



WAKO II

An integrated impact assessment of trammel net and beam trawl fisheries

DURATION OF THE PROJECT
01/05/2009 – 30/11/2011

BUDGET
178.424

CONTEXT

WAKO-II is the follow-up project of “Environmental impact evaluation of trammel net and beam trawl fisheries on the Belgian part of the North Sea” (WAKO-I). The former WAKO-I project served as stepping stone in the exploration of multi-disciplinary research and compiling expertise from biological-ecological and fisheries science. WAKO-II builds upon this base and bridges projects, exclusively focused on fundamental ecosystem research (such as Westbanks, the EU SCANS-II project, ...) and fisheries projects (such as those financed through the European Fisheries Fund). As such, WAKO-II aims at scientifically underpinning the development of an integrated policy, reconciling the interests of the marine environment and fisheries.

PROJECT DESCRIPTION

Objectives

This study targets an integrated assessment of direct ecosystem effects of trammel net and beam trawl fisheries for the Belgian part of the North Sea (BPNS). A total of 4 workpackages are therefore drawn up, namely (1) quantification of the major direct, short-term effects of trammel net and beam trawl fisheries at the BPNS, (2) the development and application of a methodology for a sensitivity assessment of key species of each of the ecosystem components (endo-, epifauna, fish, sea birds and marine mammals), (3) the making of spatio-temporal distribution maps of these key species and (4) the integration of sensitivity maps of the key species and fishing effort.

Methodology

The impact of beam trawl fisheries on several ecosystem components is investigated through a combination of literature data, experimental sea trips and data of monitoring campaigns. The impact of trammel net fisheries at the BPNS is barely quantified, except for strandings data of harbour porpoise. Therefore a monitoring programme has been drawn up. The mortality due to (by-)catch, and possible effects on other species than the harbour porpoise, are registered through this programme and a thorough cooperation with fishermen.

This quantification of short-term effects (work package 1) will be combined with literature data on recovery in work package 2. A methodology will be developed and applied to relate mortality and recovery into a sensitivity assessment of a range of key species. The list of key species comprises both highly sensitive species and tolerant species.

The species lists, one for trammel nets and one for beam trawl fisheries, possibly encompass each of the ecosystem components. Distribution maps of each of the key species will be made in the third work package. Habitat suitability maps are the applied methodology for endo-, epifauna and fish species, whereas for seabirds and marine mammals full coverage distribution maps will be developed. The latter is supported through an extensive monitoring programme and appropriate modeling.

The distribution maps of each key species will be combined with their sensitivity in the final work package. As such, an area with a highly abundant species, that is highly sensitive to beam trawl disturbance, will score high on the sensitivity index. An area with a highly abundant species that is not sensitive to trammel net disturbance will receive a low sensitivity score. Sensitivity maps of key species will be produced for beam trawl and trammel net disturbance by linking each of the sensitivity scores of the key species and their distribution. The sensitivity of an area at the BPNS is determined by a combination of these sensitivities. These maps will be compared with the best available knowledge of fishing effort. In the end this will lead to supporting spatial planning of fishing activities at the BPNS.



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EXPECTED RESULTS AND/OR PRODUCTS

- Peer-reviewed papers
- Project website (www.ilvo.vlaanderen.be/wako)
- Presentations, posters, etc. to inform a large audience
- Databases and methodologies for further research and policy-support
- Sound scientific evidence for supporting policy makers with respect to environmental and fishery management.

INTERACTION BETWEEN PARTNERS

WAKO-II is built upon an extensive consortium with expertise in different disciplines, ranging from fundamental scientific to applied research. This knowledge includes a range of ecosystem components, from benthic invertebrates, over fish up to organisms at the end of the food chain (seabirds and marine mammals). Fisheries related effects are studied in close cooperation with the ILVO. Benthos related aspects of the research are the responsibility of the ILVO and the Section Marine Biology (UGent). The INBO is specialized in research related to seabird, whereas RBINS/MUMM focuses mainly on marine mammals. Integrated evaluations are managed by one of the partners, but are always in dialogue with all partners.

PARTNERS

ILVO

Coördination, quantification of the impact on benthos and demersal fish, sensitivity assessment of key species, development of habitat suitability maps for epifauna and fish and evaluation of the sensitivity maps and fishing effort

RBINS/MUMM

Quantification of the impact on marine mammals, sensitivity assessment of key species (coordination of the development and application of the methodology), development of full coverage distribution maps for marine mammals

INBO

Quantification of the impact on seabirds, sensitivity assessment of key species, development of full coverage distribution maps for seabirds

Section Marine Biology, University of Ghent:

Sensitivity assessment of key species, development of habitat suitability maps for endofauna and knowledge on the impact on endofauna

CONTACT INFORMATION

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Follow-up Committee

For the complete and most up-to-date composition of the Follow-up Committee, please consult our Federal Research Actions Database (FEDRA) by visiting <http://www.belspo.be/fedra> or <http://www.belspo.be/ssd>

