Age determination

WKAMDEEP 2- Workshop on Age Estimation Methods of Deep Water Species

A **Workshop on Age Estimation Methods of Deep Water Species 2** (WKAMDEEP2), chaired by Ole Thomas Albert, Norway, Kélig Mahé, France and Juan Gil Herrera, Spain will meet in Cádiz, Spain, 17-21 September 2018, to:

a. Collect and review the consistency of age data used in stock evaluations of deepwater fish, including, but not restricted to, tusk (*Brosme brosme*), ling (*Molva molva*), blue ling (*Molva dypterygia*), roundnose grenadier (*Coryphaenoides rupestris*), greater silver smelt (*Argentina silus*), black scabbardfish (*Aphanopus carbo*), black-spotted sea bream (*Pagellus bogaraveo*), greater forkbeard (*Phycis blennoides*) and orange roughy (*Hoplostethus atlanticus*);

b. Review new information on precision and accuracy of age estimation of the seven first species listed above, for which WKAMDEEP1 agreed on individual ageing protocols, and revise those protocols as appropriate;

c. Review age estimation procedures, and propose new ageing protocols for deepwater species not considered by WKAMDEEP1;

d. Assemble age reading experts on deepwater species for training on age reading of several species, following the recommendation from WKAMDEEP1 to conduct age reading comparisons collectively for the whole group of slow-growing deepwater fish;

e. Conduct a small-scale comparison of otolith images from 100 individuals of each species and report on precision and between-reader biases.

f. Address the generic ToRs adopted for workshops on age calibration (see 'WGBIOP Guidelines for Workshops on Age Calibration').

Supporting Information

Priority:	Essential. Age data is essential in evaluation of fish stocks. Age data is provided by different countries and are estimated using standard ageing criteria. These are generally not fully validated, and regular workshops are needed to increase the knowledge base, harmonizing interpretations and estimating precision and relative bias. A basis was established in 2013 by the previous WKAMDEEP1.
	For most deep-water species there are very few trained age readers and few labs that provide regular age data. Production ageing may be done by one or two people from a single lab. The WKAMDEEP-1 recommended that training on age reading of deep-water species in the future be less focused on individual species and more on the group of species. With good ageing protocols and the general similarities of slow growing species, it should be achievable to educate age readers to become specialists on all the deep-water species simultaneously. This will make future exchanges and age-reading workshops more feasible for these species.
	Therefore, a WKAMDEEP-2 should be carried out in order to update the methodology, and evaluate new information on otolith growth and age determination issues for commercially harvested deepwater fish species. And as well for the purpose of bringing scattered experts together to develop a coherent approach to age

	estimation of these typically hard-to-interpret otoliths.
Scientific justification:	The necessity of accurate and precise age data for all species assessed in WGDEEP is massive. The stock-assessment is severely hampered by the lack of valid age-structured data. The aim of the workshop is to establish or update age reading protocols for each species based on recent validation and corroboration studies, and based on these protocols conduct an age reading comparison across labs and for each species in order to increase the reliability of age estimates to be used in stock assessments.
Resource requirements:	No specific resource requirements beyond the need for members to prepare for and participate in the meeting.
Participants:	Participants should include a mixture of scientists and key technicians with expertise in age determination methods, deep water species biology and assessment, as well as data analyses and scientific publication.
Secretariat facilities:	None.
Financial:	Travel costs will be eligible for participants from Member States of the European Union through the EU Data Collection Framework (DCF). Funding for external experts on the age determination methods may be required.
Linkages to advisory committees:	ACOM
Linkages to other committees or groups:	WGDEEP, WGBIOP
Linkages to other organizations:	There is a direct link with the EU DCF.