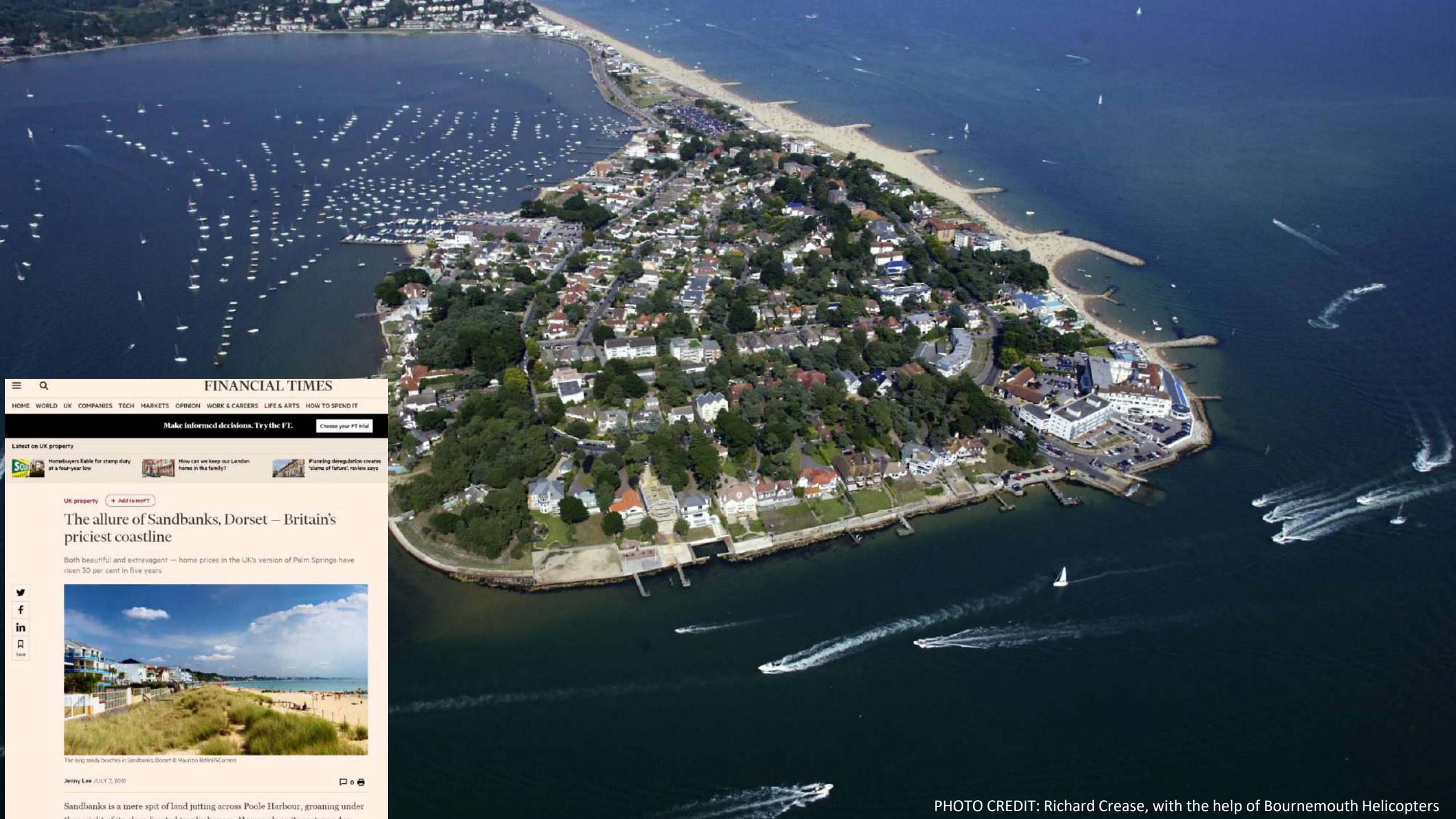
Where land and sea collide

Warren Vick
Europa Technologies Ltd.

Marine Data Management and GIS Workshop

The human fascination with the land-sea interface

PHOTO CREDIT: Richard Crease, with the help of Bournemouth Helicopters



FINANCIAL TIMES

HOME WORLD UK COMPANIES TECH MARKETS OPINION WORK & CAREERS LIFE & ARTS HOW TO SPEND IT

Make informed decisions. Try the FT. Choose your FT trial

Latest on UK property

Homebuyers liable for stamp duty at a four-year low

How can we keep our London home in the family?

Planning deregulation creates 'slums of future', review says

UK property + Add to myFT

The allure of Sandbanks, Dorset — Britain's priciest coastline

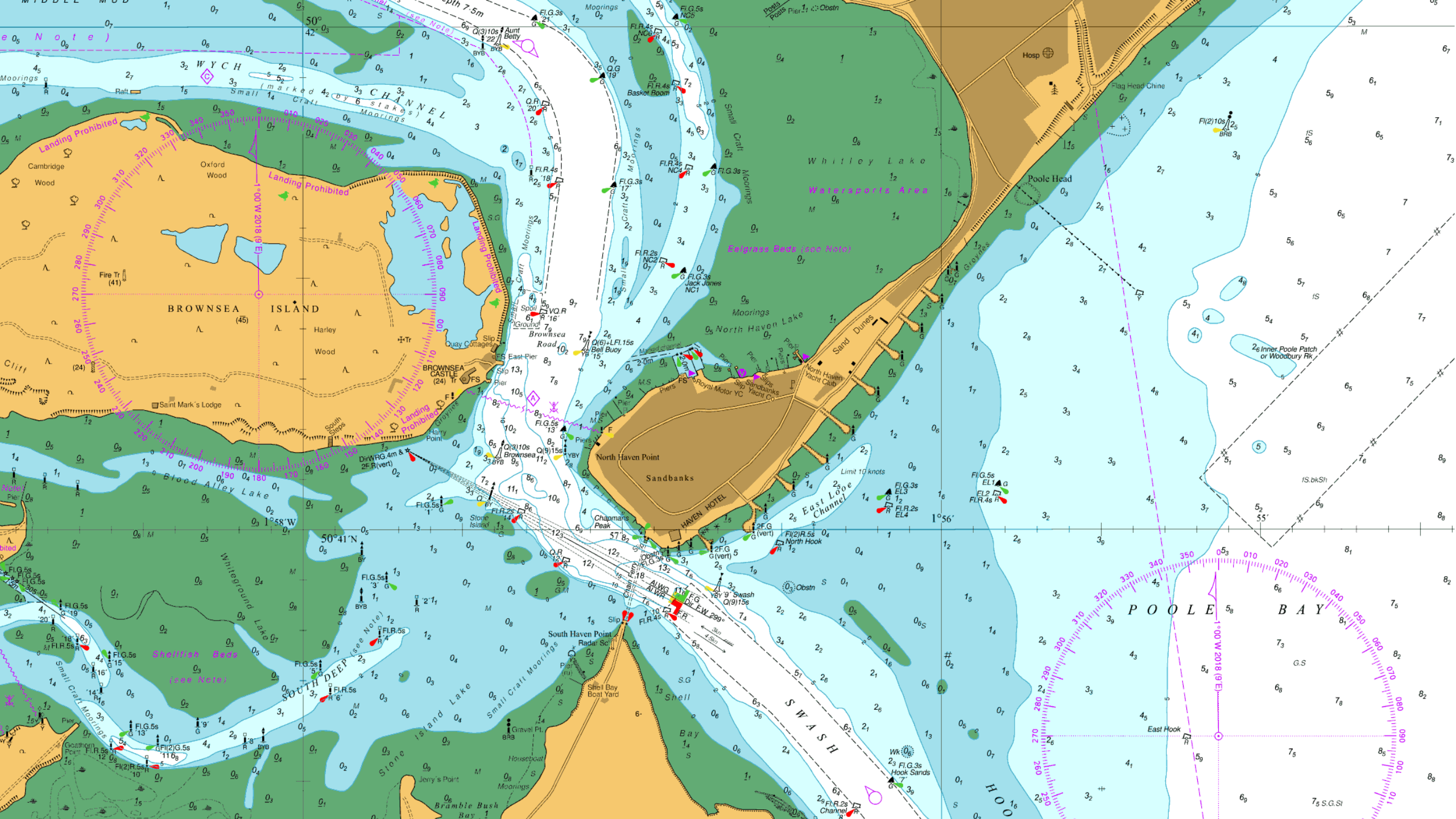
Both beautiful and extravagant — home prices in the UK's version of Palm Springs have risen 30 per cent in five years

The long sandy beaches in Sandbanks, Dorset © Maurizio Rellini/4Corners

Jenny Lee JULY 7, 2016

Sandbanks is a mere spit of land jutting across Poole Harbour, groaning under

PHOTO CREDIT: Richard Crease, with the help of Bournemouth Helicopters


WYCH CHANNEL
Small Craft Moorings (marked by 6 stakes)
Landing Prohibited
Cambridge Wood
Oxford Wood
Harley Wood
BROWNSEA ISLAND
(45)
Fire Tr (41)
BROWNSEA CASTLE (24) Tr
Saint Mark's Lodge
Quay Cottages
Brownsea Road
East Pier
Harry Point
Blood Alley Lake
Whitaground Lake
Shellfish Beds (see Note)
SOUTH DEEP (see Note)
Stone Island Lake
Jerry's Point
Bramble Bush Bay
Goathorn Point
Shell Bay Boat Yard
South Haven Point
Radar Sc
Shell Bay
Gravel Pt
Horseboat
Eelgrass Beds (see Note)
Whitley Lake
Watersports Area
North Haven Lake
Sand Dunes
North Haven Point
Sandbanks
HAVEN HOTEL
Royal Motor YC
Sandbanks Yacht Co
North Haven Yacht Club
Poole Head
Hosp
Flag Head Chine
Inner Poole Patch or Woodbury Rk
East Looe Channel
Limit 10 knots
Chapmans Peak
Store Island
Obstn
Wk
Hook Sands
East Hook
North Hook
Swash
Channel
POOLE BAY
SWASH
Basket Boom
Jack Jones NC1
Aunt Betty
Bell Buoy
Brownsea
Swash Q(9)15s
Moorings
Groynes
Piers
Slip
Pier
Posts
Pontoon
Mooring chains
Fl.G.3s 21'
Q(3)10s 22'
Fl.R.4s 18'
Fl.G.3s 17'
Q.R 20'
Fl.R.4s NC3
Fl.R.2s NC2
Fl.G.3s NC5
Fl.G.5s NC6
Fl.R.4s NC4
Q.G 19'
VQ.R 16'
Q(6)+LFl.15s 15'
Fl.G.5s 13'
Q(9)15s
Q(3)10s
DirWRG.4m & 2F.R(vert)
Fl.R.2s
Fl.G.5s 1'
Fl.G.5s 3'
Fl.R.5s 4'
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Fl.R.5s 6'
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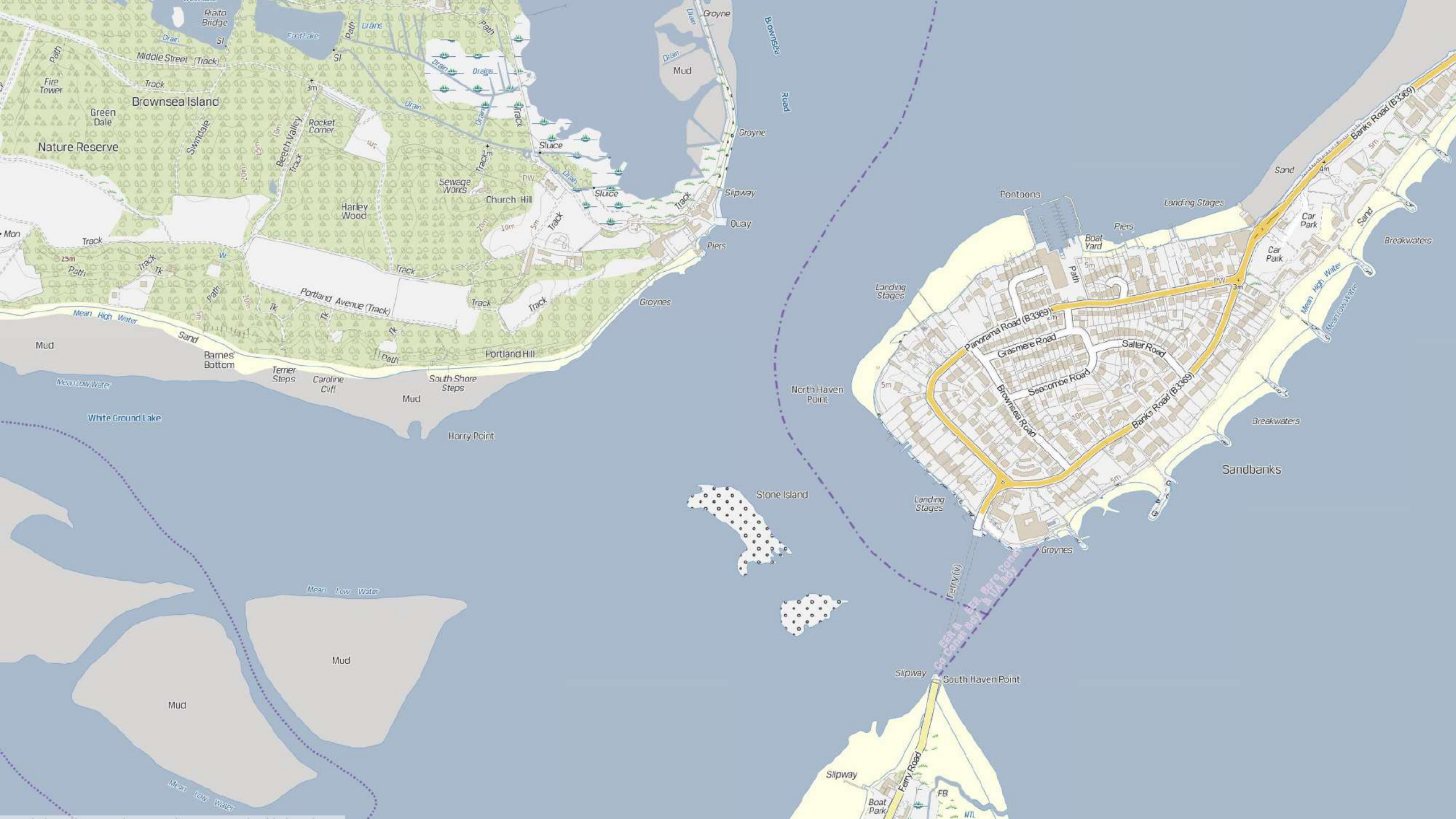


Rialto Bridge
East Lake
Drains
Path
Drain
Middle Street (Track)
Fire Tower
Track
Brownsea Island
Green Dale
Nature Reserve
Swindale
Beech Valley
Rocket Corner
Sewage Works
Church Hill
Harley Wood
Sluice
Groyne
Mud
Brownsea Road
Slipway
Quay
Piers
Portland Avenue (Track)
Mean High Water
Sand
Barnes' Bottom
Terrier Steps
Caroline Cliff
South Shore Steps
Portland Hill
Groynes
Mean Low Water
White Ground Lake
Harry Point
Stone Island
Pontoons
Landing Stages
Boat Yard
Piers
Car Park
Banks Road (B3369)
Panorama Road (B3369)
Grasmere Road
Salter Road
Seacombe Road
Brownsea Road
North Haven Point
Breakwaters
Sandbanks
Ferry (v)
Slipway
South Haven Point
Ferry Road
Boat Park
FB
NTL

Different maps, different agencies, different domains, but (IMHO) demand for holistic views is increasing.

Challenges in combining land & sea map layers / services

Challenges in combining land & sea map layers / services

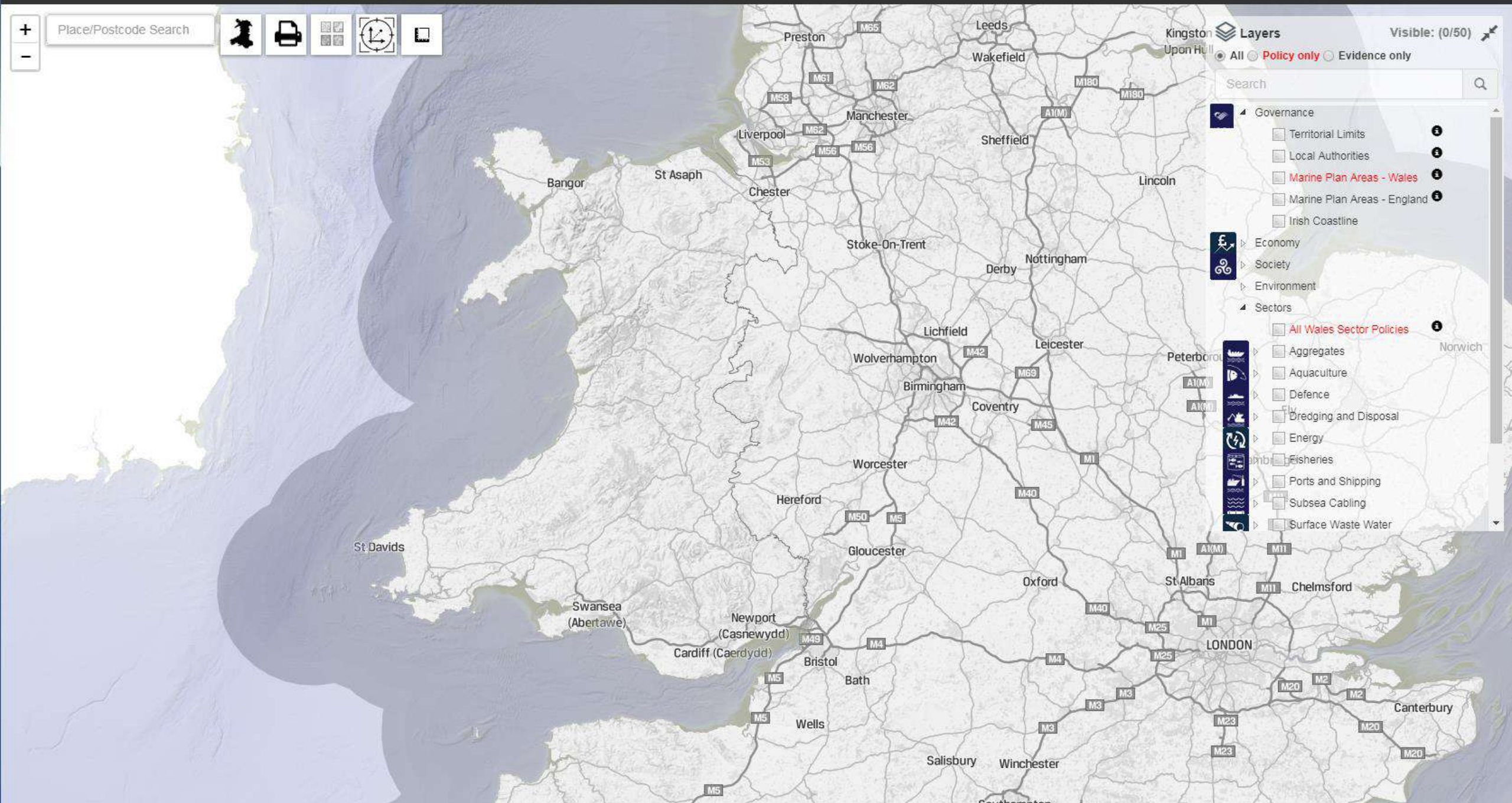
but first some background (literally)
and a cartographic warning…

Please don’t do this…

…and definitely don’t do this.

SOUTHPORT
ADLINGTON
MILNROW
ROYSTON
THORNE
SCUNTHORPE
IMMINGHAM
ORMSKIRK
WESTHOUGHTON
CHADDERTON
HOLMFIRTH
WOMBWELL
EPWORTH
LITHERLAND
HAYDOCK
SALFORD
M60
GLOSSOP
Chapeltown
TICKHILL
AMLWCH
LIVERPOOL
LYMM
SHEFFIELD
GAINSBOROUGH
MARKET RASEN
LOUTH
CAERGYBI / HOLYHEAD
PRESTATYN
HESWALL
RUNCORN
BRAMHALL
RETFORD
CONWY
LLANELWY / ST ASAPH
Y FFLINT / FLINT
M53
NORTHWICH
MACCLESFIELD
DRONFIELD
WRAGBY
BANGOR
CHESTER
MIDDLEWICH
BAKEWELL
BOLSOVER
LINCOLN
DARLEY DALE
MANSFIELD
WOODHALL SPA
RHOSGADFAN
BETWS-Y-COED
RHUTHUN / RUTHIN
ALSAGER
LEEK
SOUTHWELL
WRECSAM / WREXHAM
RIPLEY
BLAENAU FFESTINIOG
STOKE-ON-TRENT
ASHBOURNE
SLEAFORD
BOSTON
NEFYN
CRICIETH / CRICCIETH
LLANGOLLEN
WHITCHURCH
NOTTINGHAM
Y BALA
ELLESMERE
DERBY
Clifton
GRANTHAM
UTTOXETER
WEM
ECCLESHALL
BURTON UPON TRENT
M1
STAFFORD
LONG SUTTON
LLANFYLLIN
NEWPORT
BOURNE
DOLGELLAU
COALVILLE
SYSTON
SHREWSBURY
Y TRALLWNG / WELSHPOOL
TELFORD
M6
LICHFIELD
OAKHAM
CROWLAND
LEICESTER
MACHYNLLETH
FAZELEY
UPPINGHAM
PETERBOROUGH
WOLVERHAMPTON
M42
TREFALDWYN / MONTGOMERY
CHURCH STRETTON
HINCKLEY
BIRMINGHAM
BEDWORTH
CORBY
OUNDLE
RAMSEY
LLANIDLOES
CRAVEN ARMS
SOLIHULL
COVENTRY
KETTERING
ABERYSTWYTH
KIDDERMINSTER
RUGBY
TREF-Y-CLAWDD / KNIGHTON
LUDLOW
BROMSGROVE
M42
KENILWORTH
HUNTINGDON
RHAEADR GWY / RHAYADER
WARWICK
RUSHDEN
ABERAERON
TREGARON
LEOMINSTER
NORTHAMPTON
ST NEOTS
KINGTON
LLANFAIR-YM-MUALLT / BUILTH WELLS
WORCESTER
STRATFORD-UPON-AVON
OLNEY
LLANBEDR PONT STEFFAN / LAMPETER
SANDY
CASTELL NEWYDD EMLYN / NEWCASTLE EMLYN
PERSHORE
NEWPORT PAGNELL
BANBURY
ROYSTON
WDIG / GOODWICK
HEREFORD
M5
LEDBURY
LLANYMDDYFRI / LLANDOVERY
TALGARTH
MORETON-IN-MARSH
BUCKINGHAM
FLITWICK
BALDOCK
TY DDEWI / ST DAVIDS
NEWENT
STOW-ON-THE-WOLD
WINSLOW
STEVENAGE
LLANDEILO
DUNSTABLE
SANCLÊR / ST CLEARS
CRUGHYWEL / CRICKHOWELL
GLOUCESTER
WOODSTOCK
HARPENDEN
WARE
RHYDAMAN / AMMANFORD
TREFYNWY / MONMOUTH
BURFORD
TRING
BLAINAU / BLAINA
PAINSWICK
ST ALBANS
HODDESDON
PENFRO / PEMBROKE
PORTH TYWYN / BURRY PORT
PONTARDAWE
BRYNBUGA / USK
OXFORD
PRINCES RISBOROUGH
M25
M25
DURSLEY
PONTLLANFRAITH
FARINGDON
BUSHEY
ABERTAWE / SWANSEA
PONTYCYMER
CASNEWYDD / NEWPORT
THORNBURY
HIGH WYCOMBE
LOUGHTON
MALMESBURY
WANTAGE
WALLINGFORD
Kenton
Wanstead
SWINDON
HENLEY-ON-THAMES
LONDON
PENCOED
FILTON
M4
Hayes
CAERDYDD / CARDIFF
Caversham
CLEVEDON
BRISTOL
CALNE
MARLBOROUGH
ASHFORD
Penge
WOKINGHAM

Here be
dragons


Place/Postcode Search
Layers
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All
Policy only
Evidence only
Search
Governance
Territorial Limits
Local Authorities
Marine Plan Areas - Wales
Marine Plan Areas - England
Irish Coastline
Economy
Society
Environment
Sectors
All Wales Sector Policies
Aggregates
Aquaculture
Defence
Dredging and Disposal
Energy
Fisheries
Ports and Shipping
Subsea Cabling
Surface Waste Water
Preston
Leeds
Wakefield
Kingston Upon Hull
Manchester
Liverpool
Sheffield
Lincoln
Bangor
St Asaph
Chester
Stoke-On-Trent
Derby
Nottingham
Lichfield
Leicester
Wolverhampton
Birmingham
Coventry
Peterborough
Norwich
Worcester
Hereford
Gloucester
St Davids
Swansea (Abertawe)
Newport (Casnewydd)
Cardiff (Caerdydd)
Bristol
Bath
Wells
Oxford
St Albans
Chelmsford
LONDON
Canterbury
Salisbury
Winchester

FOLKESTONE
Inner Harbour
Outer Harbour
Hard
Sand & Mud
Slipway
East Pier
Groyne
Sand
East Cliff Triangle
Golf Links
Capt Point
Folkestone Harbour Pier
Landing Stage
Jetty
Market
Marine Parade
Road Of Remembrance
Lower Sandgate Road
Sandgate Road
Cheriton Place
Pleydell Gardens
The Leas
Clifton Gardens
Subway
Cheriton Road
Manor Road
Millfield
Guildhall Street
Guildhall Street North
Payers Park
Car Park
The Old High Street
The Parade
The Bayle
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Dyke Road
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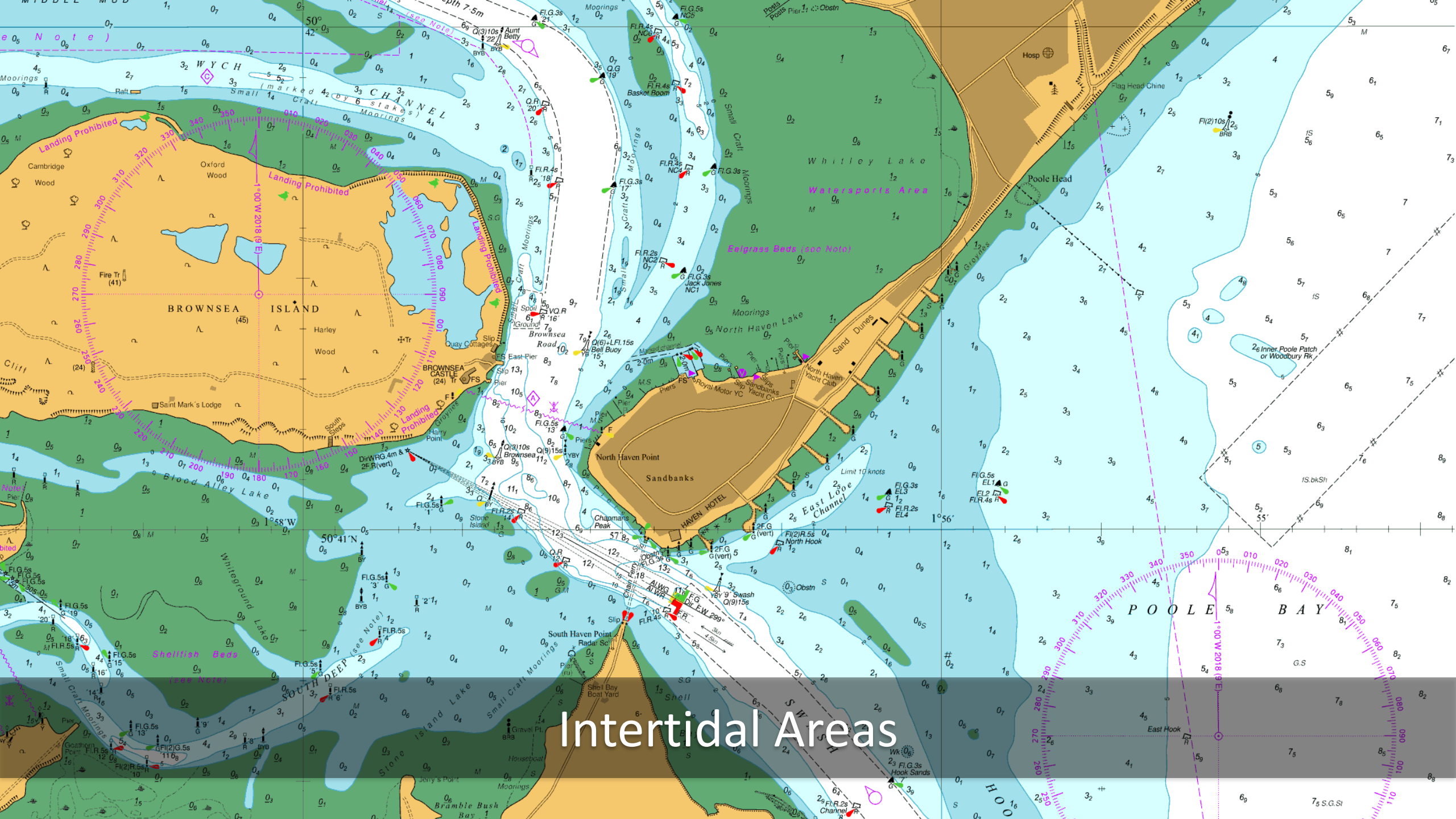
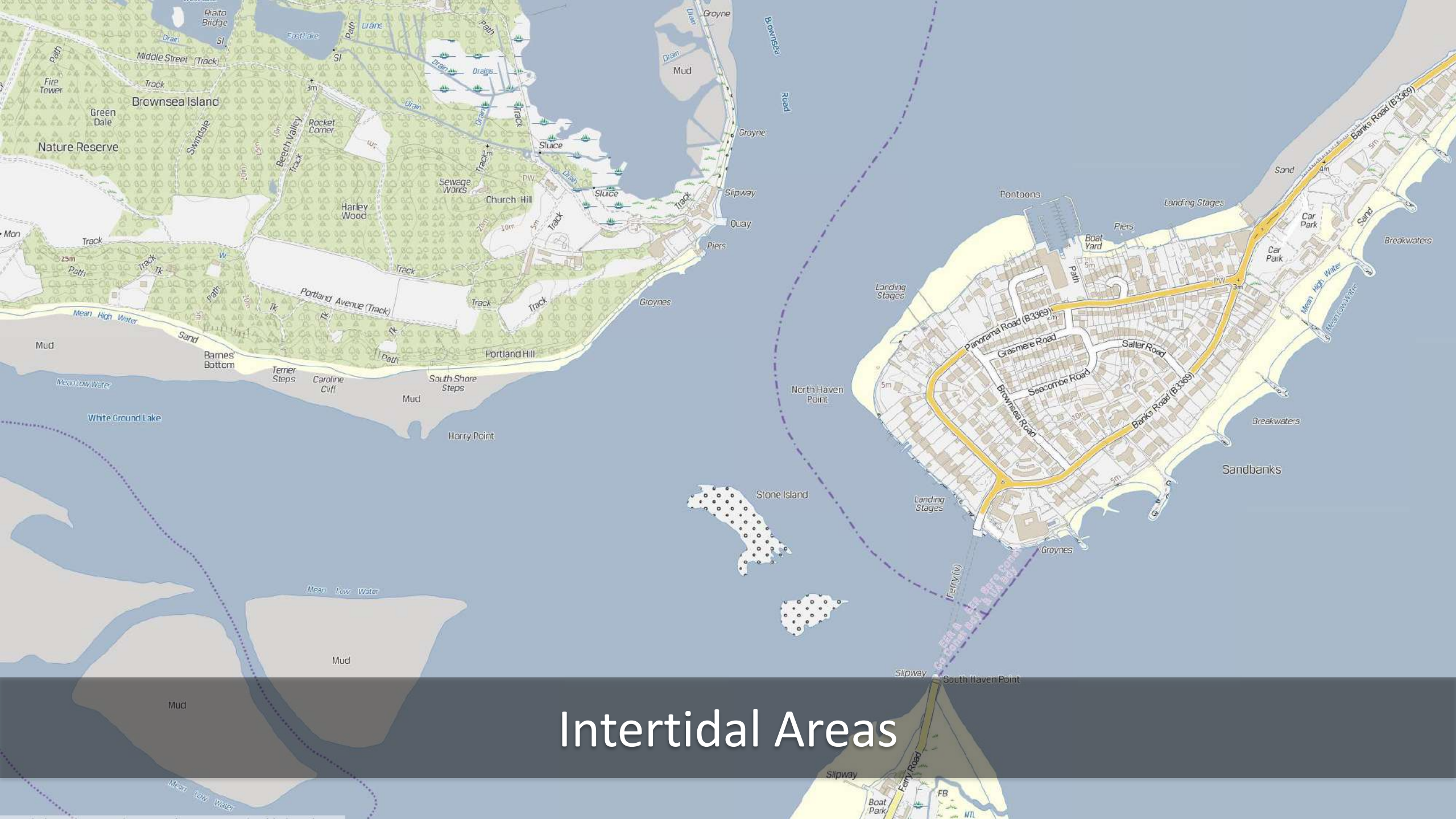

Intertidal Areas

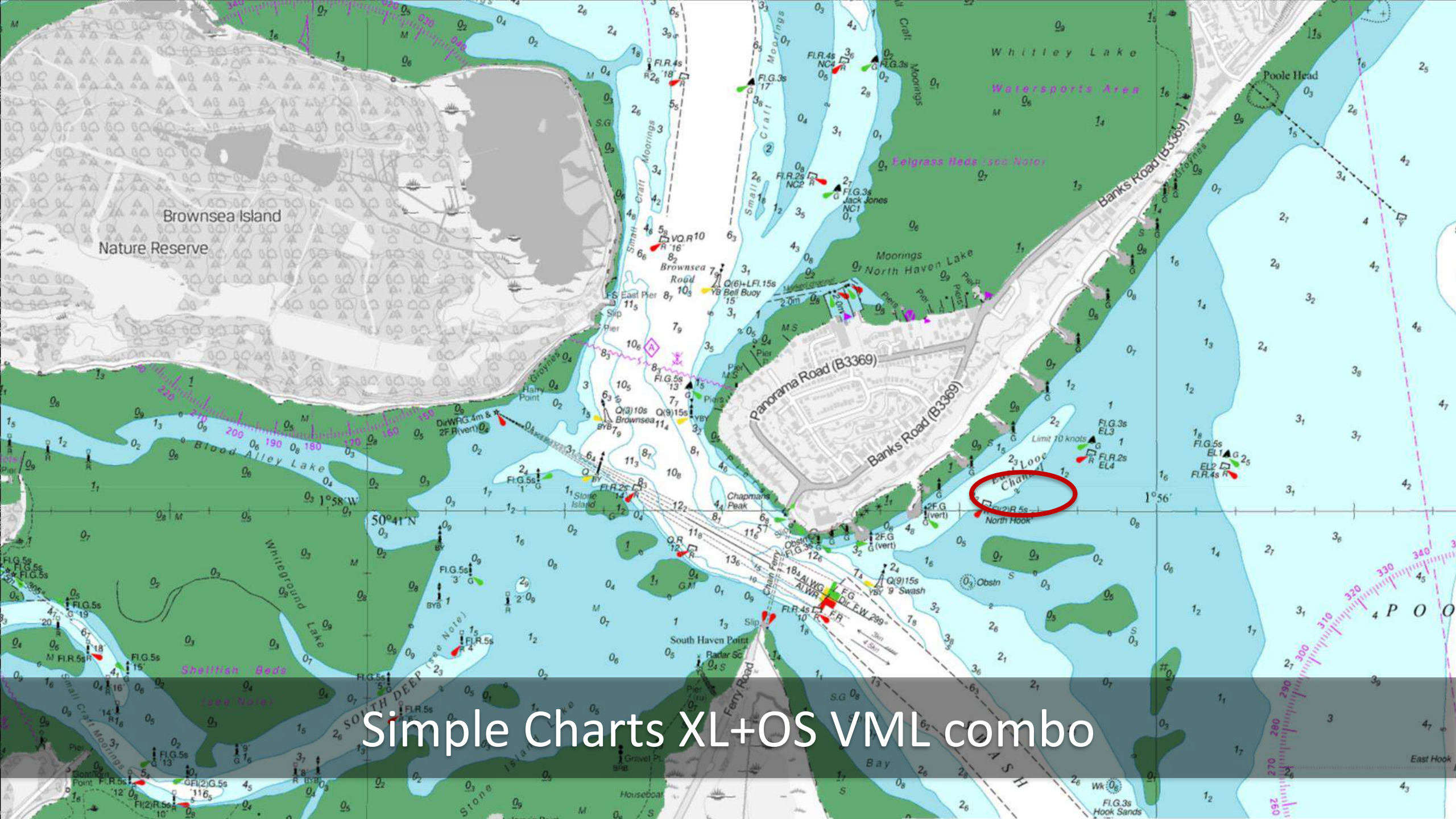


Intertidal Areas

Raster vs. Vector

- Styled by cartographers at OS / UKHO
- Compliant with cartographic standards
- Familiarity (loyalty?) for paper product users
- Ready-to-use in GIS software
- No / limited spatial analysis
- Option for land-less with Raster Charts XL

- Styled by you (or adopt a pre-made stylesheet)
- Option to compromise on cartographic standards
- Potential loss of familiarity
- Increased effort required in GIS software
- Spatial analysis possible
- **Greater flexibility for blending and conflating land/marine map data sources**



Simple Charts XL+OS VML combo

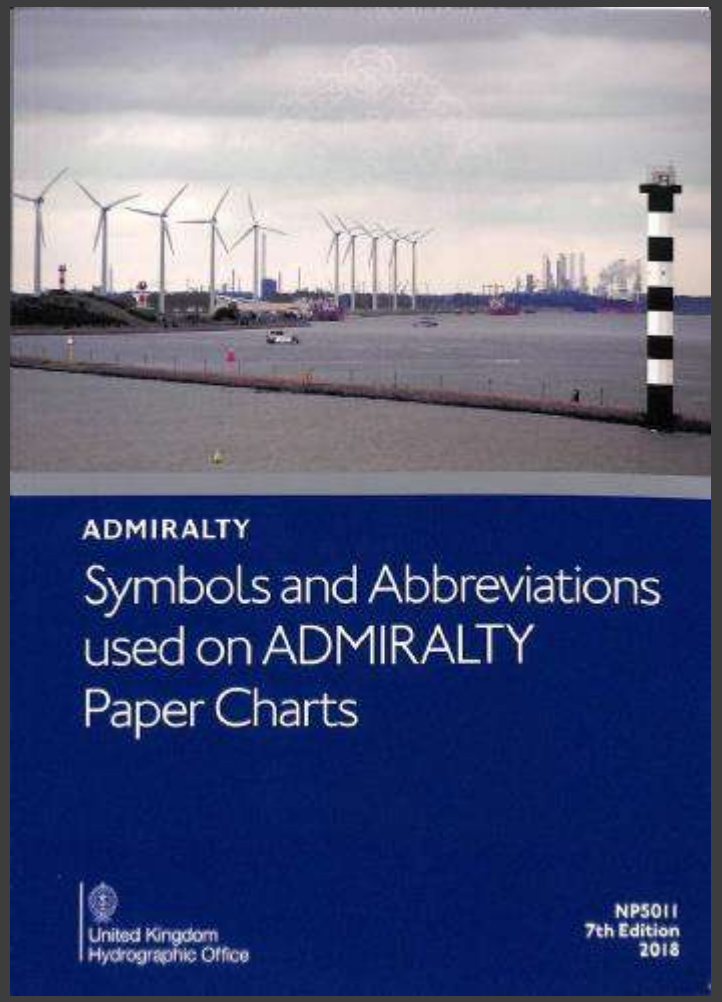
Vector Tiles

ADMIRALTY

Symbols and Abbreviations used on ADMIRALTY Paper Charts

United Kingdom Hydrographic Office

NP5011
7th Edition
2018



ADMIRALTY

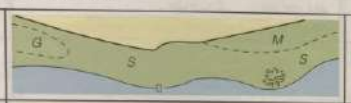
Symbols and Abbreviations used on ADMIRALTY Paper Charts

United Kingdom Hydrographic Office

NP5011
7th Edition
2018

w		Radiolaria	† Rd rad
x		Pteropods	† Pt
y		Polyzoa	† Po pol

Intertidal Areas

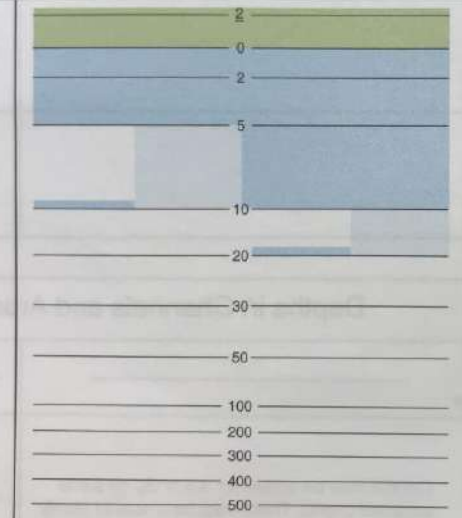
20		
21		
22		

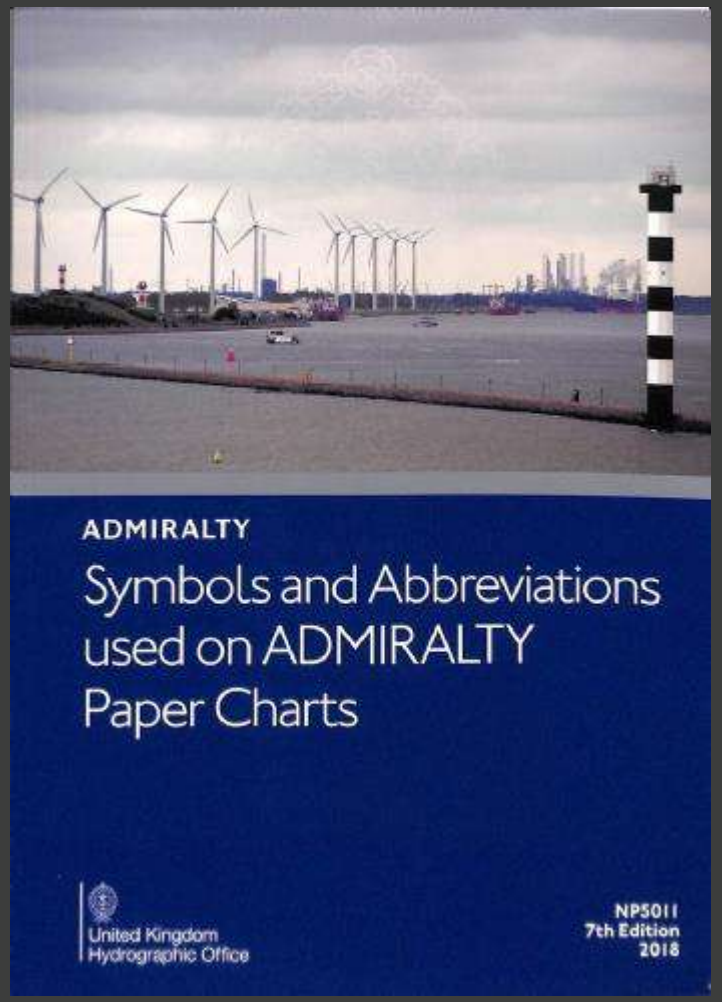
Qualifying Terms

30	f	
31	m	
32	c	

#

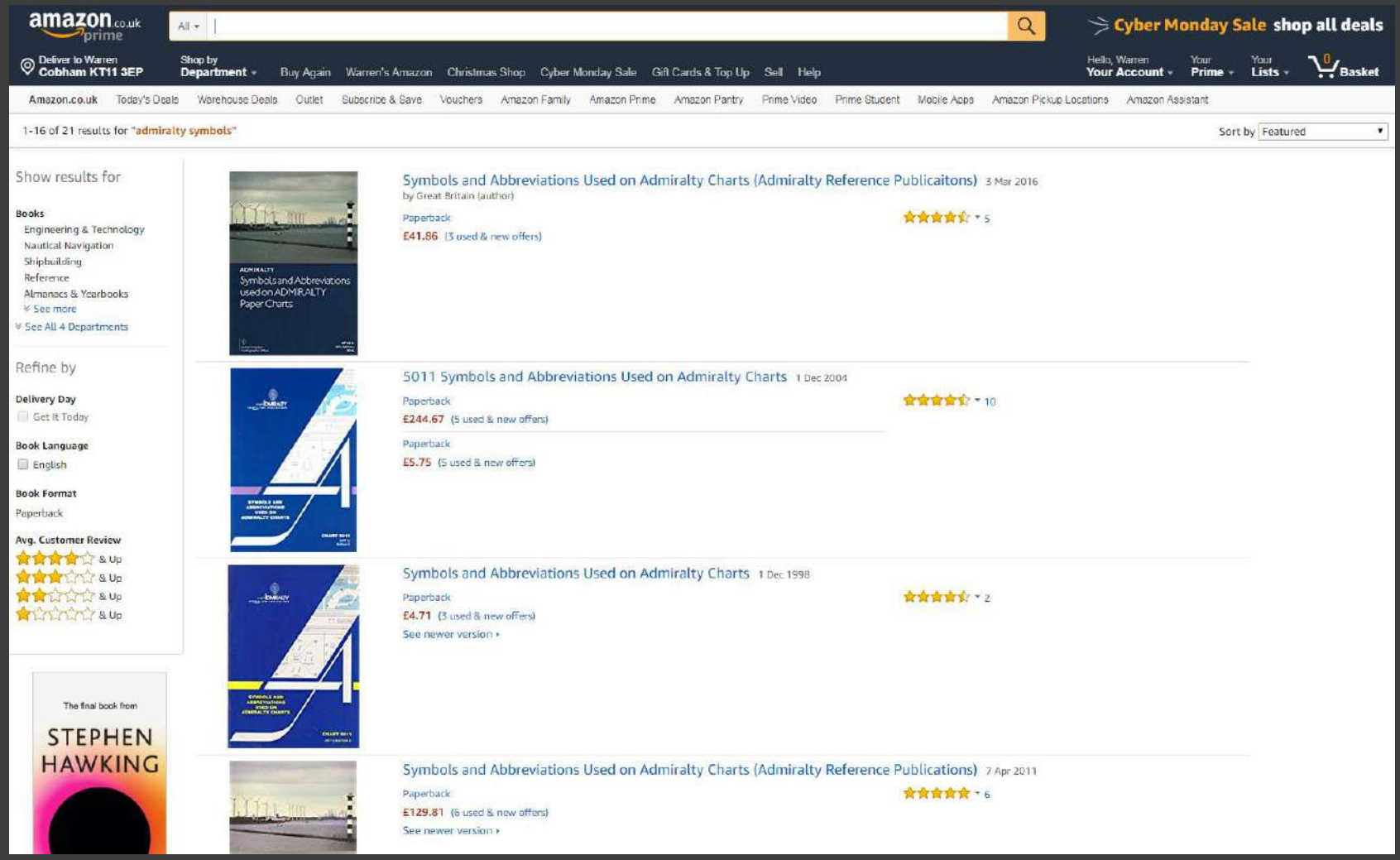
Depth Contours

30		*Dries 2m contour* *Low Water (LW) Line, Chart Datum (CD)* *Blue tint, in one or more shades, and tint ribbons, are shown to different limits according to the scale and purpose of the chart and the nature of the bathymetry.* *On some charts, the standard set of contours is augmented by additional contours in order to delimit particular bathymetric features or for the benefit of particular categories of shipping. However, in some instances where the provision of additional contours would be helpful, the survey data available does not permit it.* *On charts which are metric conversions of fathoms charts there will be a non-standard series of contours.*



<£20

But perhaps don't buy it on Amazon…



Goal

Develop a vector-based interleaved map, preserving as much cartographic convention as possible, and deployed as a service.

PHOTO CREDIT: Richard Crease, with the help of Bournemouth Helicopters

Thank you

Warren Vick
wvick@europa.uk.com

Marine Data Management and GIS Workshop