



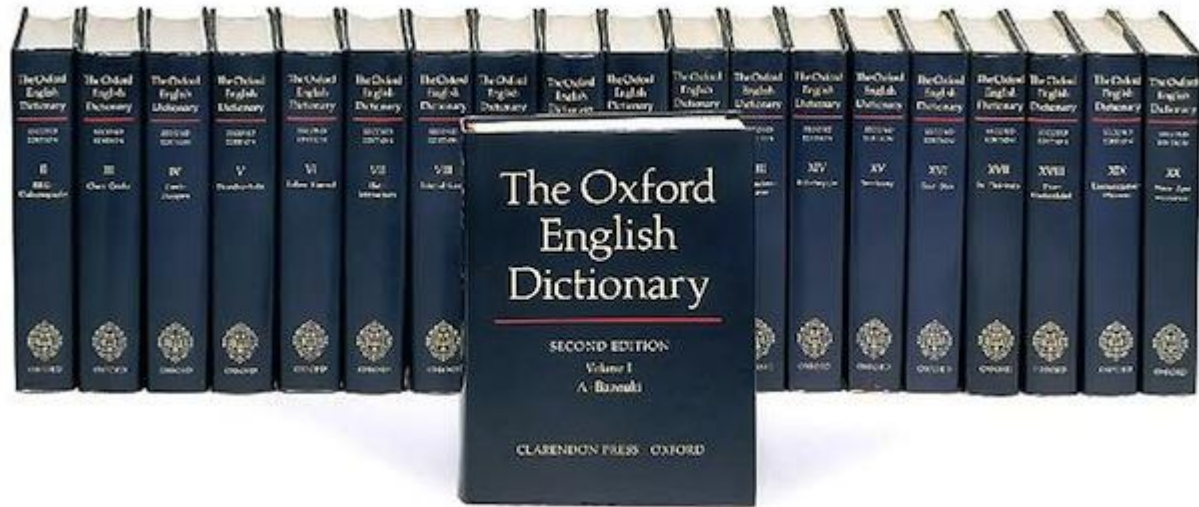
CAPTURING  
OUR COAST

**Dr Hannah Grist**

**Scottish Association for Marine Science**

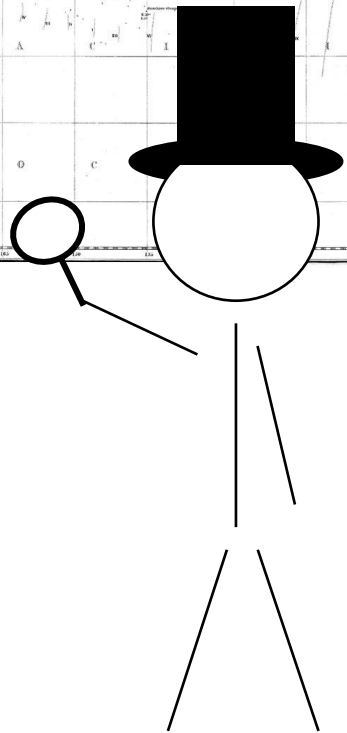
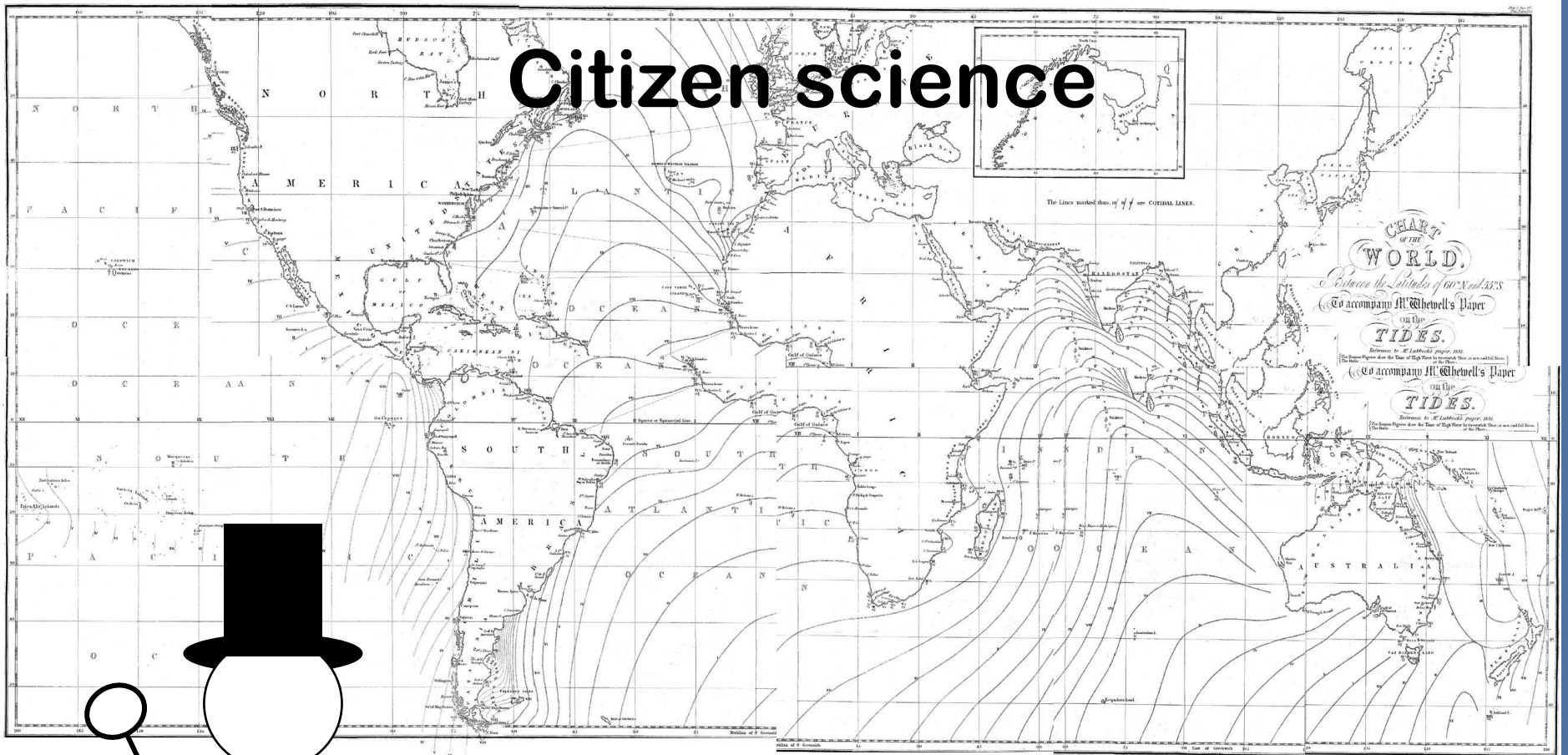


# Citizen science



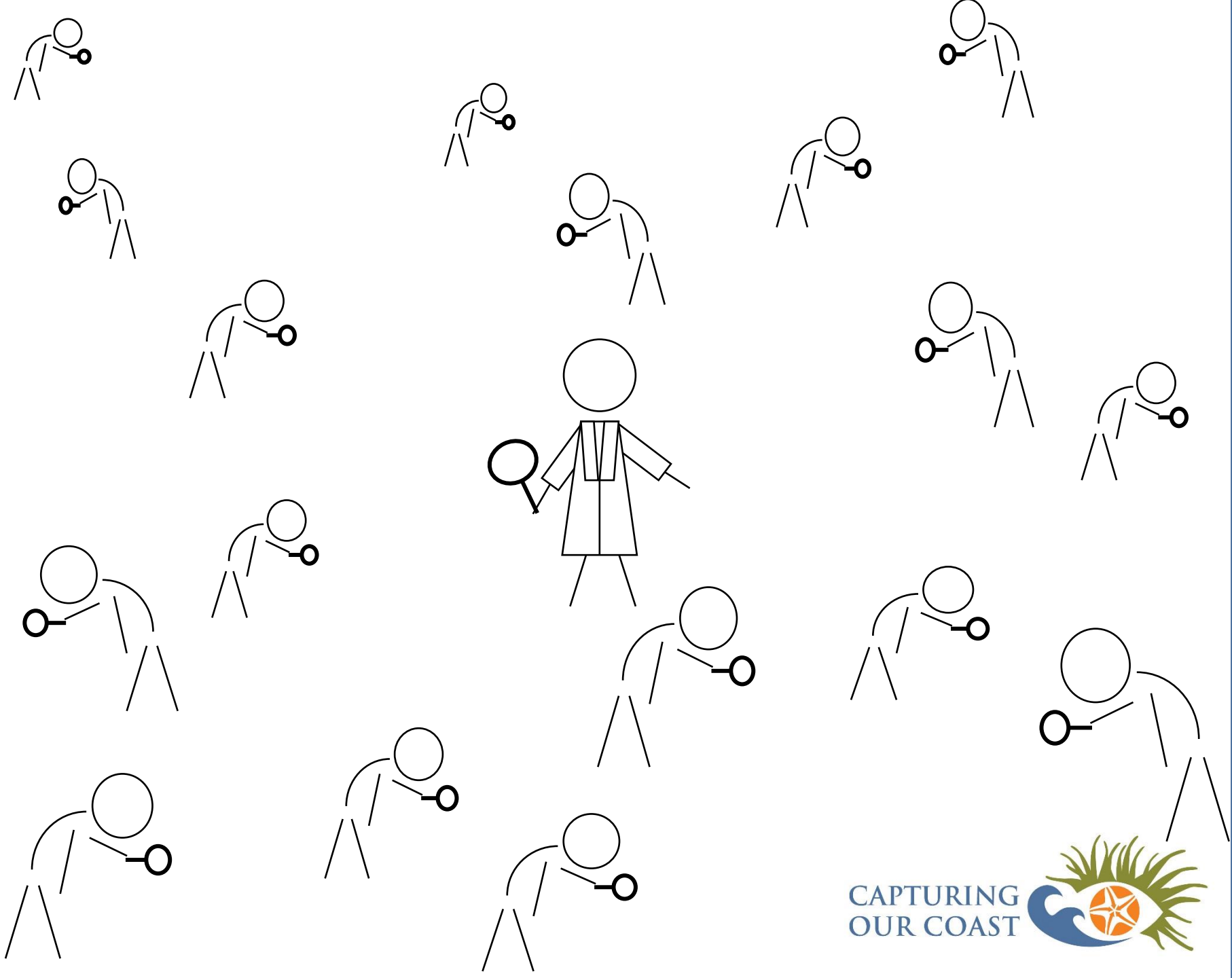
**citizen scientist** n. (a) a scientist whose work is characterized by a sense of responsibility to serve the best interests of the wider community (now rare); (b) a member of the general public who engages in scientific work, often in collaboration with or under the direction of professional scientists and scientific institutions; an amateur scientist.

# Citizen science



William Whewell  
1885





CAPTURING  
OUR COAST





# Citizen science

Rank: 317 Score: 2534  
Soloist Beginner Puzzle 8 (-150): Fruit Fly  
No conditions

Group Competition

Group Name	Score
1 Rice Biochemistry	9174
2 Team Commonwealth	9168
3 Ukraine	9088
4 Team Canada	
5 Freebird BioChem	
6 SETI Germany	
7 Biosc.be	

Soloist Competition

Player Name	Score
1 Mike Cranching for Ph	
2 woitzen	
3 ys719	
4 ghafoe	
5 Kevin Karplus	
6 JINXray	
7 ab.aric	

Shake Sidechains Wiggle All Wiggle Backbone Wiggle Sidechains Freeze Protein Remove Bands Disable Bands Align Guide Reset Structures Reset Puzzle Help Glossary

Street Bump [About](#)



Help keep your streets smooth

RECORD A TRIP

MY TRIPS

The Search Extrate

Data Analy

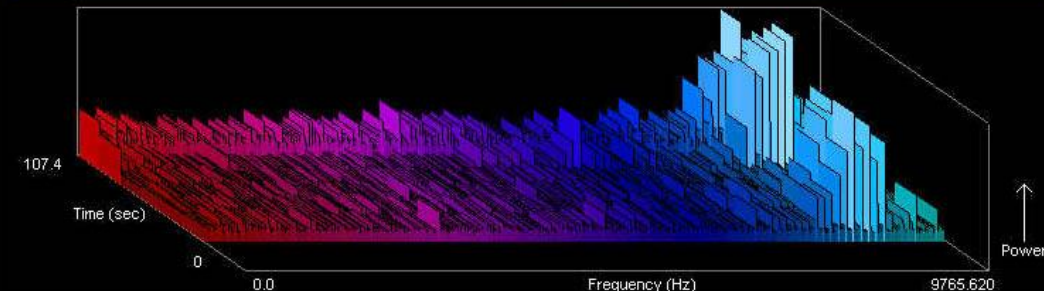
Computing Fast Fourier Transform  
Doppler drift rate: 0.0018 Hz/sec  
Frequency resolution: 0.074506 Hz  
Strongest Peak: power 533.97  
(8670.0 Hz at 13.42 seconds, drift rate 0.002 Hz/sec)

Base Frequency: 1.419990232 GHz

User Info

Name: Valeo Films Inc.  
Data units completed: 13  
Total computer time: 518 hr 19 min 34.7 sec

Overall: 0.301% done CPU time: 0 hr 07 min 21.8 sec



# Marine citizen science

DIVE ON IN

## The best thing to happen to oceans in 2015 was the rise of the citizen scientist



The year 2015 saw advances in ocean conservation big enough to kindle hope in the heart of even the most despairing marine scientists. But the...

The Sea | Christie Wilcox | Dec

Science & Environment

## Climate stirring change beneath the waves

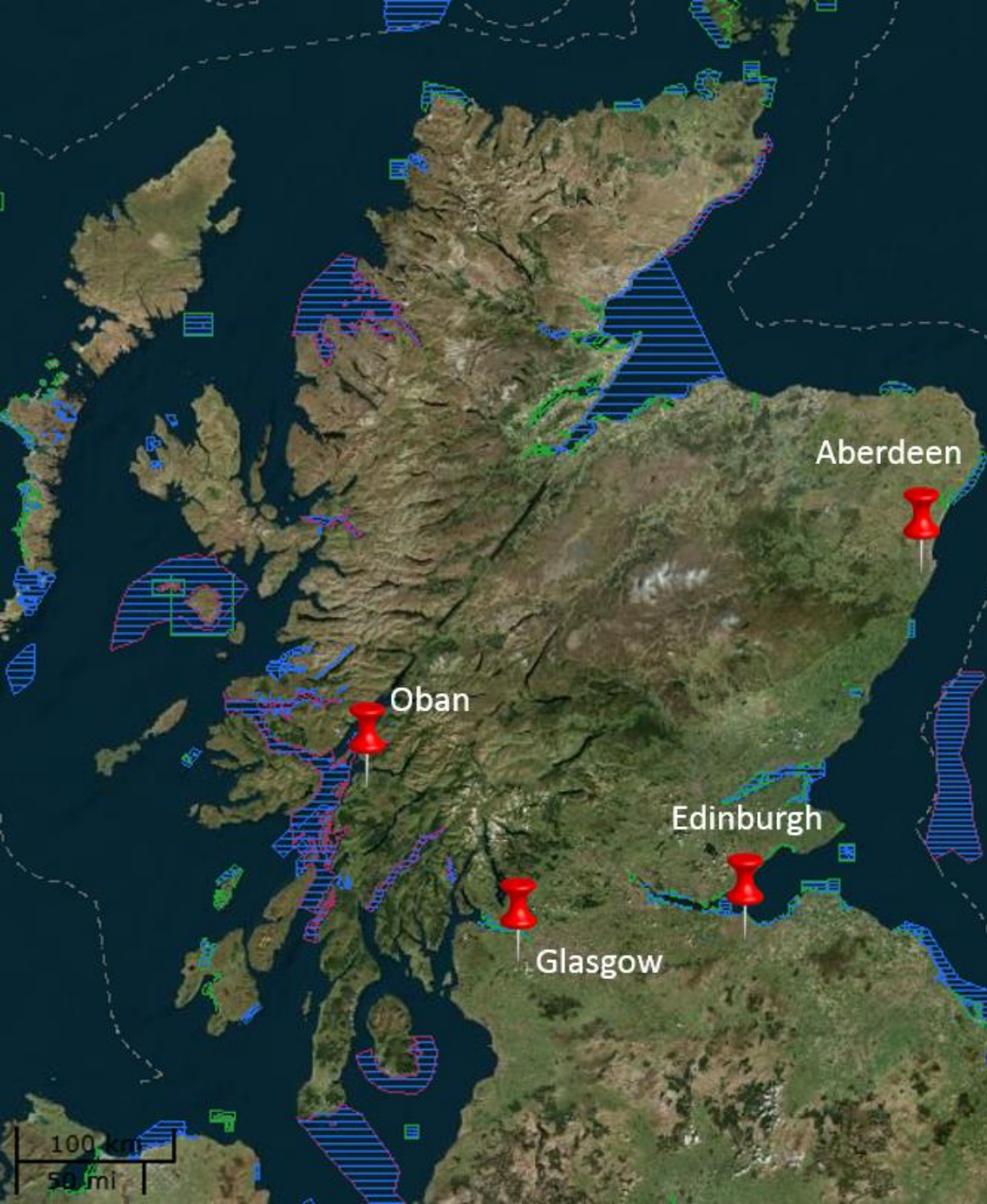
By Mark Kinver  
Environment reporter, BBC News

23 February 2015

Environment

## Unfathomable: How Much We Don't Know About the Ocean

A brief reflection on our surprising ignorance, past and present, about the underwater world.



~11,000 km  
coastline

~800  
islands

~180  
protected  
areas

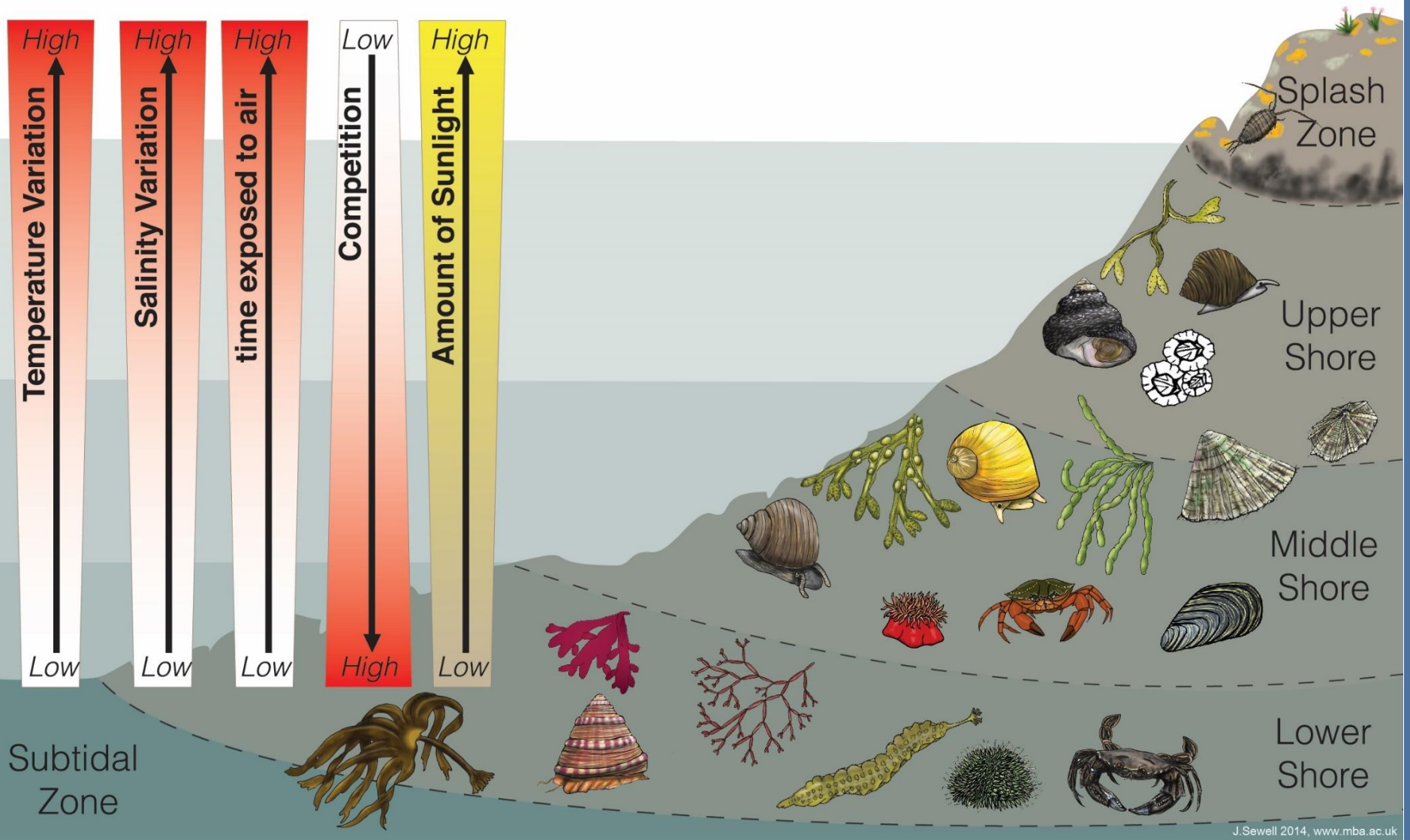




>100 million records

~3% marine



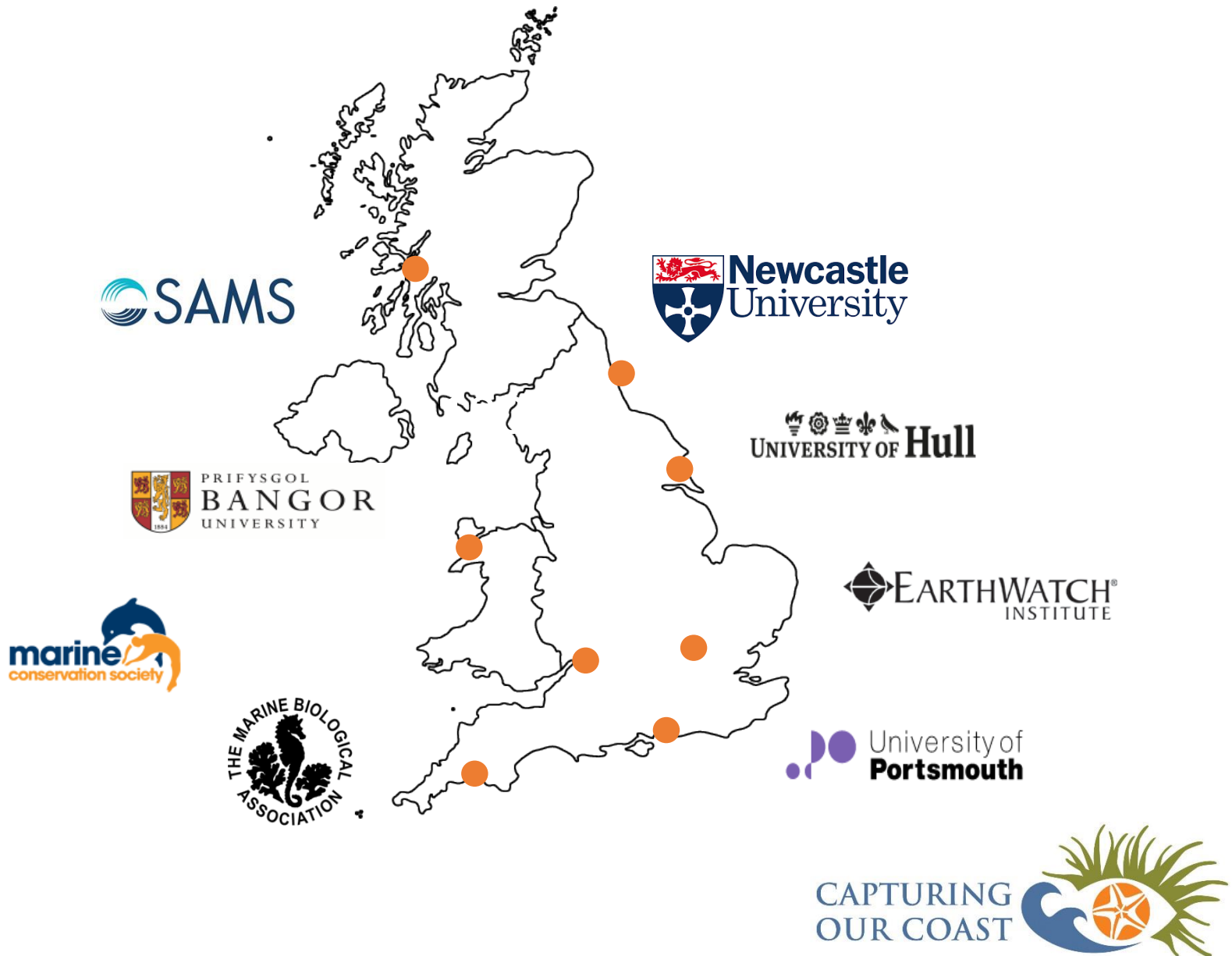


J.Sewell 2014, www.mba.ac.uk

**High biodiversity**



# Capturing our Coast





# Capturing our Coast

General surveys

Targeted experiments

Digital/  
online



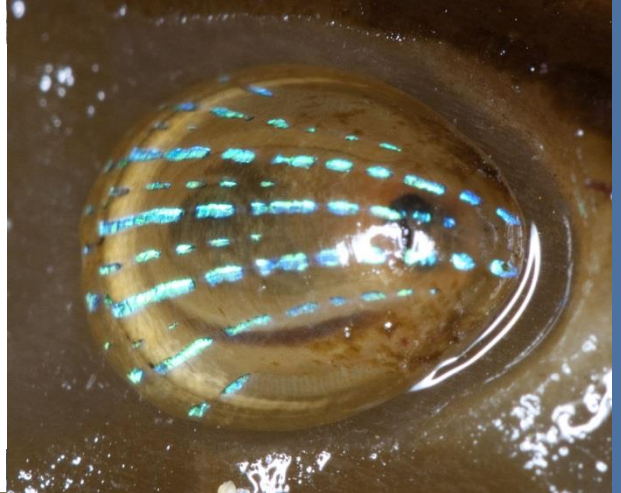




© Vicky W





# General survey




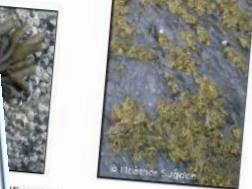



# General Survey: shared tasks


**Laminaria tangata**  
 Epiphyte  
 Size: Up to 3 m in length. Large  
 Colour: Golden brown to very  
 Key identifiable features: Frond  
 and lacks midrib. Stipe is circular  
 and snaps when bent). Rough in texture  
 red seaweeds. Holdfast is large,  
 conspicuous haptera (holdfast).  
 Can be confused with....  
 Darkweed (*Laminaria digitata*)  
 This is a similar species of kelp, however  
 the stipe of *L. digitata* is oval in cross  
 section rather than circular and the frond  
 is rarely covered in epiphytes. The stipe  
 of *L. digitata* is also flexible, unlike that  
 of *L. tangata*, which is stiff.  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

**Anemone**  
 Tentacles with purple  
 Size: Up to 7 cm across  
 Colour: Column is red or  
 are grey, brown or bright  
 Key identifiable features:  
 with a smooth column that  
 not retract into the column.  
 Can be confused with  
*Sagartia* spp.  
 Larger individuals are difficult  
 however, smaller species  
 confused with *Sagartia*  
 but snakelocks anemones are always  
 plain without any banding or speckles.  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

**Littorina littorea**  
 Common periwinkle  
 White columella Outer lip joins the body  
 at a gentle angle  
 Size: up to 35 mm long x 10 mm wide x 30 mm high  
 Colour: Variable from grey to red, but usually dark grey/  
 brown. Often with darker spirals.  
 Key identifiable features: Has a very prominent shell spire.  
 The spirals get smoother as the animal grows older. The  
 central part of the shell (columella) is white.  
 Can be confused with....  
 Small periwinkle (*Melarhaphe neritoides*)  
 Has a very small shell that resembles a pip.  
 Normally found in cracks and crevices on  
 the high shore. The shell is high pointed and  
 has a teardrop shaped opening.  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

**Pelvetia canaliculata**  
 Channelled wrack  
 15 cm long  
 when wet and dark-brown when dry.  
 es: It grows in dense tufts. The  
 nally, which forms a channel on the  
 There is no mid-rib or air bladders.  
 sth and dichotomously branched  
 reproductive bodies and can be  
 substrata.  
 Dirty rigid  
 and a narrow  
 channel of *P. canaliculata*.  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

**Enteromorpha officinalis**  
 Edible seaweed  
 Shorter  
 in colour,  
 3 segmented  
 consist of jointed  
 of calcium  
 resulting in a  
 10 rounded  
 cm wide but more typically up to  
 slightly orange colouring  
 ; Claw pincers black, slightly  
 shed. Wide, oblong-shaped carapace  
 with 10 rounded lobes, which look  
 characteristic stance of tucking legs  
 crabs  
 Irritated  
 instead of  
 rounded  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

**Cancer pagurus**  
 Edible crab  
 10 rounded lobes  
 cm wide but more typically up to  
 slightly orange colouring  
 ; Claw pincers black, slightly  
 shed. Wide, oblong-shaped carapace  
 with 10 rounded lobes, which look  
 characteristic stance of tucking legs  
 crabs  
[www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)

# General survey aims





# General survey records





**Reproductive  
timings**



**Community  
disturbance**

**Targeted  
experiments**

**Artificial  
structures**



**Invasive  
species**





# Trained volunteers







# Volunteer support

Field days

Advanced training

Coffee mornings

Wine & science



# Thanks

**Website: [www.capturingourcoast.co.uk](http://www.capturingourcoast.co.uk)**

**Email: [hannah.grist@sams.ac.uk](mailto:hannah.grist@sams.ac.uk)**

**Follow us on twitter: [@CapturingRCoast](https://twitter.com/CapturingRCoast)**



**CAPTURING  
OUR COAST**