



5 years of Seasearch - Building on volunteers' Open Data into the future

Charlotte Bolton & Iain Dixon



NBN Conference Edinburgh 23/11/2023



The very early years (1970s-1990s)



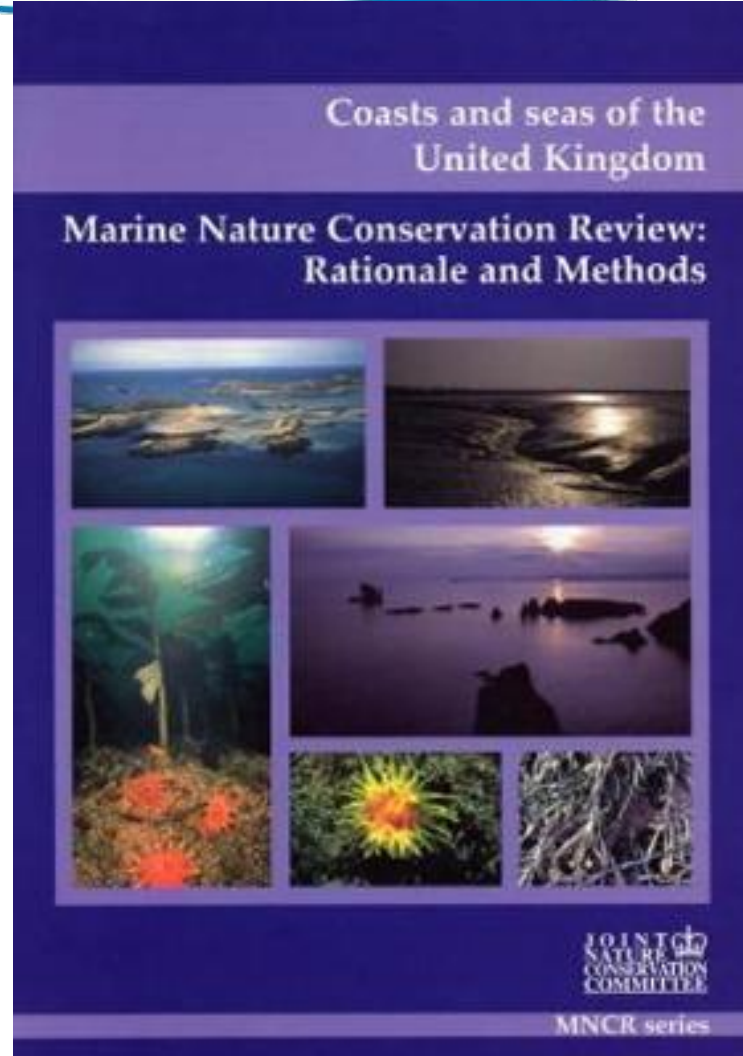
© Bob Earll



NCC Outer Hebrides survey © Frances Dipper



Challenger @ Papa Westray
© Lin Baldock



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

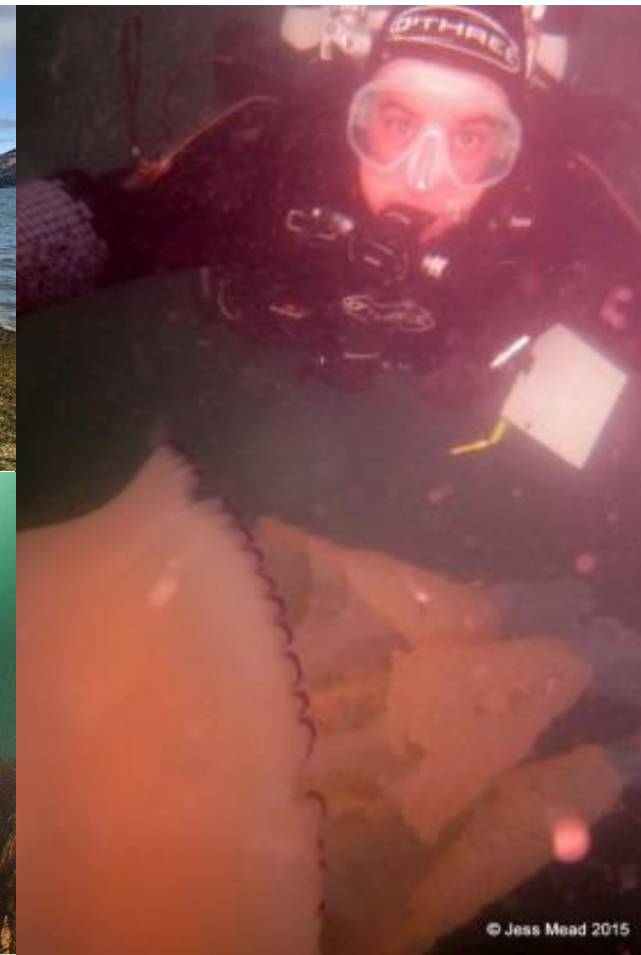


© Rik Girdler



© Danny Daniels

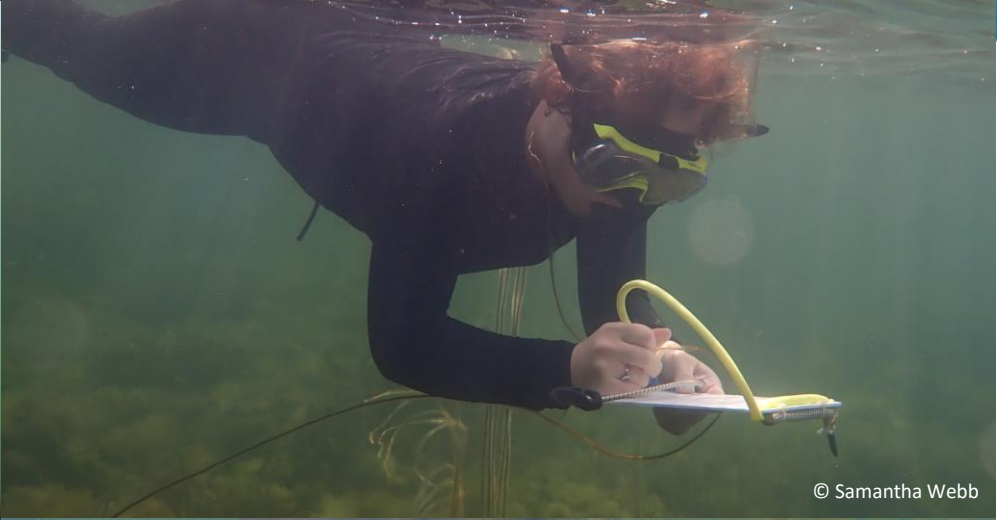
Volunteers – our lifeblood



Snorkels ahoy!



© Charlotte Bolton



Remote viewing technology – BRUVs & ROVs



Baited Remote Underwater Video (left)

Remotely Operated Vehicle (below, right)



© Karen Boswarva



© Chris Rickard



© Chris Rickard



© Chris Rickard

83

Data

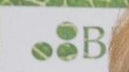
- ☰
- ↓
- 🔔
- 🔔

99%



NBN
National Biodiversity Network

NBN
National Biodiversity Network



NBN
National Biodiversity Network

This is to certify that
Seasearch
is the winner of the 2017
**John Sawyer
National Biodiversity Network
Open Data Award**

To recognise and celebrate the outstanding
contribution of NBN Data Partners in achieving
the vision of the NBN in collecting and sharing
biological data openly to educate and reform.

Michael Hassell
Chairman, NBN Trust
NBN Trust

John Sawyer
NBN Open Data Award

2017 Chairman NBN Trust	2017 Chairman NBN Trust	2017 Chairman NBN Trust
2017 Chairman NBN Trust	2017 Chairman NBN Trust	2017 Chairman NBN Trust
2017 Chairman NBN Trust	2017 Chairman NBN Trust	2017 Chairman NBN Trust

NBN
Michael Hassell

© Mark Hawkins



Recent data developments



Website

shiny apps

Marine Recorder Online

data management (back end)

data reporting (front end)

data flow

Occupancy models

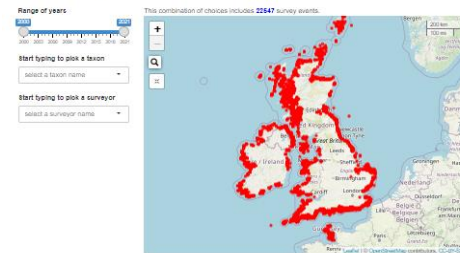
State of Nature 2023

related studies (Jackson JMBAUK 101(7) Nov. 2021)

Explore your Seasearch records

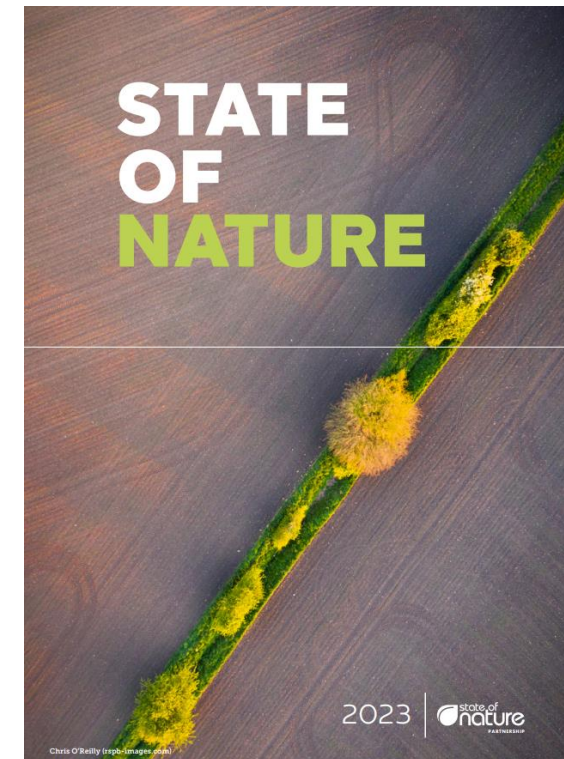
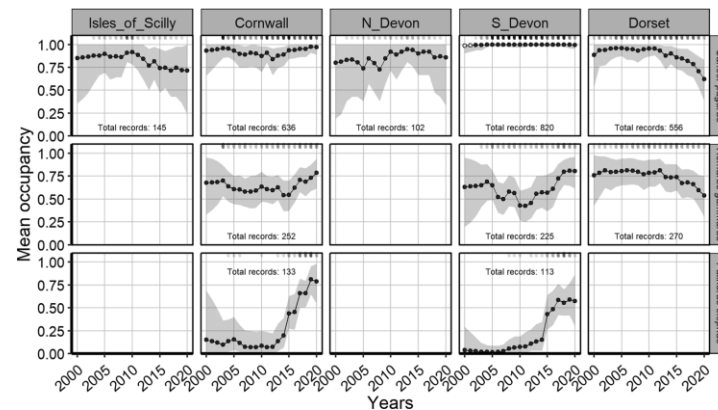


This map shows all the survey events (in directions/inter-tidal walks) done by Seasearch volunteers. The records can be filtered by any combination of year, taxon and name of surveyor. Use the sliders to search the range of years. You can search only one person and one taxon at a time. Use 'Blank-catch' to clear 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. otterfish, native oysters) have been removed to prevent their locations being made public.



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 area to contribute to the models that predict species trends. Safe to and turn some of the red squares to blue. NB, it can take a few seconds for data to load. It does not yet work well on small mobile devices like phones.



Plan your survey...

Targeting sites for repeat visits

This map shows the 1km squares that have been surveyed by Seasearch volunteers.

The colour of each square shows the status of each site based on the number of years (not the number of visits!) that it has been surveyed.

Researchers at Seasearch use data from 'well recorded' squares (dark blue on the map: with visits in multiple years) to estimate species trends, for example, in this paper about crawfish. You can increase the amount of data for these analyses by revisiting squares coloured red that have records from only one year.



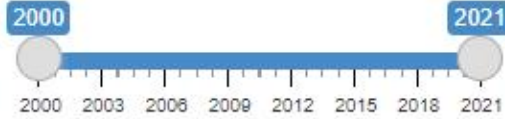
- Bright red squares are 'important' targets for additional surveys: They currently have records from only one year.
- Dark blue squares have already been surveyed in 2 or more years.
- Squares with no colour are 'Unrecorded'. It would be good to begin data collection here too.

This app is based on the Targeting Revisits apps developed by UKCEH with support from NERC and the JNCC through the TSDA (Terrestrial Surveillance Development and Analysis) project. Modified by Angus

Interrogate your records...



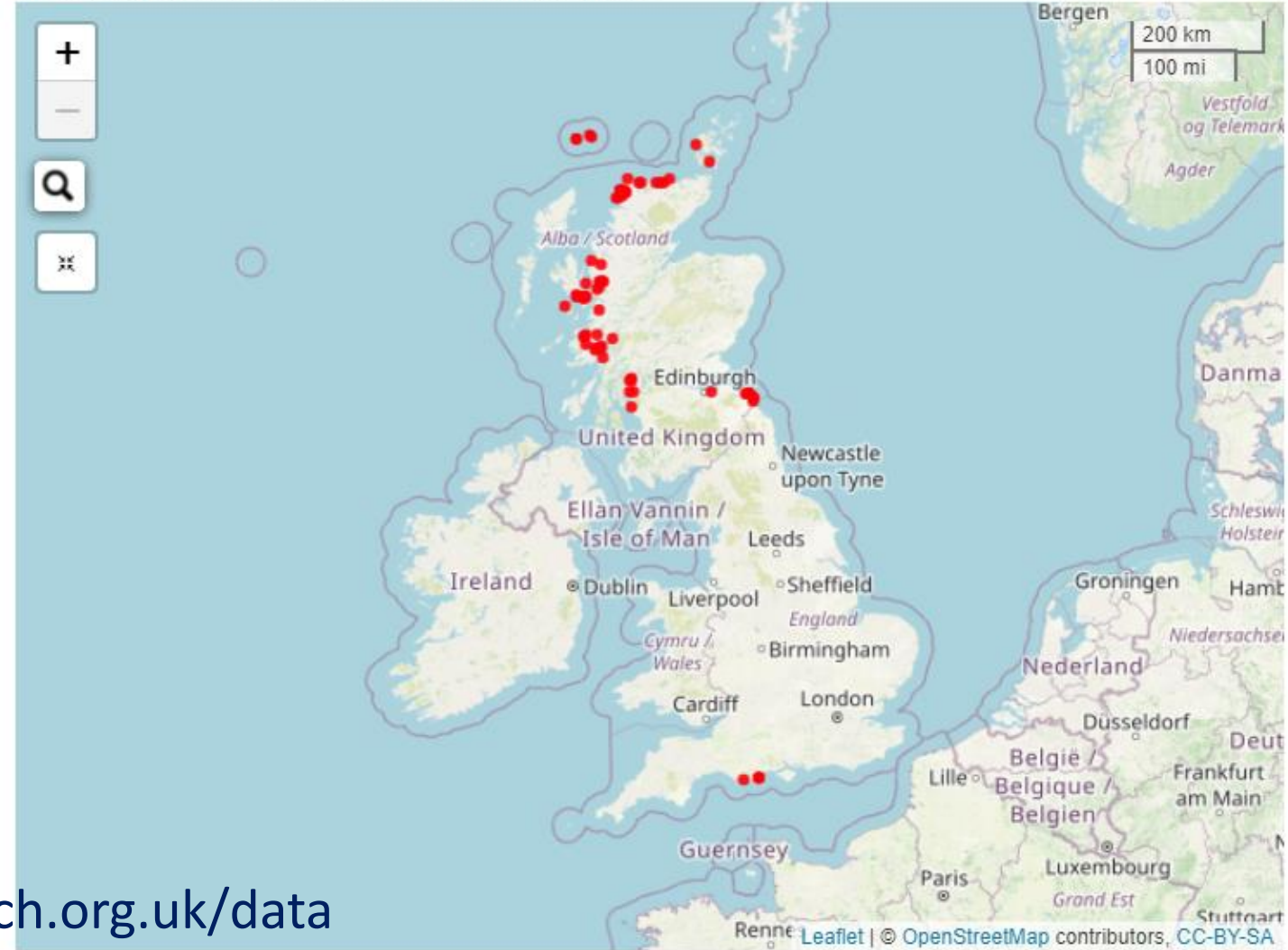
Range of years



Start typing to pick a taxon

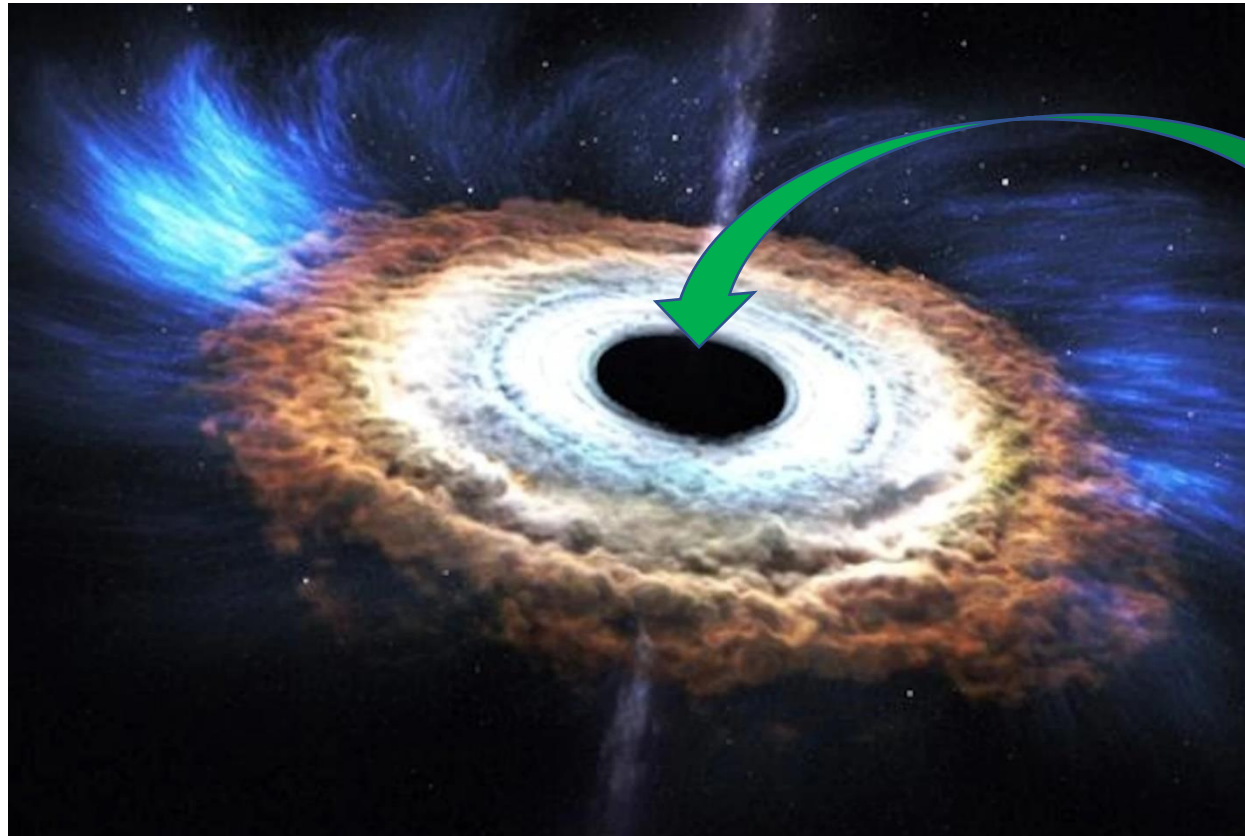
Start typing to pick a surveyor

This combination of choices includes **79** survey events.



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

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.

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"/>
<input type="text"/>	Buddy's Name <i>Nick Marney</i>
<input type="text"/>	Name of group or survey <i>Portsmouth</i>
Postcode <input type="text"/>	<i>Seasearch Trap - Chris Wood</i>

Dive/Site details

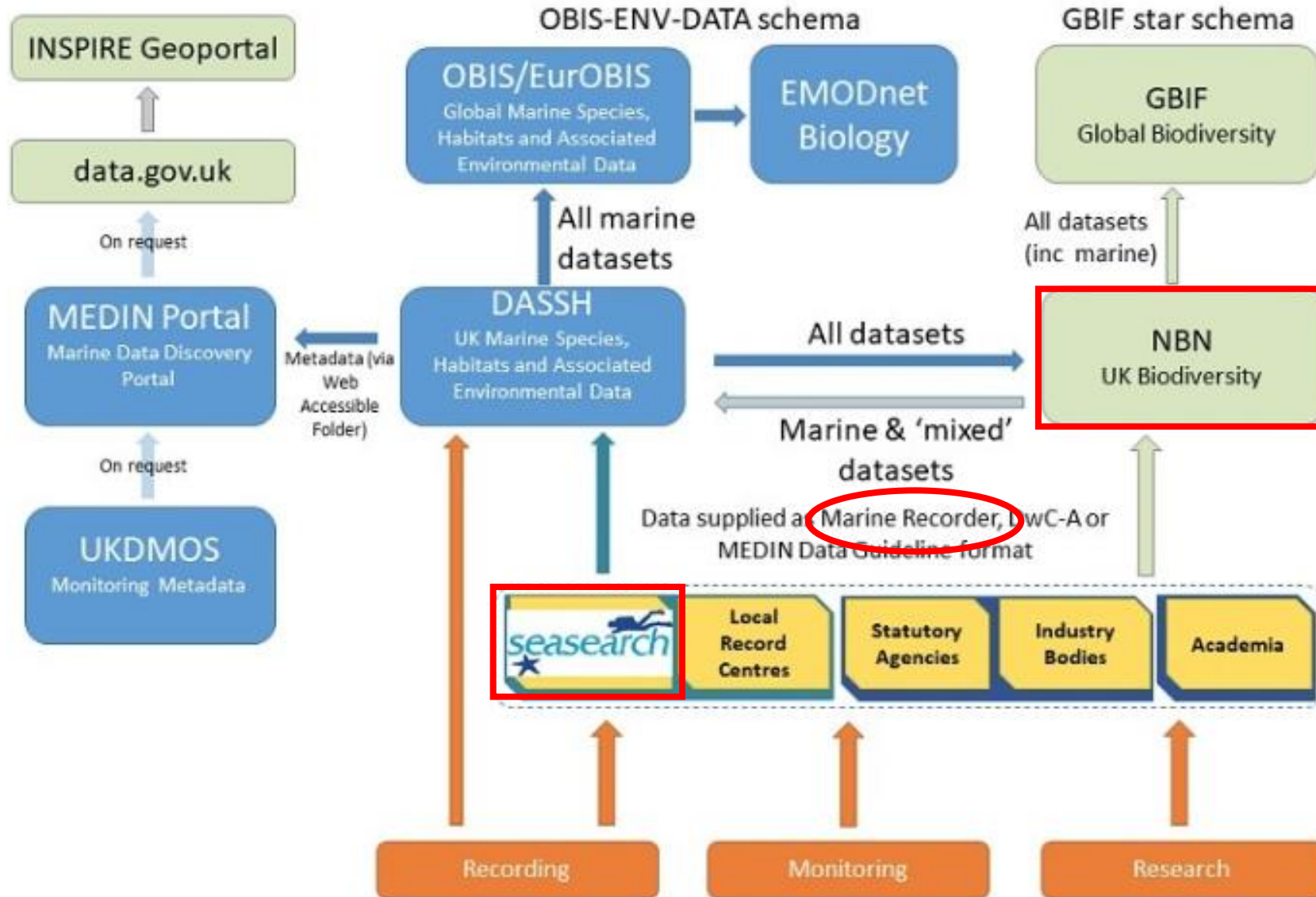
Site name <i>off Havel Bay</i>	Date of dive: <i>19</i> dd / <i>05</i> mm / <i>14</i> yy
General location <i>Lizard peninsula, Cornwall</i>	Start of dive: <i>15:55</i> (24hr)
	Dive duration: <i>45</i> (mins)
	Sea temperature: <i>12</i> °C
Position (degrees and decimal minutes - state if in any other format)	Underwater visibility: <i>10</i> m
Centre of site Latitude <i>49° 57.415'</i> Longitude <i>11.007'</i> W or E <i>W</i>	Drift dive? <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no
For drift dives From <input type="text"/> To <input type="text"/>	Night dive? <input type="checkbox"/> yes / <input checked="" type="checkbox"/> no
Or OS Grid Reference <input type="text"/>	Did you or your buddy take any of the following?
Position derived from: (circle) <input type="checkbox"/> GPS <input checked="" type="checkbox"/> Chart <input type="checkbox"/> OS map <input type="checkbox"/> Web mapping <input type="checkbox"/> GPS Datum (circle) <input checked="" type="checkbox"/> WGS84 <input type="checkbox"/> OSGS36	photographs <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no
Exposure of site: extremely exposed <input type="checkbox"/> v exposed <input checked="" type="checkbox"/> exposed <input type="checkbox"/>	video footage <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no
mod exposed <input type="checkbox"/> sheltered <input type="checkbox"/> v sheltered <input type="checkbox"/> ext sheltered <input type="checkbox"/>	specimens <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no
Max tidal stream: <input type="checkbox"/> >1kt <input type="checkbox"/> 3-5kt <input type="checkbox"/> 1-3kt <input checked="" type="checkbox"/> <1kt <input type="checkbox"/> v. weak <input type="checkbox"/>	seaweeds for pressing <input checked="" type="checkbox"/> yes / <input type="checkbox"/> no
	For the area surveyed, what was the shallowest depth? (m) <i>21</i> bed <input type="checkbox"/> bed
	the deepest depth? (m) <i>25m</i> bed <input type="checkbox"/> bed
	Tidal correction to chart datum <input type="checkbox"/> 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

- Bedrock + boulders with coarse sand patches. Top of dredging pipes, hydrofoils, red + brown weedis.
- Many Alcyonaria digitation throughout - all white: a high proportion were closed up. Polychaeta low and spread rather than the more usual vertical form. Some huge Cliona vesicles.
- None.

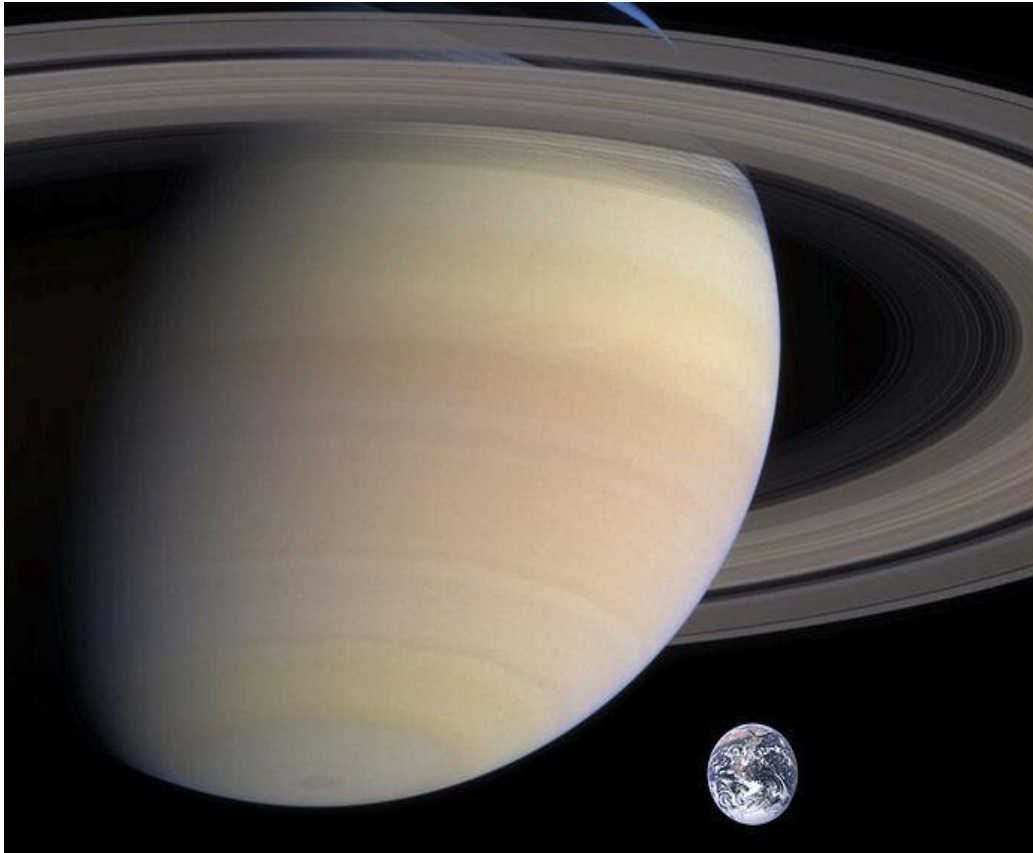
Data flow



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

Nightly updates!

Overall value of dataset? HUGE!



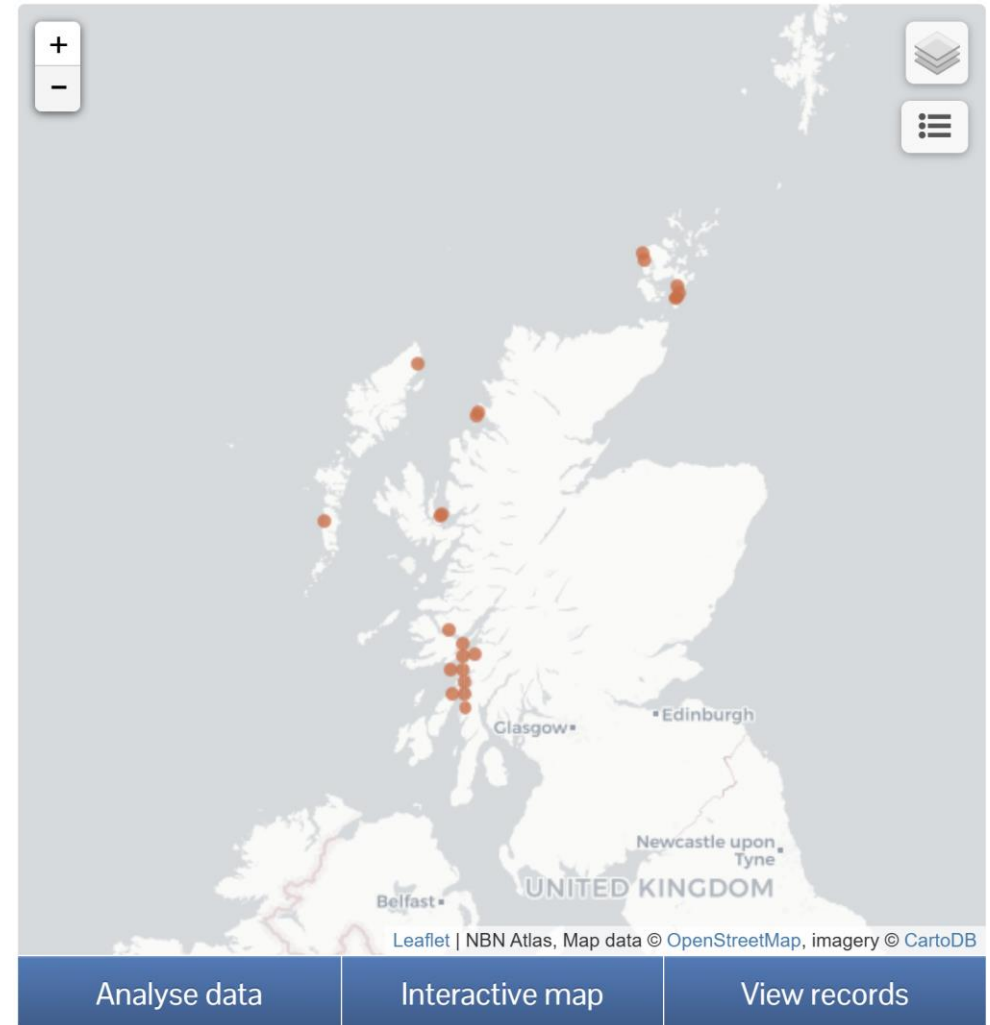
Value not just from rare/funky species, but also:

- common species
- context (habitat etc.)
- large volume
- long time series
- spatial coverage
- reliable (QC)
- OPEN! (CC-BY)

The flapper skate story



- Flapper skate (*Dipturus intermedius*) critically endangered
- Occurs largely in northern North Sea and off Scotland's northwest coast
- Little known about flapper skate breeding grounds and breeding habits due to rarity
- Eggs take around 18 months to hatch and are sensitive to seabed disturbance



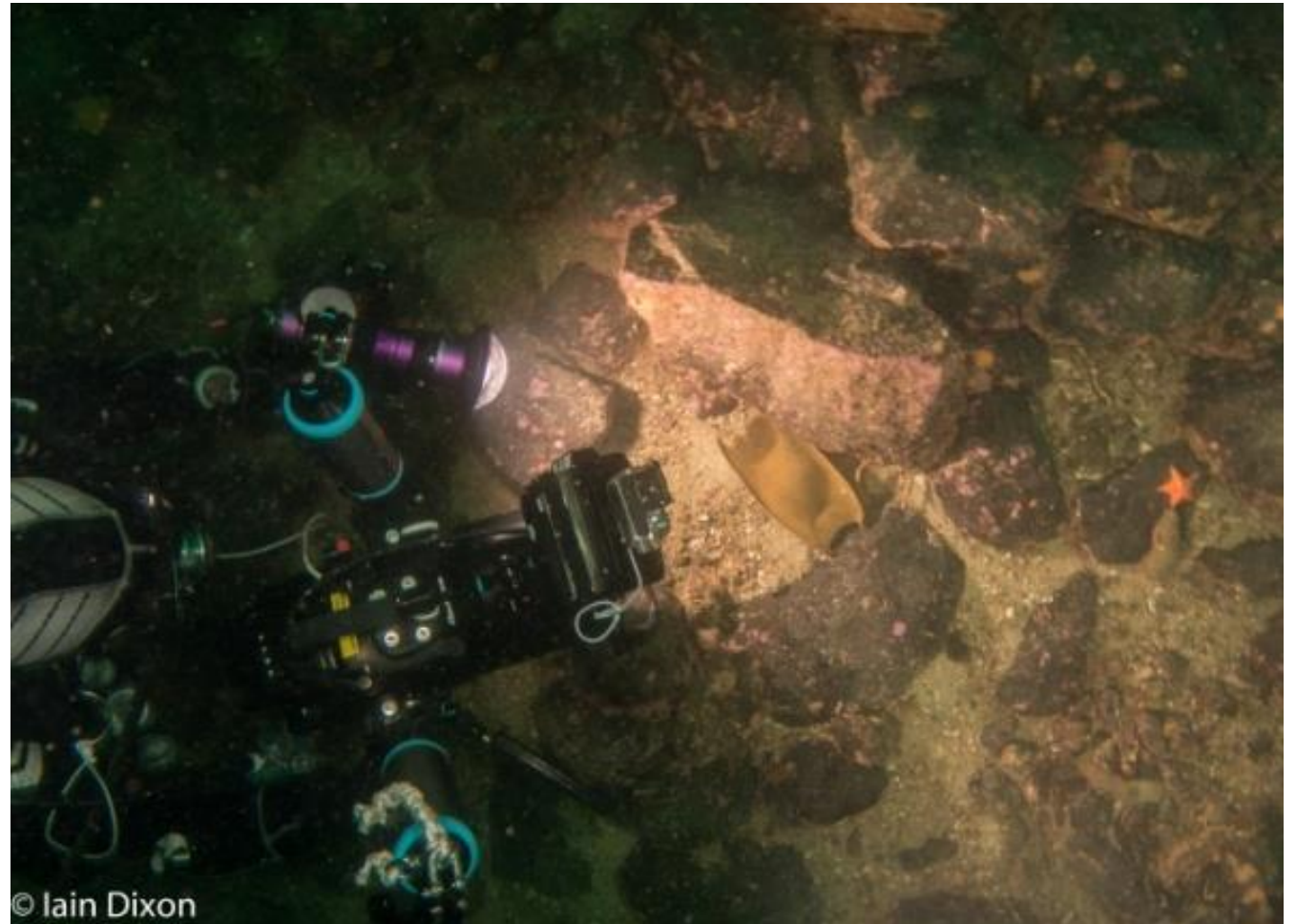
Thanks to David Ainsley for flapper skate video footage from Firth of Lorne



Red Rocks and Longay urgent MPA



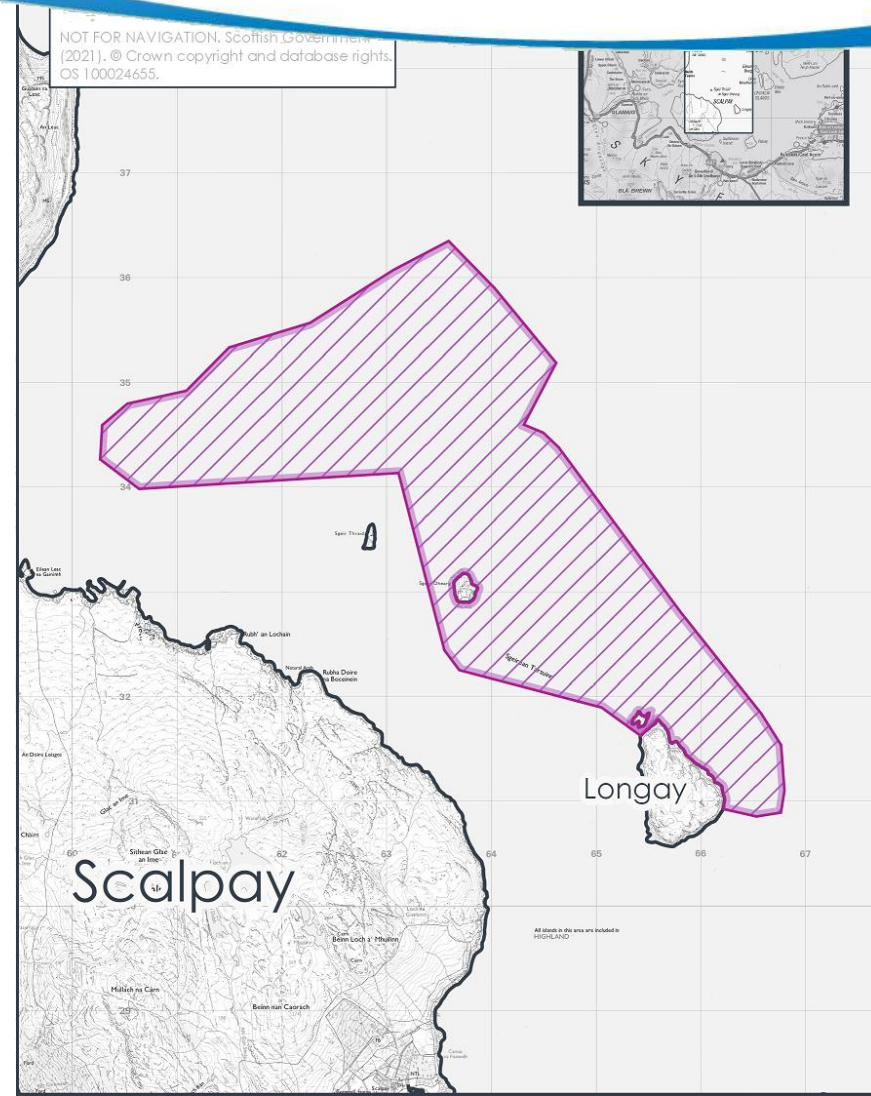
- Flapper egg cases discovered in high numbers at Red Rocks, Skye, in 2019
- Site adjacent to fishing areas and potentially vulnerable to seabed dredging
- Seasearchers involved in recording and documentation of the habitat in which these egg cases occurred



Red Rocks and Longay urgent MPA



- Urgent MPA declared March 2021
- Further surveys in 2021 discovered large numbers of eggs outside the urgent MPA boundary
- Following further consultation, original site revoked and the extended site urgently designated 16 December 2021
- Permanent designation and protection for the MPA came into force 9 February 2023

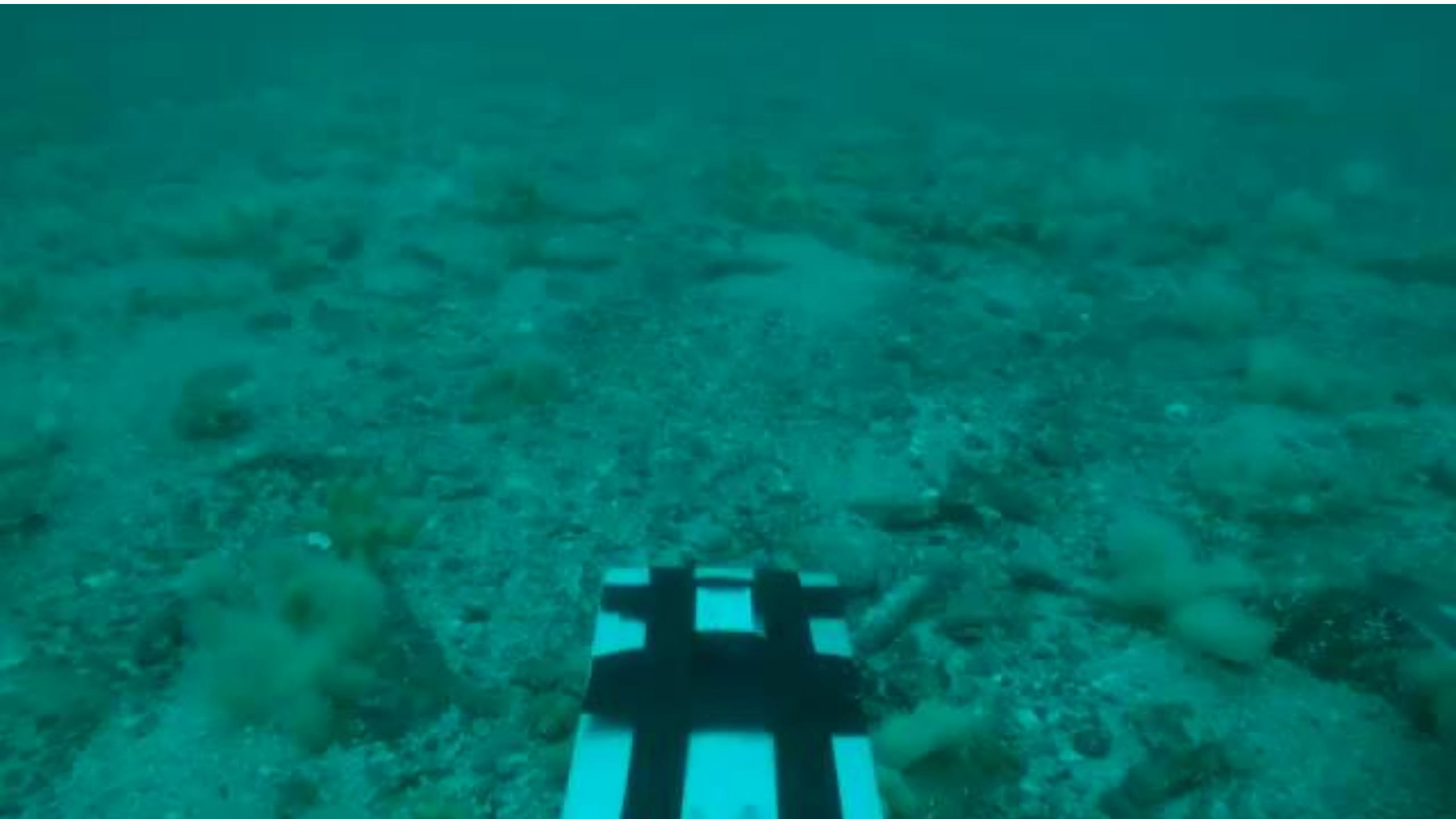


Orkney expedition June 2023



ORKNEY
SKATE
TRUST





Funding:



(in Scotland)

seasearch@mcsuk.org

seasearchscotland@outlook.com