Provision and evolution of ICES VME advice

Presentation to SWWAC

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11 July 2024

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VME advice to EC

➢ Defines polygons where VME are known to occur or likely to occur, including a precautionary buffer.

➢ Based on processing of VME records in the ICES VME database and compiled VMS data in the ICES VMS database.

➢ Five scenarios are used to define polygons, that take account of VME records and the history of fishing in different ways.

VME advice: timelines

➢ Last VME advice for EC 18 April 2023.

ICES Advice
Bay of Biscay and the Iberian Coast and Celtic Seas ecoregions
Published 18 April 2023

ICES CIEM — International Council for the Exploration of the Sea — Conseil International pour l'Exploration de la Mer

Advice on areas where Vulnerable Marine Ecosystems (VMEs) are known to occur or are likely to occur in EU waters

Advice summary

This ICES advice must be read in conjunction with the EU VME Advice Data Products (in a zip file) published together with this advice: https://doi.org/10.17895/ices.advice.22643356

➢ Release of new VME advice for EC scheduled for 18 Sept 2024.

VME advice: process

➤ ICES uses a benchmarked method to provide VME advice (Annex 6 of the report of the Benchmark Workshop on the occurrence and protection of VMEs, 2022).

➤ New and updated records of VME are submitted to the ICES VME database by ICES Member Countries, following an annual data call.

➤ VMS data, coupled with logbook data from vessels, are submitted to ICES following an annual data call that requests new and updated VMS and coupled logbook data, by month, in 0.05° x 0.05° c-squares.

➤ Accuracy and completeness of VME and VMS data depend on the quality of data submissions by member countries. The Data Centre and WG Deep-water ecology conduct additional quality assurance for ICES.

VME advice: data flows

➢ The flow of data into the VME database and data portal is published as a Data Flow Schematic

➢ The data flow into the ICES data management systems for VMS are published as a Data Flow Schematic for the northeast Atlantic and the NEAFC Regulatory Areas.

Vessel Monitoring System (VMS) and Logbook data in the North East Atlantic (FAO Major Fishing Area 27)

Volume 2 : Edition 1 I January 2021

ICES DATA FLOW SCHEMATICS

https://doi.org/10.17895/ices.advice.7670

ICES Vulnerable Marine Ecosystems

Volume 9: Edition 1 I April 2024

ICES DATA FLOW SCHEMATICS

http://doi.org/10.17895/ices.pub.25610307
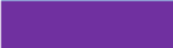
VME advice: VME records and VME index

➢ 'VME habitats' are records for which there is unequivocal evidence for a VME (e.g. from direct observation) VME habitat records are used directly to define c-squares with VME.

➢ 'VME indicators' are records that suggest the presence of a VME with varying degrees of uncertainty. VME indicator records are aggregated at the c-square level into a VME index.

➢ The VME Index is a categorical measure that combines the strength of evidence for the presence of a VME with its sensitivity, and takes values 'high', 'medium' and 'low'.

VME advice: scenarios

| Scenario	Summary description/ interpretation
A	Creates polygons including all c-squares with VME habitat, and a high or medium VME index. In addition, polygons include low index c-squares if these are adjacent to a c-square where VME are known to occur or likely to occur, regardless of fishing activity.
B	Creates polygons following scenario A, with the addition of c-squares including VME physical elements and with evidence of VME presence, regardless of fishing activity.
C	Creates polygons including all c-squares with VME habitat, and a high or medium VME index (as scenario A), but also accounts for fishing activity. Thus, low index c-squares are only included when Significant Adverse Impacts (SAI) from fishing activity have not occurred or if they are adjacent to c-squares with VME habitat, or a high or medium VME index.
D	Creates polygons including all c-squares with VME habitat, and a high, medium or low VME index, but only when SAI from fishing activity has not occurred in these c-squares. This scenario applies the strictest definition of where VMEs without SAI are known to occur or likely to occur.
E	Creates polygons based on a combination of scenarios B and C, and accounting for fishing activity in the same way as scenario C. In addition, c-squares with VME physical elements are included when there is evidence of VME presence. This scenario applies the broadest definition of where VMEs are known to occur or likely to occur.

VME advice: scenarios

Scenario	Known VME occurence		Likely VME occurrence								Potentially supports VME
	VME Habitat		VME Index								VME Physical Element
			High		Medium		Low				
	SAR < 0.43	SAR ≥ 0.43	SAR < 0.43	SAR ≥ 0.43	SAR < 0.43	SAR ≥ 0.43	SAR < 0.43	SAR ≥ 0.43			
A	🟦	🟦	🟦	🟦	🟦	🟦	🟪	🟪			
B	🟦	🟦	🟦	🟦	🟦	🟦	🟪	🟪			🟩
C	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟪			
D	🟦		🟦		🟦		🟦				
E	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟪			🟩

🟦 Included in VME polygon (primary selection).

🟪 Included in VME polygon if adjacent to primary selection.

🟩 Included in VME polygon if associated with VME habitat or indicator record.

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VME advice: example of outputs
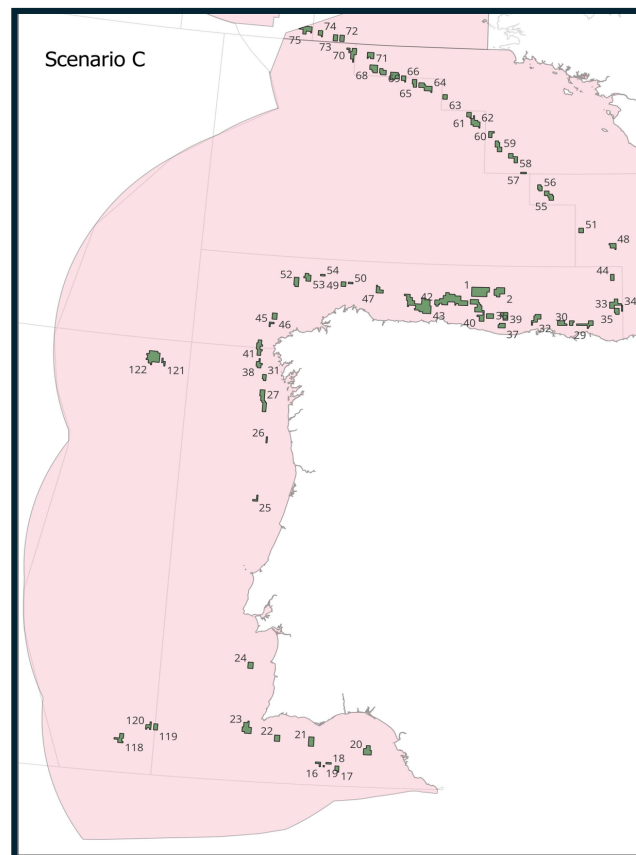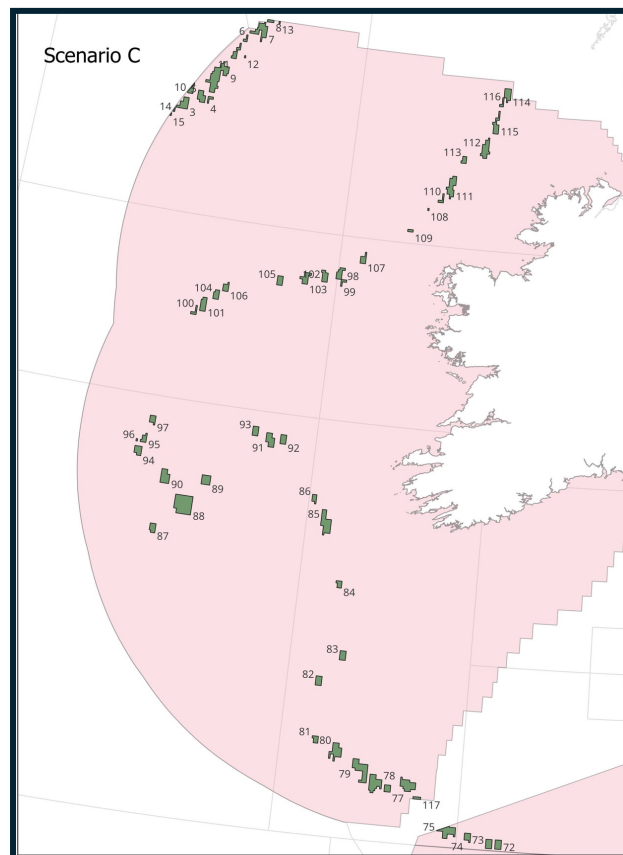
VME Advice Data Products,
Scenario Maps, 18/04/2023
https://doi.org/10.17895/ices.advice.22643356

Evolution of ICES VME advice

- ➢ Analyses and advice at any point in time are based on the available knowledge, data and evidence.
- ➢ The knowledge, data and evidence, and associated analytical methods, are continually evolving.
- ➢ ICES welcomes ongoing scrutiny of the knowledge, data, evidence and methods used to provide VME advice.
- ➢ Several ongoing actions in 2024 and 2025 will advance knowledge, data, evidence and methods.

Evolution of ICES VME advice: actions 2024-5

Topic	Progress	Timescale
Quality of historic VME data in ICES VME Database	Addressed by WG Deep-water Ecology (2024)	2024
Impacts of static gears on VME	Addressed in part by WG Deep-water Ecology (2024). Workshop planning in progress.	2024-2025
Improve VME index	Addressed in part by WG Deep-water Ecology (2024). Workshop planning in progress.	2024-2025
Transparency of analysis	Progress towards further documenting analyses and increasing repeatability underway.	2024

Evolution of ICES VME advice: actions from 2025

Topic	Progress	Timescale
Spatial scales of analysis	What are the strengths and weaknesses of alternate grid systems for VMS and VME analysis, and are there dynamic grid systems and ways of working with them that reduce concerns about systematic changes in cell area as a function of latitude?	2025 onwards
Predictive habitat mapping	Further develop models using environmental predictors to estimate distribution of VME species based on species' abiotic preferences. (WG Deep-water Ecology, WG Marine habitat mapping)	2025 onwards

Thank you

For further information:
https://doi.org/10.17895/ices.advice.22643356

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