

Vulnerable Marine Ecosystem (VME) Format

1. Data Use

The requested data will be ingested into the ICES VME database and will have a number of important uses. The ICES VME database provides an essential resource for the some of the core work of WGDEC in informing fisheries management, such as recommending bottom fishing closures within NEAFC (North East Atlantic Fisheries Commission) waters to protect VMEs. WGDEC also use this extensive database of VME records to respond to requests from the European Commission to provide new information on the locations of seabed habitats sensitive to particular fishing activities. ICES will use it when providing scientifically-robust advice on the distribution of Vulnerable Marine Ecosystems (VMEs) and possible management solutions

2. Reporting Format

The VME data reporting format consists of 4 separate records for **File information**, **Cruise**, **Sample**, and **Data**.

Data can be reported either in a “comma-separated value” (CSV) format or by completing the data submission template attached to the data call. The **File information** record is created automatically in the template. If you wish to report ‘absence’ data (for example if you are reporting a research trawl survey where there was no VME by-catch), please complete only **Cruise** and **Sample** records, and omit the **Data** record.

Tables 1-4 below show the structure of each of the data records and provide suggestions on how to report separate fields in them.

Note: in the ‘Obligation’ column, M stands for mandatory, O stands for optional and C stands for conditional (i.e. conditional on information being provided in the previous fields)

In case of questions about data reporting format, vocabulary codes, etc., please contact accessions@ices.dk

Table 1. File Information (Mandatory record, created automatically from the data submission template)

FIELD NAME	FIELD TYPE	OBLIGATION	DESCRIPTION	GUIDANCE
RecordType	Text	M	Record Type code 'FI'	The field will be autofilled during data export to xml.
Country	Text	M	Survey country 2-alpha ISO code	The field will be autofilled from the Cruise record
EntryDateTime	Date	M	Data entry date time	The field will be autofilled during data export to xml.

Table 2. VME Cruise (Mandatory record)

FIELD NAME	FIELD TYPE	OBLIGATION	DESCRIPTION	GUIDANCE
RecordType	Text	M	Record Type code 'VC'	The field will be autofilled during data export to xml.
SurveyName	Text	M	Survey name	Survey (campaign) name and acronym.
Country	Text	M	Survey country 2-alpha ISO code	Use codes from the list: http://vocab.ices.dk/?ref=337
VesselType	Text	M	Vessel type from which the sample was collected.	Choose from the list: http://vocab.ices.dk/?ref=57
Ship	Text	O	Code of vessel on which sample was collected (for ROV or AUV, provide reference to the parent vessel).	Field is strongly recommended for reporting. Report vessel code from the list at http://vocab.ices.dk/?ref=315
CruiseID	Text	M	Local Cruise ID	To be provided by the data supplier – cruise reference code. If CSR exists, report the CSR cruise reference for traceability http://seadata.bsh.de/csr/retrieve/sdn2_index.html
StartDate	Date	M	Cruise start date	All dates must be supplied as text in the format YYYY-MM-DD (ISO date format).
EndDate	Date	M	Cruise end date	All dates must be supplied as text in the format YYYY-MM-DD (ISO date format).
PlaceName	Text	O	Name of place in reference to the data collection.	Free text; e.g. "Rockall Bank"
ShipPositionPrecision	Integer	O	An estimate of the precision of the lat/long provided by the spatial positioning systems of the vessel/ROV	Calculated or estimated precision of the vessel/ROV position in metres. Take into account whether position is determined from the ship position or from ROV. For example when two separate spatial reference systems are in use such as vessel position GPS (+/- 10m) and ROV USBL (+/- 20m) position, the precision of both the vessel and ROV systems should be added together to give a precision of +/- 30m.
ResponsibleOrganisation	Text	M	EDMO code of the organization responsible for the data.	Please select the organization from the list at http://vocab.ices.dk/?ref=EDMO
ResponsibleOrganisationRole	Text	M	Role of the responsible organization for the data.	Choose from the list: http://vocab.ices.dk/?ref=1434
ScientistInCharge	Text	O	Name of SIC (Scientist in Charge) or PI (Principle Investigator).	Free text. Name of the scientist with overall responsibility for data collection and achieving science objectives during survey.
FundingProject	Text	O	Project name	Free text. Name of the funding project
PointOfContact	Text	M	Name of the point of contact for queries about the	Free text. Who should be contacted about the data

ContactEmail	Text	M	data. E-mail address for the point of contact about the data.	Valid e-mail address
Reference	Text	O	A reference to the data source.	Complete citation for the data source e.g. "Mortensen <i>et al.</i> , 2006"
FileName	Text	O	Name of the excel or shape file submitted.	Link to the related metadata files, if available. The files should be sent to accessions@ices.dk
DataAccess	Text	M	Data access constraints.	e.g. "public" or "restricted". Please use "public" if you are content with the data being downloaded in its raw form from the ICES data portal. Alternatively, the data will not be downloadable if you select "restricted". Subset of the controlled vocabulary: http://vocab.ices.dk/?ref=1435

Table 3. VME Sample (Mandatory record)

FIELD NAME	FIELD TYPE	OBLIGATION	DESCRIPTION	GUIDANCE
RecordType	Text	M	Record Type code 'VS'	The field will be autofilled during data export to xml.
CruiseID	Text	M	Local Cruise ID	To be provided by the data supplier – cruise reference code. If CSR exists, report the CSR cruise reference
StationID	Text	O	ID of the survey station, if known.	May be numeric, text or a combination of numbers and text.
SampleKey	Text	M	Key for each discernible sampling/analysis event.	A unique key for each sampling event like: <ul style="list-style-type: none"> • A single trawl • A single long line set • A single photograph from a photographic tow • A segment of analysed video from a video tow • A video tow, if video is unanalyzed • A sediment grab or core. To be created by data supplier. May be numeric, text or a combination of numbers and text, which may relate back to original data management convention for traceability.
ObservationDate	Date	C	Date the species or habitat was recorded.	Report the date of observation, if available. All dates must be supplied as text in the format YYYY-MM-DD (ISO date format).
ObservationDateType	Text	M	Precision of the reported ObservationDate	A one or two character code that identifies the types of dates used in ObservationDate. Explicitly stating the code avoids any ambiguity, which might lead to subtly different interpretations. Choose from the list: http://vocab.ices.dk/?ref=1429
DataCollectionMethod	Text	M	Reference to the data collection method used.	Specify the data collection method for the sample based on the

vocabulary list. **N.B. If several samples were taken on site by the variety of methods, report them separately with different sample keys.**

Choose from:

- Multibeam echo sounder (unknown platform)
- Multibeam echo sounder (vessel mounted)
- Multibeam echo sounder (AUV mounted)
- Multibeam echo sounder (ROV mounted)
- Single beam echo sounder
- Side scan sonar (Unknown platform)
- Side scan sonar (AUV mounted)
- Sub-bottom profiler
- CTD
- Grab (please specify type from link below)
- Core (please specify type from link below)
- Trawl (please specify type from link below)
- Dredge (please specify type from link below)
- Longline
- Seabed imagery - towed camera system
- Seabed imagery - drop camera system
- Seabed imagery – ROV system

This list is a subset of the ICES Sampler Type vocabulary. If your survey method is not listed, please select from: <http://vocab.ices.dk/?ref=152>

StartLatitude	Double	C	Start latitude of the record, if line (if point, use MidLatitude and leave this blank).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
StartLongitude	Double	C	Start longitude of the record, if line (if point, use MidLongitude and leave this blank).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
MiddleLatitude	Double	M	Midpoint latitude of the record if line (if point, use this field for position).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
MiddleLongitude	Double	M	Midpoint longitude of the record if line (if point, use this field for position).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
EndLatitude	Double	C	End latitude of the record (if point, use MidLatitude and leave this blank).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
EndLongitude	Double	C	End longitude of the record (if point, use MidLongitude and leave this blank).	Use World Geodetic System 1984 (WGS84) geographic coordinate system, and decimal degrees.
GeometryType	Text	M	Sampling geometry type	Point or line - subset of the controlled vocabulary http://vocab.ices.dk/?ref=1430
SamplePositionAccuracy	Integer	O	Accuracy of spatial position of record in metres.	For example, trawl by-catch of coral along a 5km trawl track would have a RecordPositionAccuracy of 5000 metres whereas an observation of a cold-water coral reef observed on an

				ROV/drop-camera frame transect may have a RecordPositionAccuracy of 20 metres (this being the accuracy of the USBL positioning being used on the ROV/drop-frame)
				Value in metres; e.g. "10" means the given position of the record is accurate to ± 10 metres.
DepthUpper	Double	O	Upper depth in metres	For transect data (video or trawl) indicate the shallowest depth in metres. e.g. 110
DepthLower	Double	O	Lower depth in metres	For transect data (video or trawl) indicate the deepest depth in metres. e.g. 150
DepthShoot	Double	O	Depth at the beginning of the tow in metres	For trawling data, report depth in metres at the beginning of the tow
DepthHaul	Double	O	Depth at the end of the tow in metres	For trawling data, report depth in metres at the end of the tow

Table 4. VME Data Record (Optional record – If you wish to report ‘absence’ data (for example if you are reporting a research trawl survey where there was no VME by-catch), this record should be left empty)

FIELD NAME	FIELD TYPE	OBLIGATION	DESCRIPTION	GUIDANCE
RecordType	Text	M	Record Type code 'VD'	The field will be autofilled during data export to xml.
SampleKey	Text	M	Key for each discernible sampling/analysis event.	A unique key for each sampling event like: <ul style="list-style-type: none"> • A single trawl • A single long line set • A single photograph from a photographic tow • A segment of analysed video from a video tow • A video tow, if video is unanalyzed • A sediment grab or core. To be created by data supplier. May be numeric, text or a combination of numbers and text, which may relate back to original data management convention for traceability.
RecordKey	Text	M	Unique key for each data record (row) within a submitted dataset.	To be created by data supplier. May be numeric, text or a combination of numbers and text, which may relate back to original data management convention for traceability. If no original data management key exists, this can be added as a sequential numeric list (1,2,3, etc.)
VME_Indicator	Text	C	Grouping of species/habitats used by WGDEC.	A VME indicator must be chosen if no <i>bona fide</i> VME habitat type is known to occur, e.g. a sponge from trawl by-catch. This field can also be used to record species records as additional detail for records of VME habitats. To do this, the VME

indicator record(s) should be on a separate line from the VME habitat record, and should have the same VMEKey. VME indicators should match the list shown below.

Controlled vocabulary <http://vocab.ices.dk/?ref=1409>

Choose from:

- Black coral
- Cup coral
- Gorgonian
- Stylasterids
- Sea-pen
- Soft coral
- Sponge
- Stony coral
- Anemones
- Xenophyophores
- Stalked crinoids
- Chemosynthetic species (seeps and vents)

VME_IndicatorSubtype	Text	O	Indicator subtype code	These are additional VME Indicator types used by NAFO Working Groups, and are not represented in VME Indicator field above. Controlled vocabulary: http://vocab.ices.dk/?ref=1492
VME_HabitatType	Text	C	VME habitat types used by WGDEC.	<p>A VME habitat type should be chosen if the record occurs within a <i>bona fide</i> VME habitat e.g. From an ROV transect surveying a cold water coral reef.</p> <p>All datapoints representing the known extent of a VME habitat type along a transect or tow should be recorded within one line of the database (e.g. a video tow split into sections of cold-water coral reef; bathyal rock; cold-water coral reef, would represent two VME habitat records of cold-water coral reef in the database).</p> <p>Controlled vocabulary http://vocab.ices.dk/?ref=1410</p> <p>Choose from:</p> <ul style="list-style-type: none"> • Cold-water coral reef • Coral garden • Deep-sea sponge aggregations • Sea-pen fields • Anemone aggregations • Mud and sand emergent fauna • Bryozoan patches • Hydrothermal vents/fields • Cold seeps
VME_HabitatSubtype	Text	O	VME sub habitat types used by WGDEC.	If no VME_habitat_type is filled in, this field should be left blank. If VME_habitat_type is filled in, this field is optional.

Controlled vocabulary <http://vocab.ices.dk/?ref=1411>

Choose from:

- *Lophelia pertusa/Madrepora oculata* reef
- *Solenosmilia variabilis* reef
- Hard-bottom coral garden
 - Note that these records can be further classified as one of the following:*
 - Hard-bottom coral garden: Hard-bottom gorgonian and black coral gardens
 - Hard-bottom coral garden: Colonial scleractinians on rocky outcrops
 - Hard-bottom coral garden: Non-reefal scleractinian aggregations
 - Hard-bottom coral garden: Stylasterid corals on hard substrata
- Soft-bottom coral garden
 - Note that these records can be further classified as one of the following:*
 - Soft-bottom coral garden: Soft-bottom gorgonian and black coral gardens
 - Soft-bottom coral garden: Cup-coral fields
 - Soft-bottom coral garden: Cauliflower Coral Fields
- Soft-bottom sponge aggregations
- Hard-bottom sponge aggregations
- Soft-bottom anemone aggregations
- Hard-bottom anemone aggregations

VMEKey	Double	C	Key to identify VME habitat and VME indicator records belonging to a single habitat patch.	Sequential number to identify records that come from the same block of habitat, e.g. Consecutive points on an ROV or video transect that are on the same coral reef. This is mandatory for any records of VME habitats. If each record comes from a separate habitat patch, or if this is not known, use a different number for each record. Also optional for records of VME indicator species, where it can be used to show that these come from a patch of VME habitat. See guidance on the VME_indicator field for more details.
GeneralTaxonDescriptor	Text	O	Most detailed name of taxon (according to HighestTaxonomicResolution).	e.g. Porifera, <i>Lophelia pertusa</i> , soft coral
TaxonLatinName	Text	C	Latin name of the most detailed taxon identified.	Report the taxon Latin name whenever possible. If reported in the template, the AphiaID would be matched automatically. In case of ambiguities in the Latin name, data submitter should specify the AphiaID for successful data submission.

AphiaID	Integer	C	WoRMS Species reference code	We strongly recommend reporting of valid species AphiaIDs as in http://www.marinespecies.org/ . In the template either AphiaID or TaxonLatinName should be reported (same field). If the field is left blank, AphiaID=2 (Animalia) would be automatically assigned.
DeadAlive	Text	O	Indication of whether most of sample was dead or alive.	Choose either "Dead" or "Alive". Subset of the controlled vocabulary: http://vocab.ices.dk/?ref=64
Number	Double	O	Number of individuals associated with the record.	If not known, use "Null".
Weight	Double	O	Mass of indicator, in kg, associated with the record.	Weight in kilograms. This is likely to be relevant to by-catch/ data. If not known or not relevant, use "Null". Do not include if the record is a VME habitat type.
Density	Double	O	Number of individuals per square metre (m ²).	If not known or not relevant, use "Null".
PercentCover	Double	O	Percentage cover of indicator (relevant to underwater imagery data, e.g. ROV or drop down video).	If not known or not relevant, use "Null".
SACFOR	Text	O	Semi-quantitative abundance scale (relevant to underwater imagery data, e.g. ROV or drop down video).	Controlled vocabulary http://vocab.ices.dk/?ref=1491 . Scale description: http://jncc.defra.gov.uk/page-2684 If not known or not relevant, use "Null".
TaxonDeterminer	Text	O	Name of organization that identified the GeneralTaxonDescriptor.	Please select the organization from the list at http://vocab.ices.dk/?ref=EDMO
TaxonDeterminationDate	Date	O	Date of identification of the GeneralTaxonDescriptor.	All dates must be supplied as text in the format YYYY-MM-DD (ISO date format).
Comments	Text	O	Any other relevant comments or information.	e.g. "sample was 60% live coral and 40% dead"

3. General submission instructions

Each Contracting Party should submit their data to ICES. **Data submission deadline is the 10th of February 2017.**

Step 1: The Excel data submission template attached to this data call or downloaded via <http://vme.ices.dk/> should be filled out with the new data. Some fields have specific 'fixed' values that need to be entered. These values are contained in the sheet titled 'Vocabularies' included with the Excel data entry sheets and should be chosen from the drop-down lists.

Data Access

Data access can be specified by the submitters directly in the submission form as:

Public Data are sourced outside the terms of the ICES data policy and are publically accessible

Restricted Data, in their reported form, are not to be made publically accessible. All aggregated data products are, by default, publically available, including those derived from restricted data

Please note that fields marked in red are mandatory for reporting and cannot be left blank, fields marked orange are conditional (i.e. if they meet a certain condition they must be filled in), while fields in green are optional for reporting.

The sheets [VME_Cruise], and [VME_Sample] are mandatory for reporting, whereas the worksheet [VME_Data_Record] is optional. The VME_Data_Record worksheet allows input of data on VME indicator species or the VME habitats. If you wish to report 'absence' data (for example if you are reporting a research trawl survey where there was no VME by-catch), then this VME_Data_Record worksheet should not be completed.

Step 2: Once the data sheets have been filled out, the <Export data to XML> button on the 'Export_data' worksheet should be pressed to produce the xml data file. (see Figure 1)

Note: the Excel file contains macros that are used for transforming the worksheets to the XML data format for uploading.

Generally, you should only enable macros from a trusted source, please ensure you download the Excel file from ICES directly to be sure of a clean, virus free file.

Vulnerable Marine Ecosystems

1) COPY YOUR DATA INTO THE EXCEL FILE tabs:

There are 3 tabs; VME_Sample_data_Record should always be filled in.

VME_Cruise
VME_Sample
VME_Data_Record

This worksheet should be filled in if the cruises are new

This worksheet should always be filled in

This worksheet is optional

All red outlined cells are mandatory and should be checked / filled in

All green outlined cells are optional

All orange cells are conditional, means that they have to be filled if some condition is met

2) Use the button here to export the completed Excel data template to XML.

Export data to XML

5) The vocabularies are included as a worksheet tab. These are the valid codes for use in the drop down boxes in the spreadsheet fields. The vocabularies on the vocabulary worksheet will also be available on the ICES Vocab <http://vocab.ices.dk>

Figure 1 – Excel sheet with export button for XML

Step 3: The xml file will then have to be uploaded to the ICES website (<http://vme.ices.dk/>).

Login

A login is required in order to upload and manage data. Your ICES SharePoint login can be used. If you do not have an ICES login please contact accessions@ices.dk

Once received, the data will be subjected to quality control to ensure the data standards have been met. During data validation, data will be checked for correct use of vocabulary codes and data types. This quality control (QC) will ensure that the data standards have been met. A report of QC issues will be generated and made available to the data submitter online. Data not complying with the correct format will not be accepted for uploading until the errors are corrected. As such, it is important to carefully review the VME reporting format to ensure you are inputting the correct information. In case you have questions or problems with submitting your data, please don't hesitate to contact ICES (accessions@ices.dk) for assistance.