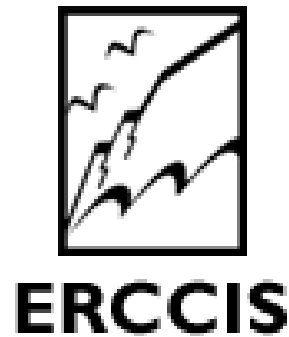




Photo: Caz Waddell

# The Intertidal Discovery Project



**Caz Waddell**

Marine Conservation Officer

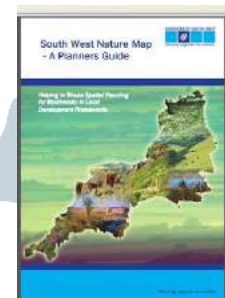
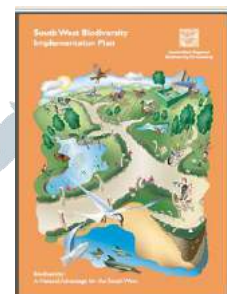
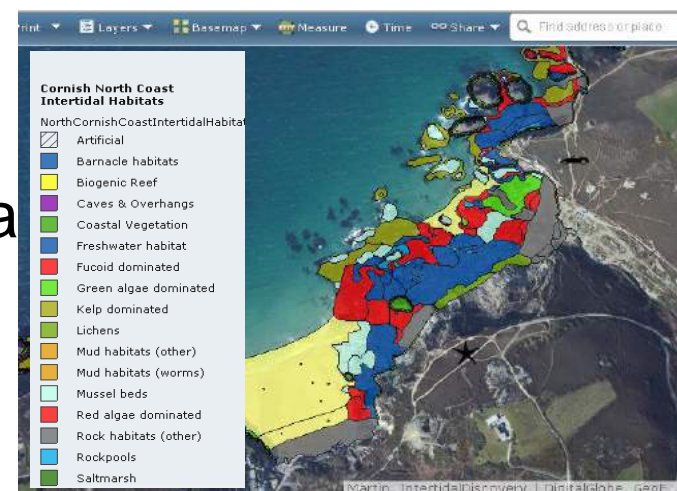
[carolyn.waddell@cornwallwildlifetrust.org](mailto:carolyn.waddell@cornwallwildlifetrust.org)





# Aims

1. Map intertidal habitats along 450km of Cornwall's North Coast.
2. Produce three key datasets; species, biotopes and non-natives.
3. Create an Internet Mapping Portal.
4. Input towards marine management plan





# Cornwall's North Coast

## Foot surveys —

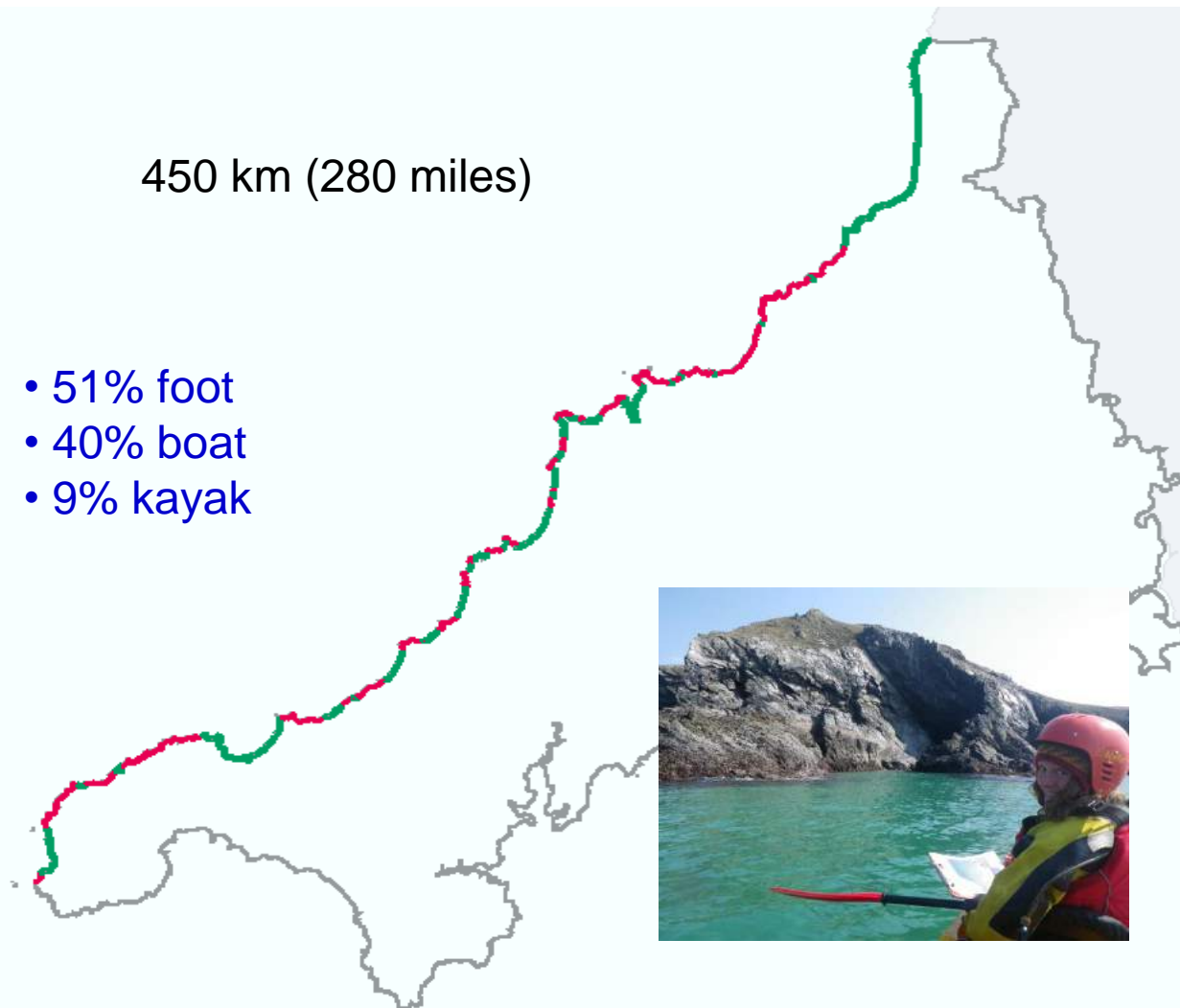


## Boat & Kayak —



450 km (280 miles)

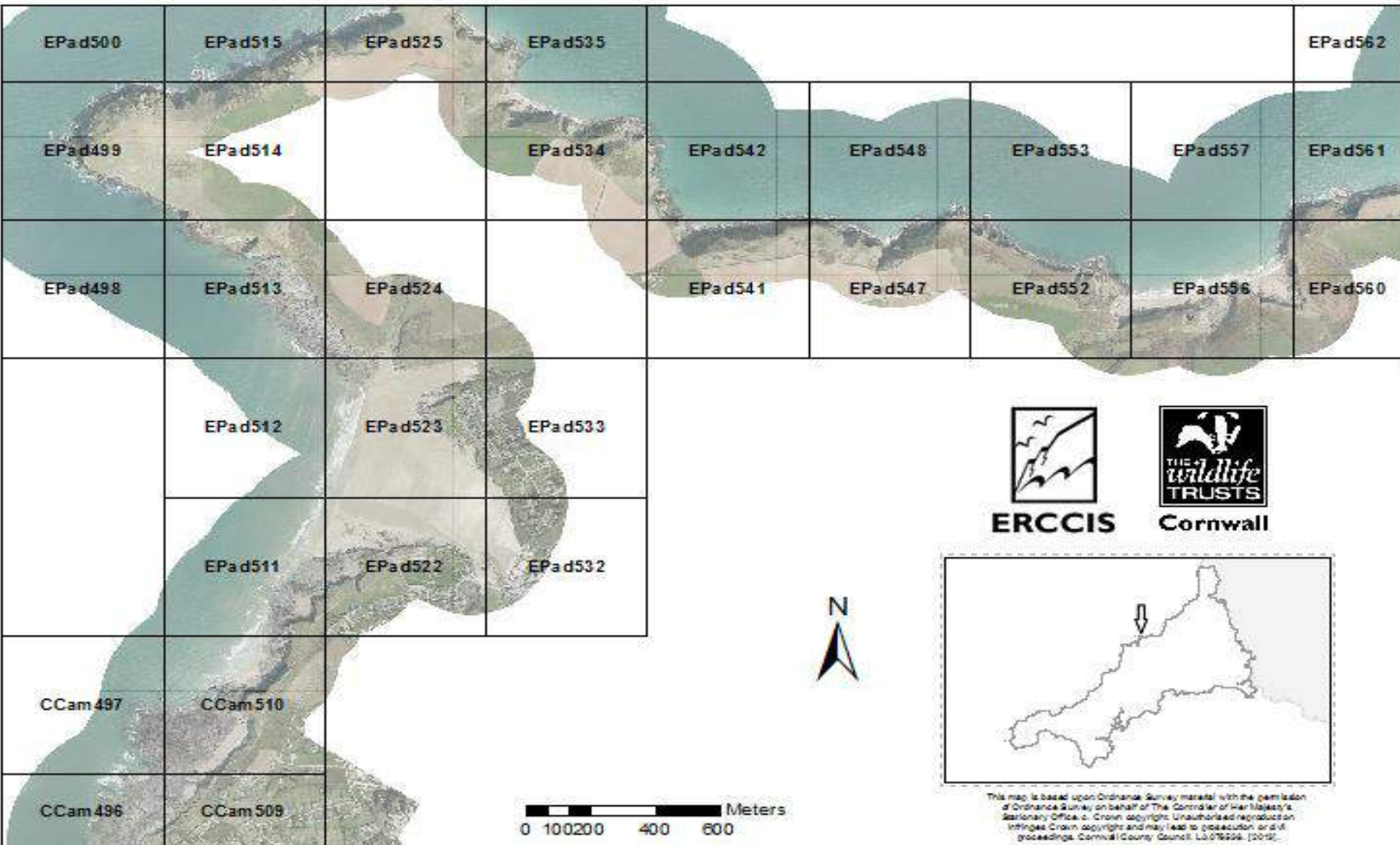
- 51% foot
- 40% boat
- 9% kayak







# Data Collection







# Data Collection

**Cornwall Wildlife Trust**  
*Protecting Cornwall's wildlife  
and wild places*



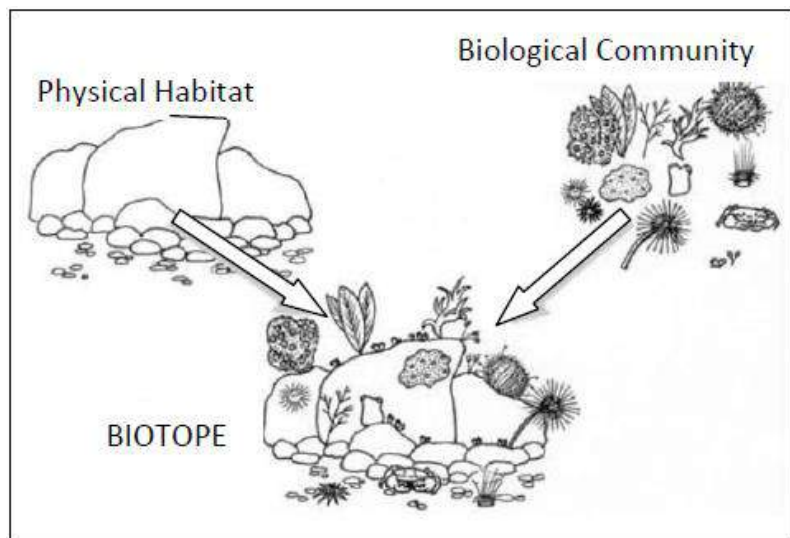




# Data Collection



**Biotope**: Uniform areas of plant and animal distribution  
(recognised ecological communities)



Yellow and Grey Lichens  
LR.FLR.Lic.YG



'Intertidal Underboulder communities'  
(BAP Habitat)  
LR.MLR.DF.FserBo



Barnacles and mussels  
LR.HLR.MusB.MytB

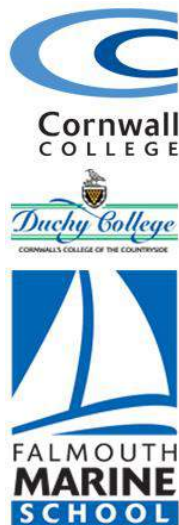
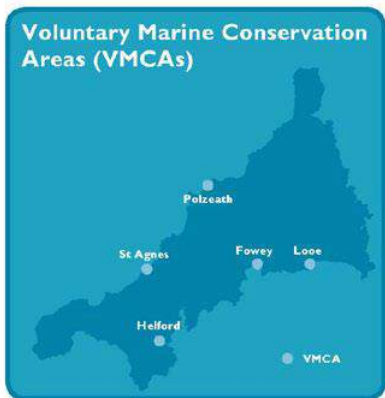








# Communities & Volunteers



Over 5000 volunteer hours

Equivalent of 2.2 full-time staff



Value of over  
£50,000!



# Achievements

- Surveyed 31,899,064 m<sup>2</sup> of intertidal habitat (3,190 hectares).
- Every major outlying rock and island within 1 mile of the coast.
- Tidal limits on the 3 major estuaries.
- Complete baseline data for the North coast; accurate to within 5m.

111  
intertidal  
habitat  
types  
(biotopes)

32 BAP  
and/or  
FOCI  
habitat  
types

Approx.  
1,200 ha of  
**rocky**  
habitats.  
**7% is BAP**  
(18 types)

Detailed  
records of  
over **200**  
species  
(including  
non-natives)

Approx.  
1,850 ha of  
**sediment**  
habitats.  
**24% is BAP**  
(14 types)

Proven ability to undertake  
field surveys with **innovative**  
**mobile GIS technology.**



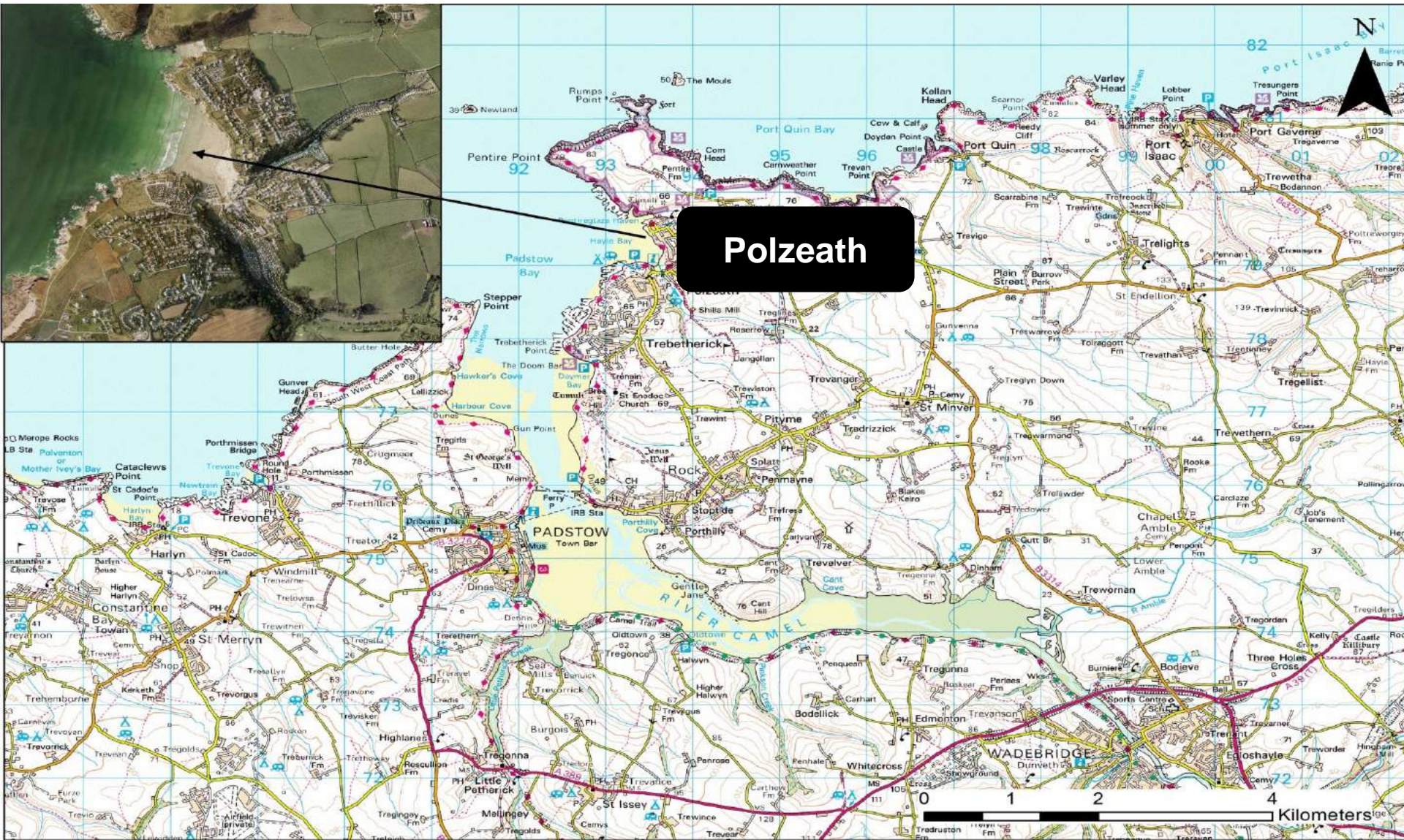
# Using Evidence



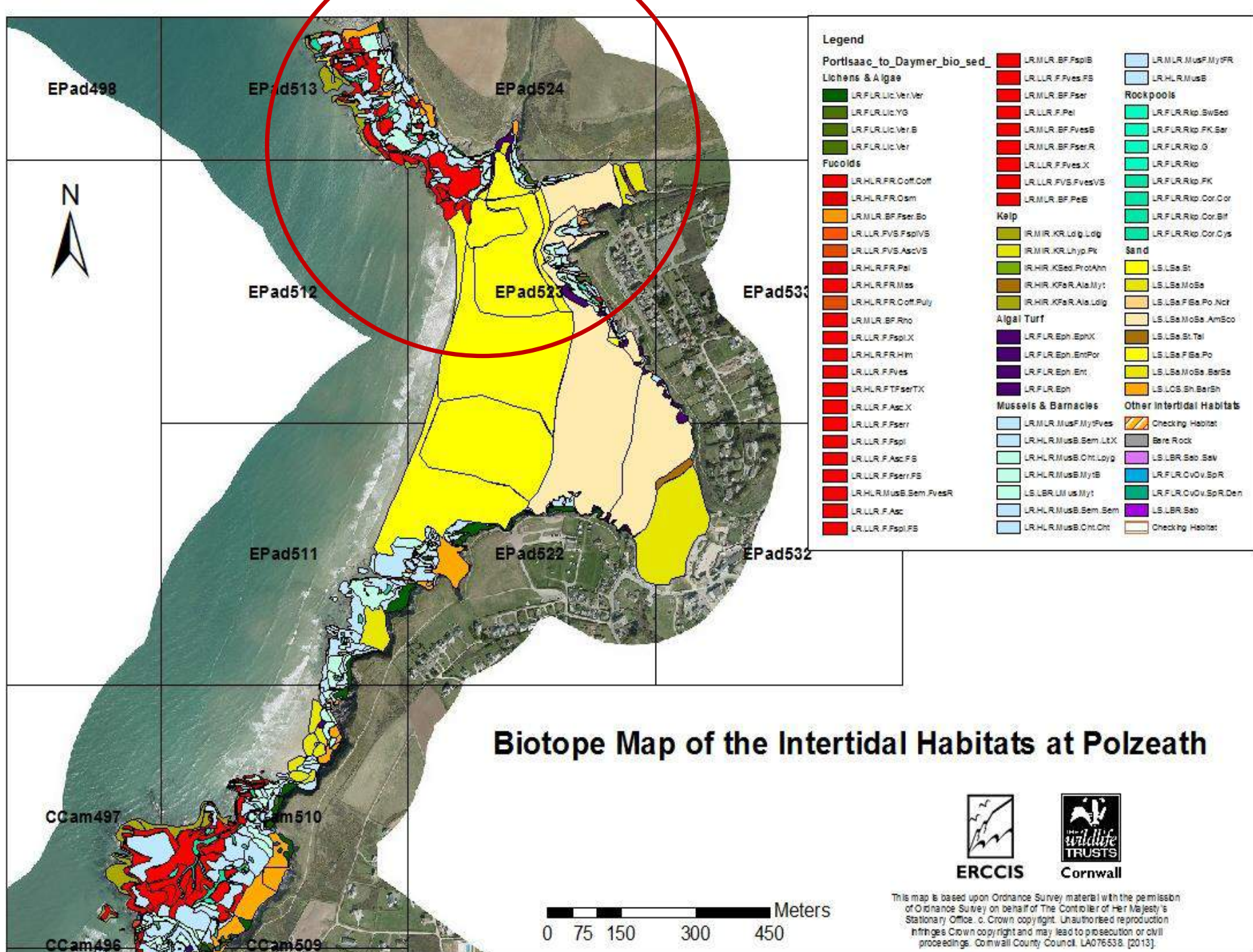




# Using Evidence







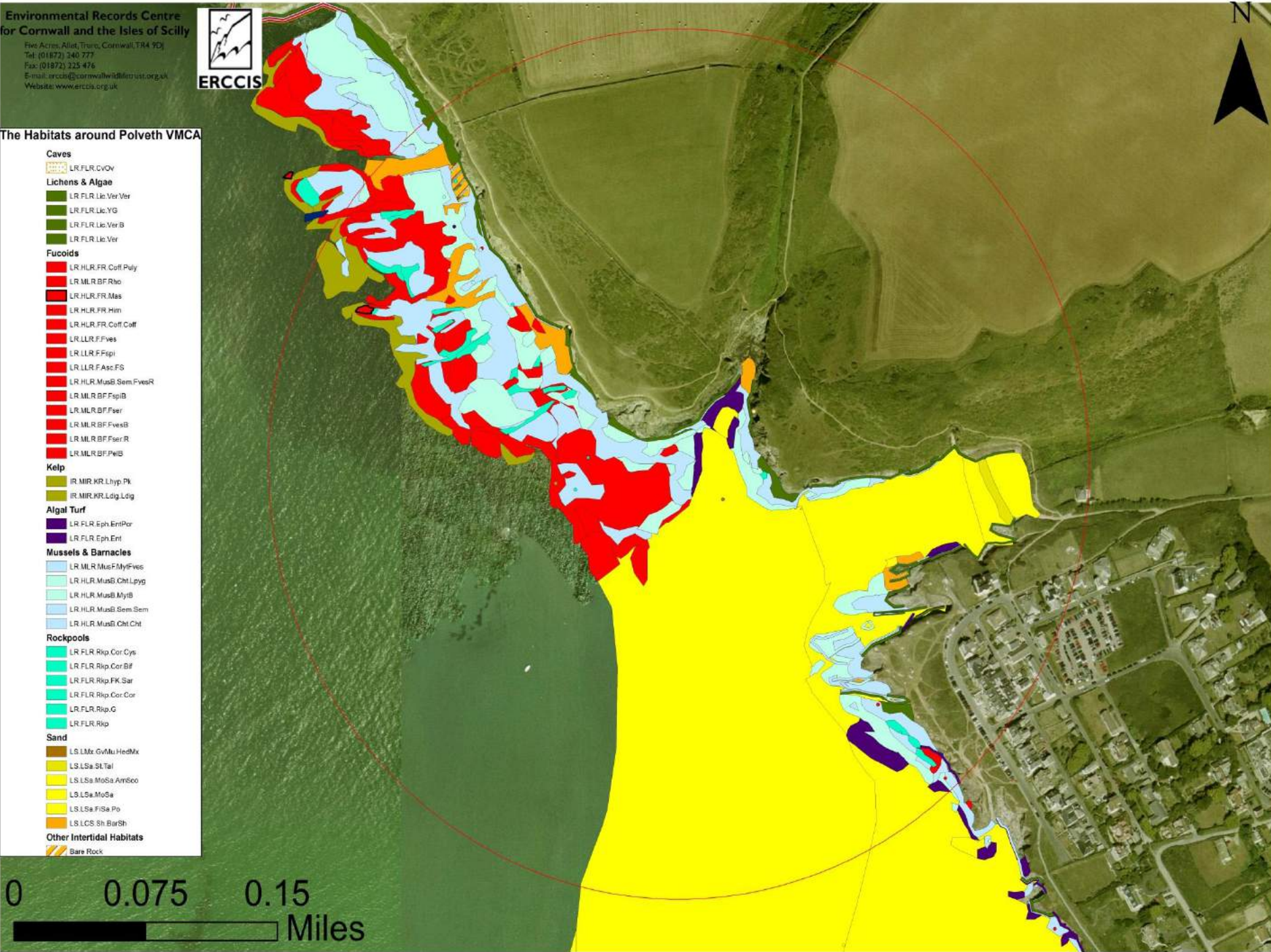
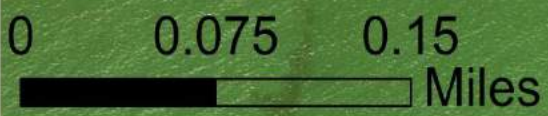
**Biotope Map of the Intertidal Habitats at Polzeath**





The Habitats around Polveth VMCA

- Caves**
- LR.FLR.CVOV
- Lichens & Algae**
- LR.FLR.Lic.Ver.Ver
  - LR.FLR.Lic.YG
  - LR.FLR.Lic.Ver.B
  - LR.FLR.Lic.Ver
- Fucoids**
- LR.HLR.FR.Coff.Poly
  - LR.MLR.BF.Rho
  - LR.HLR.FR.Mas
  - LR.HLR.FR.Him
  - LR.HLR.FR.Coff.Coff
  - LR.LLR.F.Fves
  - LR.LLR.F.Fspi
  - LR.LLR.F.Asc.FS
  - LR.HLR.MusB.Sem.FvesR
  - LR.MLR.BF.FspiB
  - LR.MLR.BF.Feer
  - LR.MLR.BF.FvesB
  - LR.MLR.BF.FeerR
  - LR.MLR.BF.PeiB
- Kelp**
- LR.MIR.KR.Lhyp.Pk
  - LR.MIR.KR.Ldig.Ldig
- Algal Turf**
- LR.FLR.Eph.EntPor
  - LR.FLR.Eph.Ent
- Mussels & Barnacles**
- LR.MLR.MusFMyFves
  - LR.HLR.MusB.Cht.Lpyg
  - LR.HLR.MusB.MylB
  - LR.HLR.MusB.Sem.Sem
  - LR.HLR.MusB.Cht.Cht
- Rockpools**
- LR.FLR.Rip.Cor.Cys
  - LR.FLR.Rip.Cor.Bif
  - LR.FLR.Rip.FK.Sar
  - LR.FLR.Rip.Cor.Cor
  - LR.FLR.Rip.G
  - LR.FLR.Rip
- Sand**
- LS.LMx.GvMu.HedMx
  - LS.LSa.St.Tal
  - LS.LSa.MoSa.AmBco
  - LS.LSa.MoSa
  - LS.LSa.FiSa.Po
  - LS.LCS.Sh.BarSh
- Other Intertidal Habitats**
- Bare Rock











# The Habitats around Polveth VMCA

## Caves

LR.FLR.CVOV

## Lichens & Algae

LR.FLR.Lic.Ver.Ver

LR.FLR.Lic.YG

LR.FLR.Lic.Ver.B

LR.FLR.Lic.Ver

## Fucoids

LR.HLR.FR.Coff.Poly

LR.MLR.BF.Rho

LR.HLR.FR.Mas

LR.HLR.FR.Him

LR.HLR.FR.Coff.Coff

LR.LLR.F.Fves

LR.LLR.F.Fspi

LR.LLR.F.Asc.FS

LR.HLR.MusB.Sem.FvesR

LR.MLR.BF.FspiB

LR.MLR.BF.Feer

LR.MLR.BF.FvesB

LR.MLR.BF.FserR

LR.MLR.BF.PeiB

## Kelp

LR.MLR.KR.Lhyp.Pk

LR.MLR.KR.Ldig.Ldig

## Algal Turf

LR.FLR.Eph.EntPor

LR.FLR.Eph.Ent

## Mussels & Barnacles

LR.MLR.MusFMyFves

LR.HLR.MusB.Cht.Lpyg

LR.HLR.MusB.MylB

LR.HLR.MusB.Sem.Sem

LR.HLR.MusB.Cht.Cht

## Rockpools

LR.FLR.Rip.Cor.Cys

LR.FLR.Rip.Cor.Bif

LR.FLR.Rip.FK.Sar

LR.FLR.Rip.Cor.Cor

LR.FLR.Rip.G

LR.FLR.Rip

## Sand

LS.LMx.GvMu.HedMx

LS.LSa.St.Tal

LS.LSa.MoSa.AmBco

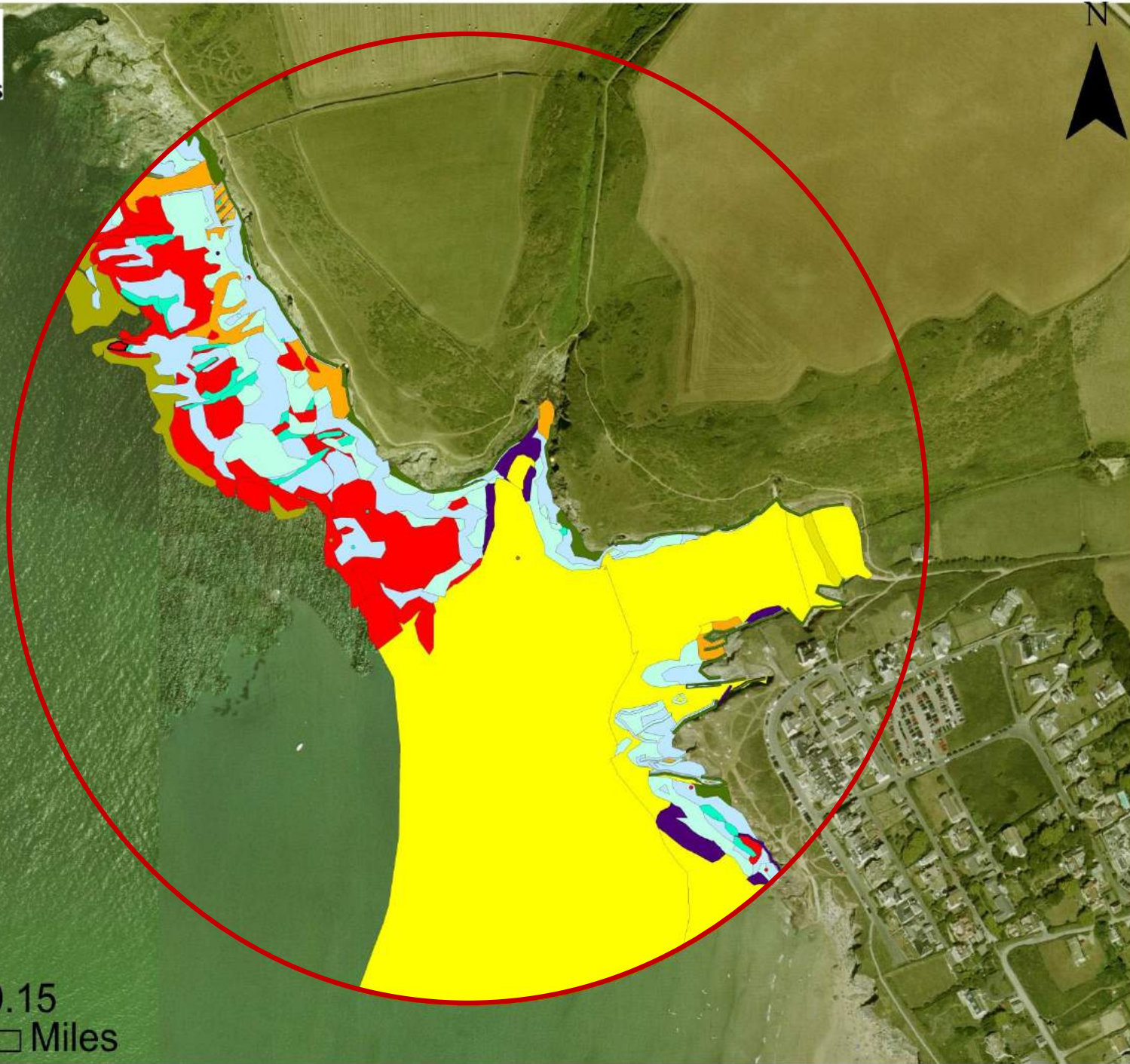
LS.LSa.MoSa

LS.LSa.FiSa.Po

LS.LCS.Sh.BarSh

## Other Intertidal Habitats

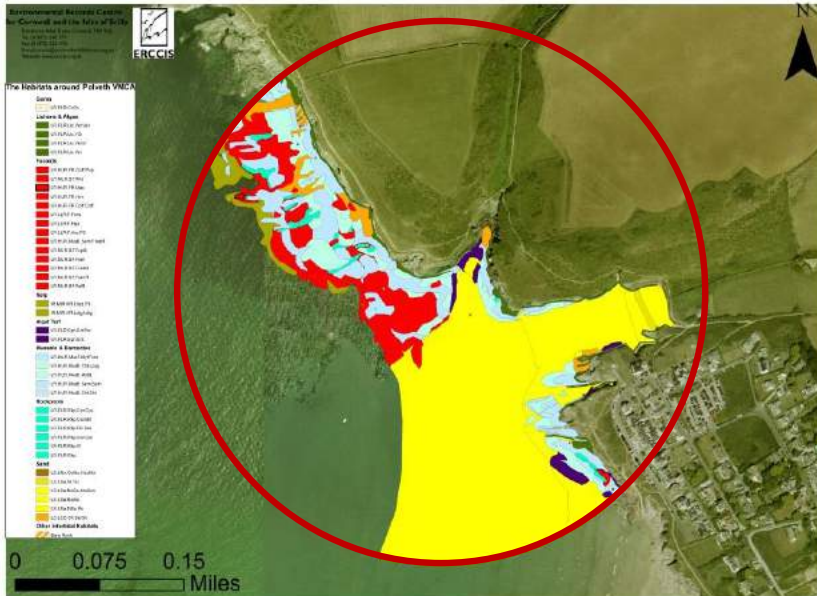
Bare Rock







# Using Evidence



## Polzeath's Intertidal Habitats:

**41 different biotopes**

**13 broad habitat types**

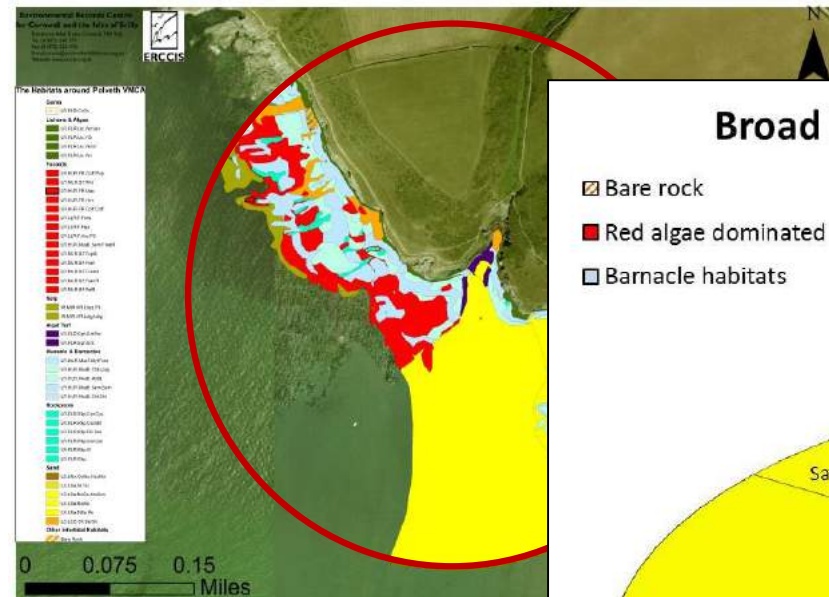
**7 lifeform types**

**(152 species)**

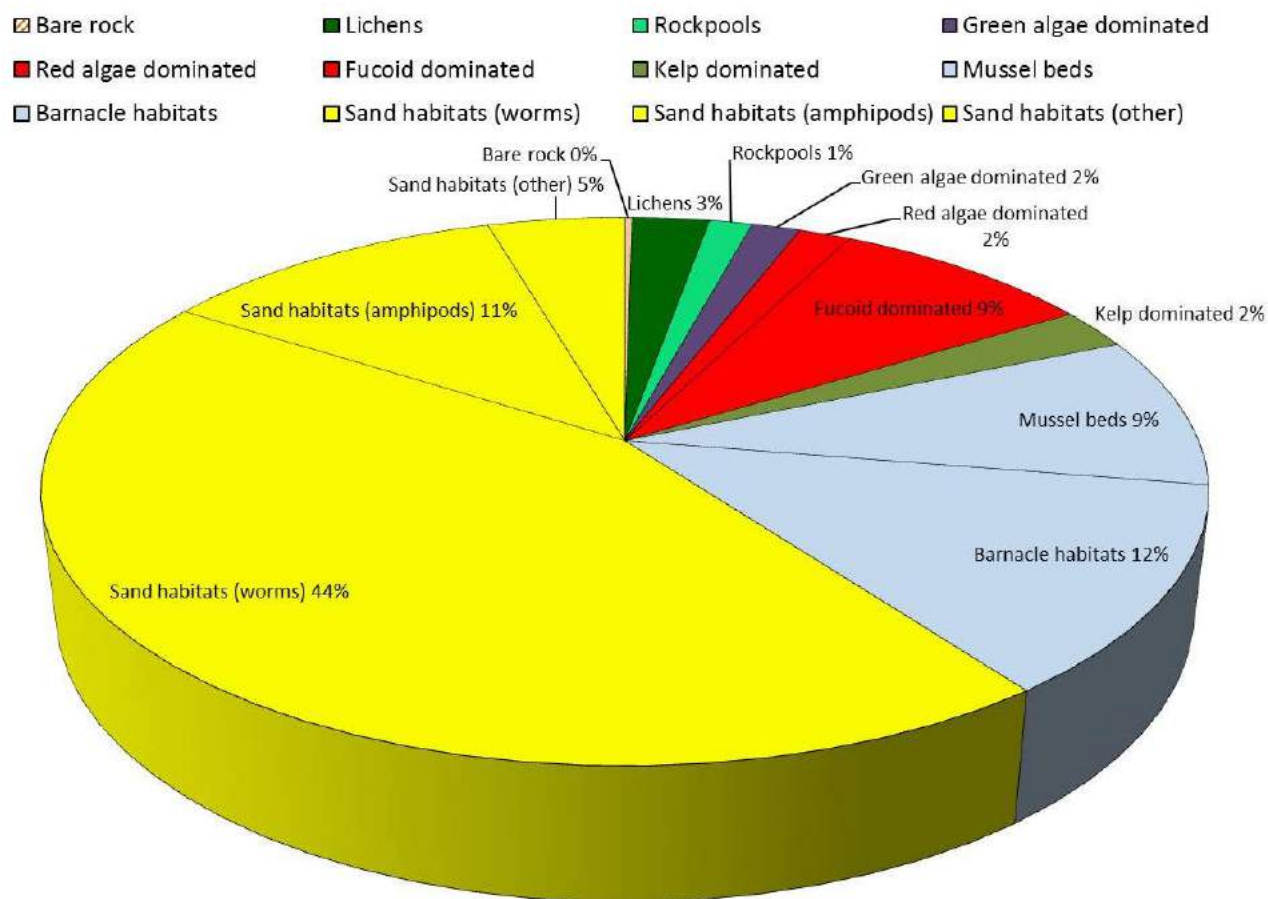
Broad Habitat Type	Area (ha)
Caves	0.001
Bare rock	0.037
Lichens	0.399
Rockpools	0.223
Green algae dominated	0.251
Red algae dominated	0.267
Fucoid dominated	1.356
Kelp dominated	0.376
Mussel beds	1.402
Barnacle habitats	1.916
Sand habitats (worms)	6.900
Sand habitats (amphipods)	1.790
Sand habitats (other)	0.710
<b>TOTAL</b>	<b>15.625</b>



# Using Evidence



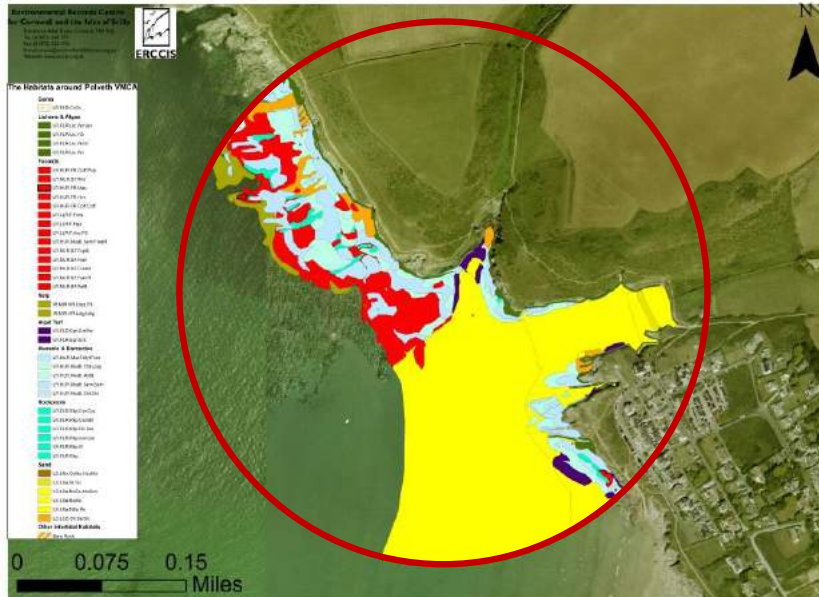
## Broad Habitat Types of the Intertidal Zone at Polzeath







# Using Evidence



## Polzeath's Management



Resource management

1.42 ha mussel habitat = approx. 4.26 tonnes



**Non-native species**



**Fucoid/kelp**



**BAP habitats**



**Bait digging – Possible**



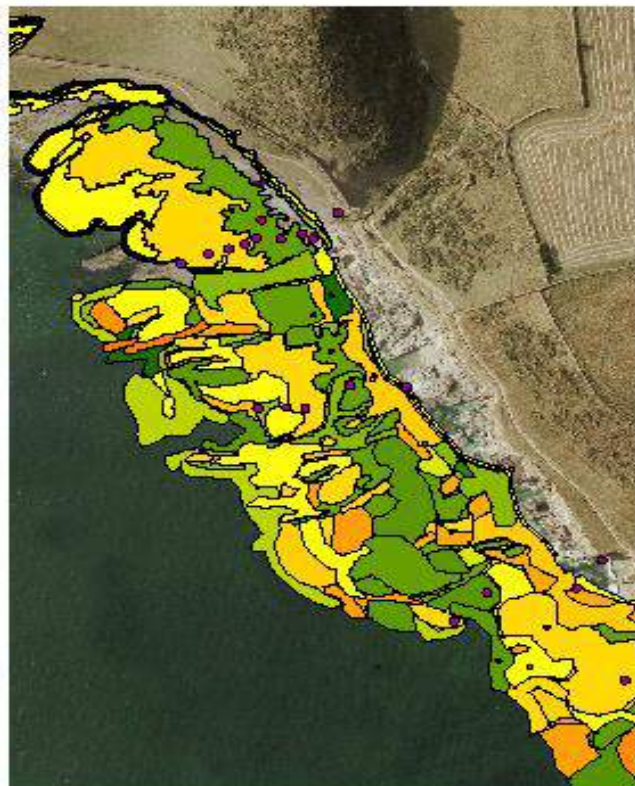


# Using Evidence

## Intertidal Discovery

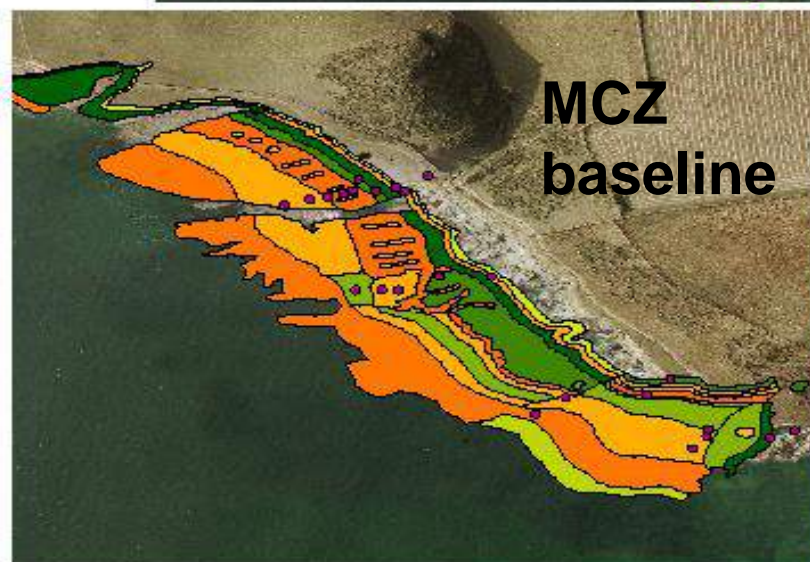
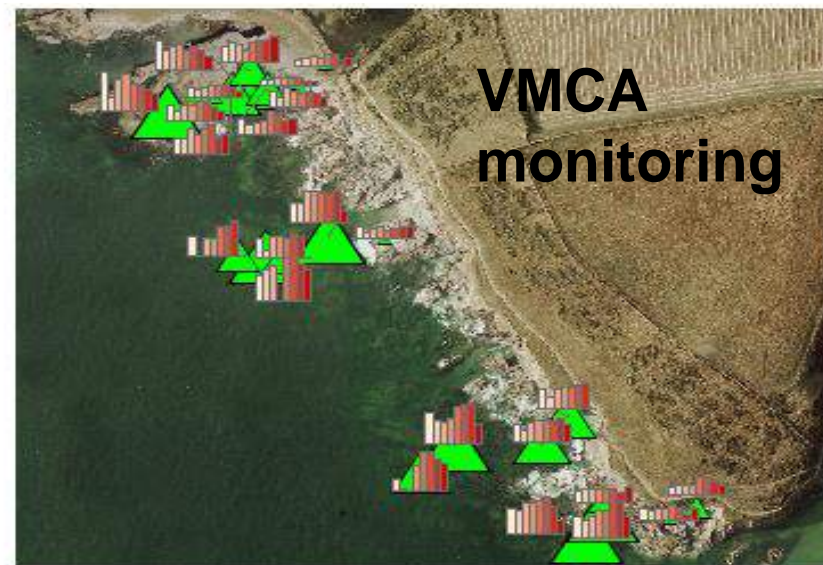
### Key

	A1 (1)
	A1.111 (22)
	A1.1121 (5)
	A1.1122 (11)
	A1.1131 (19)
	A1.1132 (8)
	A1.1221 (7)
	A1.1222 (3)
	A1.123 (13)
	A1.125 (2)
	A1.211 (1)
	A1.212 (2)
	A1.213 (16)
	A1.214 (3)
	A1.2141 (8)
	A1.215 (1)
	A1.221 (4)
	A1.312 (2)
	A1.313 (1)
	A1.3131 (1)
	A1.3141 (1)
	A1.41 (1)
	A1.4111 (2)
	A1.4113 (3)
	A1.4114 (2)
	A1.412 (1)
	A1.4121 (12)
	A1.421 (1)
	A1.44 (1)
	A1.446 (1)
	A1.451 (1)
	A2.111 (10)
	A2.231 (1)
	A3.2111 (12)
	A3.2141 (2)
	B3.111 (1)
	B3.1131 (3)
	B3.1132 (7)



### Key

	12		26 - 44
	a1999		44 - 60
	a2000		60 - 71
	a2001		71 - 96
	a2002		
	a2003		
	a2004		
	a2005		
	a2010		96 - 130



### Key

	A1 (6)
	A1.111 (5)
	A1.1121 (15)
	A1.1122 (4)
	A1.1221 (3)
	A1.213 (7)
	A1.4121 (1)
	A1.441 (3)
	A1.451 (1)
	A3.2111 (1)
	B3.111 (2)
	B3.113 (2)

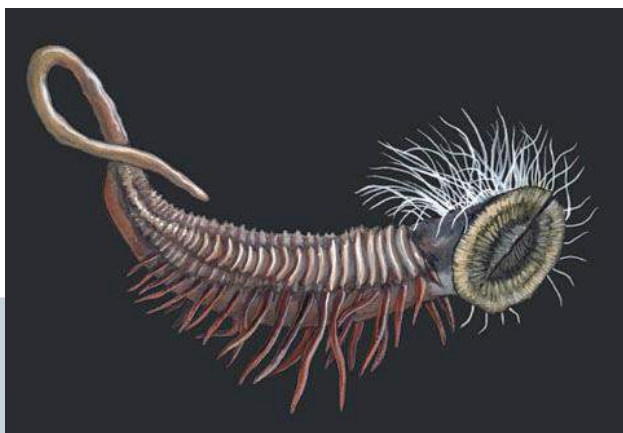




# Using Evidence



**Honeycomb worms reefs**  
*Sabellaria alveolata*



Photos: Alan Rowland (top left) and Matt Slater (above).





Intertidal Discovery

# Using Evidence



[NBN Gateway Home](#) [The NBN](#) [Browse Datasets](#) [Browse Species](#) [Browse Sites](#) [Browse Designations](#) [Documentation](#) [Forum](#)

You are here: [Taxa](#) > [Sabellaria alveolata](#) > [Grid Map](#) >

Grid map for *Sabellaria alveolata* (Linnaeus, 1767) [Honeycomb Worm]

Controls

Map

IDP Data  
(2014)

IDP Data  
(2014)

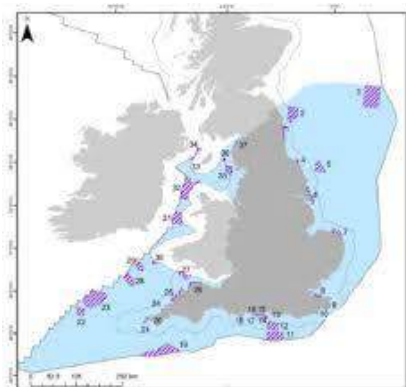






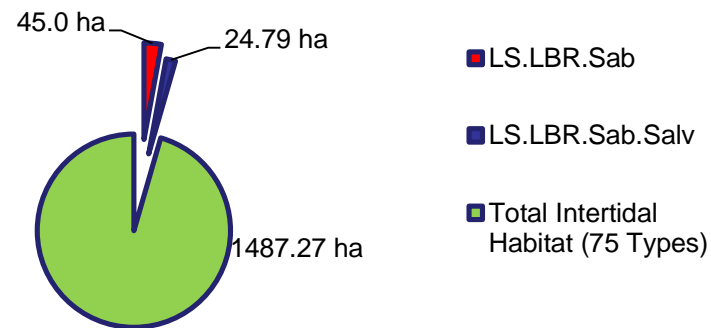
# Using Evidence

**MCZ Tranche II  
evidence data  
sent to NE/DEFRA**



**Environmental  
Planning**

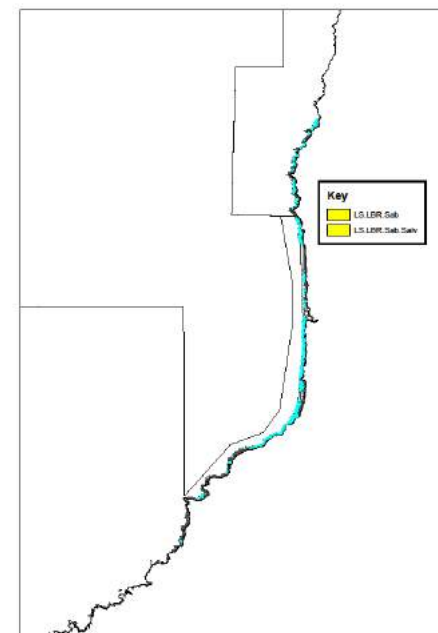
Surveyed area of *Sabellaria* BAP/HPI habitat  
in the Heartland Point to Tintagel rMCZ



**Trends &  
Data Analysis**



**Informing Policy**





# Resources

- A fully **interactive mapping portal** for desktop & mobiles.
- New **marine data** website [www.marinedatacornwall.org](http://www.marinedatacornwall.org)  
'one-stop' location for all CWT and ERCCIS managed marine data.



All free and publically available.

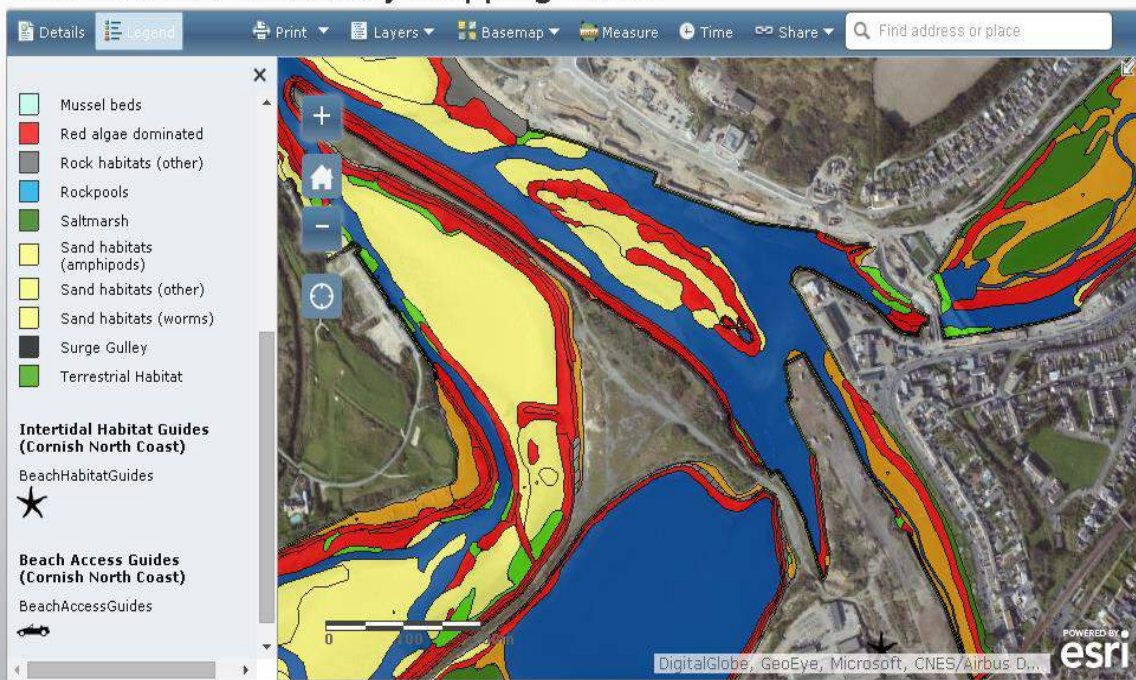


# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*



## The Intertidal Discovery Mapping Portal

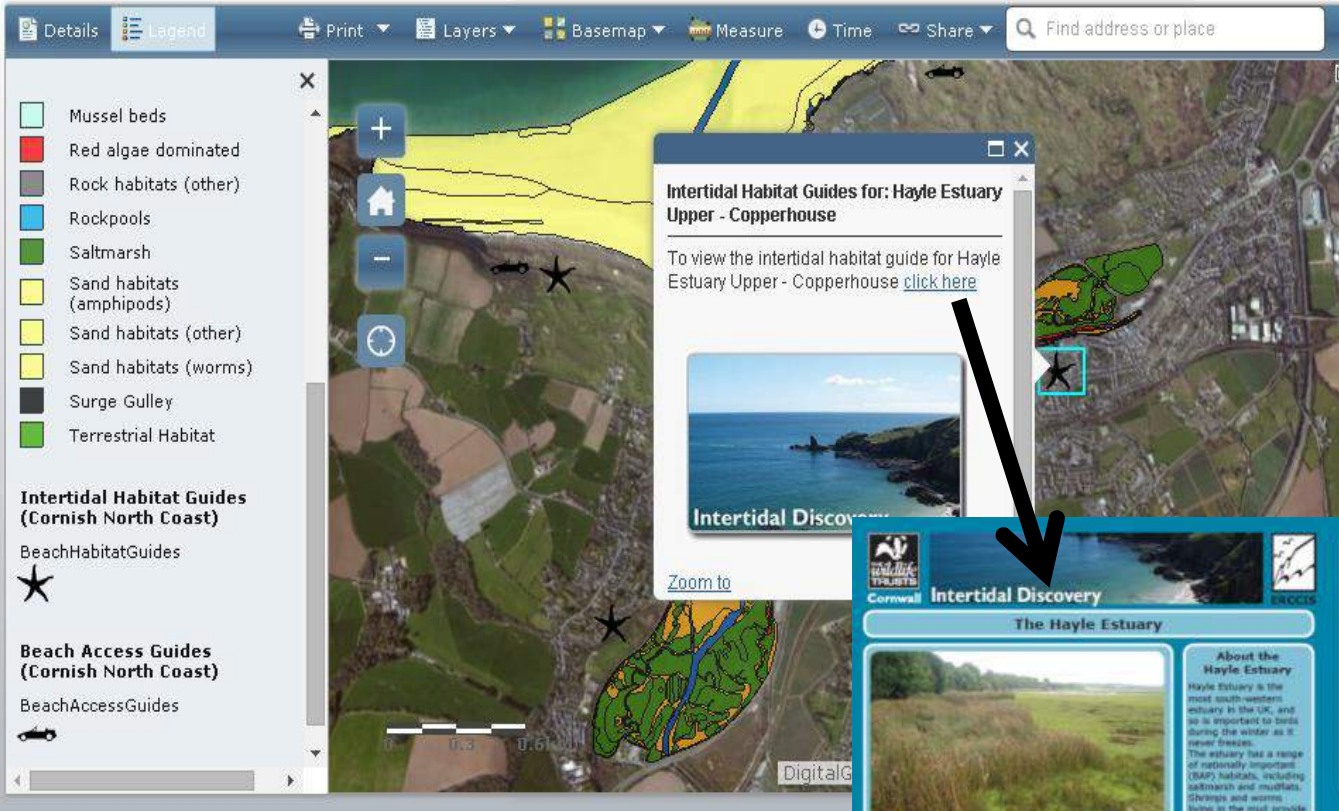




# The Intertidal Discovery Mapping Portal

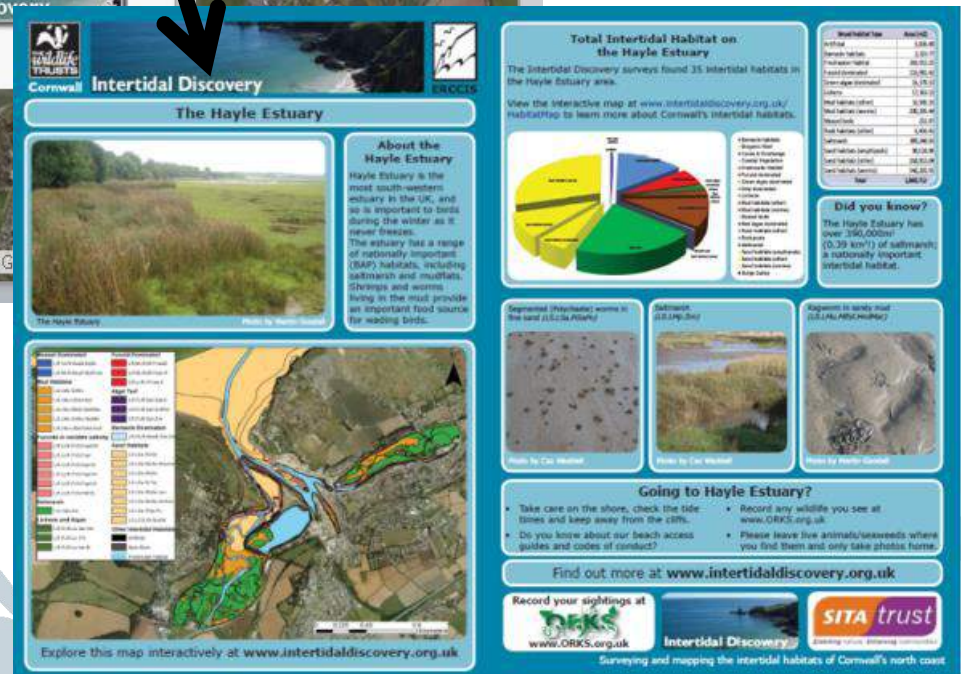
Protecting Cornwall's wildlife  
and wild places

I want info  
about the  
habitats in my  
local area...



**69 sectional areas**

[www.intertidaldiscovery.org.uk/OnYourBeach](http://www.intertidaldiscovery.org.uk/OnYourBeach)





# The Intertidal Discovery Mapping Portal

Protecting Cornwall's wildlife  
and wild places

I want more  
on a particular  
biotope...

## 108 biotope guides

[www.intertidaldiscovery.org.uk/Biotopes](http://www.intertidaldiscovery.org.uk/Biotopes)

**Intertidal Discovery**  
Saltmarsh

**Biotope Full Code:** LS.LMp.5m  
**Biotope Short Code:** 5m

**Biotope summary:**  
Sand and mud shores, colonised by salt-tolerant flowering plants.  
This biotope occurs in sheltered areas typically in the upper reaches of estuaries.

**Biotope description:**  
Saltmarshes can be defined as areas of intertidal mud colonised by flowering plants. They often form dense stands of vegetation in the very upper reaches of sheltered and estuarine shores. These habitats are only infrequently covered by high spring tides. Plant species include cord grass (*Spartina* spp.) glasswort or marsh samphire (*Salicornia* spp.), sea purslane (*Portulaca* spp.), sea purslane (*Suaeda maritima*), sea aster (*Aster tripolium*), common saltmarsh grass (*Puccinellia maritima*), sea purslane (*Cochlearia* spp.), thrift (*Armeria maritima*), sea purslane (*Cladonia maritima*), sea purslane (*Elmendorf humilis*), sea purslane (*Plantago maritima*) and a variety of reeds and rushes. There is much seasonal variation in a typical saltmarsh environment: with extensive summer growth and winter die-back. Animal species present in the mud may include lugworm (*Medea diversicolor*), spire shells (*Hydrobia ulvae*), mud shrimps (*Corophium volutator*), and fanworms (*Marasmius* spp.).

**Location on the shore:**  
Upper

**Distribution:**  
Estuaries




**North Cornwall Coast Status:**  
Occasional

**Designations:**  
Biosphere, Ramsar, SPA

**Species found in this Biotope:**  
Cord grass (*Spartina* spp.), Sea purslane (*Portulaca maritima*), Sea purslane (*Suaeda maritima*), Sea aster (*Aster tripolium*), Common saltmarsh grass (*Puccinellia maritima*), Sea purslane (*Cochlearia* spp.), Thrift (*Armeria maritima*), Sea purslane (*Cladonia maritima*), Sea purslane (*Elmendorf humilis*), Sea purslane (*Plantago maritima*), and a variety of reeds and rushes.

**References/Further Information:**  
• Joint Nature Conservation Committee (JNCC) for detailed information about biotopes and details about Biodiversity Action Plan Priority Habitats. [www.jncc.gov.uk/marine](http://www.jncc.gov.uk/marine)  
• Marine Life Information Network (MARLIN) for further marine species and habitat information. [www.marlin.ac.uk](http://www.marlin.ac.uk)  
• The Marine Biotope Classification for Britain and Ireland for full biotope descriptions. Version 04/05: Cornes, Allen, Cokling, Howell, Usher, and Rees: 2004. <http://jncc.gov.uk/marine/biotopes/classification>  
• The Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS) for further species and habitat information locally. [www.ercis.org.uk](http://www.ercis.org.uk)

Find out more at [www.intertidaldiscovery.org.uk](http://www.intertidaldiscovery.org.uk)

Record your sightings at [www.ORKS.org.uk](http://www.ORKS.org.uk)   

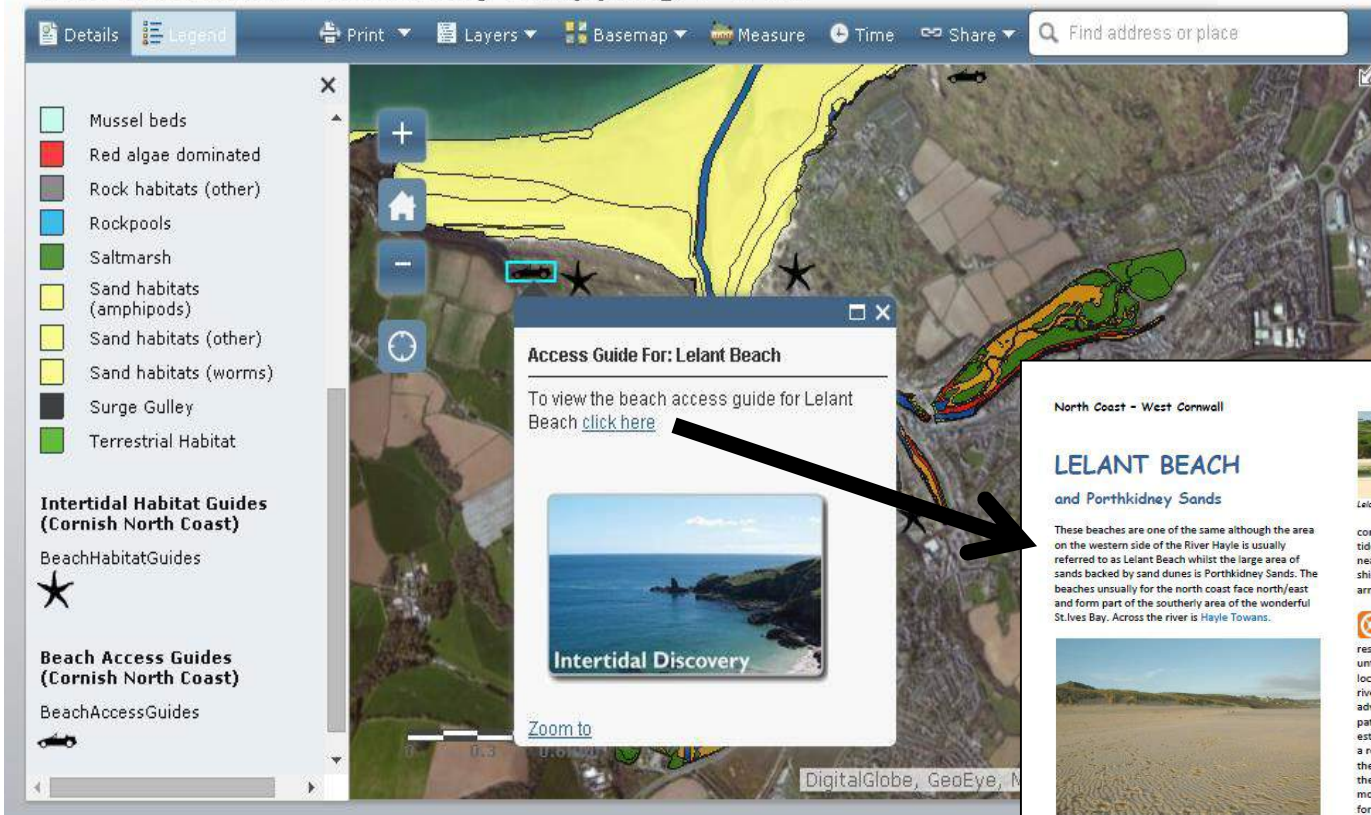
Surveying and mapping the intertidal habitats of Cornwall's north coast



# The Intertidal Discovery Mapping Portal

Protecting Cornwall's wildlife  
and wild places

I want info on  
beach  
access...



**North Coast - West Cornwall**

## LELANT BEACH and Porthkidney Sands

These beaches are one of the same although the area on the western side of the River Hayle is usually referred to as Lelant Beach whilst the large area of sands backed by sand dunes is Porthkidney Sands. The beaches usually for the north coast face north/east and form part of the southerly area of the wonderful St. Ives Bay. Across the river is Hayle Towns.

**Lelant Beach from Hayle Towns** **Porthkidney from Hayle Towns**

considerably throughout the year and during spring tides can be minimal. Lelant Beach is mostly sand nearer the mouth of the estuary but can be stony with shingle opposite the stony spit that separates the two arms of the river.

**There is safety and rescue equipment.** Lifeguards are on duty from May until the end of September. The lifeguard lookout is located in the dunes. Swimming and entering the river is prohibited because of strong currents. It is advisable to only swim in the designated area patrolled by lifeguards. Swimming at the mouth of the estuary is dangerous, especially at low water. It is not a recognised surfing beach because of its aspect but at the far end of Porthkidney Sands at Hawks Point when there is a huge swell, a fine surf is produced for the more experienced; generally the beach is only good for bodyboarding and kite surfing. It is dangerous to snorkel and there are no rock pools.

**There are no restrictions on dogs.** There are no toilets or other facilities. There is a pub and shop in Lelant village.

**It is a wonderful expanse of fine yellow sand at low water** which is at its widest next to the mouth of the river. The amount of sand at high water will vary

**Water quality is very good.** Although the inherent dangers of bathing it can be a sheltered beach and never gets crowded. At low spring tides it is possible to walk around Carrack Gladden to Carbis Bay

**Location - Part of OS Explorer Map 102**

**Lelant Beach next to the River** **Porthkidney Sands at low water**

## 104 access guides

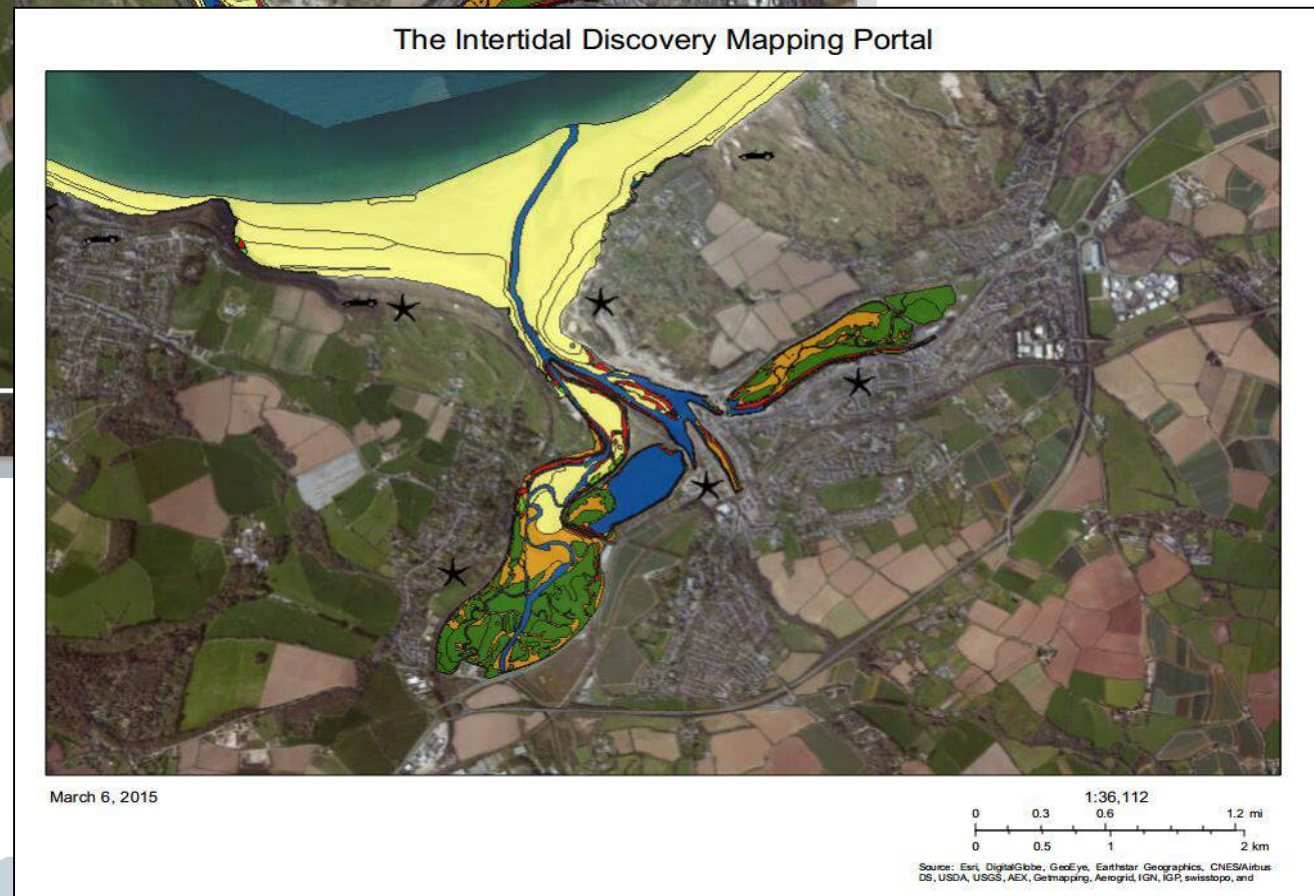
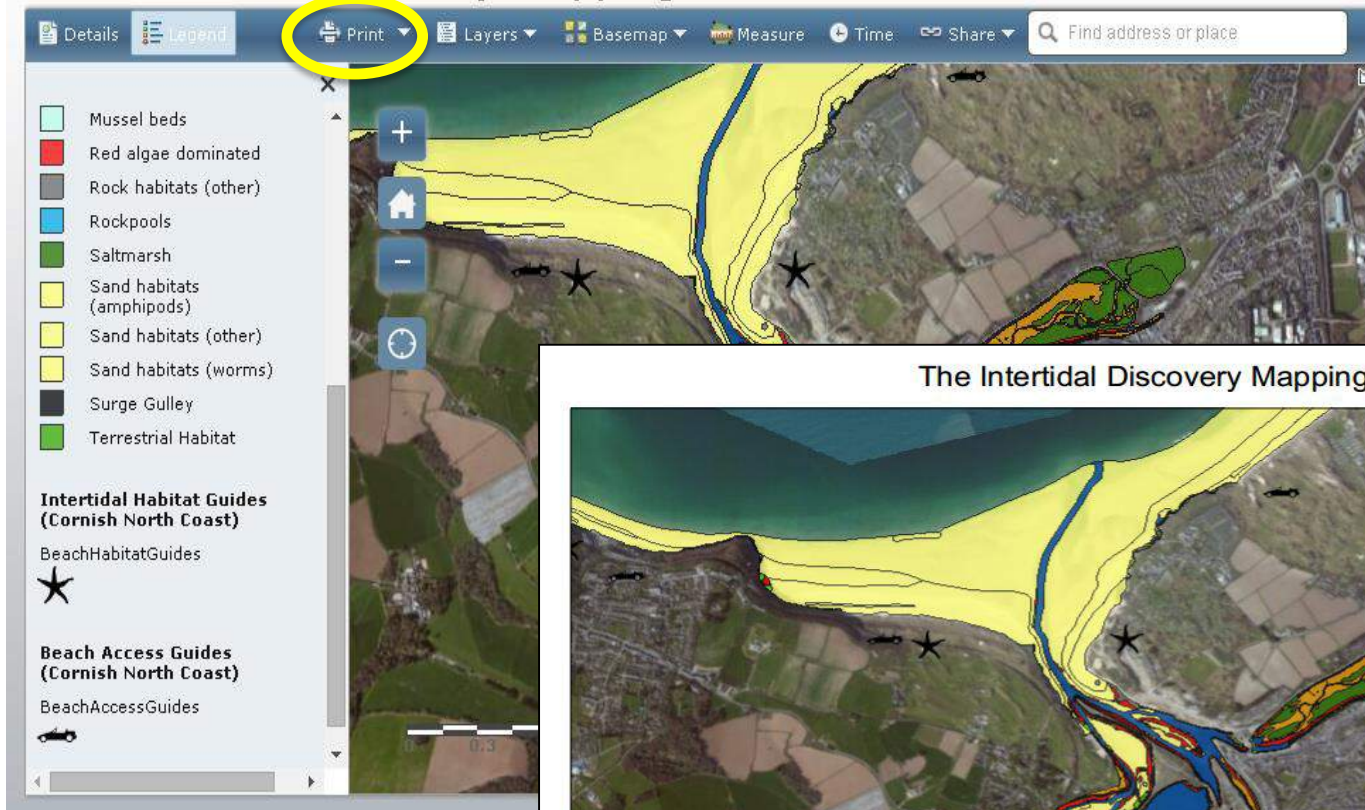
By kind permission from Mike Hawkey



# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

**I want to  
print a map...**

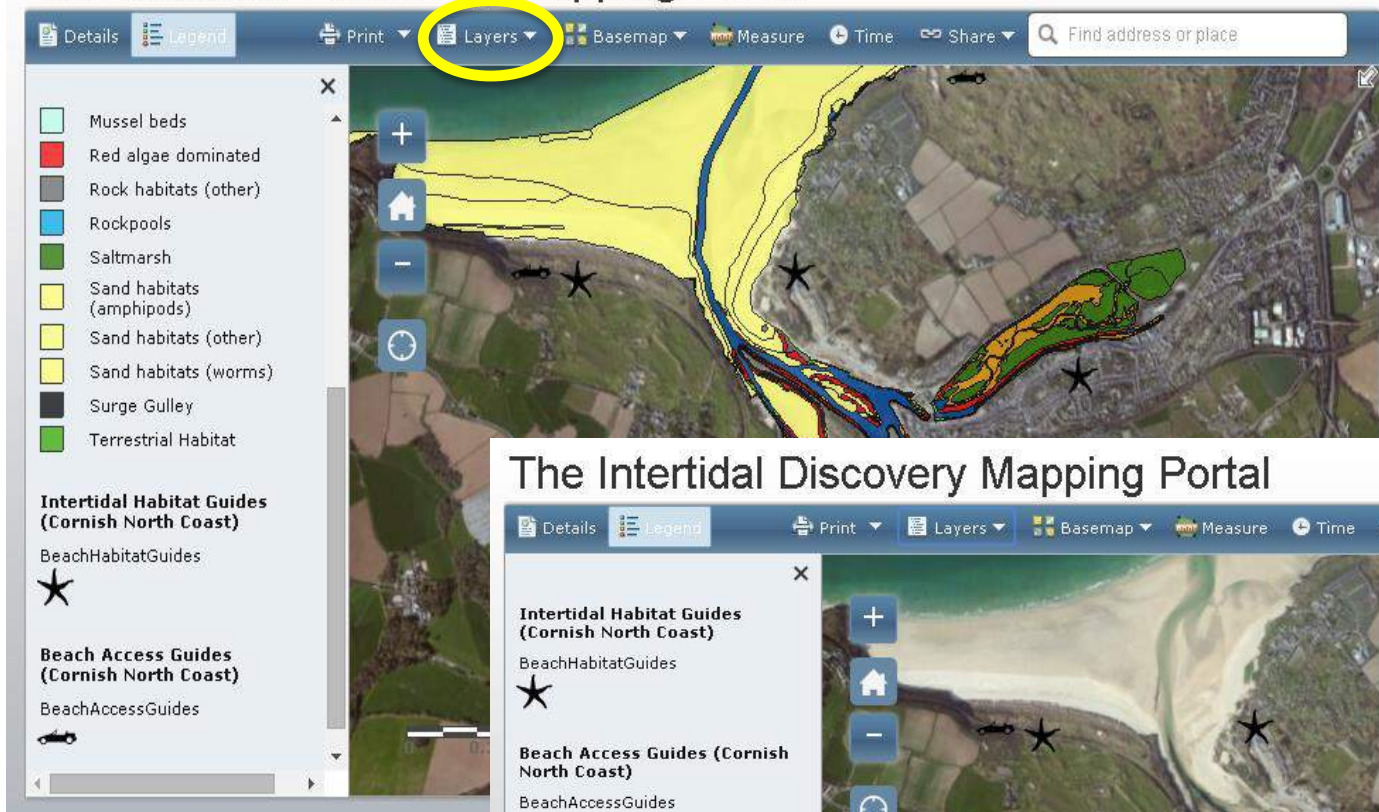




# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

**I want to  
remove the  
survey  
layers...**



## The Intertidal Discovery Mapping Portal

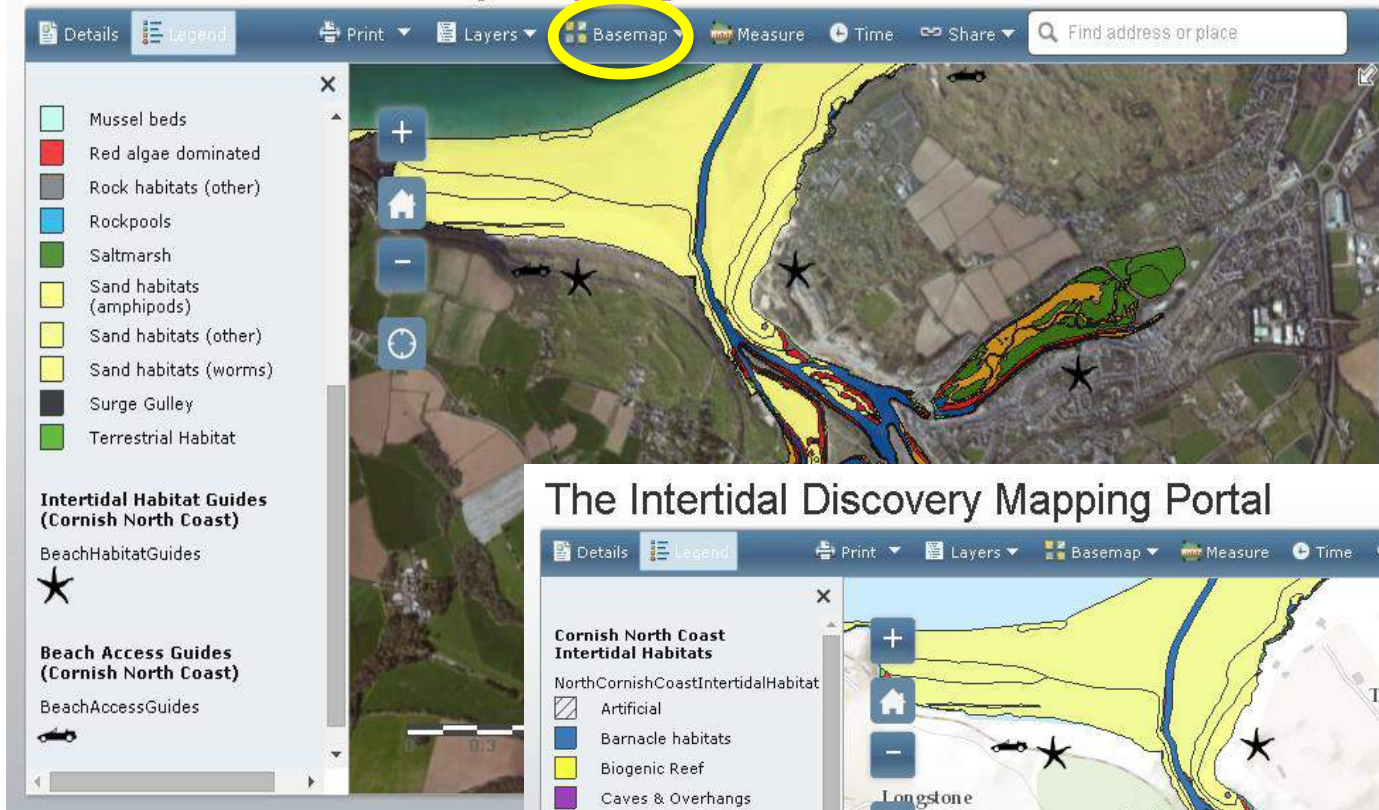




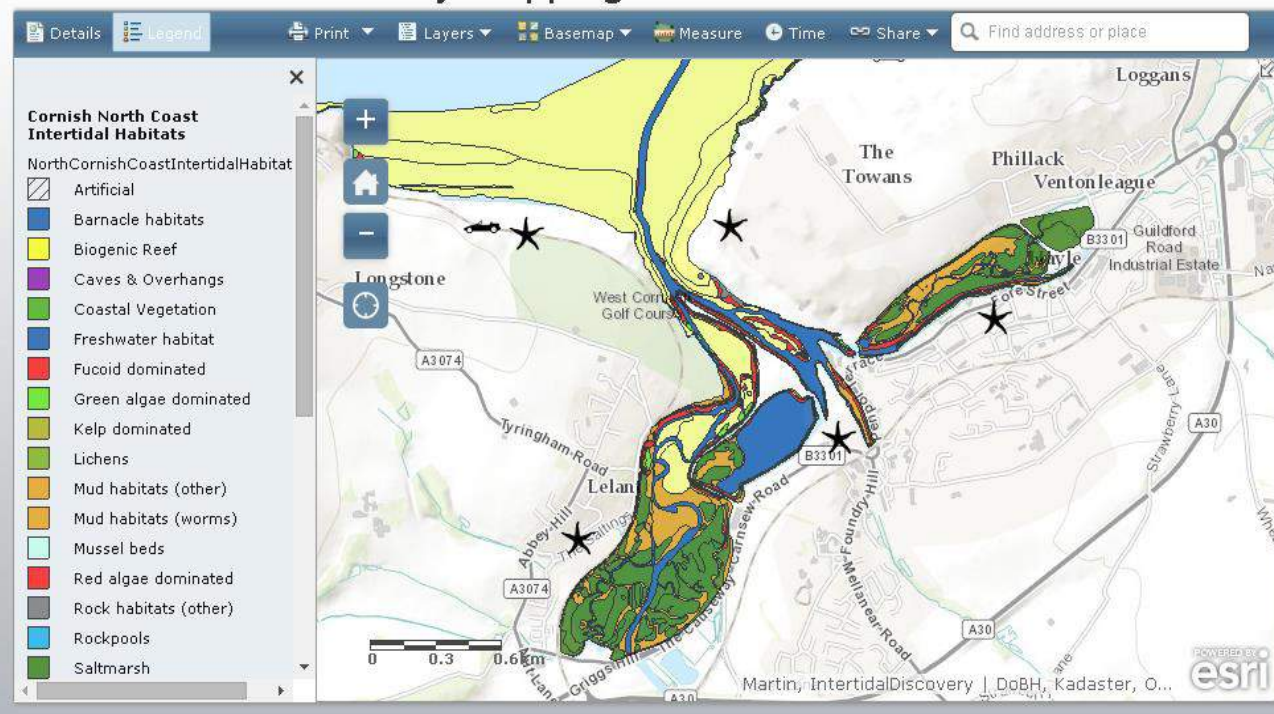
# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

**I want to  
change the  
background...**



## The Intertidal Discovery Mapping Portal





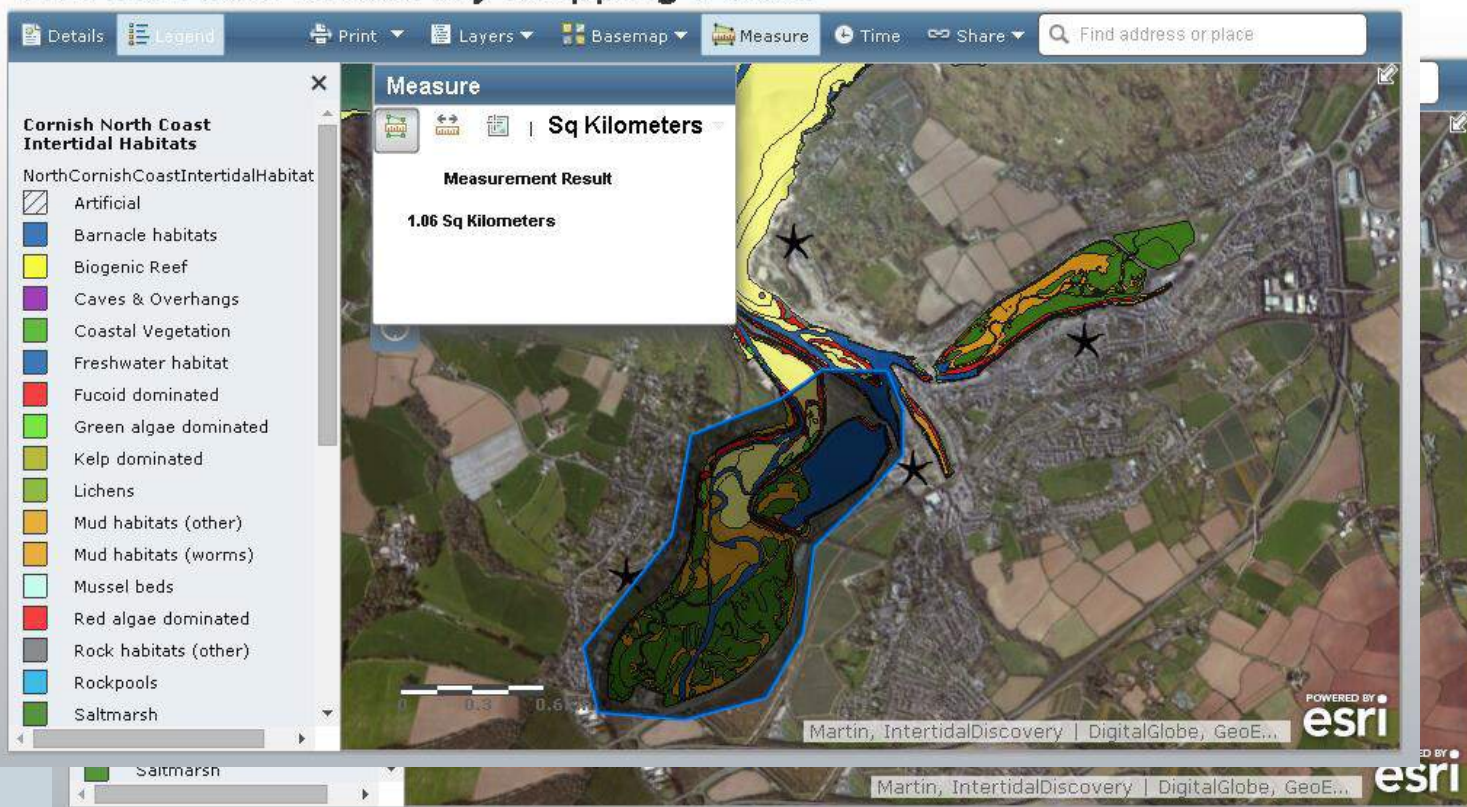
# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

**I want to  
measure  
things...**



## The Intertidal Discovery Mapping Portal

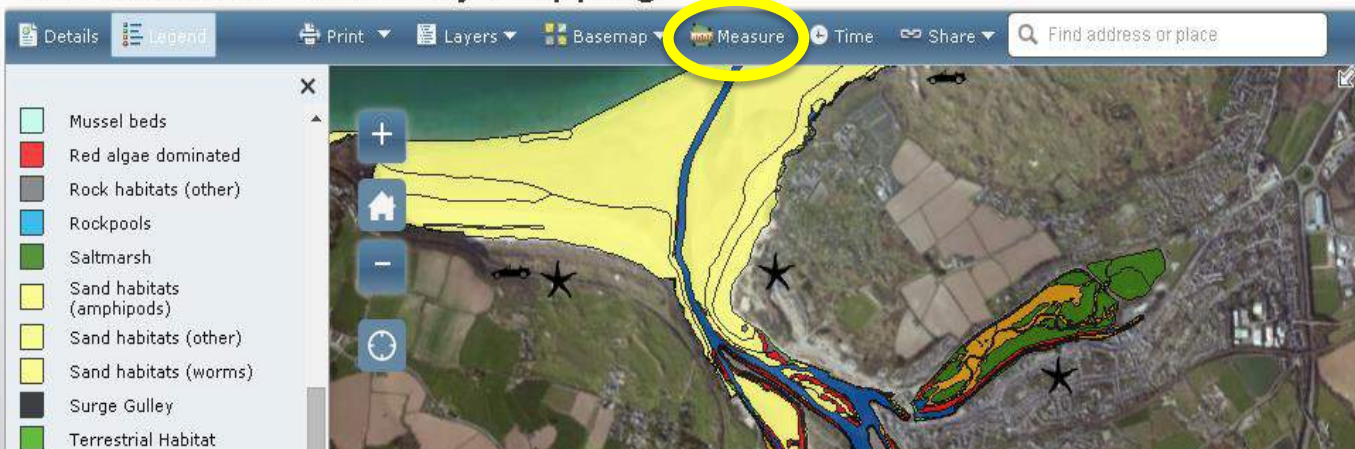




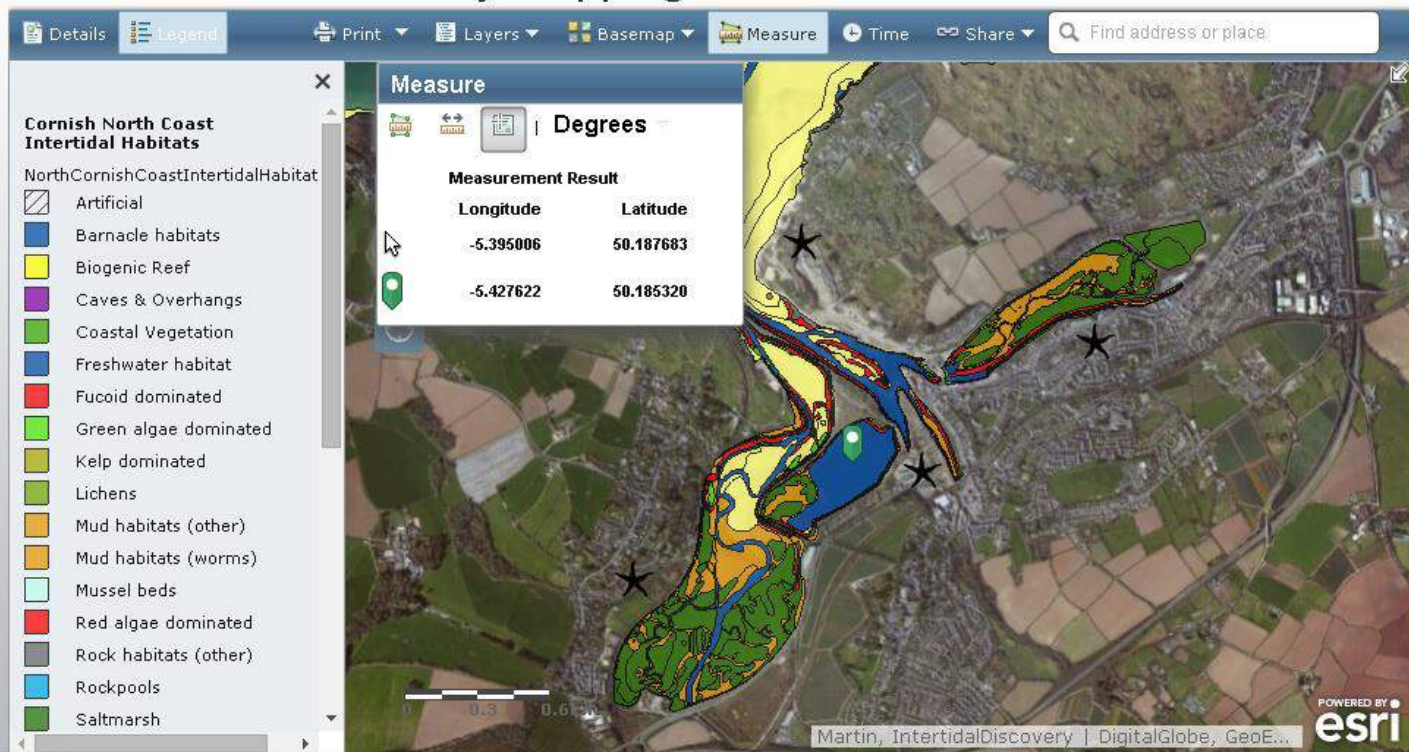
# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

I want to know  
where I am, or  
set a reference  
point for when  
I'm out



## The Intertidal Discovery Mapping Portal





# The Intertidal Discovery Mapping Portal

*Protecting Cornwall's wildlife  
and wild places*

I want to know  
when the area  
was  
surveyed...

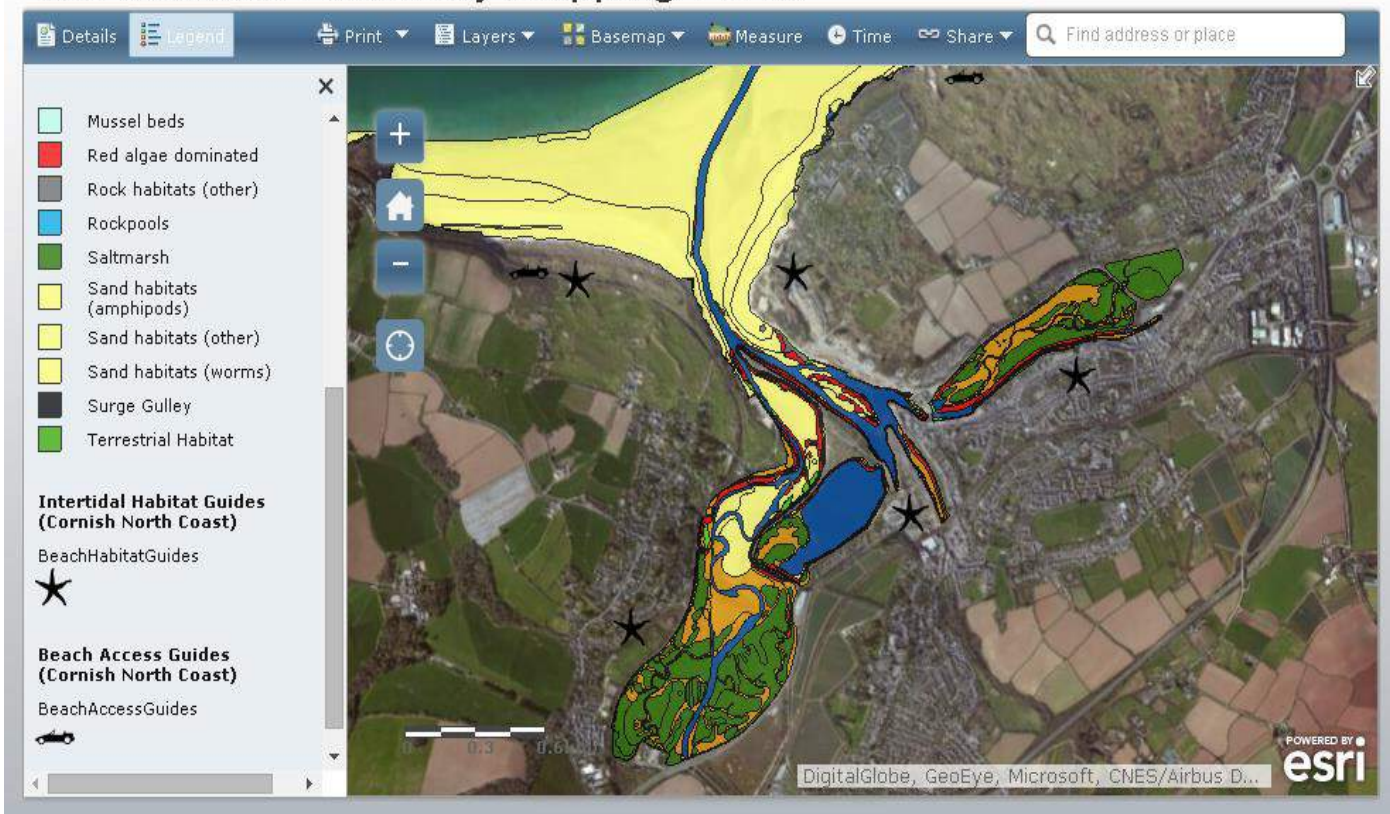


## The Intertidal Discovery Mapping Portal





# The Intertidal Discovery Mapping Portal



**Cornwall Wildlife Trust**



*Protecting Cornwall's wildlife  
and wild places*





For more information:

[www.intertidaldiscovery.org.uk](http://www.intertidaldiscovery.org.uk)

Or contact the Project Team:

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