

Marine Spatial Planning (MSP) Exercise (REJ/MRP)

Many vacancies are being advertised related to coastal and marine management. The majority of these are related to MSP, with nearly 70 vacancies since September, 2012. As well as these full time positions, there are others advertised for research assistants, PhD positions and managers. Employers include Natural England, ABP Mer, Defra, Southern IFCA, Sustainable Fisheries, Crown Estate, etc. The following exercise will enable you to develop practical experience in MSP which you could talk about in any interview situation. As shown yesterday in Mike Phillips' class, the sum of the whole is often greater than the sum of its parts.

Therefore, the following will be undertaken over the next two sessions.

In three separate groups you will undertake an environment assessment and ultimately construct a management plan for your designated SAC and/or SPA. Each designation (below) will have associated 'designated species and habitats'. These will be important when you consider your spatial plan and how you propose managing that site. Firstly you must research their current status and identify any potential threats. Obviously as you discovered last year with Ketchum's work, there are a multitude of pressures, coastal users and stakeholder interests you must consider (fishing/industry/recreation/shipping/sewage etc). Once you identify what those are in your specific area, attempt to plot any user conflict. This does not have to be GIS; a simple map with hand-drawn colour coded hatched areas will suffice. You may wish to zone areas corresponding to vulnerability or conservation value. Put forward evidenced and justified reasons for managing your SAC in a particular way, using a variety of tools from temporal or spatial closures, speed restrictions, licensed use etc.

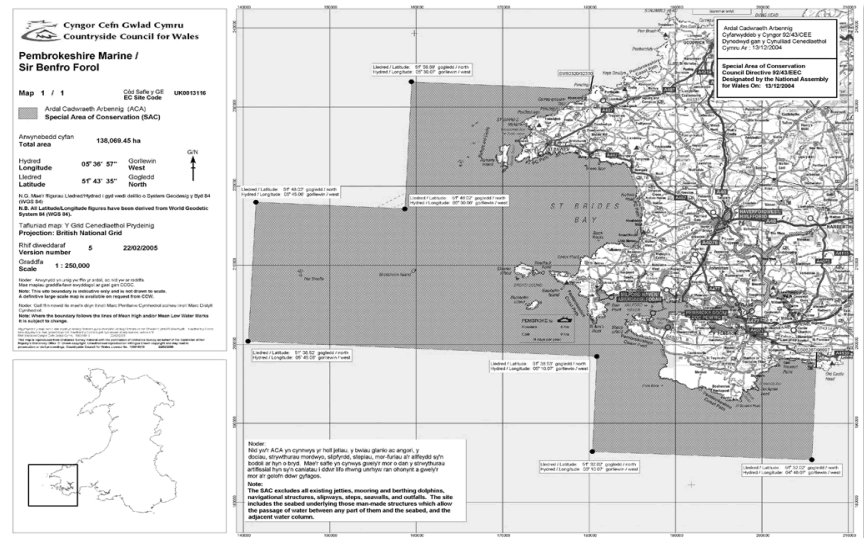
Three sites have been chosen for consideration as follows:

Pembrokeshire Marine Special Area of Conservation:

The Pembrokeshire Marine site is particularly diverse, with eight Habitats Directive Annex I habitat types and seven Annex II species; almost the longest list of any marine SAC in the UK.

These are:

- Reefs
 - Estuaries
 - Large shallow inlets and bays
 - Mud and sand flats
 - Subtidal sandbanks
 - Saltmarsh
 - Lagoons
 - Caves
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- Grey Seals
 - Otters
 - Sea & River Lampreys
 - Allis & Twaite Shads
 - Shore dock



(Group A: Aoife/Jordan/Becca/David)

Cardigan Bay:

Bottlenose Dolphins *Tursiops truncatus*
 Grey Seal *Halichoerus grypus*
 Sea Lamprey *Petromyzon marinus*
 River Lamprey *Lampetra fluviatilis*
 Eelgrass *Zostera marina*

Reef
 Subtidal sandbank
 Sea caves



(Group B: Ben, Stephen, Sian)

Carmarthen Bay & Estuaries European Marine Site (inc 2 SPAs):

The SAC was formally designated in December 2004 for having excellent European examples of six of the habitat and five of the species conservation features of interest listed in the Habitats Directive

- Estuaries
- Large shallow inlets and bays
- Atlantic salt meadows
- Salicornia and other annuals colonising mud and sand
- Mudflats and sandflats not covered by seawater at low tide
- Sandbanks which are slightly covered by sea water all the time



Species

- Allis shad *Alosa alosa*
- Twaite shad *Alosa fallax*
- River lamprey *Lampetra fluviatilis*
- Sea Lamprey *Petromyzon marinus*
- Otter *Lutra lutra*

(Group C: Alex, Nicky, Jasmine, Joel)

You may use ideas from the case studies used last year in your MSP lectures but Lyme Bay, Lundy and the Barrier Reef will provide some useful examples. Evidenced research must be found to justify each suggestion. Some examples from Swansea Bay would be as follows:

▼ Coastal Uses			Evidence of Interaction Indicators
Commercial and Industrial	Commercial	Tourism Developments	It is felt unlikely that additional tourism development and Marina Services will have a major impact. Existing infrastructure at Swansea Maritime Quarter and SA1 development is in place and Gower's many designations control coastal development. However pile driving and construction works produces variable levels of noise and sediment disruption. Thomsen <i>et al.</i> (2006) suggested that porpoise audibility of pile driving would extend beyond 80km from source. Evans (2000a) acknowledged that blasting and dredging could affect porpoise behaviour, although effects are likely to be short-term. Local Authority plans to redesign parts of Swansea Bay Seafront and Mumbles Promenade (Green, 2007; White Green Young Consulting Ltd, 2007) are currently being explored, and some proposals could potentially affect feeding grounds around Mumbles. As with SA1, construction and demolition phases involving Mumbles Pier could produce sufficient noise and sediment disruption to affect porpoises. Proximity to critical feeding habitats of Mixon Bank and White Oyster Ledge is of particular concern (Sections: 2.3.2; 3.3.1; 6.3).
		Marina Services	
		Transport	Ferries
			Shipping
			Customs etc
			A Swansea - Cork ferry operated from Swansea Marina once a day and is constrained by draught to main, deep channel routes. Most porpoise habitats will be unaffected except for porpoise corridors. Although no evidence of ship collision exists in this area, a small risk exists for young and injured porpoises transiting between critical habitats, as NOAA (2006) reported a case of a harbour porpoise killed as a result of a ship collision. Larger vessels emit low frequency noise and porpoises are less susceptible to disturbance from these, communicating through higher frequency channels. Detection rates are also higher and so aversive action by porpoises will typically be initiated in good time. Evans (2000a) noted that although porpoises can occasionally react negatively to ferries, they co-exist and only should traffic levels increase substantially would long-term behaviour be disrupted (Sections: 2.3.2; 2.3.10). Smaller Customs and RNLI craft etc are faster and typically displacement vessels, which generate high levels of noise They can enter shallow coastal areas and are capable of swift changes in direction. Therefore there is a potential impact to all porpoise habitats. Observations revealed no obvious behavioural changes provided vessels maintained a steady directional course and speed (Table 5.41). However as will be considered under 'Residency and Recreation', sudden directional changes can provoke many negative behavioural responses (Sections 2.3.10; 5.3).

You will present your findings and your management suggestions in a seminar-based session in two weeks time.