15. Evaluation of the impact of electro shrimp trawl fishery.

Desender M.[1,3*], Polet H.[1], Chiers K.[2], Soetaert M.[1,2] and Decostere A.[3]

[1.] Institute for Agricultural and Fisheries Research (ILVO), Animal Sciences - Fisheries, Ankerstraat 1, 8400 Oostende, Belgium. [2.] Department of Pathology, Bacteriology & Poultry Diseases, Faculty of Veterinary Medicine – Ghent University, Salisburylaan 133 Merelbeke, Belgium. [3.] Department of Morphology, Faculty of Veterinary Medicine – Ghent University, Salisburylaan 133 Merelbeke, Belgium.

[*]Corresponding author: marieke.desender@ugent.be

Bottom trawling, used for catching brown shrimp, is known to produce large amounts of discards and to disturb the seafloor habitat of benthic organisms. In order to consider ecological certification and increase the sustainability of these fisheries, technical adaptations are necessary to avoid these problems. Electric pulse fields have proven to be the most promising option for alternative stimulation in fishing gear, replacing the mechanical stimulation. Since 2008 the Belgian ILVO research institute has been successfully testing their Hovercran electro pulse trawl for brown shrimp fishery. In this device the bobbin rope is replaced by light weight electrodes creating a low-intensity electric field which selectively induces a startle response in the shrimps. Other benthic organisms are left untouched and can escape underneath the hovering trawl that collects the jumping shrimps without disturbing the seabed. Nevertheless, effects of suchlike electric pulse field on marine organisms are largely unknown. Preliminary exposure and survival experiments indicated that this low frequency pulse has no immediate significant effects on most adult fish and invertebrates. However, electro sensitive fish, like sharks and rays, and polychaete species were not included in these studies. Additionally, the influence on different life stages has never before been investigated, although electrofishing over active spawning grounds may affect survival of embryos, larvae or juveniles if exposed during their more sensitive stages. Further research to fill these gaps in knowledge hence is crucial to revalue pulse fishing and to provide information enabling to lift the standing ban on electric fishing in the EU.

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16. Conserving the skeleton from whale cadavers: a big challenge.

Doom M.[1], De Craene J.[1], Simoens P.[1] and Cornillie P.[1]

[1.] Department of Morphology, Faculty of Veterinary Medicine, Ghent University, Salisburylaan 133, Merelbeke, Belgium.

Optimal preservation of skeletal parts for museological or research purposes primarily relies on proper cleaning and processing of the fresh specimen and its bones. The typical procedure as applied by our department involves 4 steps: manual removal and enzymatic maceration of soft tissues, a bleaching step using hydrogen peroxide and finally degreasing of the bones. The latter process in particular is important for long-term conservation, as disintegration of fat results in formation of fatty acids which erode the mineral substance of bone. In voluminous specimens with a high fat content such as whalebones, removal of this fat poses a major challenge. Degreasing typically involves toxic or polluting solvents which need to be applied in sealed systems with limited capacity. Currently, an optimal protocol for large cetacean skeletons is lacking, resulting in an incomplete removal and dripping of residual fat from exhibited specimens. Alternative procedures to preserve large skeletons such as burial are no longer allowed because of environmental and safety considerations. Recently, the Museum of Morphology (MuMo, Ghent University) has taken part in the dissection of two stranded whales. For the degreasing of the huge lower jaws, microbial dissolution of the fat and application of industrial 'cold' degreasers in an atomizing system are being tested. The exhibition of whale skeletons fits within the new acquisition policy of this museum, which seeks to diversify its collection, currently consisting mainly of domestic and laboratory animal species, since wildlife medicine and evolutionary biology are of increasing importance in the curriculum of veterinary students.
