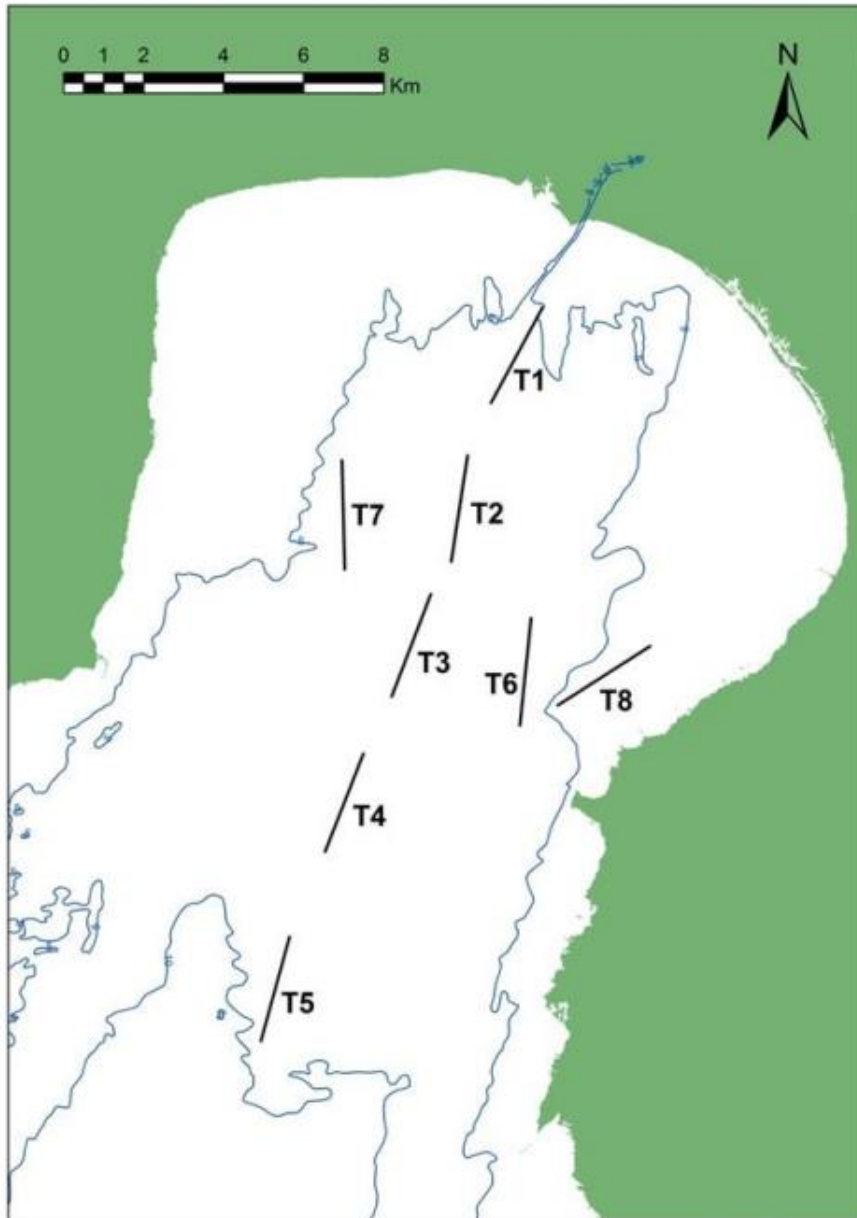
Experimental trawl survey is conducted by the Estonian Marine Institute (EMI) during ice-free period on the R/V Aurelie (L = 15.0 m, engine = 263 HP). Experimental hauls are conducted along eight stationary transects in Pärnu Bay during daylight hours with each haul lasting 30 min (Fig. 1).

Mesh size of the trawl net in the codend 12 mm. From then the international standard bottom trawl TV3-520/40-10 have been used) and its height and width are approximately during hauling 2 and 22 meters, respectively (Fig. 2). Water depth in the trawl transects vary between three and twelve meters, and hauls were made as close to the bottom as possible at a speed of three knots.

4.1. Quality assurance and data storage

Currently, the quality of the data collected within the different coastal fish monitoring programs is assured on a national level. Each contracting party has its own quality assurance system within which all data used for common assessments of coastal fish community status has been considered. Due to

lack of financial support there is currently no common data storage system for coastal fish monitoring data in the Baltic Sea. Data is instead stored in national databases from where extractions are made for common assessments.



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Figure 1. Tentative positions of experimental fish trawl transects in the Pärnu Bay (NE Gulf of Riga).

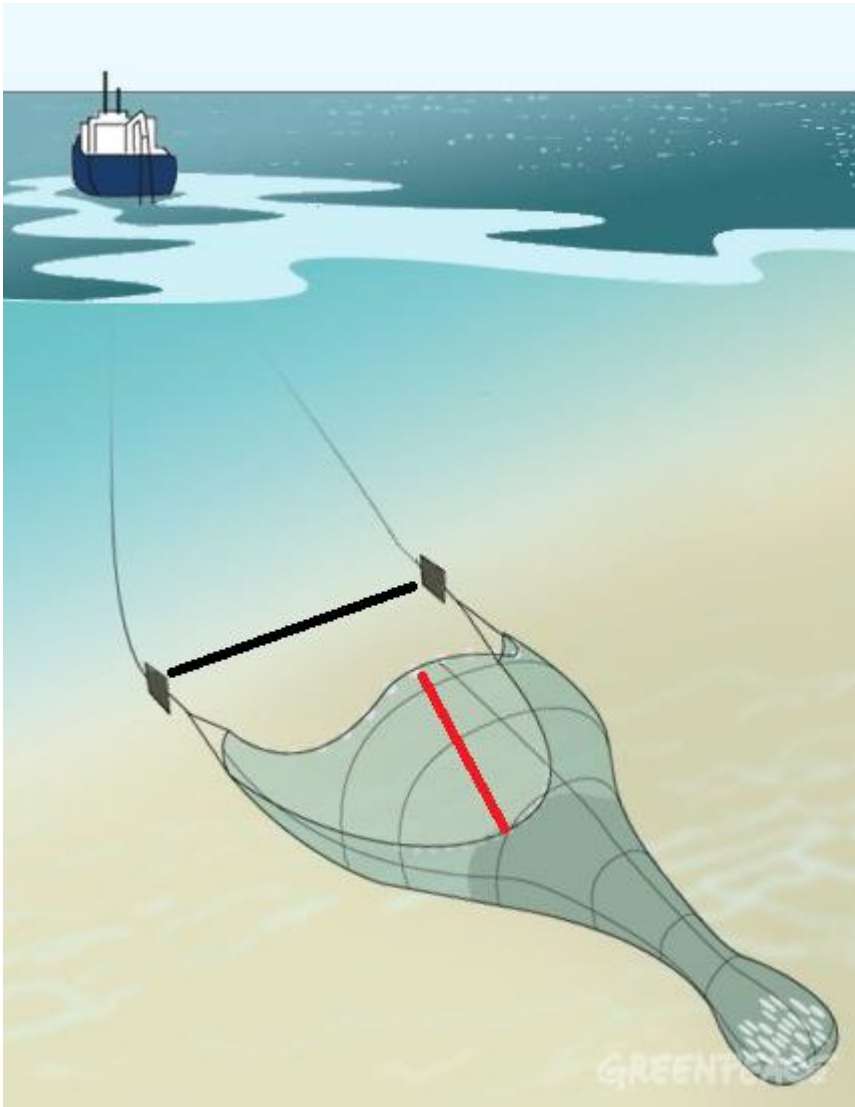


Figure 2. Schematic representation of pelagic trawl constructed to cover near-bottom water layer. Trawl height and width is marked in red and black, respectively. Photo: Greenpeace.