



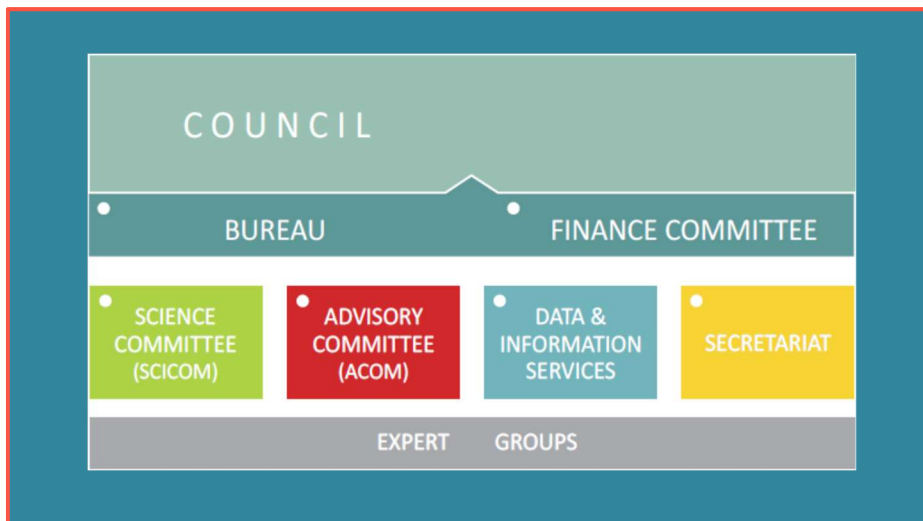
ICES – Web services & Data services

Carlos Pinto, ICES Data Systems Analyst
FixO3 Network – Workshop
16th April 2015

Outline of the presentation

- ICES in a nutshell
 - What is the our data strategy
 - How can we professionalise knowledge
 - ICES Data Governance
 - Where is the data in ICES
 - ICES Data policy
 - How to access/use data from ICES
-

Marine Science Cooperation
since 1902;
20 Member Countries;
Intergovernmental Organization;
Legal basis, 1964 Convention

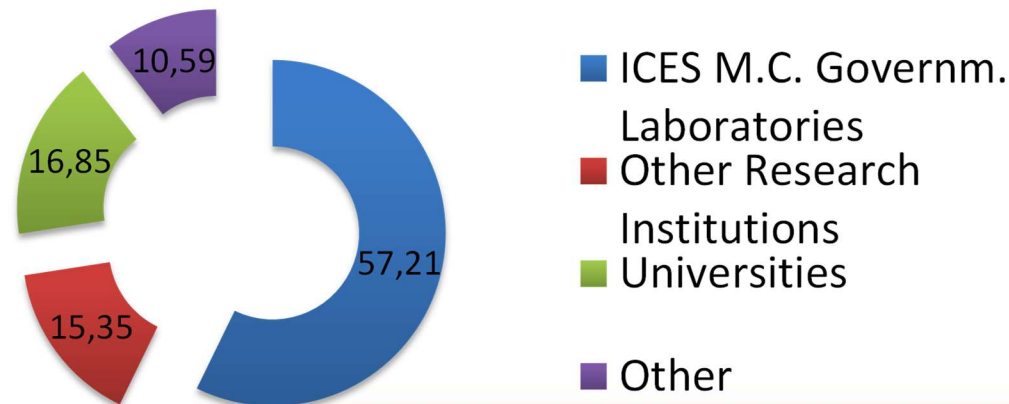


ICES in a Nutshell

360 Institutes; A network of 4,000 scientists;
1,600 scientists participating in activities annually;
>100 Expert Groups that address the many diverse issues of marine ecosystems and ocean sustainability



% Scientists in Science EG (2012)



ICES in a Nutshell

ICES strategy on data handling/databases



Data supply

Advice outputs

ICES strategy on data handling/databases



Professionalising knowledge and data products



Reality –
it works!!

Professionalising knowledge and data products

Moving from an semi-informal arrangement where:



- Operators are not always clear or known
- Methodologies are sometimes opaque or not known
- Timetable is elastic
- Services/products are ad hoc or not clearly outlined
- Access rights are shaky

Professionalising knowledge and data products

ICES plans for this advice to be operational, by which it means having a clearly defined business process that outlines:



- Roles/Responsibilities
- Operators
- Methodologies
- Timetables
- agreed deliveries services/products
- Access rights
- Etc.

Data services



Source: dilbert.com

Data governance - Vocabularies

ICES Reference Codes

<http://vocab.ices.dk/>

ICES Reference Codes
RECO Vocabulary v2.0

Select a data theme



Search by keyword

Leave blank to see all ..



Release Date: Feb 1 2015 3:00AM

> Showing Environmental Theme

Tools & Resources

Latest Codes [100]

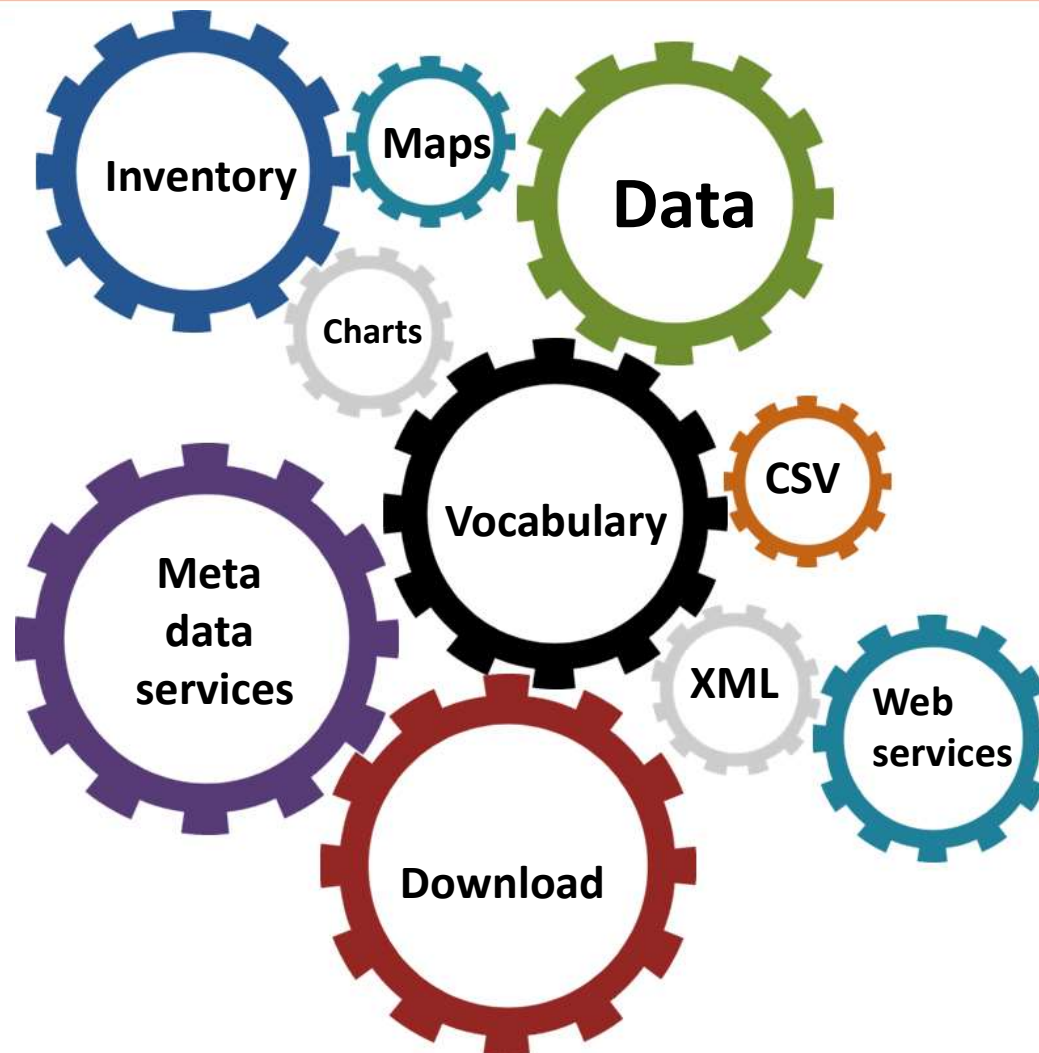
Code Types [80]

A list of all Code Types available in the selected Theme(s). (Click a CodeType link to view the list of Codes).



CodeType	Description	VerX	VerY	Created	Modified
ACORG	Accrediting organisation	1	1	2012-09-11	2014-10-26
AGDET	Age Determination	1	0	2006-10-23	2006-12-22
ASTSA	Animal state at time of sampling	1	0	2006-10-23	2006-12-22
BASIS	Basis of determination	1	0	2006-10-23	2006-12-22
BDMET	Biological Sampling Method	1	0	2006-10-23	2006-12-22
Biological Effect Techniques	Biological Effect Techniques	1	9	2006-10-23	2013-04-11
CAS® Numbers	CAS Registry Number® is a Registered Trademark of the American	1	58	2006-10-23	2014-09-30

Data Governance - Services





996 282 measurements
ICES Historical Plankton



318 319 measurements
ICES Historical Plankton



1 149 608 measurements
Stomach Content data



5 638 877 measurements
Fish trawl survey



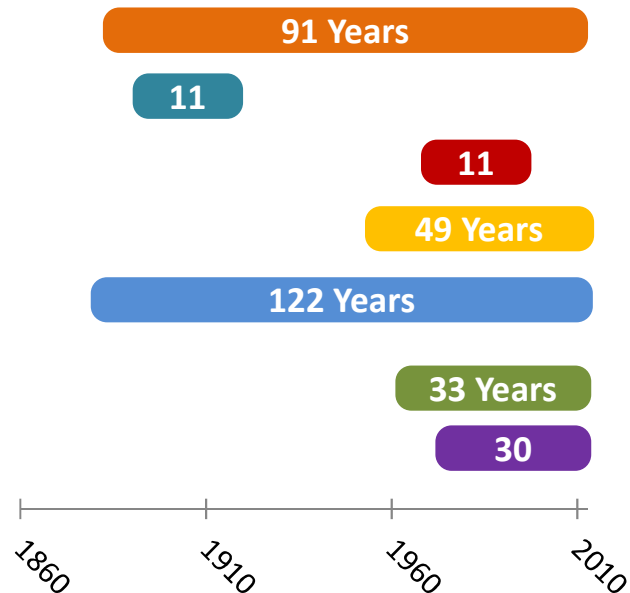
245 470 249 measurements
Oceanographic



9 547 077 measurements
Cont. and bio. effects



240 210 measurements
Biological community



Overview of the data

Where is the data in ICES

Enviromental Data Portal (DOME)

DATA PORTALS

> ICES data portal

THEMATIC

- > All data
- > DATRAS
- > DOME (Marine Environment)

- > Eggs and larvae
- > Fish stomach
- > Historical plankton
- > Oceanography

LOGIN REQUIRED

- > InterCatch
- > Regional DataBase
- FishFrame

DOME (Marine Environment)

Data portal used by OSPAR, HELCOM, AMAP and Expert Groups in the management of chemical and biological data for regional marine assessments

About the data

A large portion of the data held are monitoring data submitted for the OSPAR CEMP and HELCOM COMBINE monitoring programmes and therefore follow specific monitoring programme guidelines. While these programmes have key components which are monitored yearly at defined stations, components which are under development are also included. The result is a broad spectrum of chemical parameters from metals, PAHs, brominated flame retardants, TBT and TBT effects in sediment and biota, to histopathology, ocean acidification and benthos and plankton data.

DOME also includes methods and quality assurance data such as the reporting of uncertainty on a single component basis to



BROWSE

Map of stations

Files > View Map of Spots



[VIEW DATA OUTPUT](#)

<http://dome.ices.dk>

Where is the data in ICES

Oceanography Data Portal (OCEAN)

OCEANOGRAPHY

CTD and Bottle data

 Print it  Send to    Share it

The ICES Oceanographic database currently contains 1271172 stations and of these, 278630 are high resolution CTD stations.

Last Updated: 2015-04-09

Period	Area	Parameter
From <input type="text" value="1915-04-15"/> ?	<div><div>90</div><div>-180<div>Map</div>180</div><div>-90</div><div>?</div></div>	<div>CTD</div> <div>Temperature/Salinity</div> <div>Oxygen</div> <div>Phosphate</div> <div>Total.Phosphorus</div> <div>?</div>
To <input type="text" value="2015-04-15"/> ?		
Other		Submit
Country <input type="text" value="Any"/>		<input type="button" value="Reset"/> <input type="button" value="Submit"/>
Ship <input type="text" value="Any"/>		
Search results		
Select period, area, parameter(s), country and ship and click 'Submit'		
Statistics		

CTD stations per year in database



Profile stations per year in database

<http://ocean.ices.dk>

Where is the data in ICES

Database of Trawl surveys (DATRAS)

DATRAS

Download

[If you have problems with downloading, click here](#)

Data products Exchange Data ☒ HH ☒ HL ☒ CA	Survey BITS	Quarter(s) ☐ All ☐ 1 ☐ 2 ☐ 3 ☐ 4
Year(s) <i>Only preliminary data for the latest year and quarter</i>		
Ship(s)		

Submit

 Print it  Send to    Share it

DOWNLOAD DATA PRODUCTS

UPLOAD SURVEY DATA

WEBSERVICES

DOCUMENTS

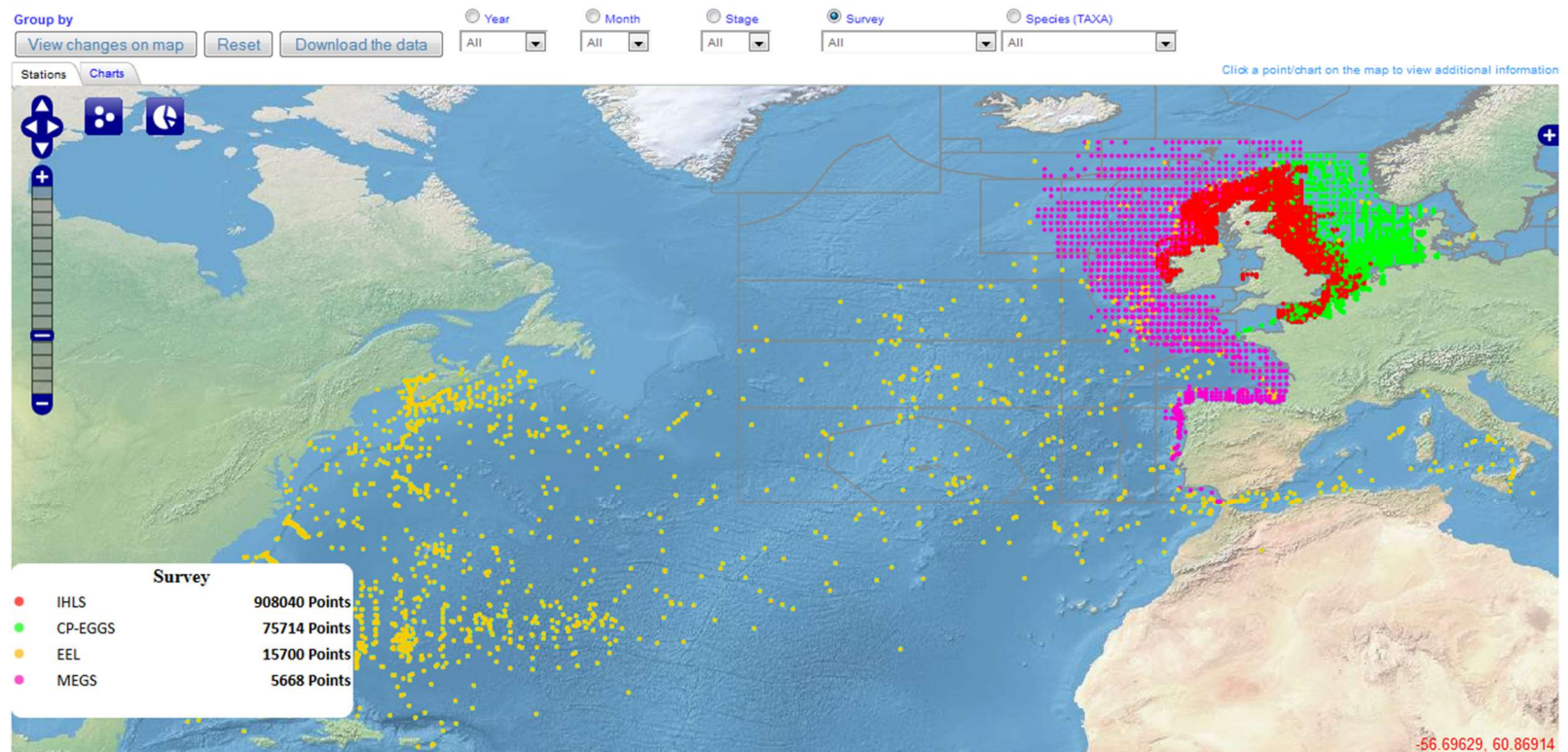
NEWS AND UPDATES

CONTACT US

<http://datras.ices.dk>

Where is the data in ICES

Eggs and Larvae data portal



<http://eggsandlarvae.ices.dk>

Where is the data in ICES

Stomach content data portal

FISH STOMACH DATA

About this dataset

While ICES has made every effort to ensure that the dataset presented here is the most complete set of information, it should be noted that there are a number of versions of this dataset held by institutions and individuals which may differ from this set. To read about the provenance of this time series, please [click here](#)

Stomach dataset summary			
Year	Country	Predator	Number of Stomachs
All	All	Melanogrammus aeglefinus	
1981	Denmark	Melanogrammus aeglefinus	21
1981	United Kingdom	Melanogrammus aeglefinus	18
1982	The Netherlands	Melanogrammus aeglefinus	11
1989	The Netherlands	Melanogrammus aeglefinus	1
1991	Denmark	Melanogrammus aeglefinus	343
1991	Germany	Melanogrammus aeglefinus	75
1991	Norway	Melanogrammus aeglefinus	756
1991	The Netherlands	Melanogrammus aeglefinus	972
1991	United Kingdom	Melanogrammus aeglefinus	2306

Proceed to download the data

<http://www.ices.dk/marine-data/data-portals/Pages/Fish-stomach.aspx>

Where is the data in ICES

Historical Plankton dataset

ICES Historical Plankton Dataset - Securing and making the data available



Where is the data in ICES

Stock Assessment Graphs

TOOLS

> Submission status

> Data calls

> Data formats

> Code lookup

DATA SCREENING

> Environment

> Fisheries

> Oceanographic calculator

> Platform code management

> Software applications

> Station dictionary

> Stock assessment graphs

> Unit conversions

> Web Services

Stock assessment graphs

The ICES ecosystem advice is based on assessment results that are presented in stock assessment standard graphs and data tables. Data and plots are available in ICES Stock assessment Database

About

The ICES Stock Assessment Database data are available for the analytically assessed ICES stocks from 2014 onwards. Plots and data from previous assessments will be made available when the data and settings have been quality controlled.

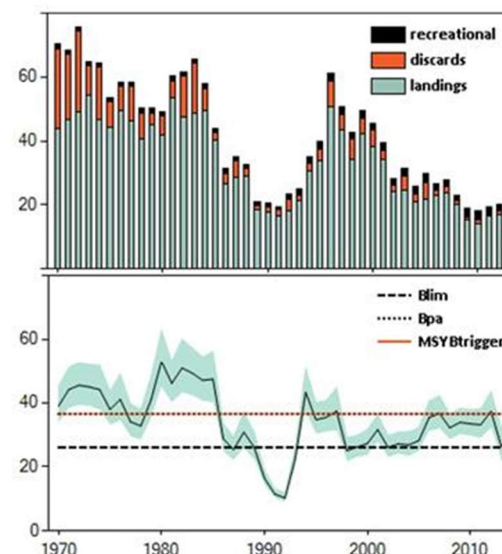
Usage and Citation

Data from published advice can be downloaded, please refer to the ICES Data Policy for full conditions and guidance on citation. When publishing results from the database the minimum citation should include "ICES Stock Assessment Database, YEAR/MONTH. ICES, Copenhagen "

ICES Advice Groups

ICES experts can upload data, make and edit graphs in preparation for new ICES advice (login required).

Print it Send to f t in Share it

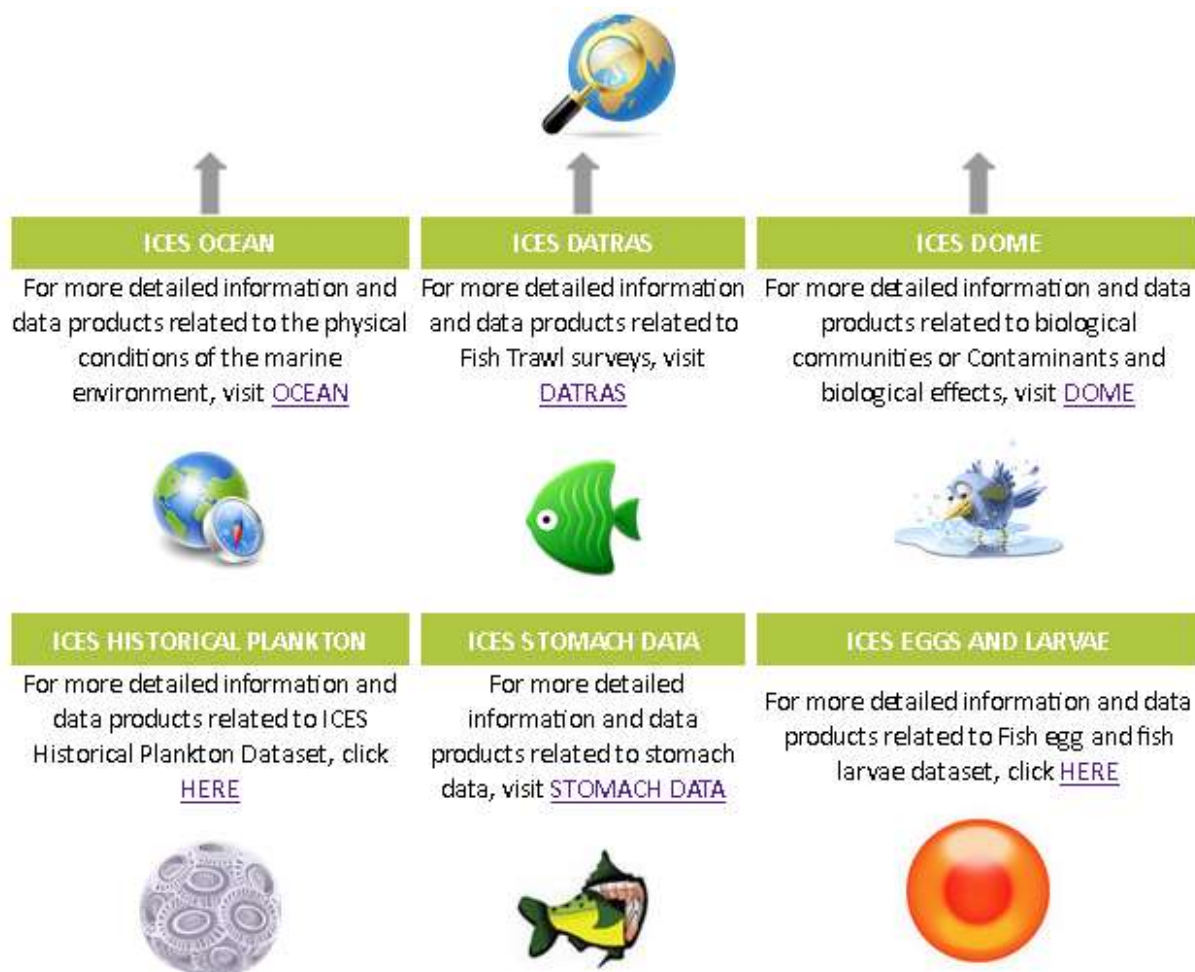


VIEW AND DOWNLOAD GRAPHS AND DATA

<http://ices.dk/marine-data/tools/Pages/stock-assessment-graphs.aspx>

Too many websites?

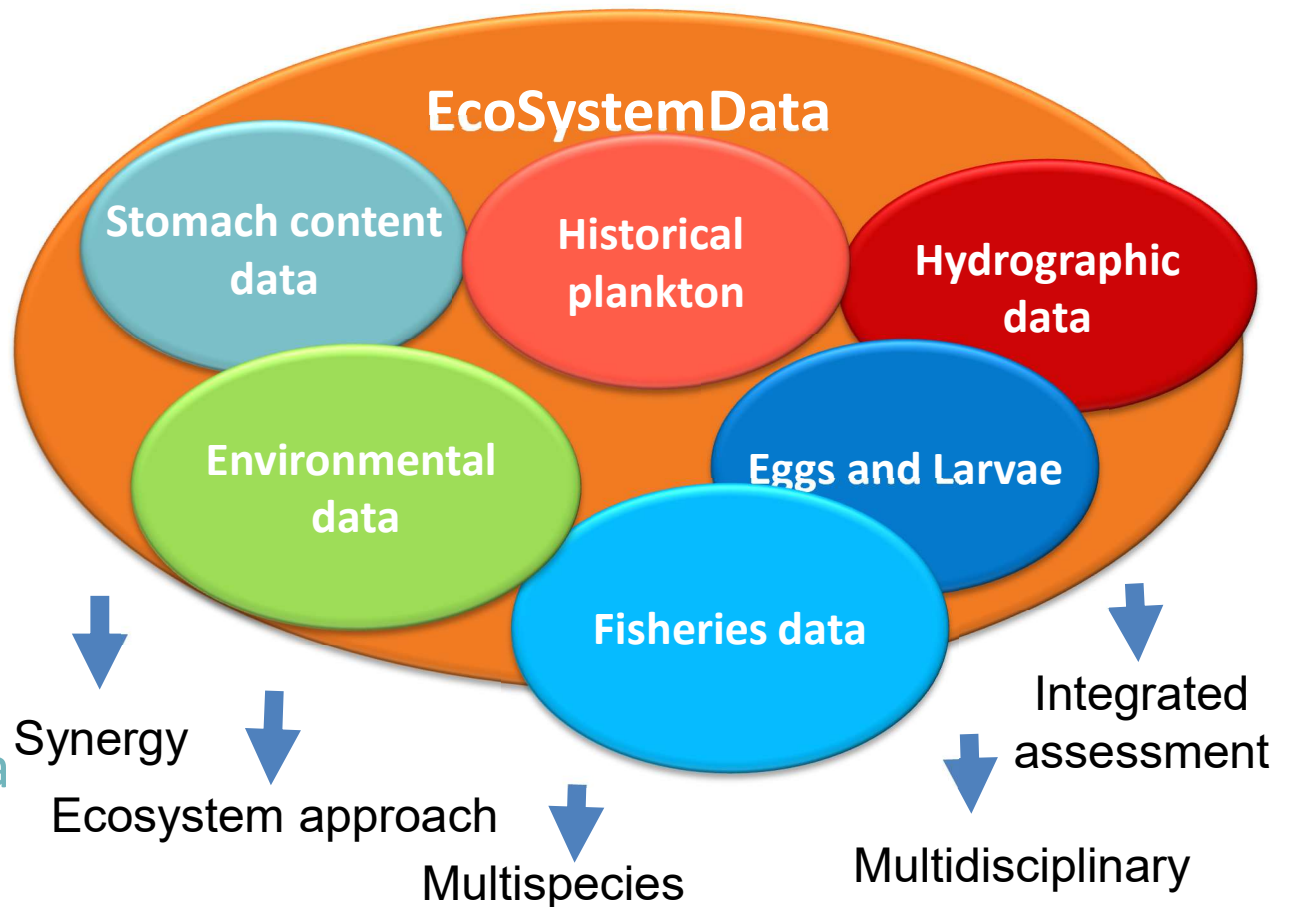
ICES Data Portal has integrated all datasets



ICES Data Portal

Why gathering all ICES Data in one Portal

- integrated repository of data
- international collection of different kinds of marine related data
- integration of distinct formats previously held in disjointed data structures and systems



ICES Data policy

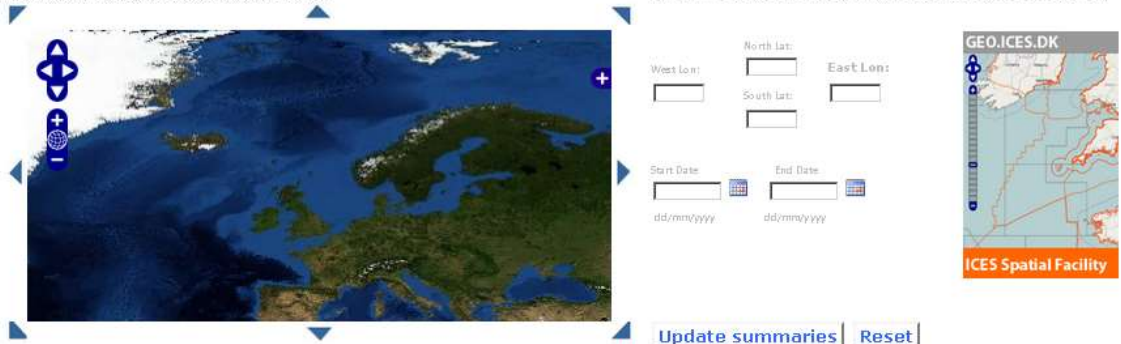
From the ICES data portal all data is free,
accessible and downloadable



How to have an overview of all the data?

Inventory of the data

Hold down shift key and left click mouse to draw a rectangle



Spatial range (decimal degrees, west and south are negative)

West Lon: East Lon:
 North Lat: South Lat:

Start Date: End Date:
 dd/mm/yyyy dd/mm/yyyy

[Update summaries](#) [Reset](#)

Filter for: [Search](#) [Reset](#)

Dataset set (7)	Data Type (35)	Matrix (51)	Parameter group (35)	Parameter (744)	Kingdom (7)	Phylum (58)
Class (114)	Order (304)	Family (877)	Genus (1434)	Species (5179)	ICES Areas (65)	OSPAR Regions (5)
HELCOM Sub basins (14)						

Metadata	View layer	per Parameter	per Species	per Matrix	Last Updated	DataSet	Measurements	First year	Last year	Years with data
					12/03/2015	Biological community	832 193	1979	2013	36
					12/03/2015	Contaminants and biological effects	11 641 967	1977	2014	38
					30/06/2014	Eggs And Larvae	1 010 599	1862	2013	93
					16/03/2011	Fish predation (stomach contents)	1 149 608	1980	1991	12
					02/04/2015	Fish trawl survey	6 458 009	1965	2015	51
					21/02/2012	ICES Historical Plankton	318 319	1902	1912	11
					13/03/2015	Oceanographic	283 082 096	1877	2015	127

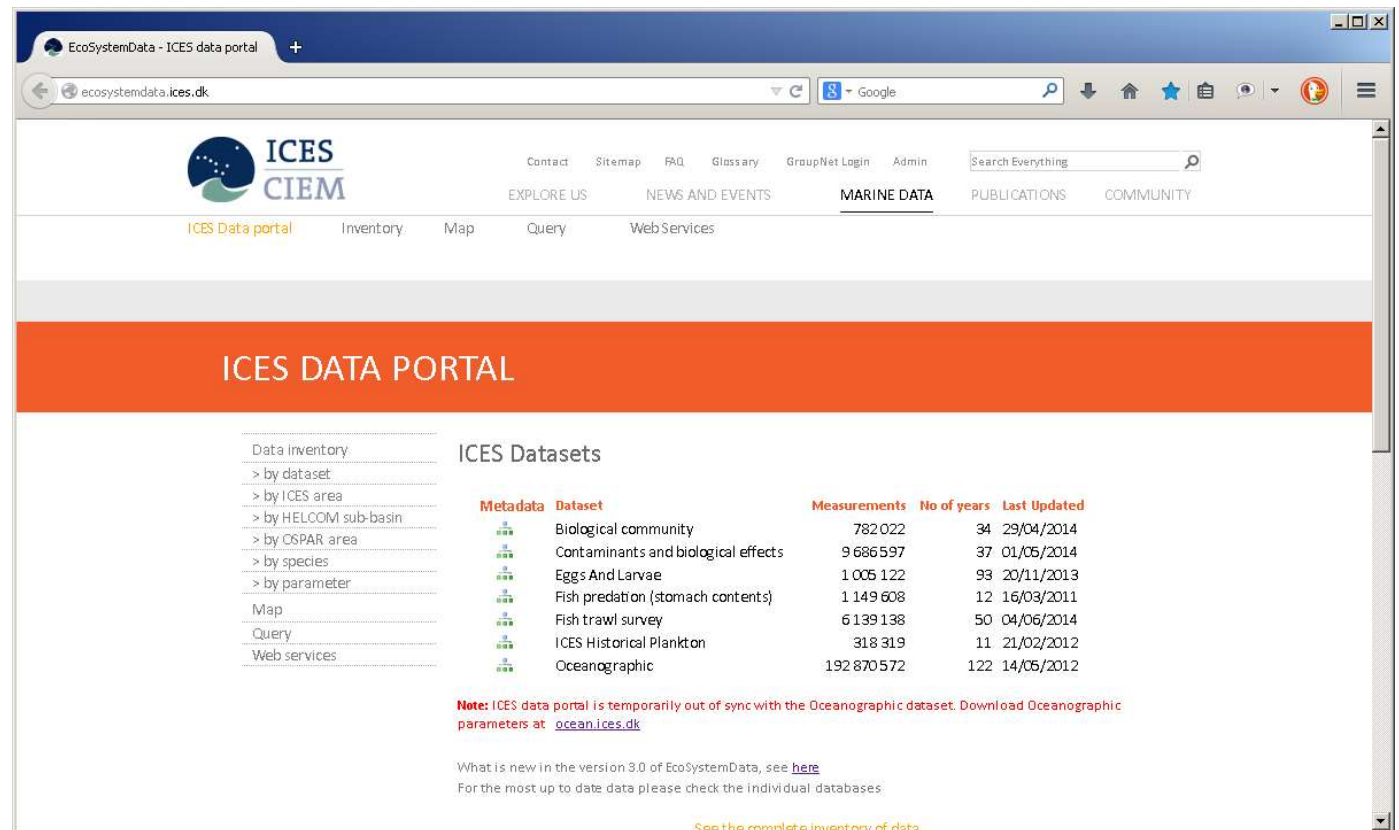
How to access/use ICES data?

Data is available in all portals and integrated in the ICES main data portal (<http://ecosystemdata.ices.dk>)

1) Download

2) Web services

3) Mapping



The screenshot shows the ICES Data Portal website. The header includes the ICES CIEM logo, navigation links (Contact, Sitemap, FAQ, Glossary, GroupNet Login, Admin), a search bar, and a menu with 'EXPLORE US', 'NEWS AND EVENTS', 'MARINE DATA', 'PUBLICATIONS', and 'COMMUNITY'. Below the header, there are links for 'ICES Data portal', 'Inventory', 'Map', 'Query', and 'Web Services'. The main content area is titled 'ICES DATA PORTAL' and features a sidebar with a 'Data inventory' menu and a table of 'ICES Datasets'. The table lists various datasets with their metadata, measurements, number of years, and last updated date. A note at the bottom states that the ICES data portal is temporarily out of sync with the Oceanographic dataset and provides a link to download parameters at ocean.ices.dk. A footer link points to the complete inventory of data.

Metadata	Dataset	Measurements	No of years	Last Updated
...	Biological community	782 022	34	29/04/2014
...	Contaminants and biological effects	9 686 597	37	01/05/2014
...	Eggs And Larvae	1 005 122	93	20/11/2013
...	Fish predation (stomach contents)	1 149 608	12	16/03/2011
...	Fish trawl survey	6 139 138	50	04/06/2014
...	ICES Historical Plankton	318 319	11	21/02/2012
...	Oceanographic	192 870 572	122	14/05/2012

Note: ICES data portal is temporarily out of sync with the Oceanographic dataset. Download Oceanographic parameters at ocean.ices.dk

What is new in the version 3.0 of EcoSystemData, see [here](#)
For the most up to date data please check the individual databases:

[See the complete inventory of data](#)

Datasets and maps have metadata and are organized

<http://geo.ices.dk>

ICES SPATIAL FACILITY

ICES Spatial Facility



[ICES Spatial Facility](#)

Username: Password:

Welcome to the **ICES Spatial Facility**, this facility contains a collection of metadata and spatial datasets relevant to the ICES community, featuring:

- **Free access** for search, viewing and download of spatial data, no need to login
- For download of data you must accept the [ICES data policy](#)
- Use the maps in map clients through [WMS](#)
- Upload of spatial data (shape file format) and metadata (ISO 19115/19139)
- For upload of data you need to login. [Contact us](#) to get an account, specifying who you

Working Group on Marine Habitat Mapping ([WGMHM](#)) maintains a collection of habitat map on

- [See a view](#) of the Marine Habitat Map outlines/metadata descriptions maintained by W
- For instructions on how to capture metadata in relation to Working Group on Marine H

[Search ICES Spatial Facility](#)



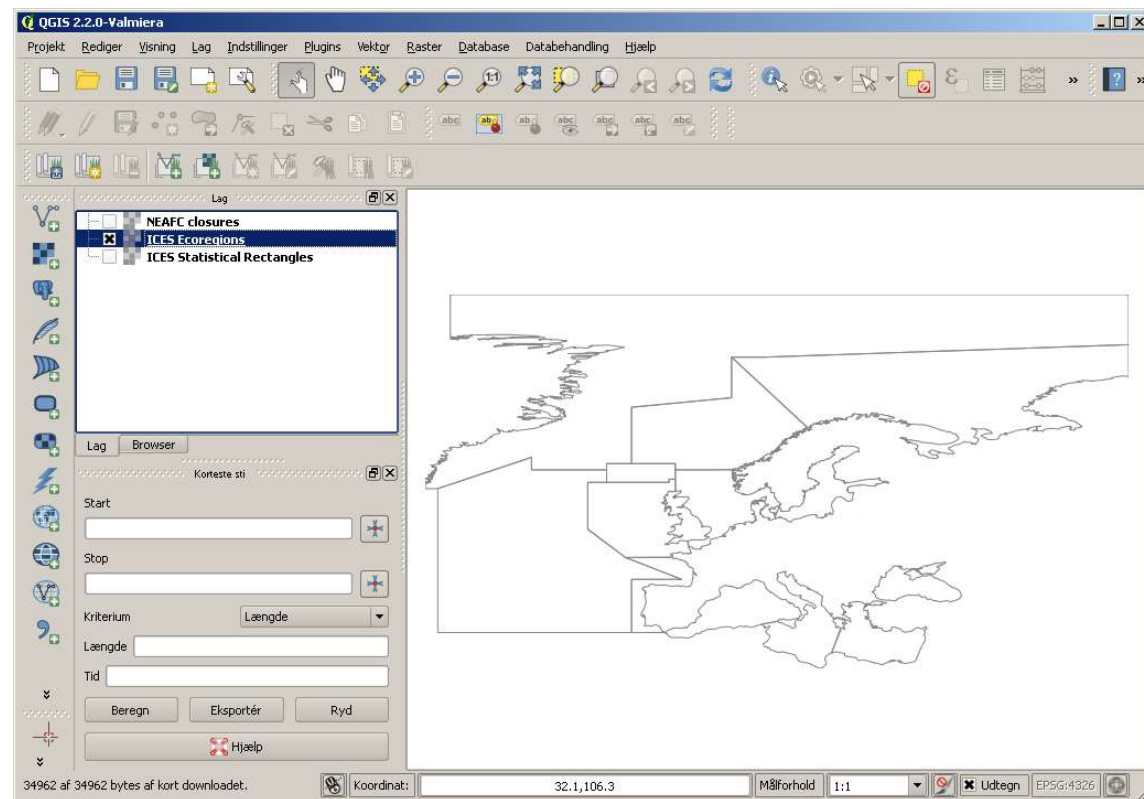
Popular maps...

ICES Statistical Areas	(View / Download)
ICES Statistical Rectangles	(View / Download)
ICES Ecoregions	(View / Download)
HELCOM sub-basins	(View / Download)
OSPAR Regions	(View / Download)



Web map services

Get the regions from the spatial facility server using WMS



EcoRegions get from ICES Spacial facility server

ICES - Web services are organized and documented

The screenshot shows the ICES Geoportal search results page. At the top, there is a navigation bar with links for Login, Register, Help, About, and Feedback. Below this is a secondary navigation bar with HOME, SEARCH, BROWSE, and LAUNCH MAP VIEWER. The main content area is titled 'Search' and features a search input field with a 'Search' button. Below the search field, there is a section for 'Records shown from: This Site' with a link to select a different site or configure search. To the left of the search results, there are 'Additional Options' including a 'Clear' button and a 'WHERE' section with radio buttons for 'Anywhere' (selected), 'Intersecting', and 'Fully within'. Below these options is a large empty map area with the ESRI logo in the bottom right corner. On the right side, the search results are displayed as a list of 10 items, each with a small icon and a title. The titles include 'Stock assessment graphs (getSpawningStockBiomassGraph(key))', 'Stock assessment graphs (getFishingMortalityGraph(key))', 'Stock assessment graphs (getListStocks(year))', 'Stock assessment graphs (getLandingsGraph(key))', 'Stock assessment graphs (getRecruitmentGraph(key))', 'ICES Oceanographic Web Service', 'ICES Platform Code Web Service', 'Stock Assessment Graphs (getRecruitmentHistoricalPerformance(key))', 'Stock assessment graphs (getFishMortality(key))', and 'Stock assessment graphs (getYSSB(key))'. Below the list, there is a section for 'See results through REST' with links for API, GEORSS, ATOM, HTML, FRAGMENT, KML, JSON, and CSV. At the bottom of the page, there is a footer with a disclaimer and privacy policy link.

Geoportal [Login](#) [Register](#) [Help](#) [About](#) [Feedback](#)

[HOME](#) [SEARCH](#) [BROWSE](#) [LAUNCH MAP VIEWER](#)

Search

Text: [Search](#)

[Records shown from: This Site](#)
Click here to select different site or configure search.

Additional Options
[Clear](#)

WHERE

☒ Anywhere ☐ Intersecting ☐ Fully within

Results 1-10 of 26 record(s) [1](#) [2](#) [3](#) [>](#) [Last](#)

☐ Expand results [Zoom To Results](#) [Zoom To Searched Area](#)

- [Stock assessment graphs \(getSpawningStockBiomassGraph\(key\)\)](#)
- [Stock assessment graphs \(getFishingMortalityGraph\(key\)\)](#)
- [Stock assessment graphs \(getListStocks\(year\)\)](#)
- [Stock assessment graphs \(getLandingsGraph\(key\)\)](#)
- [Stock assessment graphs \(getRecruitmentGraph\(key\)\)](#)
- [ICES Oceanographic Web Service](#)
- [ICES Platform Code Web Service](#)
- [Stock Assessment Graphs \(getRecruitmentHistoricalPerformance\(key\)\)](#)
- [Stock assessment graphs \(getFishMortality\(key\)\)](#)
- [Stock assessment graphs \(getYSSB\(key\)\)](#)

See results through REST
API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#) [JSON](#) [CSV](#)

This Geoportal was built using the Geoportal Server. Please read the [Disclaimer](#) and [Privacy](#) or [Contact Us](#).

<http://gis.ices.dk/geoportal/catalog/main/home.page>

Web services portal

Web services

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    <Sex>-9</Sex>
```

Using the web services to download data from DATRAS

Web services portal

Thank you for your attention



More information
www.ices.dk