

Inter-Island Environment Meeting

Sark



5 years of Seasearch

Charlotte Bolton
Angus Jackson

Thursday 28th Sept 2023

Supported by



Mr & Mrs Moerman



Le Vallon d'Or Holidays



The very early years (1970s-1990s)



NCC Outer Hebrides survey © Fran

Conservation

Coasts and seas of the
United Kingdom
Marine Nature Conservation Review:
Rationale and Methods



JOINT
NATURE
CONSERVATION
COMMITTEE

MNCR series

dock

The HLF / Chris Wood years (2003 - 2016)



© Sue Daly

Creation of “National Coordinator” post employed by the Marine Conservation Society

Steering group – SNCBs, diving organisations etc.

Formal partnerships with Wildlife Trusts for regional delivery

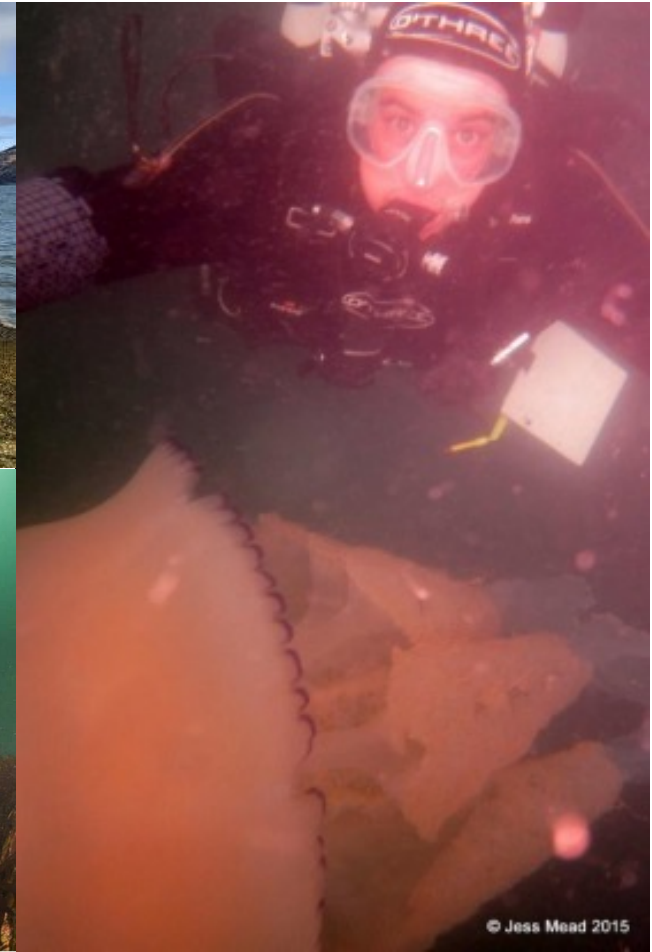
Network of regional coordinators throughout the British Isles

Training programme developed (Seasearch Observer / Surveyor)

2016 – a new National Coordinator



Volunteers – our lifeblood



Snorkels ahoy!



© Charlotte Bolton



Rob Spray and Dawn Watson - Seasearch East 2018

2020: 85 forms representing 9.12% of total

2021: 156 forms representing 9.36% of total

2022: 244 forms representing 18.63% of total



© Matt Slater



© Charlotte Bolton 2020



© Charlotte Bolton 2020

Changing distributions?



Comber, *Serranus cabrilla*

Guernsey © Charlotte Bolton

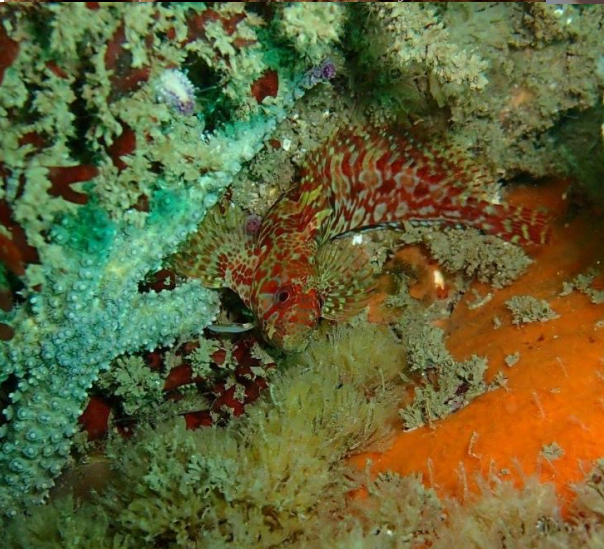
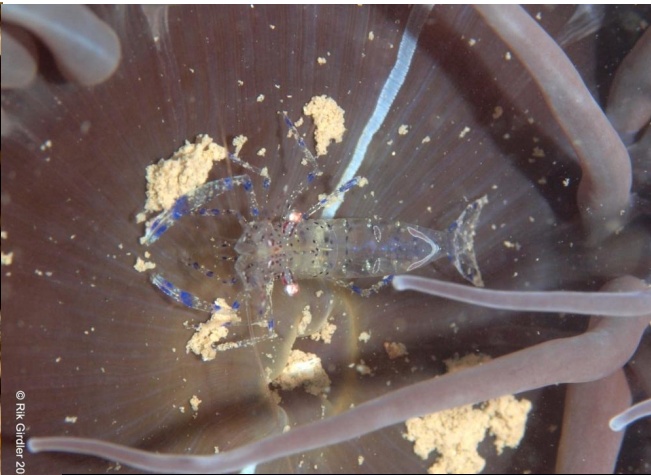


Norway bullhead, *Micrenophrys lilljeborgii*

Hampshire © Charlotte Bolton



First records...



A mountain of data...

835,332 records

Data access

☰ View records

⬇ Download usage stats

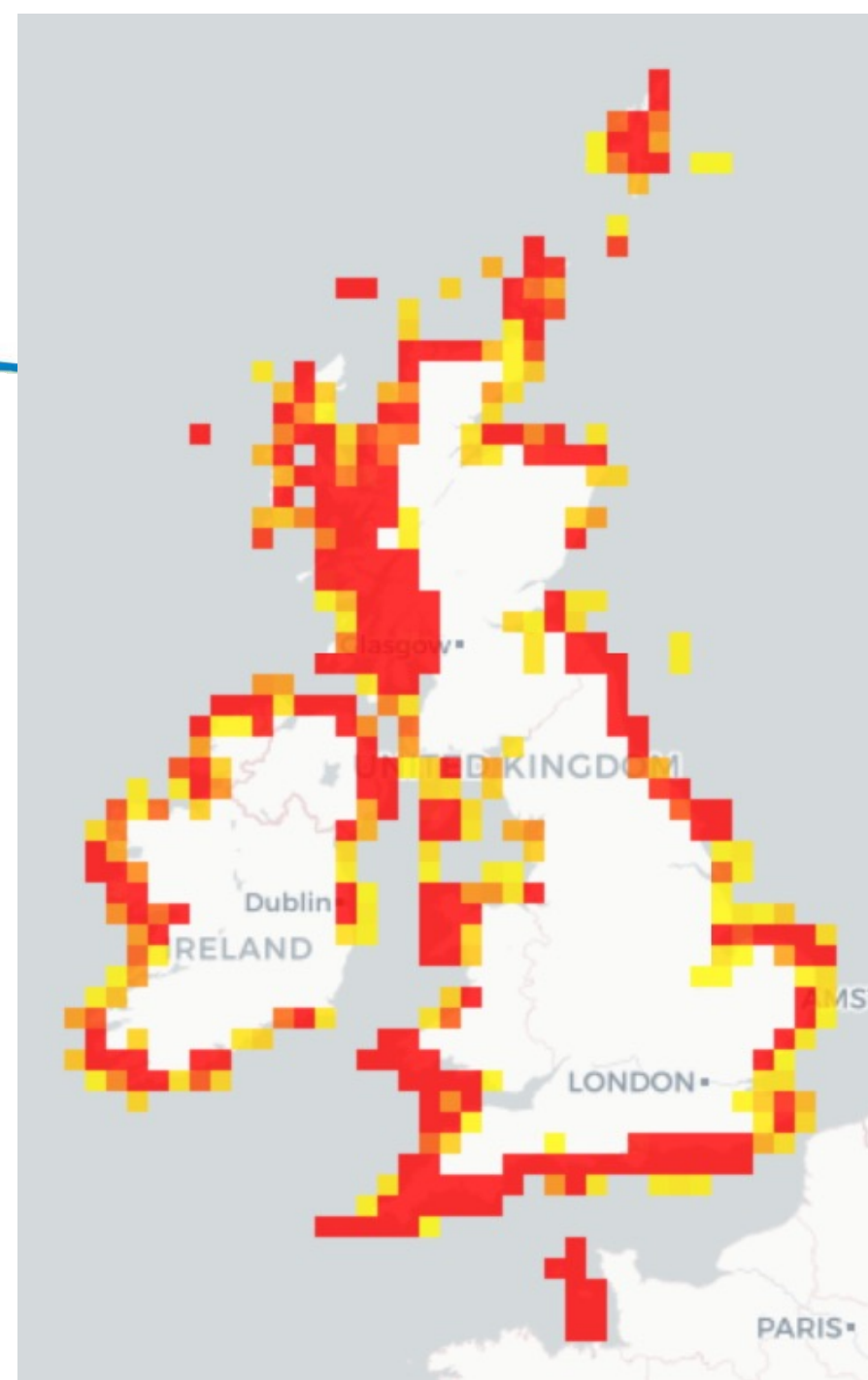
🔔 Alert me about new records

🔔 Alert me about annotations



99% records have verified identifications

NBN atlas 



Recent developments

Website

shiny apps

training dashboard (coming soon)

Marine Recorder Online

data management (back end)

data reporting (front end)

data flow

State of Nature

related studies

Explore your Seasearch records

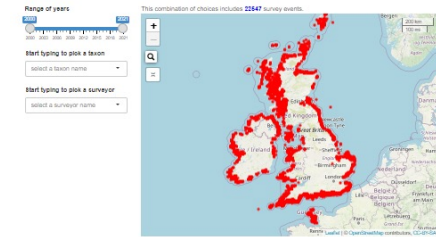


This map shows all the survey events (or observations/records) done by Seasearch volunteers. The records can be filtered by any combination of year, taxon and name of surveyor. Use the sliders to select the range of years. You can select only one person and one taxon at a time. Use 'Back-skipper' to show a selection. Please note, the map may take a while to load data, particularly when the map covers a larger area. The map has been constrained to show only the area where Seasearch is active. Records up to the end of 2021 are available.

To navigate quickly you can use the search button to search for a place name and then the map will centre on it. NB this only works for place names on land.

Clicking on a point will show a pop-up containing summary information for that survey event. Some protected species (e.g. cowfish, native oysters) have been removed to prevent their locations being made public.

In the 22 years since Seasearch officially began (1998), 8982 different Seasearch volunteers have collected 82386 ecological records during 22647 survey events, including 8148 different taxa.



Deciding where to go?

Use this map to identify areas that have been visited only once by Seasearch volunteers (red squares). Data from these sites can not yet be used to generate species trends. Adding a second visit to the site will enable that site to contribute to the mission that produces species trends. See 'try and run some of the red squares to blue'.

N.B. It can take a few seconds for data to load. It does not yet work well on small mobile devices like phones.

Targeting sites for repeat visits



This map shows the form squares that have been visited by Seasearch volunteers. The squares of red squares show the total of visits to the site. The number of visits that has been recorded.

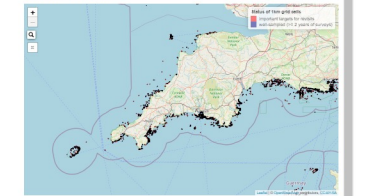
Repeat visits to a site are shown by red squares. The number of repeat visits is shown by the size of the square. The size of the square is proportional to the number of repeat visits. The size of the square is proportional to the number of repeat visits. The size of the square is proportional to the number of repeat visits.

Please note, the map may take a while to load data for the area chosen, particularly when the area chosen is large. To speed up loading, the map has been constrained to show only the area where Seasearch is active. Records up to the end of 2021 are available.

To navigate quickly you can use the search button to search for a place name and then the map will centre on it. NB this only works for place names on land.

Clicking on a point will show a pop-up containing summary information for that survey event. Some protected species (e.g. cowfish, native oysters) have been removed to prevent their locations being made public.

In the 22 years since Seasearch officially began (1998), 8982 different Seasearch volunteers have collected 82386 ecological records during 22647 survey events, including 8148 different taxa.



Plan your survey

Clicking on a square will show a point will show the 'name' of that



<https://www.seasearch.org.uk/data>

- Bright red squares are 'important' targets for additional surveys: They currently have records from only one year.
- Dark blue squares have already been surveyed in 2 or more years.

Interrogate your records

Range of years

2000 2021

2000 2003 2006 2009 2012 2015 2018 2021

Start typing to pick a taxon

Terpios gelatinosus

Start typing to pick a surveyor

Charlotte Bolton

This combination of choices includes 5 survey events.

lon: -14.41739 | lat: 51.75424 | zoom: 5

5 km
5 mi

The Bridge
St Peter Port

Leaflet | © OpenStreetMap contributors, CC-BY-SA

The image shows a web interface for searching marine records. On the left, there are three filter sections: 'Range of years' with a slider from 2000 to 2021; 'Start typing to pick a taxon' with a dropdown menu showing 'Terpios gelatinosus'; and 'Start typing to pick a surveyor' with a dropdown menu showing 'Charlotte Bolton'. These three sections are circled in red. To the right, a map of St Peter Port, Guernsey, is displayed. Above the map, it says 'This combination of choices includes 5 survey events.' and provides coordinates 'lon: -14.41739 | lat: 51.75424 | zoom: 5'. The map includes a search bar, zoom controls, and a scale bar for 5 km and 5 miles. The map shows the coastline of St Peter Port with labels for 'The Bridge' and 'St Peter Port'. A red dot on the map indicates the location of the survey events. The map is powered by Leaflet and OpenStreetMap contributors, with a CC-BY-SA license.

<https://www.seasearch.org.uk/data>

Volunteers Dashboard

Number of Observers trained **1078**

Tot_forms	Tot_ObsForms	Tot_SurvForms	Tot_courses
27045	15106	10756	819



Obs Qualification Incomplete

Volunteers who have (probably) done an Obs course and have submitted some forms (possibly a mix of Obs & Surv) but have not been signed off as a qualified Observer.

The **dark blue** date slicer alters the range of dates over which the list is built.

27/07/2014 21/12/2022

603 volunteers	im	ObsForms	SurvForms	TotForms	Earliest Form	Most Recent ObsForm	Most Recent SurvForm
9999/30		3	95	98	02/08/2016	25/03/2022	27/11/2022
9999/31		60	0	60	10/05/2017	30/09/2022	
9999/33		10	45	55	03/11/2019	19/09/2020	31/12/2022
1514/02		0	30	30	11/06/2015		12/05/2019
0912/03		0	15	15	04/08/2018		20/06/2021

Obs Qualification Complete

These tables list volunteers that are signed off as Observers, but who have either a) not submitted any more Obs forms yet (nor progressed to Surveyor level), or b) subsequently submitted Obs forms (irrespective of whether they have progressed to Surveyor level).

The **red** date slicer alters the range of qualifying dates over which the lists are built.

a)

31/12/2019 31/10/2022

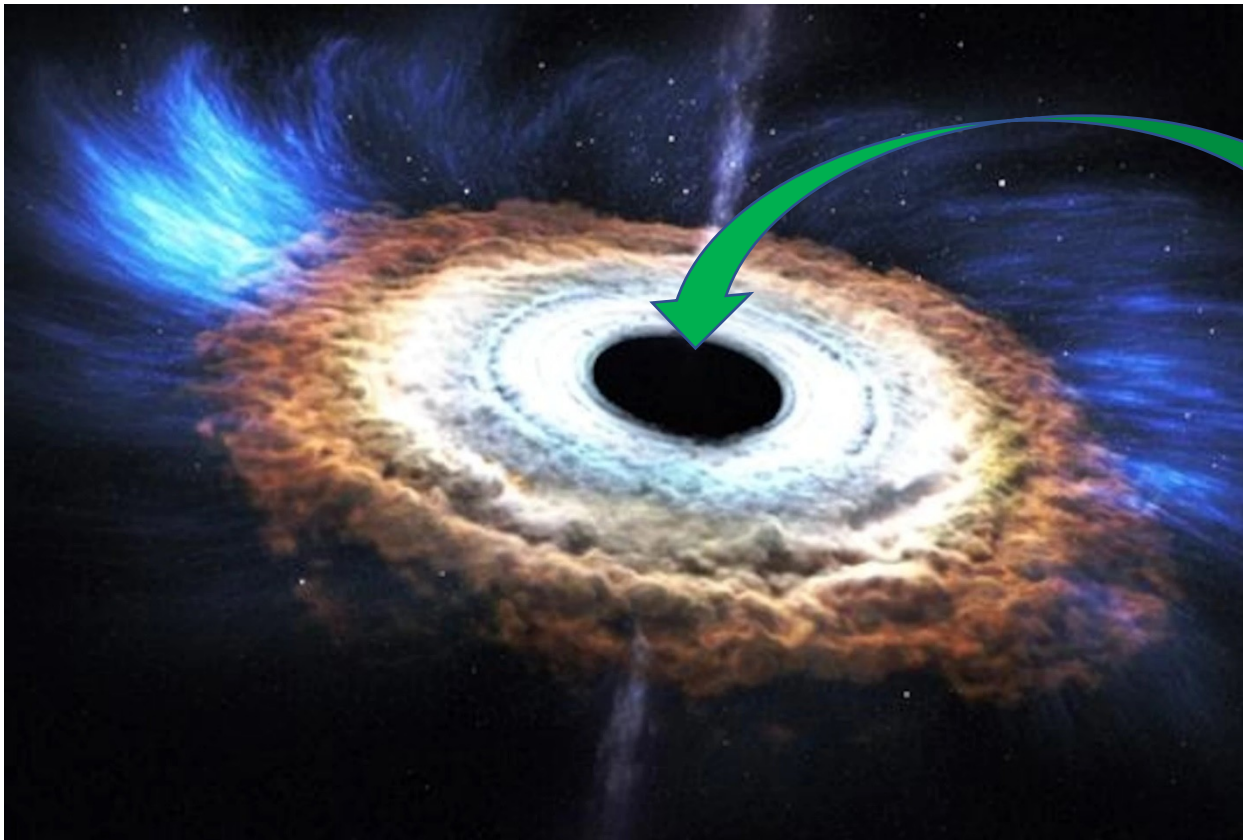
51 volunteers	Qual_Date	Obsforms (as primary recorder) pre ObsQual	Most recent form (as primary recorder)
1814/02	28/09/2020	0	
1920/04	22/03/2021	0	
2021/09	22/03/2021	1	10/08/2011
1822/05	15/01/2020	1	09/06/2019
1853/04	28/09/2020	7	14/08/2019
1914/06	12/10/2020	5	25/08/2019
1933/01	15/01/2020	7	08/09/2019

b)

32 volunteers	Qual_Date	Obsforms (as primary recorder) pre ObsQual	Obsforms (as primary recorder) post ObsQual	Obsforms (as named recorder) post ObsQual	Most recent form (as primary recorder)
2030/22	30/09/2020	4	1	1	08/11/2020
2030/02	18/12/2020	4	1	1	13/08/2022
1402/05	28/07/2021	4	1	1	07/08/2022
2021/16	04/09/2020	6	1	1	05/09/2020
1845/03	23/11/2020	6	1	1	08/08/2021
1933/04	15/01/2020	8	1	1	08/02/2020
2038/05	13/10/2020	5	2	2	03/08/2021
2006/03	27/11/2020	5	2	2	11/10/2021


- Select all
- Channel Islands
- England
- Isle of Man
- Northern Ireland
- Republic of Ireland
- Scotland
- Wales

What happens to the data?



SEASEARCH SURVEY FORM Form No (leave blank)

• If anything is unclear please refer to the Guidance Notes
 • Each pair of divers should complete a form between them
 • Please complete all parts of the form. Where there is a * only fill in the information if you know it.


 www.seasearch.org.uk

Validated by	Date	Entered by	Date	MR Reference
Recorder leave blank - for Seasearch use				

Your details

Name <i>John White</i>	Tel No: <input type="text"/>
Address <input type="text"/>	Email: <input type="text"/>
Buddy's Name <i>Nick Morley</i>	Name of group or survey <i>Partners</i>
Postcode <input type="text"/>	<i>Seasearch Trip - Chris Wood</i>

Dive/Site details

Site name <i>off Havel Bay</i>	Date of dive: <i>19</i> dd / <i>05</i> mm / <i>14</i> yy <i>Ave 2</i>						
General location <i>Lizard peninsula, Cornwall</i>	Start of dive: <i>15:55</i> (24hr)						
	Dive duration: <i>45</i> (mins)						
	Sea temperature: <i>12</i> °C						
Position (degrees and decimal minutes - state if in any other format)	Underwater visibility: <i>10</i> m						
Centre of site <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th>Latitude</th> <th>Longitude</th> <th>W or E</th> </tr> <tr> <td><i>49° 57.415'</i></td> <td><i>11° 007'</i></td> <td><i>W</i></td> </tr> </table>	Latitude	Longitude	W or E	<i>49° 57.415'</i>	<i>11° 007'</i>	<i>W</i>	Drift dive? <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no
Latitude	Longitude	W or E					
<i>49° 57.415'</i>	<i>11° 007'</i>	<i>W</i>					
For drift dives	Night dive? <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no						
From <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th>Latitude</th> <th>Longitude</th> <th>W or E</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	Latitude	Longitude	W or E				Did you or your buddy take any of the following?
Latitude	Longitude	W or E					
To <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th>Latitude</th> <th>Longitude</th> <th>W or E</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	Latitude	Longitude	W or E				photographs <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no video footage <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no specimens <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no seaweeds for pressing <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no
Latitude	Longitude	W or E					
Or OS Grid Reference <input type="text"/>							
Position derived from: (circle) <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Chart <input type="checkbox"/> OS map <input type="checkbox"/> Web mapping <input type="checkbox"/> WGS84 <input checked="" type="checkbox"/> OGS03							
Exposure of site: extremely exposed <input type="checkbox"/> v exposed <input checked="" type="checkbox"/> exposed <input type="checkbox"/> mod exposed <input type="checkbox"/> sheltered <input type="checkbox"/> v sheltered <input type="checkbox"/> ext sheltered <input type="checkbox"/>	For the area surveyed, what was the shallowest depth? (m) <i>21</i> bed <input type="text"/>						
Max tidal stream: <input type="checkbox"/> >0.5 <input type="checkbox"/> 3-0.5 <input type="checkbox"/> 1-3.0 <input checked="" type="checkbox"/> <1.0 <input type="checkbox"/> v. weak <input type="checkbox"/>	the deepest depth? (m) <i>29m</i> bed <input type="text"/>						
	Tidal correction to chart datum <input type="text"/> m						

Seabed summary

Summarise: a. The main features of the site, b. Any unusual features or species, c. Any human activities or impacts at the site

- a) Bedrock + boulders with coarse sand patches. Top of drooping kelps, hydroids, red + brown weeds.
- b) Many Alcyonarian digitation throughout - all white: a high proportion were closed up. Polyspore low and spread rather than the more usual rounded form. Some huge Cliona colonies.
- c) None.

SS1 01/14

Marine Recorder Online

Marine Recorder BLUE OCEAN, CLICK TO SWITCH CUSTODIAN MY ACCOUNT ABOUT

Home
Common Data
Delegated Surveys
Data Export
Data Import
User API Keys
Information

SEARCH
GUID SEARCH PLACEHOLDER

WELCOME
Hi **Angus** - Welcome to the Marine Recorder database.
Project alerts/updates will be display here...

SHARED METADATA
Project
Location

SURVEY METADATA
Survey
Method
Survey Event
Sample Event
Replicate

SURVEY DATA
Taxon Occurrence

DATA QUERIES
BUILD SEARCH QUERY **MAP OF ALL SURVEYS** Search...

Query Name	Description	Edit Search Query
AJ search	search for survey names containing AJ	EDIT
Qry_replicateIDs	a query to extract replicate IDs from a survey, prior to creating taxon occurrences.	EDIT

« < 1 > »

Data management: back end

A proper spatial database

Internal interactive map

MAP OF ALL SURVEYS

FILTER

Survey event
 Point Line Polygon None

Sample event
 Point Line Polygon None

REFRESH CANCEL

Data reporting: front end

☰ Marine Recorder Reporting MY ACCOUNT ▾

Home

WELCOME

Hi Miles - Welcome to the Marine Recorder Reporting database.

SURVEY METADATA

Survey

SURVEY DATA

Taxon Occurrence

Biotope Occurrence

DATABASE SNAPSHOTS

Database Snapshots

DATABASE SNAPSHOTS

Type ↑ ▾	Custodian ▾	Date Created ▾	Download
Public		22-09-2023 08:31:23	DOWNLOAD
Restricted		22-09-2023 08:31:33	DOWNLOAD
FullCustodian	Clear Blue	22-09-2023 08:31:44	DOWNLOAD
FullCustodian	Oyster Alliance	22-09-2023 08:31:54	DOWNLOAD

Search... 🔍

1

1 - 4 of 4 items

Data snapshot

inloop.github.io/sqlite-viewer/



SQLite Viewer

view sqlite file online

Drop file here to load content or click on this box to open file dialog.

Survey (7 rows)

```
SELECT * FROM 'Survey' LIMIT 0,30
```

Execute

SurveyID	CustodianName	ProjectID	SurveyReference	SurveyName	SurveyType	SurveyA
9E3BBB71-A590-779E-742...	Clear Blue	40DD0484-D0BF-89C6-083...	null	Magilligan Extraction Site R...	Benthic Characterisation Su...	funem. M
AB5338BE-504C-2B42-E29...	Clear Blue	40DD0484-D0BF-89C6-083...	SVY-OEL-RXQ126	Clacton-on-Sea Breakwater...	Benthic Characterisation Su...	gravis br
7E944413-6E98-011E-06D...	Clear Blue	null	SVY-OEL-UDGYLU	Newquay Diesel Spill Benth...	Sampling	quo quo,
90591CD2-5C18-1DEA-AB...	Clear Blue	7703B9E0-E50E-5DB7-58B...	SVY-OEL-S940N5	Holywell Bay Public Slipway...	Monitoring	et si trep
DC312F74-BDEC-3502-67...	Clear Blue	7703B9E0-E50E-5DB7-58B...	SVY-OEL-AAHLFD	Porthcurno Public Slipway ...	Subtidal Benthic Characteri...	e egredc
260E7EA7-D100-2505-682...	Clear Blue	7703B9E0-E50E-5DB7-58B...	SVY-OEL-0D7VXF	Perranporth Wind Farm Sur...	Benthic Monitoring Survey	apparen:
99415774-26A8-CFEB-839...	Oyster Alliance	null	SVY-OEL-A6LODA	Rampside Beach Fish Farm...	RSMP Survey	pladior q

DATA QUERIES

BUILD SEARCH QUERY		MAP OF ALL SURVEYS		<input type="text" value="Search..."/>
Query Name	Description	Edit Search Query		
JY_surveyevents	list of surveyevents in JY22	EDIT		
Alderney22_samplingspersonnel_ID	a list of all SamplingsPersonnelIDs for dives in Alderney 2022	EDIT		
repID	gets all the replicate IDs	EDIT		

TABLES

Root Table:

TaxonDeterminer

Columns:

Max 30 columns

FullName (Organisation) x Forename (Person) x Surname (Person) x DeterminationDate (TaxonDetermination) x ValidAlphaID (TaxonDict) x TaxonName (TaxonDict) x Qualifier (TaxonDetermination) x SACFORN (TaxonOccurrence) x Present (TaxonOccurrence) x Qualifier (TaxonOccurrence) x MethodName (Method) x SampleEventCode (SampleEvent) x OriginalGeometry (SampleEvent) x SampleStartTime (SampleEvent) x SampleEndTime (SampleEvent) x SeabedDepthUpper (SampleEvent) x SeabedDepthLower (SampleEvent) x SurveyName (Survey) x AccessConditions (Survey) x IsPublishable (Survey) x EventReference (SurveyEvent) x EventName (SurveyEvent) x FromDate (SurveyEvent) x TempBottom (SurveyEvent) x UnderwaterVisibility (SurveyEvent) x

FILTER

AND OR

SurveyName (Survey) Contains Guernsey

(SurveyName (Survey) Contains 'Guernsey')

SAVE QUERY

Name ** required*

Qry_Key_fields

Description ** required*

A selection of important fields from across the hierarchy of tables

Data queries

Spatial queries too!

BUILD-SEARCH-QUERY

QUERY-MANAGEMENT

Name

Description

Share-level

Copy-from-existing-query

Select

Root-Table

Select

Columns

Select

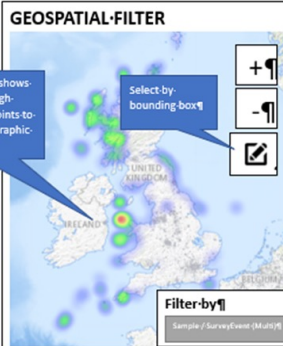
FILTER-BY-ATTRIBUTES

GEOSPATIAL-FILTER

Nice-to-have: Map shows pre-cached rough-distribution of all points to help a "blind" geographic search.


Select-by bounding box

Filter-by



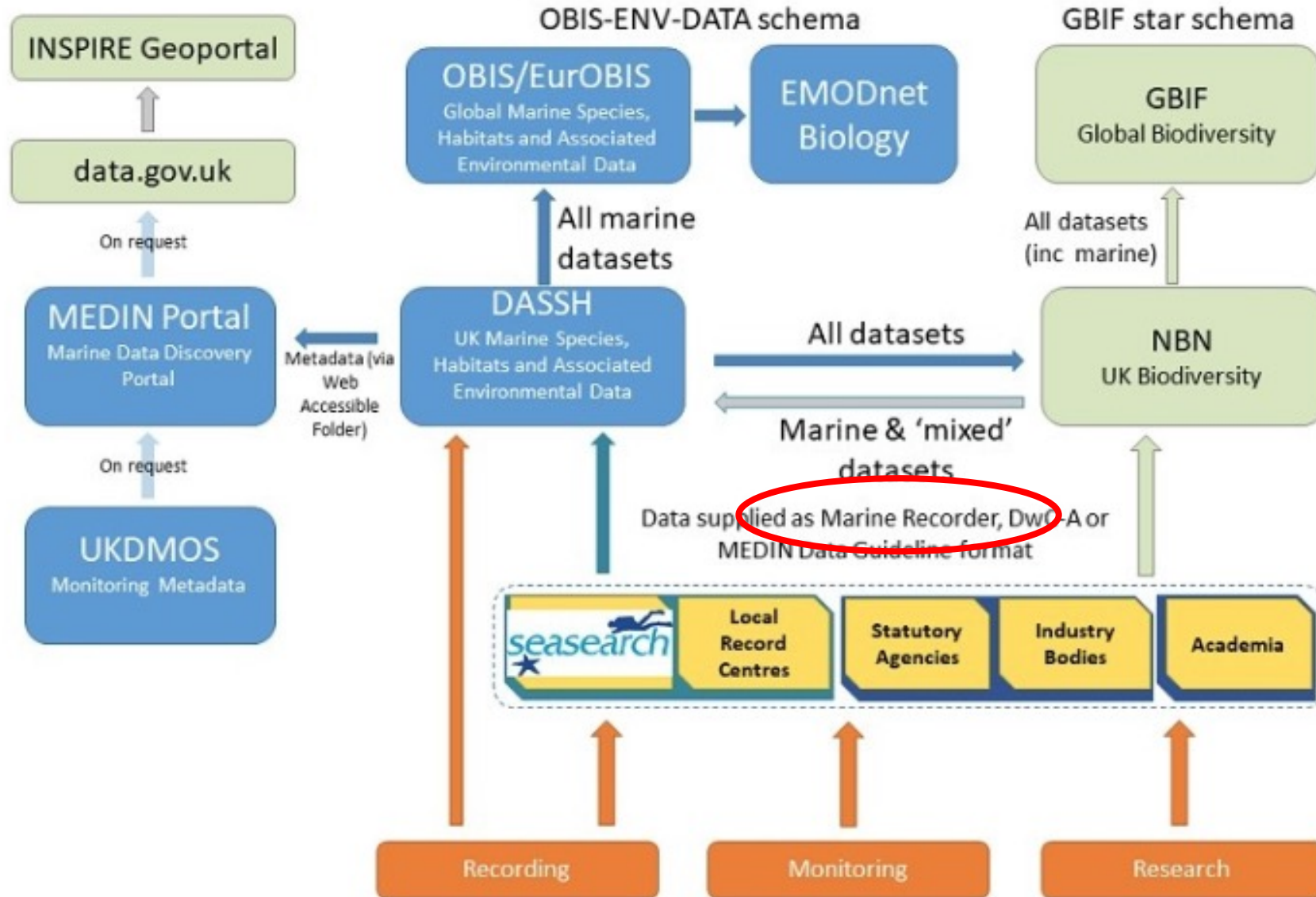
Data export

RESULTS

 EXPORT TO EXCEL

FullName (Organisation)	Forename (Person)	Surname (Person)	DeterminationDate (Taxon...	ValidAphiaID (TaxonDict)	TaxonName (TaxonDict)	Qualifier (TaxonDetermina...
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	558	Porifera	Yellow-orange crusts
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	132473	Axinella dissimilis	
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	558	Porifera	Orange-red crusts
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	133543	Hemimycale columella	
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	117388	Obelia geniculata	on kelp blades
Guernsey Seasearch	Charlotte	Bolton	20/09/2022	101016	Corynactis viridis	

Data flow



Automated flow
To public-facing front end
To DASSH (data archive)
To data portals (e.g. NBN, GBIF)

Nightly updates!

STATE OF NATURE

Marine topics embedded throughout

Populations trends for benthic species

2023



The UK's biodiversity is in trouble



More species have seen their populations decrease than increase

38% have decreased

34% little change

27% have increased

The abundance of 753 terrestrial and freshwater species has on average fallen by

19%



16% of species are threatened with extinction from Great Britain. 151 of 10,008 assessed have already become extinct.

We have seen big changes in where wildlife is found

The distributions of half of flowering plant species have decreased across Great Britain

54%



The distributions of invertebrates have on average decreased across the UK

13%



Stronger declines in some insect groups which provide key ecosystem functions such as Pest control 34% and Pollination 18%



Insects that help keep a healthy balance of nutrients in rivers and ponds initially declined before showing a rapid recovery that has since slowed



The greatest drivers of change over the last 50 years

On land and in freshwater:

- Agricultural management
- Climate change



At sea and around our coasts:

- Unsustainable fishing
- Climate change
- Marine development



These drivers continue from centuries of habitat loss, development and persecution.

The UK is one of the most nature depleted countries on Earth.

The UK's ambitious targets to address nature loss:

- Improve species status
- Increase nature-friendly farming, fisheries and forestry
- Expand and manage protected areas
- Increase ecosystem restoration
- Co-ordinate our response to the nature and climate crises

Conservation actions deliver results for nature

In Lyme Bay Marine Protected Area, the number of species has increased since trawling was banned in 2008



Natterjack Toad populations have stabilised or expanded at sites where conservation management has been well-resourced



Large-scale restoration projects, such as Cairnholm Connect, are helping to benefit many woodland-dependent species



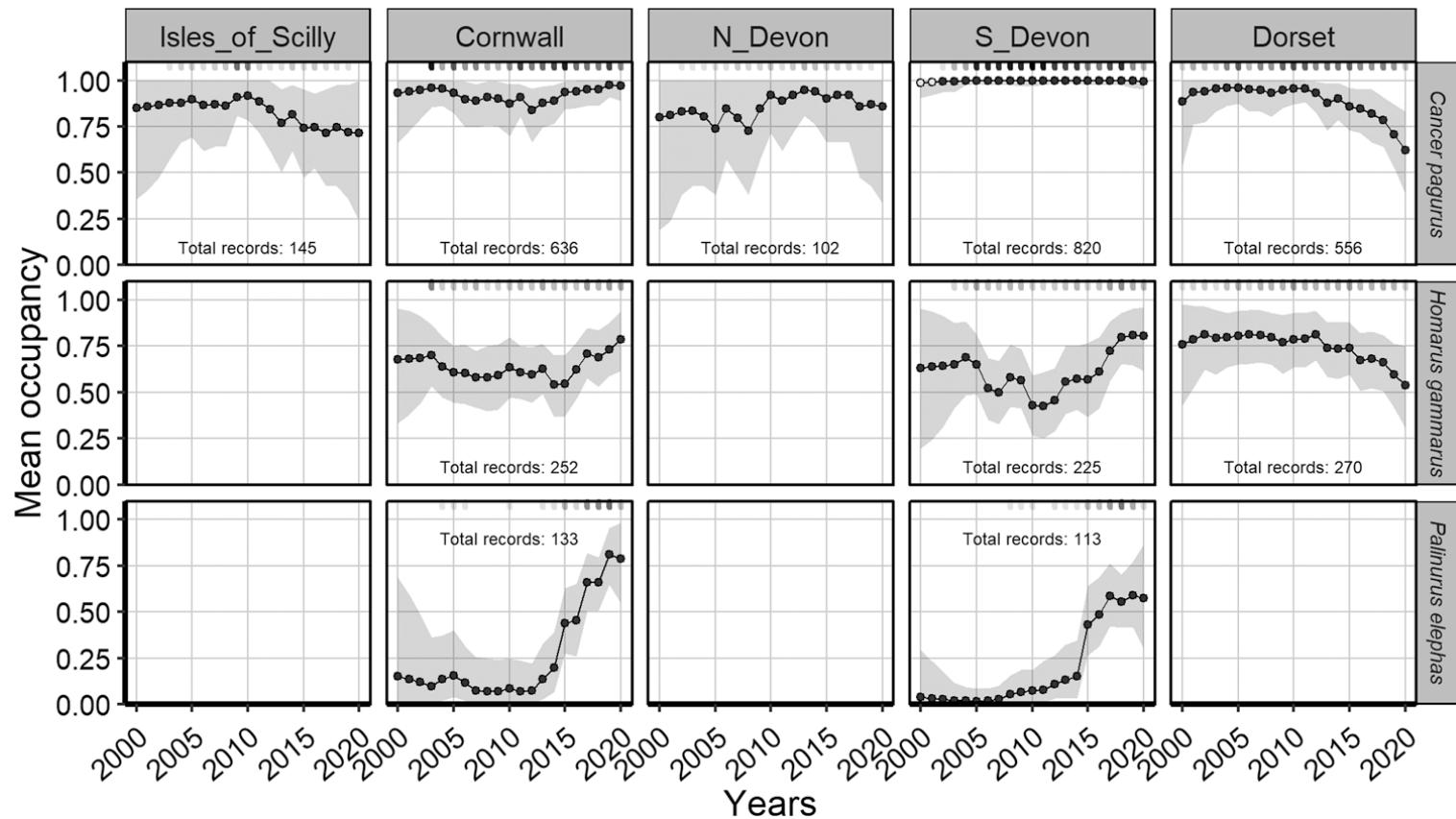
We have never had a better understanding of the State of Nature and what is needed to fix it

Find / 1 |

Scientific publications

Occupancy models

loads of potential!



“Bayesian occupancy modelling of benthic Crustacea and the recovery of the European spiny lobster, *Palinurus elephas*”

A.C. Jackson JMBAUK 101(7) Nov. 2021



Overall value?



Not just for Channel Islands, but nationally

Value not just from rare/funky species, but also:

- common species,
- context (habitat, etc.),
- large volume,
- long time series,
- spatial coverage
- Reliable (QC)

Can I find out more about this?



Check out our website: (www.seasearch.org.uk)

- data exploration tools
- training opportunities
- reports and papers

Get in touch:

- seasearch@mcsuk.org

Summary



MARINE
CONSERVATION
SOCIETY

Fabulous dataset

Exploiting new digital tools

Robust new system

Allows many applications

Let's encourage recording and make even more use of the data

Thank you to Sue for the invitation and of course to all the many volunteers who contribute their time and records

Thank you

Any questions?

angus.jackson@mcsuk.org

© Leigh Morris



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