WRFT response to Scottish Government Consultation on the Management of Inshore SACs and MPAs: comments with reference to Wester Ross MPA.

Peter Cunningham, 1st February 2015 info@wrft.org.uk .

Wester Ross Fisheries Trust [WRFT] was set up in 1996 in response to the collapse of salmon and sea trout fisheries around Wester Ross. The Trust aims to support the fisheries and wildlife within the Wester Ross area which depend upon healthy wild fish populations. Healthy fisheries are of vital importance to the local economy of Wester Ross. Formerly, the seas around Wester Ross were renowned for the fisheries they supported. In addition to commercial fisheries, in the 1960s and 1970s Ullapool hosted many major angling festivals, including the annual British Skate championships and European Federation of Sea Anglers championships[1] . Fisheries for cod, haddock, whiting and many other species around Wester Ross collapsed following the removal of the three mile limit to mobile gear in 1984.

Our work addresses opportunities for actions which will restore and support wild fish populations and the natural productivity of rivers, lochs and coastal seas for the benefit of people and wildlife.

In 2012 a Third Party Bid for a Marine Protected Area [MPA] for Loch Gairloch and the western part of Loch Ewe was developed and submitted, with support from a wide diversity of organisations and individuals within the local community[2]. Loch Gairloch was not included within one of the new set of inshore MPAs. However we were pleased that Loch Ewe was incorporated within the Wester Ross MPA as designated in July 2014.

We welcome this opportunity to provide comment on proposed fisheries management measures for the Wester Ross MPA[3]. However we believe that neither of the proposed approaches within the consultation document is adequate to protect even the habitats for which the MPA has been designated. There is little evidence of ambition to restore the productivity of coastal ecosystems.

This response to the consultation explains our concerns. It also includes related proposals (for discussion) for a stepwise progression towards the development of a fisheries management system for the Wester Ross Marine Protected Area to achieve much more for wildlife conservation and habitat protection, and for restoring productive fisheries of much higher value (by £100,000s) for the benefit of all concerned.

[1] Robinson, Laurie (1970) Sea Fishing in Scotland. The ESFA officials assessed the 1965 EFSA championships at Ullapool (there were 524 entries) as 'Scotland's Finest Hour'.
[2] Gairloch and Wester Loch Ewe 3rd party bid for a MPA http://www.wrft.org.uk/news/newsitem.cfm?id=145
[3] Refer to description and explanation of the two management approaches at http://www.scotland.gov.uk/Publications/2014/11/9361/21 (**summarised in Appendix 1**) and to the accompanying figures to go with the description of the management approaches at http://www.scotland.gov.uk/Publications/2014/11/6197/15 .

Answers to questions in the Consultation response Form[4]

Question 45. Do you support the preferred approach (number 2) for managing the protected area?

No. See comments under question 46.

Question 46. If you answered no to Question 45 [typo on form] **do you support the other approach?**

No. Approach 1 is even less adequate than approach 2.

Comments: We agree with the stated objective to *'deliver sufficient protection for all the protected habitats and species'.* All the site features (habitats and species) should be adequately protected from mobile fishing gear. However neither approach will achieve this objective, for **two reasons**:

Firstly, following the maerl bed survey in autumn 2014 led by SWT with support from Fauna and Flora International & SNH, neither approach is adequate to protect known maerl beds within the MPA.

Spatial measures should encompass **all areas** where maerl is known to be present within the MPA. Scallop dredgers should be restricted from areas on the map displayed on the Save Scottish Seas website which is based on new information for newly discovered maerl beds[5], including around the Coigach coast.

Secondly, Marine Scotland has signed up to the **Precautionary Principle**. A precautionary approach is also referred to in the Draft MPA Management Handbook[6]. Therefore, spatial protection measures are also needed for areas which have not been surveyed or remain inadequately surveyed.

Spatial protection measures are required for coastal waters of less than 25m in depth between Rhu Reidh, around the mouth of Loch Ewe, around Greenstone Point and into Gruinard Bay, following Moore *at al* 2014[7] which stated that:

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[4] A consultation response questions form has been submitted by WRFT along with this more detailed response with background information.

[5] SWT Results of maerl be survey November 2014
http://scottishwildlifetrust.org.uk/article/trust-calls-for-newly-discovered-marine-habitat-to-be-protected/
BBC Report on the discovery of maerl beds
http://www.bbc.co.uk/news/uk-scotland-highlands-islands-30224978

[6] Scottish Government Draft MPA Management handbook http://www.scotland.gov.uk/Resource/0042/00428637.pdf

[7] Moore, C.G. 2014. Upper Loch Fyne and Loch Goil pMPA and Wester Ross pMPA – the identification of conservation management areas to support protected feature recovery. Scottish Natural Heritage Commissioned Report No. 764.
http://www.snh.org.uk/pdfs/publications/commissioned_reports/764.pdf

'Recommendations for the distribution of target areas for the conservation management of maerl beds throughout the Wester Ross pMPA are summarised in Figure 20. Also shown are potential management polygons, which represent adjacent areas, where it might be expected that additional maerl bed coverage is present, although further work is required to assess the presence, distribution and condition of maerl habitats and the potential for maerl bed expansion.

It should also be noted that there are additional, extensive areas of apparently suitable coastline for maerl presence within the pMPA, where habitat records are sparse or absent within the relevant depth range for maerl. Such locations, requiring further investigation, include off the mouth of Loch Ewe between Rubha Reidh and Rubha Beag, to the north of Little Loch Broom from Creag Mhòr Sgoraig to Leac Dhonn, and north of the Summer Isles to Rubha Còigeach.'

The SWT - Flora and Fauna initiative of November 2014 provides an example of how a seabed survey by third party could be undertaken. If these areas are as valuable to the mobile fishing industry as suggested within the consultation documents, industry organisations could be invited to contribute to the costs of carrying out seabed surveys of these areas to assess potential impacts of their operations (c. EIA legislation).

Question 47. Should static gear fisheries be restricted in the areas essential to the recovery of maerl beds and flame shell beds?

Yes, but not banned from all of these areas.

Comments: Restrictions on static gear would be needed to support both conservation objectives and to support livelihoods of local fishermen within the area. A permit system is required (see below). The level of creeling which is compatible with achieving the conservation objectives and provides greatest return per creel for the fishermen may not be so different from what is currently practiced in these areas. However, unless restrictions, via a permit system are put in place, there is the possibility of fishing effort increasing and a Loch Torridon nephrops creel fishery type 'honey pot' situation developing[8].

Restrictions should apply to both commercial and hobby fishermen including creelers and scallop divers to regulate fishing effort (see under 'additional comments' p5).

Permits should not be unreasonably withheld, unless there is good reason to believe that there is potential for damage to protected features or fisheries. A sensible permit system would minimise disturbance of some areas and provide support and greater security for commercial fishermen working within the area.

For scallop fisheries within the MPA, a system to regulate access already been achieved within parts of the area through designation of Several and Regulating Orders[9,10]. Could such an approach be extended to other areas, and other fisheries (e.g. lobsters, crabs and prawns) to maximise productive value?

[8] Link to papers relating to the Loch Torridon nephrops creel fishery, formerly a MSC accredited 'sustainable fishery' http://www.msc.org/track-a-fishery/fisheries-in-the-program/exiting-the-program/withdrawn/loch_torridon_nephrops_creel

[9] Guidance Shellfisheries: Several Orders and Regulating Orders
https://www.gov.uk/shellfisheries-several-orders-and-regulating-orders

[10] Scot-hatch Several orders http://scot-hatch.com/?page_id=640

Question 48. Under either approach should the Summer Isles be zoned by depth to enable scallop dredging to continue?

No.

Comments: Scallop dredgers should be excluded from the MPA unless it can be demonstrated that their operation will have no detrimental impact on the ecology and productivity of the area (which we don't currently believe), and that alternative harvesting methods (e.g. diving for scallops) are not more appropriate throughout the MPA. At very least, recommendations in the Scottish Scallop Fisheries Review[11] should be implemented within the MPA to protect sensitive habitats.

Question 49. Do you agree with the economic, social, and environmental assessments of the impacts of the management approaches?

No.

Comments: The assessment of costs and benefits presented within the consultation document is imbalanced[12]. **No attempt has been made to quantify the potential economic and social benefits** of restricting access to mobile fishing gear for local creelers, scallop divers and other local fisheries. This document appears to have been drafted to elevate the concerns of the mobile fishing gear sector rather than to present objective assessments that include other fisheries.

For example, **a scallop diver can gather up to 400 scallops a day, worth £400+, from an area of less than 1Ha of sea bed**[13]. The number of times a 1Ha area of sea bed can yield 400 scallops in a day to a scallop diver depends on the standing crop. I believe that this could be, and with appropriate management would be, many times more often than where a scallop dredger operates within the same area because, (1) a dredger causes greater damage to undersize scallops, reducing the standing crop and recovery time, (2) by damaging and killing other shellfish populations, numbers of predatory starfish are likely to be higher where dredgers operate, with higher predation pressure of scallops. Local divers report that following scallop dredging (e.g. in Loch Ewe), many undersize scallops are damaged and easily killed by starfish (*ibid*).

It is our view that the value of shellfish fisheries within shallow sheltered waters **can increase substantially** if scallop dredgers are kept out. If carefully managed, my calculations suggest that the value of produce from firm seabed habitats (i.e. almost all the seabed habitats except burrowed mud) within the Wester Ross MPA may increase by up to an order of magnitude higher than the estimated loss in earnings to scallop dredging [£39,000] (i.e. **if scallop dredgers are kept out, an increase of several £100,000s in the value of scallop landings from within the MPA is possible, benefiting the local economy in addition to achieving conservation objectives**).

We also believe that there will normally be positive impacts for juvenile cod, flatfish, skates and rays, lobsters and crabs, and many other species including sea trout from measures to protect all sheltered shallow (<25m deep) waters from scallop dredging (as currently practiced). Why is there no assessment of potential increases in value of these fisheries within the 'approaches' document?

[11]Scottish Scallop Fisheries Review.
http://www.scotland.gov.uk/Topics/marine/Sea-Fisheries/InshoreFisheries/ScallopReview
[12]Scottish Government Consultation on the Management of Inshore Special Areas of Conservation and Marine Protected Areas Approaches. Protected Area Q - Wester Ross MPA
http://www.scotland.gov.uk/Publications/2014/11/9361/21
[13] Sources available on request.

Additional comments: The MPA provides a unique opportunity to develop smarter measures for managing fisheries in ways that can both maximise the productive value of the MPA for fisheries and achieve conservation objectives. Greater ambition is possible!

The Marine (Scotland) Act 2010 already gives Scottish Ministers the power to **introduce a permit system** to regulate fishing effort within an MPA. Such a system has recently been used (in haste) to implement a Marine Conservation Order for the South Arran MPA[14]. We would seek to develop a permit system for all fishing activity within the MPA, including commercial and unlicensed (hobby) fishing. This system would be developed by local fishermen and other local stakeholders (including NGOs) in collaboration with Marine Scotland and SNH to agree the measures which would work best for the area and achieve widespread (ideally, unanimous) support. The permit system would encompass objectives set out in the MPA management handbook[15] and go further. The aim would be to make permits available for all, from schoolchildren fishing for mackerel off the pier during their summer holidays to skippers of commercial fishing boats. Examples of systems which work in other countries (e.g. Australia, New Zealand . . .) could be adapted. The difference from the 'free for all' that would otherwise ensue, is that through the permit system, fishing activity can be guided and where and when necessary, restricted to protect features of the MPA, recover important habitats, and nurture and maximise the productive capacity of the area in terms of finfish and shellfish fisheries. Other objectives of the permit system would be:

- to support existing local commercial fishermen and provide greater security for their livelihoods;
- to regulate activities such as shellfish harvesting, scallop diving and creeling, thereby preventing the type of 'honey pot' scenario of too much fishing effort that led to the failure of the Loch Torridon MSC accredited *Nephrops* fishery following closure to mobile gear;
- to raise awareness and understanding of all aspects of the Marine Protected Area including its potential to support and enhance local fisheries though greater protection of habitats of importance to stocks;
- to foster a greater sense of ownership of the MPA and personal responsibility for the future welfare of wildlife and fisheries among all stakeholders (school children upwards);
- to maximise the value of the MPA to the local economy and more broadly, within the region;
- to collect catch data and other data for assessing fish and shell fish populations and other habitats and wildlife within the area;
- to develop and demonstrate systems of managing inshore water to achieve both conservation objectives and to maximise wild fisheries production which may subsequently be extended to other coastal waters around Scotland.

For too long, governments have neglected the damage caused by mobile fishing gear to the overall productivity of coastal waters around Scotland and elsewhere. Governments have failed in their duty to protect the natural heritage including commercially important fish populations and the habitats that are of importance for fisheries. We are encouraged by recent consideration of alternative options for management of Scottish inshore fisheries; we welcome the opportunity to discuss and reconsider these issues. For the Wester Ross MPA, figure 1 presents a series of management scenarios progressing from the current situation (Scenario 1).

[14]Marine Conservation Order for the South Arran MPA http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/southarranmco
[15] DRAFT Nature Conservation MPA Management Handbook http://www.scotland.gov.uk/Resource/0042/00428637.pdf

Figure 1 A progression of possible management scenarios for the Wester Ross MPA. For discussion!

Wester Ross Marine Protected Area: towards a progressive management plan

To foster creative discussion, the table below outlines some ideas for a progression of possible management scenarios for the MPA (all hypothetical other than scenario 1!) ranging from the initial position (as designated) to an advanced scenario where the management system developed within the MPA is extended to other coastal waters around Scotland. Timescale: this may depend upon levels of active interest and ambition of all concerned.

All comments welcome; let me know what you think?

Peter Cunningham, Jan. 2015 info@wrft.org.uk.

	Management scenario	Comment	Seabed habitat (MPA feature) protection	Employment opportunities	Value of standing crop of fish and shellfish within MPA	Annual management expenditure	Annual income
1	Small voluntary protection zones around known sensitive MPA features: maerl beds and flameshell beds (as designated)	As seabed habitats may continue to be degraded within the MPA outwith the small protection zones, it is questionable as to whether the whole area qualifies as a 'MPA'.	If successful, protection and recovery of MPA features within protection zones. Degradation of seabed may continue outside protection zones.	Loss of small areas for scallop dredger (how much of these were ever dredged?). However, scallop divers able to harvest scallops within protection zones.	Little overall change: slight increase within voluntary protection zone may be offset by decrease outside zone.	Small: as measures are voluntary, little cost for policing.	Little overall change from prior to designation.
2	Legal protection zones. For example Loch Ewe, Gruinard Bay inner sea lochs and the area around the Summer Isles are closed to scallop dredgers [two changes from scenario 1: 1 protection zones are larger; 2 legal protection of protection zones.]	Still only a relatively minor part of the MPA is protected from seabed damage. In addition to legal exclusion of mobile fishing gear, measures also needed to manage fishing effort. Historically, scallop divers over-harvested scallops from parts of Loch Ewe; creelers over-harvested nephrops in Loch Torridon. This issue is addressed in scenarios 3 and 4, by introducing a licensing system.	Protection and recovery of MPA features and other important features (e.g. **seagrass beds**) over a larger area. However, seabed habitats outside protection zones are still vulnerable to further degradation from dredgers.	Loss of area for scallop dredger. Increase in area for scallop divers and creelers who have exclusive access to a larger area (c. Loch Torridon and Loch Gairloch where mobile gear has been excluded for many years). Net increase in local employment possible.	Scallops: potential increase in value as higher survival of sub-market size individuals. Higher standing crop value for crabs, lobsters, other shellfish and juvenile fin-fish as nursery habitat and juvenile shellfish are better protected.	Small. If there is active support of people living around the exclusion zones, it should be very difficult for a dredger to operate without being seen and reported.	Increase to local scallop divers and creelers. Smaller loss to nomadic scallop dredger. Rod and line fishermen may have increased opportunity as stocks of cod, haddock, plaice and other fin-fish recover in sea lochs (over a longer period of time).
3	Legal protection of all shallow water (<~20m deep) 'firm ground' habitats within the MPA. Fishing effort licensed. [two changes from scenario 2: 1 extension of protection zones to all shallow water habitats; 2 requirement for fishing licence within MPA to regulate fishing effort.]	The 'MPA' still provides only a fraction of the extent of seabed protection that existed prior to loss of the three mile-limit in 1985. Licensing options: 1. low cost to encourage good practice and enable all to participate, subject to limits for numbers of participants; 2. market value to larger commercial operations to promote efficient harvesting (however continued risks of overharvesting & corner cutting . . .)	Protection and recovery of all shallow water habitats. The protected area is large enough to benefit some mobile species including juvenile demersal fin-fish and spawning grounds for herring and skate.	Further loss of fishing area for dredgers. However , some areas within MPA may be identified as dredging zones if it can be shown through Environment Impact Analyses that scallop dredging represents the best management option for these areas. Opportunities for creelers, scallop divers and recreational angling will increase.	As above, and over a larger area.	Medium to high. Costs of issuing licenses and of policing areas outside populated sea lochs. Cost lower if fishermen and the Coastguard are responsible for reporting infringements; this is adressed in scenario 4.	Increased income to local scallop divers and creelers. Loss to nomadic scallop dredger. Increase for line fishermen and white fish fishermen inside and near MPA. Costs of issuing licenses could be covered by income from licenses (c. SEPA CAR licences).
4	Legal protection of the whole MPA. Fishing rights are owned, controlled and managed by MPA authority / company with local shareholders / state owned organisation . . .? [changes from scenario 3: harvesting rights for all species within the MPA transferred to MPA management authority; hunter-gather fisheries are replaced by extensive (poly-) aquaculture systems]	A more radical scenario: a solution for fisheries management elsewhere (see scenario 5)? The main debate is likely to be 'who could own and control the MPA?' Currently the Highland Council / Crown Estate & SEPA licence aquaculture operations. Could wild fisheries be managed as extensive aquaculture operations? I think the way forward is to develop a body like the Forestry Commission where management and commercial harvesting operations are managed to maximise the value of produce, support local employment, provide amenity and benefit wildlife . . .	Protection, recovery and enhancement of sea bed habitats within the whole of the MPA. Associated benefits to all commercial fish and shellfish species and other wildlife maximised.	Fish and shellfish harvesting become just one part of the overall co-ordinated management system. Large proportion of MPA employees are sea-goers living within the local area; their income is largely salary-based, and income from sales of harvested fish goes into the larger 'pot'. Access for non-commercial and recreational fishers is via the licensing system.	The standing crop is managed to maximise potential productive value (for example, targets are met for sustaining the number of large mature fish and shellfish as broodstock and the productive capacity of the area for fisheries); whilst ensuring that other objectives for habitat and wildlife restoration are met.	High. Fishermen are employed and paid salaries by the MPA management authority. In addition to commercial harvesting of fin-fish and shellfish, their normal duties include monitoring fish stocks and seabed habitats, and participating in management decisions.	High. The main difference from scenarios 1-3 is that scallops, other shellfish, fin-fish and other products are harvested and sold when they are most valuable, not just when someone thinks they can make a few bob out of grabbing them before another fisherman finds and takes them. Therefore, the area is able to generate higher income and support more jobs than when the traditional 'hunter-gatherer' system remains in place.
5	Legal protection of the whole of Scotland's inshore waters with the management authority owning, controlling and managing inshore waters to maximise their value and benefit for people, wildlife and as productive fisheries.	The MPA is a stepping stone for developing and then extending progressive management of coastal waters around Scotland; moving from hunter-gatherer based fisheries to science & collective-intelligence based systems where knoweldge sharing, collaboration and joined-up thinking (rather than secrecy, competition and conflict) are fundamentals.	Protection, recovery and enhancement of seabed habitats around Scotland. The associated benefits to commercial shellfish and fin-fish species and fisheries and other wildlife are maximised.	As above for scenario 4, extended around Scotland.	As above for scenario 4, extended around Scotland.	As above for scenario 4, extended around Scotland.	As above for scenario 4, extended around Scotland.

A **local MPA management group** should be set up open to membership of all who live within the surrounding area to inform decision making.

To minimise the costs of policing the MPA we would recommend development of a **voluntary warden scheme** to support compliance. Following training, wardens could include coastguards, freshwater fisheries bailiffs, fishermen or any other competent individuals living within the surrounding area.

All measures should be subject to **monitoring and review** to achieve long-term benefits.

Seagrass (eel grass) beds. If the environment protection measures proposed within the Scottish Scallop Fisheries Review are implemented within the MPA, sea grass beds within the MPA will be afforded with greater protection without the need for a formal revision of listed features for which the Wester Ross MPA has been designated. It would be sensible to add sea grass beds to the formal list of protected features at the earliest opportunity. Since preparing an initial draft of this document I've recorded a previously undocumented seagrass bed within the MPA (see Appendix 2). Like maerl beds, seagrass beds within the Wester Ross MPA are not adequately documented. Although proposed measures will provide seagrass beds with greater protection than they have received in recent years, the ecological coherence of the MPA, potential benefits for other species, and opportunities for pro-active public support for the MPA will be greater if seagrass beds are added to the list of protected features.

Some seabed habitats of importance to the ecology of the area may remain unprotected within the Wester Ross MPA. Maerl beds (left) are to be protected. However, vulnerable seagrass beds such as this one in Gruinard Bay (right) have not been included in the list of protected features. [credits: left, SNH; right, Peter C (WRFT)]

Appendix 1 Extract from Marine Scotland - 2014 Consultation on the management of inshore Special Areas of Conservation and Marine Protected Areas - Overview[16]

Protected Area Q–Wester Ross MPA

The Wester Ross MPA encompasses seabed features that not only offer valuable insights into Scotland's glacial past but are also home to an amazing array of plants and animals. Burrowed mud, flame shell beds, maerl beds and northern feather star aggregations to name but a few, all find a place to thrive in the mosaic of sea lochs, bays and near shore island channels. This complex landscape is a legacy from the end of the last ice age, when the ice sheet that once covered most of Scotland retreated.

The deeper parts of the MPA are covered by extensive areas of burrowed mud. Norway lobsters can be seen guarding the entrances to their burrows amongst dense forests of seapens. All three species of seapen found in Scottish coastal waters are present including substantial numbers of the scarce tall seapen.

Increased tidal flow in shallower waters between the coastal islands and on the sills of the sea lochs supply the necessary food and aeration for beds of flame shells and maerl to form. These habitats provide a stable home for a myriad of other plants and animals, from beautiful burrowing sea cucumbers burying their bodies in the maerl and gravel, to northern feather stars gripping onto the mixed sediments.

Summary of the approaches to management

There are 2 approaches presented. Under both approaches, the use of suction dredges (boat or diver operated) would be prohibited throughout the MPA. The capacity of vessels able to fish in the MPA would also be restricted to 150 Gross Registered Tonnage (GRT).

The 1st approach focuses on zonal management for the recovery habitats – maerl beds and flame shell beds. These zones would prohibit the use of demersal trawls or mechanical dredges. Additional measures would be required for sedimentary habitats.

The 2nd approach provides zonal management for all habitats. These zones would prohibit the use of demersal trawls or mechanical dredges. This approach would deliver all of the conservation requirements.

Further information

See the Protected Area Q section in the following documents; Approaches; Maps; Pictures.

See questions 43 – 47

[16]Marine Scotland - 2014 Consultation on the management of inshore Special Areas of Conservation and Marine Protected Areas - Overview [PDF, 466.5 kb: 07 Nov 2014] http://www.scotland.gov.uk/Resource/0046/00462816.pdf

Appendix 2 New record of previously undocumented seagrass bed in Gruinard Bay by Second Coast, within the Wester Ross MPA

Peter Cunningham, 22 Jan 2015 info@wrft.org.uk

Aeriel photos on Google Map and UK Grid Reference Finder show a seabed feature to the west of the mouth of the Allt Bad an Luig. On 21st January 2015, at low spring tide (0.3m), I snorkelled over the feature and recorded video using a GoProHero3 camera, to find out whether, as suspected, the feature is a seagrass bed.

Seagrass beds were recorded at all sites closely corresponding to the feature shown on the arial photographs. The beds are in water shallow enough to stand up in (at 0.3m tide) at the most sheltered west end of the bed, then in deeper water extending to estimated depths of 4 or 5m to the south east.

I swam two transects three diagonal transects through the beds. Two mooring buoys (which appear on the aerial photos) are good reference points. The NW mooring is located within the seagrass bed area. Over all, seagrass is present within an of atleast 80m x 30m (as shown on aerial photos), centred at NG93174 90857; with about 50% or more of this area with visible shoots. The extent of the bed to the SE and towards Little Gruinard (and towards where James, 2004 recorded seagrass) was not fully explored. Other possible seagrass beds can be seen on the aerial photos to the north of the Inverianvie bed. These should be surveyed.

Further details, including site photograps and video stills from the survey are available from Peter Cunningham (info@wrft.org.uk) on request. They are not included here because of possible copyright infringements (for base photos) should this consultation response be published.

Recommendation

Given recent research findings of the importance of seagrass beds for juvenile fish production including cod (Bertelli and Unsworth, 2014; Lilley and Unsworth, 2014), seagrass beds should be added to the list of protected features within the Wester Ross MPA, with a management objective of **protecting and recovering** sea grass. Existing fixed, permanent moorings maybe OK if they allow seagrass beds to grow around these places where boats can tie up and be moored; however unregulated anchors could harm these beds and measures may be required to alert boat users to the area.

Bertelli CM and R.K.Unsworth (2014). Protecting the hand that feeds us: seagrass *(Zostera marina)* serves as commercial juvenile fish habitat. *Mar Pollut Bull. 2014 Jun 30; 83(2):425-9.* http://www.ncbi.nlm.nih.gov/pubmed/23998854

James, B. (2004). North-west Scotland subtidal seagrass bed survey 2004. *Scottish Natural Heritage Commissioned Report No. 076 (ROAME No. F04LB05).* http://www.snh.org.uk/pdfs/publications/commissioned_reports/F04LB05.pdf

Moore, C. G., Harries, D. B., Trigg, C., Porter, J. S. and Lyndon, A. R. (2011). The distribution of Priority Marine Features and MPA search features within the Ullapool Approaches: a broadscale validation survey. Scottish Natural Heritage Commissioned Report No. 422. http://www.snh.org.uk/pdfs/publications/commissioned_reports/422.pdf

Richard J. Lilley and Richard K.F. Unsworth, (2014). Atlantic Cod *(Gadus morhua)* benefits from the availability of seagrass (*Zostera marina*) nursery habitat. *Global Ecology and Conservation V 2, December 2014, Pages 367–377* http://www.sciencedirect.com/science/article/pii/S235198941400050X