Vee kvaliteet. Juhend kalade arvukuse hindamiseks hüdroakustiliste meetoditega

Water quality - Guidance on the estimation of fish abundance with mobile hydroacoustic methods

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15910:2014 sisaldab Euroopa standardi EN 15910:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 15910:2014 consists of the English text of the European standard EN 15910:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.01.2014.	Date of Availability of the European standard is 22.01.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Water quality - Guidance on the estimation of fish abundance with mobile hydroacoustic methods

Qualité de l'eau - Guide sur l'estimation de l'abondance des poissons par des méthodes hydroacoustiques mobiles

Wasserbeschaffenheit - Anleitung zur Abschätzung der Fischabundanz mit mobilen hydroakustischen Verfahren

This European Standard was approved by CEN on 17 November 2013.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 15910:2014) has been prepared by Technical Committee CEN/TC 230 “Water analysis”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is one of several European Standards developed for the evaluation of species composition, abundance and age structure of fish in rivers, lakes and transitional waters. The following standards have already been published:

— EN 14011, *Water quality — Sampling of fish with electricity*;

— EN 14757, *Water quality — Sampling of fish with multi-mesh gillnets*;

— EN 14962, *Water quality — Guidance on the scope and selection of fish sampling methods*.

The initial draft of this document was constructed by an international group of experts during an ad hoc joint EIFAC/CEN workshop.

WARNING — Persons using this European Standard should be familiar with normal laboratory and fieldwork practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this European Standard be carried out by suitably trained staff.

1 Scope

This European Standard specifies a standardized method for data sampling and procedures for data evaluation of fish populations in large rivers, lakes and reservoirs, using hydroacoustic equipment deployed on mobile platforms (boats and vessels).

This standard covers fish population abundance estimates of pelagic and profundal waters > 15 m mean depth with the acoustic beam oriented vertically, and the inshore and surface waters of water bodies > 2 m depth with the beam oriented horizontally. The size structure of fish populations can only be determined to a relatively low degree of precision and accuracy, particularly from horizontally-deployed echosounders. As acoustic techniques are presently unable to identify species directly, other direct fish catching methods should always be used in combination.

This standard provides recommendations and requirements on equipment, survey design, data acquisition, post-processing of data and results and reporting. A selected literature with references in support of this standard is given in the Bibliography.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14962:2006, *Water quality - Guidance on the scope and selection of fish sampling methods*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14962:2006 apply.

3.2 Symbols and abbreviated terms

Common abbreviations used in this document:

— EDSU Elementary Distance Sampling Unit; Unit: Metre (m);
— GPS Global Positioning System;
— MUR Maximum Usable Range; Unit: Metre (m);
— PST Peak of Small Targets;
— S_a Area Backscattering Strength; Unit: decibel, dB re 1 (m^2 m^{-2});
— S_v Volume Backscattering Strength; Unit: decibel, dB re 1 m^{-1};
— SED Single Echo Detection;
— SNR Signal to Noise Ratio;
— ST Single Target;
— TS Target Strength; Units = dB re 1m^2;
— TVG Time Varied Gain;
— YOY Young of the year.