

AGENDA
Socio Economic Sub Group meeting - Friday 28th May, 2010 @Ladywell House,
Newtown, Powys - 11:00am to 3:00pm.

Item	Timing	Title	Lead
1.	11:00am - 11:15am	Welcome and introductions	Chair
2.	11:15am - 11:30am	Apologies	Chair
3.	11:30am - 12:30pm	Defining and integrating social & economic criteria (paper 1): <ul style="list-style-type: none"> • Methodology • Data availability and gaps • Impacts – general and sector specific 	Presentation by Chair
		Buffet lunch 12:30-1:00pm	
4.	1:00pm -1:30pm	CCW's Recreational Audit and work on damaging/disturbing activities (paper 2)	Luke Davies to introduce
5.	1:30pm -2:00pm	Fisheries data layer using SFC and MFA data	Presentation by Koen Vanstaen-Cefas
6.	2:00pm - 2:30pm	General discussion (way forward)	Group
7.	2:30pm - 2:40pm	Group membership	Chair
8.	2:40pm -2:50pm	AOB	Chair
9.	2:50pm -3:00pm	Date of next meeting	Chair

NOTES OF MEETING

28 May 2010 at Ladywell House, Newtown

Present

Mike Christie – Chair, Aberystwyth University
Michel Kaiser – Bangor University
Mike Cowling – The Crown Estate
Koen Vanstaen – Cefas
Jennifer Lawson – CCW
Luke Davies – CCW
Mike Jones - Fisheries WAG
Phil Wensley – Fisheries WAG
Andrew Hobden – Economic Advice WAG
Louise George – Marine WAG

Apologies

Andy Mackie – National Museum Wales
Mark Gray – Seafish
Callum Roberts – University of York
Mike Cummings – Sustainable Energy WAG
Rhiannon Caunt – Statistics WAG
Julia Williams – Marine WAG

Summary of Actions

Action	Lead	Outcome
WAG Marine to clarify the position of the All Wales coastal path and co-location with MCZs.	Louise	
Mike Kaiser to send Koen data from Bangor University work for collation and comparison overlap for clarify.	Mike Kaiser	
Phil and Koen to prepare (one page) proposal on data collection protocols for consideration by the Group before submitting to MCZ project.	Phil & Koen	
WAG to provide a policy statement re marine renewable energy.	Louise	
WAG Marine to confirm the required format of GIS data layers and advise members.	Louise	Complete
WAG Marine to arrange series of maps for consideration at next meeting.	Louise	
WAG marine to discuss membership with Chair of SCEG.	Louise	

Welcome and introductions

1. Chair welcomed members to the first meeting of the Social and Economic Sub Group and members provided an introduction with detail of their background and expertise.

Project Background and role of the Sub-Group

2. Louise George set the scene for members in that the overall aim of the MCZ project in Wales is to use the new powers within the Marine and Coastal Access Act 2009 to designate a small number of highly protected marine conservation zones. It is

envisaged that most of these new highly protected sites will be found within existing protected areas in Welsh waters. These sites will supplement the existing suite of protected areas in Wales and contribute to the wider UK network.

3. WAG has given a commitment to incorporating ecological, social and economic considerations into the site selection process. Work is underway by TAG to develop ecological guidelines for site selection and it is the role of this Sub-Group to consider and make recommendations as to how the social and economic aspects are incorporated into the process.

Defining and integrating social and economic considerations

4. Chair presented a paper (paper 1) outlining the key issues to the identification, selection and adoption of social and economic considerations. There was discussion about how social and economic considerations should be used when identifying potential sites with a suggestion from some at the TAG ecological workshop that this be a 2 stage process whereby initial site options are identified on the basis of ecological guidelines, with social and economic (including pragmatic) considerations being applied at stage 2, which for the first iteration are likely to be such things as key physical and legal constraints. There was some support for this method.
5. Members were asked to consider what social and economic considerations should be taken into account during the site selection process and the weighting to be given to these considerations. Outputs from the TAG ecological workshop suggested that these be considered in terms of ecosystem services that are of benefit to mankind, being; Provisioning Services, Cultural Services, Pragmatic Services and Intrinsic values.
6. Ongoing work for the Group will be to consider these further including the weighting to be applied to each category and the data available to inform decisions/recommendations. The Group was also asked to think about the likely impacts of HPM CZs on social and economic activities. Members noted that it was important to consider the benefits of a designation, and not just negative consequences of a HPM CZ. We are aiming for a situation whereby the MCZ project is able to recommend a suite of sites to stakeholders (and ultimately Ministers) presenting a full picture of the positive and negative consequences of a potential designation.

CCW advice regarding social and economic considerations

7. Luke Davies presented a paper (paper 2) summarising the finding of work commissioned by CCW on defining social and economic considerations for site selection.
8. CCW's marine and coastal recreation audit found that a range of data exist for the spatial distribution of recreational activity and trends relating to specific activities. Of relevance to the MCZ project the audit found clear hotspots of activity which overlap with existing nature conservation and landscape designations – locations identified repeatedly mentioned include the Llyn Peninsula, Pembrokeshire, Anglesey and the Gower. There is however very little information (mainly anecdotal) regarding the intensity of activities within Welsh waters, but recognising that some activities will be more affected than others by a HPM CZs designation will help the Group to focus on whether further data is required to fill this knowledge gap.

9. CCW commissioned a report to define the activities that are likely to be excluded from a HPMCZ – because it is considered to be an extractive, depositional or potentially damaging/disturbing activity. This report will help the Group understand the type of activities likely to be affected by a HP designation.
10. Members raised the issue of the 'All-Wales Coastal Path' and whether its implementation will pose any restrictions to the location of potential MCZs. The potential for catch and release fishing within a HPMCZ was also raised as an issue for further discussion. Allowing this activity within a HPMCZ will need careful consideration as it conflicts with the 'no extractive, no depositional' aim of highly protected sites and the survival rate of fish after release can vary for different species. The management and enforcement needs of such an initiative would need careful consideration and could prove to be too onerous.

Action

- WAG Marine to clarify the position of the All Wales coastal path and co-location with MCZs.

Spatial Evaluation of non consumptive marine recreational activities

11. Mike Kaiser presented the findings of work undertaken by Bangor University on the spatial distribution of non-consumptive marine recreational activities in Wales. The work provides findings on the distribution of activity and annual expenditure (for 2008) for scuba-diving, sea kayaking, wildlife viewing cruises and sea bird watching. Mike confirmed that the outputs from this work would be available to the project on a confidential basis. The outputs will help to identify activity hot-spots and may be of use in justifying a decision for a HPMCZ in a particular area, and/or the exclusion of a particular activity. It may also inform the estimated financial impact of selecting a HPMCZ in an area and estimated enhancing factors of a HPMCZ (e.g. greater number of bird watchers).

Crown Estate Data Layers

12. Mike Cowling presented some of the information held by the Crown Estate relating to social and economic uses of Welsh waters – both in terms of current and future activities. Key to the MCZ project is recognising that the sea around Wales has potential for renewable energy generation for example areas of high tidal energy have been identified around the coast of Anglesey, Llyn, Pembrokeshire and in the Severn estuary. Mike confirmed that TCE are willing to assist the MCZ project with data using the MaRS system.

Fisheries Data Layers

13. Koen Vanstaen presented the work by Cefas to develop a national data layer of inshore fisheries activities using SFC and MFA data. The data has been collated as part of the MB0106 data layers project commissioned by Defra¹. It represents best available data but to bear in mind there are some areas where the level of detail is low and some areas where confidence in the data is low. Mike Kaiser noted that Bangor University had data from work undertaken last year that could be collated with this data to provide further clarification.

¹ A UK wide project to assist those planning the marine protected area network in understanding where the social and economic activities occur in marine waters. WAG has access to the outputs of this research.

14. The Group discussed the value and validity of the SFC data and there was some concern that it was not accurate. WAG Fisheries suggested that they work with Cefas to develop a proposal for protocols for future data collection. There was a view that this could be introduced easily in time to inform this project, at no extra cost and with no impact on existing workloads.

Action

- Mike Kaiser to send Koen data from Bangor University work for collation and comparison overlap for clarify.
- Phil and Koen to prepare (one page) proposal on data collection protocols for consideration by the Group before submitting to MCZ project TAG for consideration.

Group Discussion

15. There was support for the approach put forward by CCW that certain physical and legal restraints be identified and agreed as being applied when identifying the 1st iteration of sites. The group discussed identifying areas of the Welsh sea where there is a high level of industrial activity and heavily modified areas for consideration as areas of exclusion for the 1st iteration of candidate MCZs.
16. The restraints discussed:
- Ports and harbours, including areas where maintenance dredging is required.
 - Areas licensed for aggregate extraction.
 - Fisheries several orders.
 - Major cables and pipelines.
17. Areas of sea identified as being important or a potential resource for marine renewable energy also needs to be considered in the 1st iteration. WAG's Marine Renewable Energy Strategic Framework will identify areas of the sea that have potential for marine renewable energy development and it is due for completion later this year. In the absence of this information the Group agreed that a position statement from WAG as to how areas of sea identified as being important for future renewable energy production should be considered within the ongoing MCZ process.

Action

- WAG to provide a policy statement.

Next Steps

18. WAG is taking the lead in collating the social and economic data for the MCZ project. Louise George will confirm the format required by WAG's GIS team so that Group members can send GIS data files to WAG to start the data collation exercise.
19. It was agreed that once collated each data layer should be considered as to whether it is an extractive, depositional or a potentially damaging/disturbing activity. The group will then be able to consider each activity and identify the level of impact to a HPMCZ and whether it is an activity of concern. One suggestion was to use the 'Prioritisation' criteria used in the Ecological Assessment (Primary, Secondary, Tertiary, Overarching and output criteria) to aid this assessment.

20. It was agreed that there was probably no need to map the activities considered as having no impact upon an HPMCZ but the group would need to develop a statement to justify its position.
21. Group agreed to use existing GIS data to produce a series of maps for consideration at the next meeting:

Map 1 – current areas of high industrial activity and/or heavily modified areas

Map 2 – areas where likely to be future activity, as map 1 above

Map 3 – hotspots where extractive activities occur

Map 4 – hotspots where depositional activities occur

Action

- WAG Marine to confirm the required format of GIS data layers and advise members.
- WAG Marine to arrange series of maps for consideration at next meeting.

Group Membership

22. It was suggested that Professor Lynda Warren as Chair of the Stakeholder and Citizen Engagement Group be considered as an additional member in order to provide the stakeholder perspective.

Action

- WAG marine to discuss membership with Chair of SCEG.

Date of Next Meeting

23. WAG to circulate dates for meeting early to middle of July 2010.

PAPER 1

Notes on Defining Highly Protected Marine Conservation Zones (HPMCZ)

Social-economic criteria

The social and economic (SE) MCZ TAG sub-group has been established to explore the social, economic and pragmatic criteria for selecting highly protected MCZs. This paper provides a brief outline of a number of key issues relating to the identification, selection, and adoption of SE criteria. It is proposed that these questions form the basis for discussion at the first SE sub-group meeting to be held on the 28th may 2010.

Background

The Marine and Coastal Access Act 2009 provides that when considering whether it is desirable to designate an area as a MCZ the appropriate authority (Welsh Ministers in Wales) may have regard to the economic and social consequences of doing so.

The Welsh Assembly Government has stated its intention to give full consideration to social and economic consequences throughout the process of selecting MCZs in Welsh waters. "Protecting Welsh Seas, a draft strategy for marine protected areas in Wales (September 2009)"² outlines the Welsh Assembly Government's approach to MCZ site selection: to develop a robust site selection process that incorporates ecological, social and economic considerations and is informed by stakeholder dialogue. The aim is to ensure that MCZs are chosen to maximise benefits (ecological, social and economic) while minimising any conflicts with the different uses of the sea, as far as possible.

Explanatory note 335 of the Act states:

"Subsection (7) allows Ministers to take account of the economic or social consequences of designation. This ensures MCZs may be designated in such a way as to conserve biodiversity and ecosystems whilst minimising any economic and social impacts. Where an area contains features that are rare, threatened or declining, or forms a biodiversity hotspot, greater weight is likely to be attached to ecological considerations. Where there is a choice of alternative areas which are equally suitable on ecological grounds, socio-economic factors could be more significant in deciding which areas may be designated as an MCZ."

The Welsh Assembly Government considers that its approach to social, economic and pragmatic considerations is in line with the explanatory note.

1. **How should social and economic criteria be used for selecting MCZs (highly protected)?**

Draft guidelines regarding the ecological aspects of site selection have been developed by the TAG (see paper 3). The SE sub-group should consider how the social, economic and pragmatic aspects of site selection are to be incorporated into the process.

At a recent TAG workshop to consider the ecological criteria for selecting MCZs it was suggested that site options would in the first instance be identified using ecological guidelines, the options would then be refined (or even eliminated) after taking account of social, economic and other pragmatic considerations.

The result would be a 2-stage approach to site selection, with stage 2 being relevant to this group:

Stage 1 – site options identified using ecological guidelines

Stage 2 – site options refined/modified after considering social, economic and pragmatic implications

² <http://wales.gov.uk/consultations/environmentandcountryside/marineprotectedareas/?lang=en>

Is the sub-group happy for this approach? Or are there suggestions for an alternative approach?

2. What SE criteria should we consider, and how should they be scored?

The TAG draft ecological site selection guidelines (May 2010) argues that MCZ selection criteria need to include social, economic aspects of ecosystem services that are of benefit to humankind. These services include the *provisioning services* of providing food and raw materials, *cultural services* such as cultural heritage, leisure and recreation, education value and safeguarding marine ecosystems for future use, as well as the *intrinsic values* of marine ecosystems. Roberts et al. (2008) provides further detail of specific SE services by identify 15 potential SE criteria that have been used to select other HPM CZs (see Annex 1 for more detail). Below, these criteria have been listed under four headings: provisioning services, cultural services, pragmatic approaches and intrinsic values. Finally, in the selection of the ecological criteria, the TAG group recognise that not all criteria are of equal weighting, and the selection criteria are grouped into five prioritisation categories: overarching, primary, secondary, tertiary and output drivers.

Provisioning services	Cultural services	Pragmatic approaches	Intrinsic values
Compatibility with existing users	Archaeological/Cultural Significance and Heritage	Ease of Management	
Importance to commercially important species	Recreation	Accessibility	
Importance to fisheries	Aesthetics	International/National/Regional Significance	
Economic Effect	Research/Monitoring/Education/Interpretation	Public/Political Acceptance	
Public Health	Value for Tourism		
	Safety		

Discussion points

Method:

- ***Is the list of SE criteria appropriate for MCZs in Wales?***
- ***What are the likely impacts of MCZs in each of these criteria?***
- ***What should be the priorities of the different criteria?***
- ***How might we ‘score’ each of these criteria?***
- ***Should the SE criteria aim to (i) reduce SE impacts, (ii) maximise benefits or (iii) both (i) and (ii)?***

Data:

- ***What data are available for each of these criteria?***

- ***What are the data gaps, are the gaps significant? Can we fill them? Research needed?***

3. Impacts of SE criteria on stakeholders

It is likely that MCZs will impact a wide range of stakeholders, including:

- Fisheries,
- Recreational and tourist groups (angling, kayaking, diving etc),
- Energy (e.g. wind farms, oil, gas)
- Aggregates

Discussion points

What are the general impacts? What are the sector specific impacts?

What are the likely implications of MCZs on each of these groups?

What are the potential displacement effects?

What are the implications for enforcement?

How do we get all stakeholder groups 'on-board'?

Dr Mike Christie

Aberystwyth University / Chair MCZ SE sub-group.

Annex 1: Summary table of possible socio-economic considerations for the selection of candidate sites for HPMRs (Source: Roberts et al., 2008).

PROVISIONING SERVICES

Compatibility with Existing Users

The degree to which an area would affect the activities of local users. The designation of HPMCs should aim to minimise conflict with and among existing users. Consideration should be given to the likely effects of activities displaced from the candidate HPMR.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Importance to commercially important species

The intention is not to designate MCZs for fisheries purposes but the designation of an MCZ may in turn benefit fish stocks. Is the proposed site critical for important life-history stages or vulnerable life history stages of commercially important species? Choosing such areas will increase the likelihood that an MPA network will benefit local fisheries.

Scoring: Could be scored according to the number of species that use the site, their degree of dependence and their commercial value.

Importance to fisheries

The number of dependant fishers and the size of the fishery yield from a proposed HPMCs should be considered. The greater these two values the more important it becomes to manage the area properly. Areas with a high number of dependant fishers that are then protected as HPMCs may be the source of significant displacement of fishing effort – designating such an area and the management of displacement will need careful consideration from an economic, social and ecological perspective.

Scoring: Could be scored according to the value of fish landings obtained from the site, or on the basis of the number of fishers who use the site.

Economic Effect

What will be the long-term economic effects to the local area following designation? The long-term economic effect to local communities of HPMCZ designation should be considered carefully. Most HPMCZs will have short-term disruptive effects to the local economy therefore sites should be rated on their predicted long-term effects. There may also be impacts on various uses of marine areas such as marine energy, aggregates etc.

Scoring: Detailed economic appraisals would allow numeric estimates of economic impacts to be applied to specific sites. However, it is unlikely that these will be available for even a small number of the sites considered. Therefore, it may be better to score sites according to each of the different economic activities affected, the likely direction of effect (positive, negative, neutral), and the likely magnitude of the effect (e.g. low, medium, high).

Public Health

If a proposed HPMCZ serves to diminish pollution or other disease agents that may contribute to public health problems it will score highly for this criterion. However, heavily contaminated areas may be of little use ecologically speaking. In such cases a broader suite of management measures may be more appropriate.

Scoring: It is difficult to quantify this value for a site, although level of past contamination may be easier to measure.

CULTURAL SERVICES

Archaeological/Cultural Significance and Heritage

This refers to the existing or potential value a site has because of its archaeological, religious, historic, artistic or other cultural values. Natural areas that contain important cultural features (e.g. submerged wrecks) should be given high ratings as they are likely to benefit from greater local support. By protecting such areas the integrity of adjacent ecosystems will also be protected. The value of such features can be regarded at a local/regional/national/international scale, with increasing importance given at each level. Need to consider how the no extractive / depositional nature of HPMCZs will affect this.

Scoring: Could be scored according to the number and significance of archaeological/cultural features present.

Recreation

Is the site currently or could it potentially be used for public recreation? The rating of this criterion depends upon the goals of the network. Areas that have high use value in terms of public recreation may or may not be compatible with the goals of HPMCZs. Such areas should be considered carefully in view of other criteria, but excluding recreational activities may be controversial and meet with resistance from the local communities.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Aesthetics

An area with exceptional scenic beauty may be rated highly as safeguarding such features usually requires the integrity of adjacent ecosystems to be maintained. Aesthetic appeal is often important for sites used for tourism. The weighting placed on this criterion will depend upon the goals and objectives of HPMCZs.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Research/Monitoring/Education/Interpretation

Does the area represent various ecological characteristics and can it serve as a 'control site' for scientific monitoring and research? Is it the subject of existing research? Control sites are

essential components of any ongoing ecological monitoring programme, and this is one of the goals of HPM CZs in Wales. An area that is already a part of a long-term monitoring program should be given priority for this criterion. In addition, the potential of a site to be useful for education and interpretation is important.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high level of past/present research or education activity. The site could additionally be scored on its potential value, e.g. low, medium, high.

Value for Tourism

Areas that lend themselves to forms of tourism that are compatible with conservation goals should receive a higher rating. Areas that have existing infrastructure may be preferable over areas where high levels of development are required. Consideration should also be made on the number of visitors a given HPM CZ can support.

Scoring: Could be scored on a categorical scale, e.g. low, medium, high present tourism value; low, medium, high potential tourism value.

Safety

Principal users of the area after designation will often be recreational users and therefore the degree of danger to people from strong currents, surf, submerged obstacles, waves and other hazards may be taken into account. Areas not protected in the candidate HPM CZ might also be considered in the context of any displaced activities.

Scoring: Could be scored on a categorical scale, e.g. low risk, medium risk or high risk to public safety.

PRAGMATIC CONSIDERATIONS

Ease of Management

This refers to the ease of managing a potential area. Areas that are difficult to manage may be less likely to succeed in achieving HPM CZ goals.

Scoring: Could be scored on a categorical scale, e.g. easy, moderate or difficult.

Accessibility

Support for an MPA network requires understanding and therefore access to the area for researchers, students and visitors should be relatively easy, although greater accessibility may also mean greater pressure from users. If an HPM CZ is to be used by researchers, visitors and students it should be accessible to them. Likewise management and patrols may be more straightforward if an area is easily accessible. However remote areas will receive fewer visitors and as such may be more likely to achieve their ecological goals.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

International/National/Regional Significance

If an area contains proposed or possible features for international protection (e.g. on the World Heritage List) or has an existing designation (e.g. UNESCO Biosphere Reserve, Special Area of Conservation of SSSI), contains features that could be proposed under such designations or forms a link with a cross boundary MPA network it should rate highly for this criterion. If an area is an important representative of regionally or nationally important characteristics it should also receive a high rating.

Scoring: Sites could be scored according to the number of species and habitats they cover.

Public/Political Acceptance

This criterion refers to the amount of social and political acceptance and the degree of community support for the creation of an HPM CZ in a particular area. HPM CZ success (and more broadly MPA success) has been shown to often be reliant on compliance and support

from local communities. Therefore every effort should be made to obtain social support and acceptance throughout the planning stages. An area that is already protected through tradition or practise could represent a favourable site for inclusion in the network under this criterion.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

INTRINSIC VALUE

PAPER 2

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

18th May 2010

SOCIO-ECONOMIC CONSIDERATIONS IN THE HIGHLY PROTECTED MCZ SELECTION PROCESS: CCW ADVICE TO TECHNICAL ADVISORY GROUP

1. Introduction

Part of the Technical Advisory Group's work is to consider the role of socio-economics in selection of highly protected MCZs, and in particular to consider data availability and the way in which this should be incorporated into the site selection process. Although CCW's remit is not directly concerned with many relevant socio-economic issues, we do have relevant roles in:

- promoting access to the countryside and sea and collecting relevant information and data,
- advising on the impacts of activities on the condition and management of protected sites, and
- advising on ecosystem goods and services provided by the (marine) environment

It is in relation to these areas of CCW's remit that this advice is provided.

This short paper aims to:

1. Summarise the findings of CCW-commissioned research to date that may assist in defining the process and data needs for applying socio-economic considerations to the selection of highly protected MCZs.
2. Suggest further work needed and data requirements in the areas discussed.

2. Socio-economic considerations for highly protected MCZ site selection

Prior to the commencement of the MCZ Project Wales, CCW commissioned a report to review and recommend a process for identifying highly protected MCZs in Welsh waters³. This report also identified a series of socio-economic and practical considerations that could form part of the site selection process. The considerations identified are listed in Box 1. Further explanation of these is provided in Annex 1. The full report also makes some suggestions as to how socio-economic considerations could be applied in practice to the site selection process.

The list in Box 1 is not presented as a definitive list of socio-economic considerations but it does indicate the breadth of issues that could form part of the highly protected MCZ site selection process.

Box 1: Summary of possible socio-economic considerations for HPMCZ selection: from Roberts *et al* (2008)

Social/Political Acceptance
Ease of Management
Public Health
Archaeological/Cultural Significance and Heritage
Recreation
Aesthetics
Compatibility with Existing Users
Safety
Accessibility
Research/Monitoring/Education/Interpretation
Importance to commercially important species
Importance to fisheries
Economic Effect
Value for Tourism
International/National/Regional Significance

³ Roberts, C., Brown, R., Thurstan, R. and Hawkins, J. (2008) Selecting and implementing Highly Protected Marine Reserves in Wales. CCW Policy Research Report No. 08/17

In 2009 Defra commissioned a study to review and set out options on how socio-economic data could be integrated into the planning of MPA networks in UK marine waters⁴. The findings of this study, together with the Roberts et al (2008) report, may also be of use to the Welsh MCZ Project.

In considering what socio-economic information to apply to the MCZ selection process and how, it may be useful to review what other MCZ projects are doing in this area. The four England/UK offshore projects are all actively engaging with stakeholders to obtain relevant socio-economic data and information. For example the South West of England Finding Sanctuary project is working to collect detailed information on recreational use of the projects area. Recreational sea-users have opportunities to input information about their activities by liaising with their Stakeholder Group representative, contributing to an interactive WebGIS map, attending workshops and local ‘drop-in’ days, or through their club for example diving or angling clubs. Information provided is captured through the interactive map or through questionnaires and placing marks on charts. Other information on when they go, frequency, activities carried out and any relevant ecological data is also collected.

First iterations of highly protected MCZ site proposals

In Wales, the process being following for highly protected MCZ selection includes the production of two iterations of site proposals. The first iteration is currently scheduled for the autumn. It is our understanding that that some key socio-economic factors will be applied as part of the production of the first iterations of sites before integrating more detailed socio-economic considerations between the first and second site iterations. CCW advises that the following list of key physical and legal constraints could be applied to the first iterations of highly protected MCZ proposals:

- Ports/ harbours - areas where maintenance dredging is required
- Areas licensed for aggregate extraction
- Fisheries several order areas
- Major cables and/or pipelines

(Permanently modified areas like offshore windfarms, sea defences etc will be excluded under the “ecological recovery potential” criterion in the ecological site selection criteria)

The above list is offered for discussion. There may be other significant fixed physical or legal constraints that the Group considers should be added to the list. It should be borne in mind that a key issue for application of socio-economic factors to the first iteration of site proposals will be the availability of spatial data in an appropriate format. CCW representatives of the Technical Advisory Group can advise of this issue.

Socio-economic benefits of highly protected MCZs

When considering MCZ proposals, socio-economic considerations are usually thought of in terms of potential constraints. As part of the Welsh MCZ Project, CCW advises that active consideration is given to the potential socio-economic *benefits* of sites. There is a growing understanding that a healthy marine environment is important for the provision of a variety of important goods and services with social and economic value. These ‘services’ the environment provides can be direct, such as fishing, aggregate extraction, energy potential and commercial recreation, or indirect, such as mitigating the effects of climate change, coastal erosion or flooding. This is an area where CCW is

⁴ Hull, S.C., Front, N. J., Saunders, J. E., Rupp-Armstrong, S., Hime, S., Tinch, R., Claydon, J. and Jones, P. (2009) Determining how and what to take into account in the planning of marine protected area networks – socio-economic data Defra Report MB0104. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=16371&FromSearch=Y&Publisher=1&SearchText=MB0104&SortString=ProjectCode&SortOrder=Asc&Paging=10>

able to assist the Welsh MCZ Project and we propose to carry out an initial descriptive assessment in parallel with the first iteration of site proposals.

3. Marine and coastal recreation data and information

In addition to deciding what socio-economic considerations to apply to highly protected MCZ site selection, there is also the issue of data and information availability, collation and analysis to address. Aware of this need to address data availability, CCW commissioned an audit of existing information and knowledge on recreation in the marine and coastal environment in Wales⁵; as this is an area of socio-economic activity that relates directly to CCW's remit.

The Marine and Coastal Recreation Audit (MCRA) considered available data sources for recreation at a range of levels. For each activity information was gathered at UK, Wales-wide and local level. In total, 127 documents were reviewed and are available on CD that can be obtained from CCW.

The overall conclusion of the report is that although a range of data exists looking either at spatial location of activities and trends in relation to specific activities, there is little or no information on the intensity of use or popularity of specific activities within Welsh waters. Most existing data is anecdotal and quantitative survey information available only at national or site specific level. Annex 2 provides a summary of the types of information available for recreational activities considered in the Audit.

Spatial information is available for some activities and has been used in the Audit. In relation to location it was found that 'hotspots' of activity clearly overlap with nature conservation and landscape designations. This has particular relevance in the identification and selection of MCZs that will be highly protected, especially if some may be sited within existing designated sites. Particular locations that were repeatedly mentioned include Llyn Peninsula, Pembrokeshire, Anglesey and the Gower.

The lack of information setting out the spatial intensity of use of different sea areas for different recreational activities is an issue in the context of the selection of highly protected MCZs. Nevertheless, CCW considers that some recreational activities may be more affected (either positively or negatively) by highly protected MCZs than others and understanding this relationship could help target data and information collection. This issue is explored further below.

4. Site management considerations

There is a need for the management implications of highly protected MCZs to be agreed as part of the MCZ project Wales. Highly protected MCZs are defined as sites that are protected from all extractive and depositional activities, as well as all other damaging and disturbing activities. This definition means that some activities will not be considered compatible with highly protected MCZs under any circumstances. There will also be other activities that may be compatible given appropriate management measures. An upfront understanding of these site management implications may help focus attention on key socio-economic considerations for site selection. For example, for ease of site management, it may be desirable to avoid, where possible, areas where certain activities take place commonly or intensely and, vice versa, it may be desirable to seek to overlap with potentially positive activities.

⁵ Land Use Consultants (2009) Marine and Coastal Recreation Audit. CCW Policy Research Report No. 09/02.

A report to CCW in 2009⁶ reviews activities that occur in highly protected marine areas around the world and:

- Defines extractive, depositional, potentially damaging and potentially disturbing activities,
- Discusses the circumstances under which potentially damaging and disturbing activities would be considered damaging or disturbing in the context of MCZs that are highly protected, and
- Proposes possible mitigation and management measures.

Annexes 3 and 4 present the key findings of this report:

- Annex 3 lists activities that are:
 - a) considered extractive and depositional, and hence incompatible with highly protected MCZs), and
 - b) activities that are potentially damaging or disturbing, and hence may be acceptable if appropriate management measures can be put in place to mitigate negative impacts.
- Annex 4 provides a summary of potential management issues and mitigation measures relating to potentially damaging and disturbing activities.

The report may be particularly useful in informing the MCZ selection process, as an understanding of which activities may be significantly affected by highly protected MCZs could help target information collection and analysis. For example, in many countries diving is encouraged (but managed) within highly protected sites and can be an important source of support and enforcement for sites. Other recreational activities, such as the use of personal watercraft may be less compatible with the objectives of highly protected MCZs and this is more strictly controlled or banned within these areas. Drawing on evidence from other highly protected sites around the world, and other studies of activities and impacts, the report indicates those activities that either have a (potentially) particularly positive relationship with highly protected sites, or a particularly conflicting relationship:

Potentially positive relationship with highly protected sites:

- Diving/snorkelling
- Bird/wildlife watching
- Kayaking/canoeing

Potential conflict with highly protected sites:

- Angling
- Powerboating
- Personal water craft
- Anchoring/mooring

The above activities may be useful to focus on as part of the socio-economic analysis. Other potentially damaging and disturbing activities that are either less affected, or where impacts are relatively easily mitigated, may be considered less of a priority in terms of obtaining a more detailed spatial understanding for site proposal analysis.

⁶ Thurstan, R., Roberts, C., Hawkins, J. and Neves, L. (2009) Highly Protected Marine Conservation Zones: defining damaging and disturbing activities. CCW Policy Research Report No. 09/01.

5. Further data and information collection

In relation to recreation data and information, CCW proposed targeting any further data and information collection towards those activities that are most likely to impact on site selection – either by looking for sites with mutual interest, or by avoiding areas heavily used already by activities likely to have a negative impact on highly protected MCZs, based on common practise in highly protected sites elsewhere in the world.

Though some spatial and intensity data is available, (see Annex 5 for a summary of data included in the Recreation Audit and data held by CCW), more information on intensity, frequency and seasonal data would be particularly useful to inform the MCZ process. It may be possible to rework existing datasets to extract further information or commission new data on certain activities where none or limited data exists. It is important to be aware when considering using existing or obtaining new data possible limitations of existing data for example limited sample size, gaps in data or in extrapolation of results. The Wales Outdoor Recreation Survey (2008)⁷ mentioned as a source of further information in the Recreation Audit may provide useful information on activities in the marine and coastal environment, particularly from the perspective of demographics and socio-economic groups, but could be further analysed to produce spatial intensity maps for activities included in the survey. (See Annex 6 for more information on the Wales Outdoor Recreation Survey.) Spatial data could also be produced from the CCW Phase 1 intertidal database as locations of activities were noted as part of the Intertidal Survey⁸. On a site basis, recreational activities are monitored within the Skomer Marine Nature Reserve and this information is available from CCW.

New sources of information from CCW include a study (available in October, 2010) illustrating the relative seasonal vulnerability of Welsh habitats, (excluding sub and intertidal) to fire, contamination, damage and disturbance (including recreation)⁹, and a study to commence shortly on the locations for recreational angling. Other sources of information available from external sources not identified by the Recreation Audit, or that have been produced since it was published, include the Watersports and Leisure Participation Survey 2009¹⁰ and the Adult Sports Participation Survey carried out by the Sports Council Wales¹¹.

5. Conclusion and recommendations

In areas of socio-economic interest that relate to CCW's remit there is clearly a range of information available that may assist the process of selecting highly protected MCZs. There are also many data gaps identified, but it is likely that, due to time and resources, opportunities for new survey and data collection work will be limited. In this context, the following recommendations are made:

1. A clear list of key socio-economics factors that present physical or legal constraints to highly protected MCZ locations could be identified for incorporation into the first iteration of site proposals; these will have to have readily available spatial data.

⁷ Wales Outdoor Recreation Survey (2008). Commissioned by the Countryside Council for Wales and the Forestry Commission Wales.

⁸ Brazier, P., Birch K., Brunstrom, A., Bunker, A., Jones, M., Lough, N., Salmon, L., and Wyn, G. (2007) When the Tide Goes Out: The biodiversity and conservation of the shores of Wales – results from a 10 year intertidal survey of Wales. CCW.

⁹ Liley D., Lake, S., Underhill-Day, J., Sharp, J., White, J. Hoskin, R. & Cruickshanks, K. (2010). Welsh Seasonality Habitat Vulnerability Review. Footprint Ecology / CCW.

¹⁰ Watersports and Leisure Participation Survey 2009 (2010). Arkenford Ltd. Guildford.

¹¹ Adult Sports Participation Survey – Update (2005). Sports Council for Wales Contact: Dr Rachel Hughes - research@sportwales.org.uk

2. The site selection and impact assessment process could be enhanced by developing an understanding of the potential benefits of highly protected sites in terms of supporting the provision of valuable ecosystem good and services; CCW is willing to assist with this assessment.
3. To improve understanding of marine and coastal recreation effort should be focussed on reworking existing datasets to extract further information, including further sources of data and information identified in section 4 above.
4. Collation of *additional* data and information could usefully be focussed on:
 - a. existing sources and obtaining information directly from relevant sectors, and
 - b. spatial and intensity data as this is particularly relevant for highly protected MCZ site selection and management.
5. Time and effort to obtain *more detailed* recreation information and data could usefully be focussed on those activities that are most likely to impact on sites (activities / areas likely to have a mutual interest, and activities / areas likely to have a negative impact).
6. Resources will be needed for all the above work; it is recommended that the Technical Advisory Group gives consideration to how to resource further information collection and analysis as resources may be needed beyond available existing staff time.

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Annex 1: Summary of possible socio-economic considerations for the selection of candidate sites for HPMCZs

Extract from Roberts, C., Brown, R., Thurstan, R. and Hawkins, J. (2008) *Selecting and implementing Highly Protected Marine Reserves in Wales*. CCW Policy Research Report No. 08/17

Summary table of possible socio-economic considerations for the selection of candidate sites for HPMRs

Social/Political Acceptance

This criterion refers to the amount of social and political acceptance and the degree of community support for the creation of an HPMR in a particular area. HPMR success (and more broadly MPA success) has been shown to often be reliant on compliance and support from local communities. Therefore every effort should be made to obtain social support and acceptance throughout the planning stages. An area that is already protected through tradition or practise could represent a favourable site for inclusion in the network under this criterion.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Ease of Management

This refers to the ease of managing a potential area. Areas that are difficult to manage may be less likely to succeed in achieving HPMR goals.

Scoring: Could be scored on a categorical scale, e.g. easy, moderate or difficult.

Public Health

If a proposed HPMR serves to diminish pollution or other disease agents that may contribute to public health problems it will score highly for this criterion. However, heavily contaminated areas may be of little use ecologically speaking. In such cases a broader suite of management measures may be more appropriate.

Scoring: It is difficult to quantify this value for a site, although level of past contamination may be easier to measure.

Archaeological/Cultural Significance and Heritage

This refers to the existing or potential value a site has because of its archaeological, religious, historic, artistic or other cultural values. Natural areas that contain important cultural features (e.g. submerged wrecks) should be given high ratings as they are likely to benefit from greater local support. By protecting such areas the integrity of adjacent ecosystems will also be protected. The value of such features can be regarded at a local/regional/national/international scale, with increasing importance given at each level.

Scoring: Could be scored according to the number and significance of archaeological/cultural features present.

Recreation

Is the site currently or could it potentially be used for public recreation? The rating of this criterion depends upon the goals of the network. Areas that have high use value in terms of public recreation may or may not be compatible with the goals of HPMRs. Such areas should be considered carefully in view of other criteria, but excluding recreational activities may be controversial and meet with resistance from the local communities.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Aesthetics

An area with exceptional scenic beauty may be rated highly as safeguarding such features usually requires the integrity of adjacent ecosystems to be maintained. Aesthetic appeal is often important for

sites used for tourism. The weighting placed on this criterion will depend upon the goals and objectives of HPMRs.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Compatibility with Existing Users

The degree to which an area would affect the activities of local users. The designation of HPMRs should aim to minimise conflict with and among existing users. Consideration should be given to the likely effects of activities displaced from the candidate HPMR.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Safety

Principal users of the area after designation will often be recreational users and therefore the degree of danger to people from strong currents, surf, submerged obstacles, waves and other hazards may be taken into account. Areas not protected in the candidate HPMR might also be considered in the context of any displaced activities.

Scoring: Could be scored on a categorical scale, e.g. low risk, medium risk or high risk to public safety.

Accessibility

Support for an MPA network requires understanding and therefore access to the area for researchers, students and visitors should be relatively easy, although greater accessibility may also mean greater pressure from users. If an HPMR is to be used by researchers, visitors and students it should be accessible to them. Likewise management and patrols may be more straightforward if an area is easily accessible. However remote areas will receive fewer visitors and as such may be more likely to achieve their ecological goals.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high.

Research/Monitoring/Education/Interpretation

Does the area represent various ecological characteristics and can it serve as a 'control site' for scientific monitoring and research? Is it the subject of existing research? Control sites are essential components of any ongoing ecological monitoring programme, and this is one of the goals of HPMRs in Wales. An area that is already a part of a long-term monitoring program should be given priority for this criterion. In addition, the potential of a site to be useful for education and interpretation is important.

Scoring: Could be scored on a categorical scale, e.g. low, medium or high level of past/present research or education activity. The site could additionally be scored on its potential value, e.g. low, medium, high.

Importance to commercially important species

Is the proposed site critical for important life-history stages or vulnerable life history stages of commercially important species? Choosing such areas will increase the likelihood that an MPA network will benefit local fisheries.

Scoring: Could be scored according to the number of species that use the site, their degree of dependence and their commercial value.

Importance to fisheries

The number of dependant fishers and the size of the fishery yield from a proposed HPMR should be considered. The greater these two values the more important it becomes to manage the area properly. Areas with a high number of dependant fishers that are then protected as HPMRs may be the source of significant displacement of fishing effort that will need to be managed carefully.

Scoring: Could be scored according to the value of fish landings obtained from the site, or on the basis of the number of fishers who use the site.

Economic Effect

What will be the long-term economic effects to the local area following designation? The long-term economic effect to local communities of HPMR designation should be considered carefully. Most HPMRs will have short-term disruptive effects to the local economy, therefore sites should be rated on their predicted long-term effects.

Scoring: Detailed economic appraisals would allow numeric estimates of economic impacts to be applied to specific sites. However, it is unlikely that these will be available for even a small number of the sites considered. Therefore, it may be better to score sites according to each of the different economic activities affected, the likely direction of effect (positive, negative, neutral), and the likely magnitude of the effect (e.g. low, medium, high).

Value for Tourism

Areas that lend themselves to forms of tourism that are compatible with conservation goals should receive a higher rating. Areas that have existing infrastructure may be preferable over areas where high levels of development are required. Consideration should also be made on the number of visitors a given HPMR can support.

Scoring: Could be scored on a categorical scale, e.g. low, medium, high present tourism value; low, medium, high potential tourism value.

International/National/Regional Significance

If an area contains proposed or possible features for international protection (e.g. on the World Heritage List) or has an existing designation (e.g. UNESCO Biosphere Reserve, Special Area of Conservation of SSSI), contains features that could be proposed under such designations or forms a link with a cross boundary MPA network it should rate highly for this criterion. If an area is an important representative of regionally or nationally important characteristics it should also receive a high rating.

Scoring: Sites could be scored according to the number of species and habitats they support that are important at different levels (i.e. international, national, regional).

Annex 2: Summary gap analysis of availability of activity data considered in the Marine and Coastal Recreation Audit, 2009.

Extract from Land Use Consultants (2009) with additional activities and datasets added by CCW informed by Thurstan *et al* (2009) and CCW Special Sites database.

Activity	Spatial	Intensity	Demo- graphics	Socio- economic groups	Type of trip	Frequency	Duration	Season	Destinations	Trends in use
WATER-BASED										
Diving/Snorkelling	?	✓	○	○	○	●	●	●	✓	✓
Anchoring / mooring ¹	✓	?	?	?	?	?	?	?	?	?
Powerboating	✓	?	✓	✓	✓	●	●	✓	○	○
Sailing	✓	?	✓	✓	●	●	●	✓	○	✓
Navigation/transit of vessels	✓	?	?	?	?	?	?	?	?	?
Canoeing/Kayaking/Rowing/Rafting	✓	✓	○	○	○	●	●	✓	○	○
Swimming	✓	?	○	○	●	●	●	✓	○	○
Water Skiing	?	?	○	○	✓	●	●	✓	○	○
Windsurfing	✓	?	○	●	✓	●	●	✓	✓	○
Angling	?	?	○	○	○	●	●	○	✓	○
Bird and wildlife watching	✓	✓	●	●	●	●	●	○	✓	○
Archaeology & salvage ¹	?	?	?	?	?	?	?	?	?	?
INTER-TIDAL										
Coasteering	?	?	●	●	○	●	●	○	○	○
Surfing/Bodyboarding/Gliding	✓	?	✓	✓	✓	●	○	✓	✓	✓
Gathering - living resources (including bait collection/boulder turning)	✓	?	●	●	●	●	●	●	○	○

- Key:**
- Data missing for the whole of Wales
 - Partial data available for specific locations or available across Wales but not specifically coastal
 - ✓ Data available
 - ? Data type not assessed in MCRA
 - ¹ Activity not assessed in MCRA

Activity	Spatial	Intensity	Demo- graphics	Socio- economic groups	Type of trip	Frequency	Duration	Season	Destinations	Trends in use
LAND-BASED										
Golf	?	?	○	○	○	●	●	○	✓	○
Cycling/Mountain Biking	?	?	○	○	○	●	●	○	○	○
Horse Riding	?	?	○	○	○	●	●	○	✓	○
Walking	?	?	○	○	○	●	●	○	○	○
Rock Climbing	✓	?	○	○	✓	●	○	○	✓	✓
Land Yachting/Kite Buggy	?	?	●	●	●	●	●	✓	✓	✓
Beach Pastimes	✓	?	○	●	●	●	●	○	○	○
Access/Use ¹ - erosion/disturbance/damage	✓	?	?	?	?	?	?	?	?	?
- Trampling	?	?	?	?	?	?	?	?	?	?
- Inappropriate vehicle use	?	?	?	?	?	?	?	?	?	?
- Wildfowling	?	?	?	?	?	?	?	?	?	?
Low flying aircraft ¹	?	?	?	?	?	?	?	?	?	?

- Key:**
- Data missing for the whole of Wales
 - Partial data available for specific locations or available across Wales but not specifically coastal
 - ✓ Data available
 - ? Not assessed in MCRA
 - ¹ Activity not assessed in MCRA

Annex 3: Activities considered extractive, depositional and potentially damaging or disturbing

Extract from Thurstan *et al* (2009)

Table 18 lists activities considered extractive, depositional and potentially damaging or disturbing.

Extractive	Depositional	Potentially damaging or disturbing
Commercial fishing	Commercial fishing	Point-source discharges
Recreational angling	Recreational angling	Catch-and-release angling
Collection of flora and fauna	Dredging	Scientific research and education
Marine curio collection	Construction of structures	Scuba diving and snorkelling
Beachcombing	Petroleum/gas exploration	Swimming
Collection/use of natural materials/substrates	Petroleum/gas operation	Walking/hiking
Dredging	Aquaculture	Visitor amenities/ camping
Construction of structures		Vehicular access
Aquaculture		Other recreational pursuits
Petroleum/gas exploration		Non-motorised boating
Petroleum/gas operation		Motorised boating
Military activities		Personal water craft
		Maintenance and operation of existing structures
		Ports and harbours
		Wildlife observation
		Anchoring/mooring
		Navigation/transit of vessels
		Low flying aircraft

Annex 4: Summary of management issues relating to potentially damaging and disturbing activities within highly protected MCZs

Extract from Thurstan *et al* (2009)

Table 19 summarises many of the management issues relating to non-consumptive activities and other potential non-extractive impacts within highly protected MCZs. It lists possible management responses that can help mitigate the effects of potentially damaging and disturbing activities to reduce harm to acceptable levels, and hence enable the activities to take place.

Activity	Circumstances where activity may be disturbing or damaging	Possible mitigation
Point source discharges	All circumstances	Treatment of effluent
Catch-and-release angling	All circumstances	Unlikely
Scientific research and education	Damage to sensitive habitats e.g. by trampling Disturbance to sensitive species such as cetaceans, seals High numbers of people Extraction or removal of species for research	Code of conduct Code of conduct Code of conduct To be performed only under permit
Scuba diving and snorkelling	High numbers of divers/snorkellers - trampling/sediment stirring/abrasion Low skill level of divers Presence of sensitive wildlife or habitats High numbers of boats - noise and visual disturbance	Permits to regulate numbers, code of conduct, zoning Signs to raise awareness; specified areas for beginners, zoning Seasonal closures, code of conduct Permits to regulate numbers
Swimming	Trampling of sensitive intertidal populations Disturbance to sensitive species such as cetaceans, seals	Demarcation of access points Code of conduct, zoning
Walking/hiking	Trampling of sensitive intertidal populations Erosion of intertidal habitats	Access restrictions Well marked paths, code of conduct

Activity	Circumstances where activity may be disturbing or damaging	Possible mitigation
Visitor amenities/ camping	Effects of construction works for visitor amenities Increased waste of litter	Minimal construction of facilities, placed away from highly protected MCZ Site facilities away from highly protected MCZ, code of conduct in place, educational boards
Vehicular access	Sensitive populations/habitats in intertidal zone Noise/disturbance during wildlife breeding/feeding/resting times	Specified access routes Unlikely - access should be restricted during these times
Other recreational pursuits	Dog walking - disturbance to wildlife Dog walking – faeces Horse riding - disturbance to wildlife Horse riding - disturbance to sensitive habitats	Seasonal closures, code of conduct, zoning Must be removed, waste disposal facilities, zoning Seasonal closures, code of conduct, zoning Restricted access, zoning
Non-motorised boating	Visual disturbance during wildlife breeding/feeding/resting times	Code of conduct, seasonal restrictions
Motorised boating	Noise disturbance or physical impact on wildlife such as cetaceans, seals Noise disturbance or physical impact on wildlife with dependent young Anchoring in sensitive habitat	Seasonal closures, code of conduct, speed restrictions Seasonal closures, code of conduct, speed restrictions Provision of moorings, zoning

Activity	Circumstances where activity may be disturbing or damaging	Possible mitigation
Personal water craft	Visual disturbance during wildlife breeding/feeding/resting times Noise disturbance or physical impact on species such as cetaceans, seals Noise disturbance or physical impact on wildlife with dependent young Damage to sensitive habitats by scour/wash/propellers	Unlikely Unlikely Unlikely Unlikely
Maintenance and operation of existing structures	Mortality of seabirds during windfarm operation Removal of large decommissioned structures Disturbance to wildlife from electromagnetic fields	Unlikely Unlikely Deep burial of cables, no new cables once highly protected MCZ in place
Ports and harbours	Disturbance to sensitive habitats and species from shipping activity e.g. noise, visual disturbance and wash Release of chemicals into marine environment	Unlikely Re-siting of boat cleaning areas away from highly protected MCZ, careful disposal of contaminants
Wildlife observation	High numbers of boats - noise and visual disturbance to wildlife populations Noise/disturbance during wildlife (e.g. seals, cetaceans, birds) breeding/feeding/resting times Harassment of wildlife	Permits to regulate numbers Code of conduct Code of conduct
Anchoring/mooring	Presence of sensitive habitats e.g. Zostera beds	Restrictions on anchoring, moorings, code of conduct

Activity	Circumstances where activity may be disturbing or damaging	Possible mitigation
Navigation/transit of vessels	<p>Noise disturbance or physical impact on species such as cetaceans, seals</p> <p>Noise disturbance or physical impact on wildlife with dependent young</p> <p>Visual disturbance during wildlife breeding/feeding/resting times</p>	<p>Speed restrictions</p> <p>Speed restrictions</p> <p>Speed restrictions, restricted access</p>
Low flying aircraft	Noise or visual disturbance to wildlife or visitors	Restrictions on low-flying activity

Annex 5 Summary of available spatial and intensity data for marine and coastal recreation activities in Wales included in the Marine and Coastal Recreation Audit, 2009. The table includes other activities identified as important but not included in the MCRA.

Based on Land Use Consultants (2009) with additional activities added by CCW informed by Thurstan *et al* (2009) and CCW Special Sites database.

Activity	Spatial	Source	Intensity	Source
WATER-BASED				
Diving/Snorkelling			Diving Intensity map	MRCA (A. Ruiz, Bangor Uni./CCW)
Anchoring / mooring	Mooring/beaching/launching Location data	CCW Phase 1 Intertidal Survey		
Powerboating	Power boating and Personal Water Craft Location map Marina Location data	MRCA (Natural Facilities Database, Coastal Recreation Study) CCW Phase 1 Intertidal Survey		
Sailing	Location map	MRCA (Natural Facilities Database, Coastal Recreation Study)		
Navigation/transit of vessels	Cruising route Wales map	MRCA(RYA)		
Canoeing/Kayaking/Rowing/Rafting	Location map	MRCA (Natural Facilities Database, Coastal Recreation Study)	Kayaking Intensity map	MRCA (A. Ruiz, Bangor Uni./CCW)

Activity	Spatial	Source	Intensity	Source
Swimming	Location map	MRCA (Natural Facilities Database, Coastal Recreation Study)		
Water Skiing				
Windsurfing	Location map	MRCA (Natural Facilities Database, Coastal Recreation Study)		
	Location data	CCW Phase I Intertidal Survey		
Angling	Fishing – netting Fishing – angling Location data	CCW Phase 1 Intertidal Survey		
Bird and wildlife watching	Key bird-watching sites map	MRCA (Natural Facilities Database, BirdLife International)	Wildlife viewing boat customer Intensity map Seabird watching Intensity map	MRCA (A. Ruiz, Bangor Uni./CCW) MRCA (A. Ruiz, Bangor Uni./CCW)
Archaeology & salvage				
INTER-TIDAL				
Bait Collection	Bait collection Location map	MRCA (CCW Phase I Intertidal Survey)		
	Boulder turning Location map	Addendum to MRCA(CCW Phase I Intertidal Survey)		
Coasteering				

Activity	Spatial	Source	Intensity	Source
Surfing/Bodyboarding/Gliding	Location map	MRCA (Natural Facilities Database, Coastal Recreation Study)		
Gathering - living resources	Collection – shellfish Collection – algae Location data	CCW Phase I Intertidal Survey		
LAND-BASED				
Cycling/Mountain Biking				
Horse Riding				
Walking				
Rock Climbing	Location map	MRCA (Natural Facilities Database, BMC Coastal Access Database)		
Land Yachting/ Kite Buggy				
Beach Pastimes	Blue Flag beach map Popular beach Resort Recreational facilities Watersports Educational / scientific study Location data for the above	MRCA (Blue Flag Programme) CCW Phase 1 Intertidal Survey		
Access points	Access points to shore used in Survey Location data	CCW Phase 1 Intertidal Survey		
Access/Use - erosion/disturbance/damage	Evidence of physical damage Location data	CCW Phase 1 Intertidal Survey		

Activity	Spatial	Source	Intensity	Source
- Trampling				
- Inappropriate vehicle use				
- Wildfowling				
Low flying aircraft				

Annex 6. Overview of the Welsh Outdoor Recreation Survey 2008¹²

The Welsh Outdoor Recreation Survey covers the informal outdoor leisure activities that are undertaken by adults who live in Wales. It is a randomised telephone household survey with a sample size of 6045, based on 12 months continuous fieldwork in 2008. The survey covers visits to a range of different place ‘types’, including visits to the coast, the sea, and beaches. For each of these 3 types of place that have been visited, there are a number of different sources of data available:

1. The full dataset, which is available in SPSS on request, that provides all the responses to the questions about people’s visits to the sea, beach, and coast.
2. All the main cross-tabulations tables about all visits, including those to the sea, beach, and coast (these will be published on the 20th May 2010)
3. Bespoke analysis reports on visits to the sea, beach and coast: one covers ‘marine recreation’ and one details ‘coastal recreation’. These have extracted all the relevant data from the full survey dataset on these types of places, and has undertaken multivariate analysis to provide a full demographic profile of visitors to these areas, characteristics of their place of residence (ie whether they live in rural or urban areas, or come from Communities 1st areas); the activities they undertook on their visits (everything from ‘on-water’ activities such as non-motorised watersports, to beach or coastal activities such as walking); the distance that they travel to reach the sea, beach or coast; and who they went with (including group size). These bespoke analysis reports will be available as soon as possible after the data release on the 20th May 2010.

The survey does not include exact details of where people visited, as previous research has found that this is very difficult to obtain. However, having the combination of the respondents’ postcode sector, the distance they travelled, and the generic type of place visited, has the potential for spatial analysis based on a modelling approach using these three aspects. This has not yet been tested, and would require resources to develop this as an area of work.

¹² Wales Outdoor Recreation Survey (2008). Commissioned by the Countryside Council for Wales and the Forestry Commission Wales.