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Dear Lorna,

Comments on:

(A) 'A Strategy for Marine Nature Conservation in Scotland' and

(B) 'Guidelines on the selection of MPAs and development of the MPA network'.

Thank you for the opportunity to comment on both 'A Strategy for Marine Nature Conservation in Scotland' and 'Guidelines on the selection of MPAs and development of the MPA network'.

Seafish is a non-departmental public body that provides support to all sectors of the seafood industry. It has no official role in resource or environmental management but has an obvious interest in the outcomes of the management processes. Seafish has a publicly stated commitment to "the sustainable and efficient harvesting of those resources on which the UK seafood industry depends, the protection of marine ecosystems, and the development of marine aquaculture based on sustainable resource utilisation and best environmental practice".

(A) 'A Strategy for Marine Nature Conservation in Scotland'

We have identified and we will comment on the following 8 key areas of the strategy of interest to Seafish:

1. Timeline
2. Flexible designation
3. Multi-use MPAs
4. Clarity of conservation objectives
5. Socio-economic considerations
6. Industry participation in site selection
7. Industry involvement in site management
8. Industry involvement in site monitoring

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1. Timeline for completion of the MPA network

The target date set of 2012 for completion of the UK MPA network is unrealistic and risks the creation of a sub-optimal network of Marine Protected Areas. We recommend the target date is extended to 2016 for the following reasons.

The strategy sets out a vision and framework for marine nature conservation for the next 10-25 years yet the MPA network is proposed within two years. Moreover, the target date of 2012 does not correspond to the likely timescale set for the national marine plan since it is only 'anticipated' for that to be in place by 2012 with implementation thereafter. Information is currently being gathered to inform the economic, social and marine ecosystem objectives for the national, and if established, regional marine plans. The MPA network will therefore have been completed before the national and possibly regional plans are implemented. The target date of 2012 for the completion of Natura 2000 network in Scottish waters is more realistic, since, if successful it will have taken over fifteen years to finally complete.

International MPA commitments under WSSD, CBD and OSPAR are not legally binding and we believe that most signatories will not reach the 2012 target. Significantly, the requirement to '*establish the OSPAR network of MPAs and to ensure that by 2010 it is an ecologically coherent network of well-managed marine protected areas*' has not been achieved. Having submitted 63 sites already, further work is being carried out by the Joint Nature Conservation Committee to assess which additional UK MPAs are required to support the OSPAR network. A more realistic timeframe would follow the provisions of the Marine Strategy Framework Directive (MSFD), which provides for the designation of MPA networks by 2016 and not 2012 as suggested by the strategy. The requirement for MPAs under the MSFD is set within a clear framework that links environmental management provisions to the state of the marine environment and the achievement of Good Environmental Status (GES) by 2020. The definition of what GES means for each regional sea and the associated management targets to reach GES will only be in place by 2012 and there is a requirement to report only on the *progress* of establishment of a system of MPAs by 2013, not its *final designation*. All of the aims in the strategy could be achieved by a revised target date of 2016.

2. Flexible designation

The marine environment is very dynamic and subject to complex exogenous influences including climate change. The distribution of species and some habitats, such as biogenic reefs will change in response to rising sea temperatures and ocean acidification. There is a danger, therefore, that some areas selected for protection may quite quickly become redundant. The spatial and temporal nature of fishing constantly alters in response to many factors, including fishing regulations, markets for new species, new markets for existing species, development of new gear, and first sale value. Seafish is very concerned that a rigid marine spatial planning system could seriously disadvantage the fishing industry without any ecological benefit, and we call for as much flexibility as possible in the siting and managing of MPAs.

Fishermen probably know more about the seabed conditions around the UK than most scientists. According to the British Geological Survey, only 15% of our seabed has been properly mapped in respect of ground conditions, habitat types and species assemblages. It is highly likely that we will not have a comprehensive map of the UK seabed by 2012, and therefore habitats and species that qualify for MPA designation will undoubtedly be discovered following the designation of MPAs. Alternative MPAs may therefore be beneficial for both marine biodiversity and fisheries interests.

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We are disappointed to note the lack of a de-designation mechanism in the Scottish Government's strategy. The Ministerial Statement on the creation of a network of Marine Protected Areas (laid down in The Scottish Parliament on 12 March 2010) stated that MPAs can be moved or decommissioned if they are unable to contribute to the MPA network's long term aims. The possibility of de-selection is also stated in the MPA guidance document but without details of how it could be achieved. We recommend that a de-designation process is included in the strategy with details of the process provided in the MPA guidance. We hope that Seafish and the industry will be consulted and involved in the development of guidance on such de-designations.

3. Multi-use MPAs

We wish to see more work done to identify existing and future sites which have been designated for activities other than environmental protection that could prove beneficial for marine biodiversity. For example, the marine biodiversity protection afforded by areas dedicated for wind farms, underwater turbines, MOD use, and those areas currently closed, both permanently and temporarily, for fisheries management purposes should be considered against the MPA targets set for specific habitats and species. This would help minimise the cordoning off of new areas and the consequent negative impact on current and future fishing operations and aquaculture. As experts in both seabed mapping and with considerable experience of informing the fishing industry of seabed activities such as cable routes, oil and gas rig positions and wind farm sites, Seafish's Kingfisher Services would be able to map the types of marine usage described above in order to inform the Scottish Government's MPA project.

4. Clarity of conservation objectives

The management of activities within and close by an MPA will be driven by the site's conservation objectives. We assume that the conservation objectives for MPAs will be similar to those set for current European marine sites. That is, the nature conservation aspirations for a site will be expressed in terms of the desired conservation status (i.e. favourable) for each feature for which a site is designated. These conservation objectives must be clear, measurable, and reasonable, for the reasons outlined below.

Objectives must be clear

The key objectives for MPAs should not incorporate uncertain outcomes, but acknowledge from the onset that, for example, the protection of an area deemed to be an important spawning and / or nursery area for commercial shellfish and / or finfish species, may not necessarily lead to an increase in population size. Unlike tropical waters where finfish tend to be more territorial, most commercial finfish targeted by UK fishermen in temperate waters are highly mobile. So MPAs covering spawning and nursery areas, whilst a good thing, would not necessarily increase the spawning stock biomass. A recent study by Polunin 2009¹ found no effect of protection (*through an MPA*) on finfish abundance off the Yorkshire coast. Nor was there was no evidence in any of the studies reported in a special issue of the ICES Journal of Marine Science in 2009 that reported on a European Symposium on Marine Protected Areas as a Tool for Fisheries Management and Ecosystem Conservation (Vol 66, No. 1, January 2009) to demonstrate that MPAs benefited finfish populations in temperate waters. Similarly, the

¹ Polunin, N.V.C., Bloomfield, H.J., Sweeting, C.J., & McCandless, D.T. 2009. The Effect of Small Prohibited Trawling Areas on the Abundance of Fishes. Final Report to the Esmée Fairbairn Foundation April 2009.

authors of a Defra study on MPAs for management of temperate North Atlantic fisheries in 2005² concluded '*evidence for benefits to temperate finfish inside MPAs is inconsistent*' and '*in no case examined has spill over compensated for loss of fishing area*'.

Objectives must be measurable

Conservation objectives must be measurable to be able to determine whether favourable conservation status is being achieved. Global environmental influence such as rising sea temperature may, for example, prevent a site feature attaining Favourable Conservation Status (FCS), so we need to be able to identify whether this is the case or not.

Objectives must be reasonable

The nature conservation aspirations for a site which will determine a site's FCS, need to be reasonable and take account of past economic activity. For example, will the favoured population size of a particular species or extent of a habitat be set at levels known to have occurred before the industrial revolution? Or after the second world war? It must be remembered that marine ecosystems may have been fundamentally altered in structure by fishing, making a return to pre-closure conditions impossible³.

In order to ensure that reasonableness prevails, conservation objectives and site management plans need to be developed with stakeholder participation. Fishermen probably know more about the seabed conditions around the UK than most scientists, because they are best placed to observe seasonal and annual trends in the distribution, size and behaviour of habitats and species of conservation interest, and Seafish could help facilitate their collaboration with conservationists.

5. Socio-economic considerations

We are encouraged by Marine Scotland's commitment to 'To maximise sustainable use of our seas and minimise disruption to sustainable marine activities through proportionate marine management measures' (Objective x.); to 'encourage the co-existence of MPAs and social and economic activities where they are mutually compatible' (#58 p21) and to help the Scottish Government to 'minimise any adverse social and economic impacts and wherever possible to work with the grain of sustainable economic use of the seas' (#58 p21). However, socio-economic fishery assessments are notoriously difficult because data is not readily available; the assessments may depend on a number of scenarios driven by a variety of complex factors such as the ability to diversify; there are many onshore costs to consider; and problems arise from the spatial nature of fishing and the constant fluctuations in economic circumstances. To deal with these difficulties, below are some suggestions on how to ensure socio-economic information is comprehensive, accurate and respected.

² Sweeting, C.J., & Polunin, N.V.C. 2005. Marine Protected Areas for Management of Temperate North Atlantic Fisheries. Lessons learned in MPA use for sustainable fisheries exploitation and stock recovery. A report to the Department for Environment, Food and Rural Affairs. 64pp.

³ Sweeting, C.J., & Polunin, N.V.C. 2005. Marine Protected Areas for Management of Temperate North Atlantic Fisheries. Lessons learned in MPA use for sustainable fisheries exploitation and stock recovery. A report to the Department for Environment, Food and Rural Affairs. 64pp.

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Note that the reliability of socio-economic information will very much depend on the involvement of industry.

A consistent approach

Uncoordinated or disjointed efforts to collect data will lead to costly and unnecessary duplication of effort and a missed opportunity to standardise approaches.

During the establishment of the MCZ project in England, Seafish became aware that a methodology developed for participatory mapping of fishing grounds in the South West (known as 'FisherMap') to inform the Finding Sanctuary MCZ project was going to be rolled out to the remaining three regional MCZ projects. Seafish and industry were aware of some of Fishermap's shortcomings - for example it was not designed to collect spatial economic data - and as a result Seafish commissioned a peer review followed by a series of workshops involving experts and representatives from Defra, Cefas, Marine Scotland, Sea Fisheries Committees, Statutory Nature Conservation Agencies and the MCZ projects themselves to address the gaps and improvements identified in the peer review. The revised questionnaire was subject to a final peer review before being implemented by the three regional MCZ projects in England at the beginning of this year. If Marine Scotland intends to undertake a similar exercise and noting Marine Scotland's desire to 'introduce effective methods of data collection' to avoid 'unnecessary data collection and analysis' (#47 p20), we recommend using FisherMap which incidentally is being proposed to inform the Welsh Assembly Government's MCZ project, through an EFF funded project run by the University of Wales, Bangor. A consistent methodology would provide a standard baseline for comparison across and within MCZ regions for calculating the socio-economic implications of both MPA selection and management. In addition, as advisers to the UK Government and devolved administrations of the economic consequences of regulatory change using techniques such as input-output multipliers (developed by the Fraser of Allander Institute, University of Strathclyde) to derive economic and employment scenarios, the Seafish Economics team would be able to advise Marine Scotland on the socio-economic impact of MPAs.

Continual monitoring

Given that the spatial and temporal nature of UK fishing can change frequently, for the reasons outlined above, then the corresponding spatial change in socio-economic value needs to be monitored. Up-to-date information will be required by Marine Scotland for accurate assessments, management and licensing decisions.

6. Industry participation in site selection

We support the creation of a network of protected areas for conservation of habitats and species, provided that their selection is made on sound scientific evidence and the industry is afforded the opportunity to participate fully in the negotiation of site selection. We strongly believe that the industry can work together with Marine Scotland and Scottish Natural Heritage to agree the sites, and that this approach will generate the best results. We therefore welcome Marine Scotland's intention to: (1) take an inclusive approach to the establishment of the Scotland MPA network (#51 p20); (2) 'use the best available science to identify potential MPAs' and (3) 'work with stakeholders at each key stage of the process to develop a draft list of sites for designation by Scottish (and UK) Ministers' (#59 p21).

Because only 15% of our seabed has been properly mapped in respect of ground conditions, habitat types and species assemblages, we recommend using fishermen's

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knowledge of the seabed to inform the MPA survey work which follows Marine Scotland's commitment 'to more participative approaches ... that would allow communities to do parts of the survey work themselves' (#52 p20). Greater knowledge of habitat and species distribution will allow greater flexibility in MPA site selection and greater account could therefore be taken of socio-economic implications as recognized by 'consideration of some locations that are in a more natural state.

The consultation on marine Special Areas of Conservation (SACs) in the Western Channel has highlighted a number of areas where there is disagreement between the fishing industry / Sea Fisheries Committees (SFCs) and Natural England on the location and extent of reef features. Such disagreements could have been resolved if the industry and the SFCs had been involved in the planning phase, thereby saving considerable time and money spent by both them in collecting evidence to challenge Natural England's claims.

The fishing industry has the capacity to produce a large quantity of acoustic data from the powerful Acoustic Ground Discrimination Systems (AGDS) fitted to many of their vessels. Many vessels utilize AGDS such as Olex™ which provide spatially log bathymetric (depth) and seabed (hardness/softness) data obtained from a single beam sounder. This type of data has been used by a number of organisations including Sussex, Devon, Cornwall and South Wales Sea Fisheries Committees to produce both broadscale and feature-specific bathymetric maps⁴. Moreover Seafish has worked with the industry, SFCs and the statutory nature conservation agencies to develop seabed mapping techniques using acoustic ground discrimination sonar and underwater video to collect video survey data on the location of reefs, important fishing grounds and sensitive areas. For instance, information collected during trials conducted in 2008 helped to inform (1) the Sussex SFC's fisheries management plan, which considered the sensitivity and vulnerability of the seabed to various fishing activities and whether more action was required to further protect it, and (2) the Devon SFC's management plan for seagrass beds in Salcombe Estuary in order to protect the beds from the winter scallop dredge fishery. These data gathering techniques are part of the 'Environmental Toolkit' that Seafish developed for industry to collect environmental data to inform, for example, environmental assessments where the lack of such information was causing severe delays in the assessment process. For more information go to:

<http://www.seafish.org/b2b/subject.asp?p=326>

The current method of 'boxing' large areas of seabed to protect in some cases minority areas of protected sensitive habitat features is archaic. All fishing vessels now routinely use GPS navigational systems and modern boats have, for example, the precise location of power and telecommunication cables recorded onto their GPS to prevent damage to both cables and fishing gear. Recording more closely fitting MPA boundaries would therefore be a straightforward exercise and one which Seafish could easily facilitate through our Kingfisher service.

There are also some good examples of the Joint Nature Conservation Committee working with industry to select offshore SACs. A combination of scientific records, fishermen's knowledge and surveillance data on fishing activity were successfully used to select and protect Stanton Bank and Rockall SACs with a substantial re-drawing of

⁴ Clark, R. W., Dapling, T. M., Hume, D. R., Woolmer, A. P., Vause, B. J., 2008. Habitat Classification Using Video and Acoustic Techniques: Development of an Appropriate Hierarchical Classification Scheme for the Supervised Classification and Accuracy Assessment of AGDS Data. Extension Project MAL 0020 Aggregate Levy Sustainability Fund Partnership Grants Scheme, 53 pp.

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the originally-proposed boundaries. A study⁵ of the Rockall Bank SAC selection process concluded ‘*These sources could not necessarily be relied upon individually to identify suitable closure areas, but when used together, they provide a powerful tool to indicating where such closed areas should be established*’. Work to identify potential SACs to protect deep water corals within the Irish Sea EEZ is using the same effective ‘combination’ approach.

We urge the Scottish Government to take advantage of these well-established and mutually advantageous practices of collaboration between conservationists and fishers

7. Industry involvement in site management

We are particularly pleased that one of the objectives is to ‘minimise disruption to sustainable marine activities through proportionate marine management measures’ and under this objective to encourage co-existence of activities. We are also pleased that ‘Voluntary measures will continue to be important (#37 p18). We would like see this presumption in favour of mixed use being expressed clearly and forming the basis for the negotiation of consensus management plans. Although, difficulties lie in determining whether or not activities can co-exist, and the way in which some activities may need to be restricted, especially where information on potential impacts and recovery rates is lacking. We believe these difficulties can be overcome through adaptive management and co-operation. For example a Natura 2000 site management project initiated in South West England this year brought local fishermen together to suggest how they thought current fishing activities could be compatible with the draft conservation objectives of the proposed new Natura 2000 sites. The workshop was chaired by Seafish and Natural England is keen to repeat the exercise in other areas.

Demonstrating proportionate use of the precautionary principle; adopting adaptive management techniques; taking account of vessel displacement; and considering how best to mitigate the impact of MPAs on current fishing activities, could improve the prospect of successful co-existence, thereby increasing the likelihood of MPA conservation objectives being achieved. These four points are developed in more detail below:

Proportionate use of the Precautionary Principle

Advice from the European Court of Justice (C-127/02, September 2004) has provided a very precautionary interpretation of Article 6 of the EC Habitat’s Directive, for example on deciding when an Appropriate Assessment is required and the level of certainty required before permitting certain activities following appropriate assessment. The need to demonstrate ‘certainty’ that there will be no adverse effect on the integrity of a site, and ‘no reasonable scientific doubt’ of adverse effect, means that fishery and aquaculture authorities must be ‘convinced’ that there will not be an adverse effect, and that where any doubt remains as to the absence of adverse effects, the activity must not be authorised. But providing certainty of no adverse effect (proving a negative) can be extremely onerous and even impossible given our current understanding of the marine environment. It has led to obscure concerns being raised by the Statutory Nature Conservation Agencies in Natura sites which the fishing industry have sometimes found (a) too difficult to answer owing to a lack of information on site features and on the potential impacts, or (b) to have cost it disproportionate time and money to contest, and

⁵ Hall-Spencer JM, Tasker M, Soffker M, Christiansen S, Rogers S, Campbell M, Hoydal K (2009) Design of Marine Protected Areas on high seas and territorial waters of Rockall Bank. *Mar Ecol Prog Ser* 397:305-308

as a result has led to good proposals being abandoned. We hope management of nature conservation MPAs will not be hampered by such extreme precaution and draconian regulation, but will ensure that environmental concerns are based on sound judgement and bear scientific or expert scrutiny.

A recent concern by conservationists over the alleged impact of scallop dredging in Cardigan Bay SAC that led to a blanket ban revealed a lack of knowledge of habitat distribution and sensitivity to scalloping. With support from the Welsh Assembly Government, the fishermen are using their own boats in assisting scientists at the University of Wales, Bangor to map the seabed, and this has resulted in a partial opening of the fishery on traditional scalloping grounds. This form of collaboration would help fulfil objective vii 'To reduce reliance on the precautionary principle by improving the science and data on which we depend when taking decisions'. We would like to see the same level of commitment to reduce the burden of the precautionary principle on the marine renewable energy sector (#47 p19) to be applied to fishing and aquaculture.

Adaptive management

Given the dynamic and resilient nature of the marine environment, an adaptive approach to managing fisheries and shellfish cultivation - for example by agreeing monitoring programs and allowing experimental fisheries under strict guidelines - would be a more reasonable way of interpreting the precautionary principle. At present we do not have (and we may never have) a complete understanding of the marine environment - how it functions and how it copes with anthropogenic effects. Preventing sustainable fisheries and shellfish cultivation in nature conservation MPAs on grounds of less than perfect knowledge, contravenes European and UK Government policies on sustainable development, which is a concept that accepts the need for reasonable trade-offs between environmental and economic goods.

Vessel displacement

Displacing fishing activity from MPAs to other areas could negate the ecological benefits afforded by an MPA network. The effects of fishing pressure displacement can be assessed by combining (i) information on habitat distribution; (ii) predicted change in the spatial distribution of effort following management action; and (iii) predicted impact of fishing on habitat⁶. Jennings reported on modelling work to assess the effect of MPA designs on biomass, production and species richness of benthic communities at the scale of the management region (which included MPAs and unprotected areas) undertaken by Hiddink *et al*⁷, which demonstrated that '*MPA closures of different sizes and in different locations could have positive or negative effects on the aggregate state of benthic communities*'. In the absence of fishing effort control, Hiddink predicted that the use of MPAs in lightly fished areas would lead to the largest increases in biomass, production and species richness. The potential consequences of fishing effort displacement highlights the need for a holistic consideration of the benefits and ramifications of MPA designation and management in regional management systems, such as the one proposed in the MCZ project. MPAs that meet local management

⁶ Jennings, S. 2009. The role of marine protected areas in environmental management. ICES Journal of Marine Science, 66: 16–21.

⁷ Hiddink, J. G., Hutton, T., Jennings, S., and Kaiser, M. J. 2006. Predicting the effects of area closures and fishing effort restrictions on the production, biomass, and species richness of benthic invertebrate communities. ICES Journal of Marine Science, 63: 822-830.

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objectives may not contribute to meeting objectives set at a regional scale⁸.

Fishermen's displacement response to fishing effort restrictions in MPAs and knowledge of fishing intensity in a management region are two critical areas of information that can be provided by the fishing industry. This information could be obtained from a 'FisherMap' survey as mentioned above.

Mitigation measures

We believe that, where there is good reason to restrict or even curtail current fishing activities following adequate consideration of the socio-economic and wider ecological impacts of doing so, government assistance in helping fishermen to diversify, and in using fishermen and their vessels for surveying and monitoring sites, should be encouraged. Diversification is often presented as a viable alternative when an existing fishery is being challenged in an MPA. The ability of fishermen (in terms of skill and cost), the capability of vessels, marketing opportunities and regulations are just some of the issues facing those considering diversification. Government assistance in shouldering the financial burden of training and guidance on how to deal with novel forms of fishing and aquaculture would make diversification a real option. For example, using fishermen and their fishing vessels to collect environmental information for site management (as described above) and monitoring of UK MPAs (see below) is becoming increasingly popular.

8. Industry involvement in site monitoring

We support Marine Scotland's inclusive approach to the development of the MPA network and wish to see the industry at the forefront of MPA site selection, management and monitoring. We are however disappointed that under participative monitoring (#52–54 p20-21) emphasis is placed on tourism and communities rather than the industry undertaking survey and monitoring work. The fishing industry can provide valuable information on seabed habitats and species both encountered on the seabed and visible from a vessel. Using fishermen in MPAs surveys and monitoring will ultimately save money by avoiding high vessel chartering costs as well as helping to instill a sense of ownership and responsibility. Directed by Scottish Natural Heritage photography and drop-down video techniques that can assure data quality could be deployed by those fishermen who will suffer economic loss following MPA designation to monitor the performance of the MPA, possibly as a form of mitigation. We are starting to see fishermen involved in monitoring the effects of habitats protection in Natura 2000 sites, such as Flamborough Head SAC where fishermen, advised by Natural England are monitoring the effects of a no-take zone.

Another concern over site monitoring is the difficulty of establishing causal links between anthropogenic inputs and changes to status. The potential resource implications of the monitoring needs are very considerable and, in the absence of monitoring, industry may be wrongly blamed and unfairly treated following damage to a site feature. As mentioned above marine ecosystems may have been fundamentally altered in structure by past fishing activity and a return to pre-closure conditions may not be possible. We are pleased to see this has been recognised (#60 p22).

⁸ Jennings, S. 2009. The role of marine protected areas in environmental management. ICES Journal of Marine Science, 66: 16–21.

(B) Guidelines on the selection of MPAs and development of the MPA network.

We have provided comments on 7 aspects of the guidelines that are of interest to Seafish:

- i. Industry contribution to site selection
- ii. Socio-economic assessment
- iii. Contribution of other area-based measures
- iv. Demonstration and research MPAs
- v. Habitats and species for which nature conservation MPAs may be identified.
- vi. Development of site management measures

i. Industry contribution to site selection

Local fishermen's knowledge must be used at the beginning of the nature conservation MPA site selection process; stages 1-4, to ensure the best available information is used, and not just stages 3 & 4 as suggested (#7.2 p34)

Fishermen can provide information on the type and distribution of seabed habitats; distribution of marine species; areas utilised at particular life stages; and temporal and spatial variation in species distribution and some habitats. Incorporating fishermen's knowledge from stage 1 would help achieve:

- The use of the best available information (#4.5 p18)
- The location of priority marine features (PMF) (#6.7 p23)
- The location of (PMF) that are more natural and least damaged, (#6.7 p23), for example hard reefs where the use of mobile gear is not possible
- Greater flexibility to minimise constraints on current economic activity

We appreciate the difficulty of gathering and standardising information from fishermen and presenting it in a format that can be readily incorporated into data used by Marine Scotland and Scottish Natural Heritage. Regional and national fishermen's organisations could be asked to undertake this task with perhaps assistance from the newly formed Inshore Fisheries Groups, the UK Fishing Industry MPA Coalition Group and Seafish. The FisherMap work (as described under section 5 Socio-economic considerations 'A Consistent Approach' above) is an example of how this could be achieved.

Using fishermen's information at the earliest opportunity will demonstrate the inclusiveness and transparency necessary to allay anxiety in the fishing community that the process is a closed shop; show there is a real commitment to minimising constraints on current activities; and help the Scottish Government achieve its aim 'to minimise any adverse social and economic impacts and wherever possible to work with the grain of sustainable economic use of the seas' (Ministerial Statement on the creation of a network of MPAs, 12.04.10).

ii. Socio-economic assessment

As mentioned in our response to the MPA strategy (point 5), socio-economic assessments are notoriously difficult and we can offer advice on such work. We are disappointed to see that the MPA guidance does not mention how social and economic assessments will be undertaken; the precise methodology; the type of data required;

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how data will be acquired; and the role of stakeholders. To fulfil the Scottish Government's aim of minimising any adverse social and economic impacts, key fishing grounds need to be identified. Our experience of revising the 'FisherMap' questionnaire to take account of economic information showed that:

- (a) This a relatively new and fast developing area of work.
 - (b) There are few socio-economic experts in the UK who are familiar with the marine environment and in particular both fisheries and marine nature conservation.
 - (c) This work could inform (and in the case of the Defra's MCZ project will) inform the statutory impact assessments and as such will involve those who will be carrying out this work.
 - (d) A considerable amount of time and effort could be spent collecting, processing and validating information provided by industry, which could be made considerably easier with fishermen's support.
 - (e) Custodianship of data and confidentiality agreements need to be considered.
- Given our experience of revising FisherMap we could help address these points.

iii. Contribution of other area-based measures

There are many existing area-based measures that could contribute to the nature conservation MPA network target, as recognised in both the MPA strategy and guidance. We would like to see consideration of the biodiversity benefits of these measures being assessed at the beginning of the process. Moreover, given that many marine industrial activities will have been subject to environmental impact assessments, the spatial and temporal distribution of habitats and species including areas supporting particular life stages will be readily available. We recommend considering this information also at the earliest opportunity and before embarking on work to decide new MPAs, again to help achieve the Scottish Government's aim of reducing economic hardship.

iv. Demonstration and research MPAs

We support the checks and balances put in place for the designation of MPAs for the purpose of demonstration and research, yet we believe this type of designation will cause confusion about how it will contribute to the nature conservation MPA target will cause confusion. We agree with the requirement for a 'greater level of support' from those most directly involved/affected by a proposal for a demonstration and research MPA during site selection and the need for a socio-economic assessment of activities existing in the area in addition to those likely to be affected. As stated under the socio-economic assessment point above, we would be willing to advise on how and what to consider for these assessments.

v. Habitats and species for which nature conservation MPAs may be identified.

Some of the species and habitats identified for protection (PMF) are commercially exploited and therefore subject to national and European fisheries measures. These measures include spatial restrictions and technical measures, for example to protect juveniles and avoid 'growth over fishing' and we would not wish to see new management measures being imposed over and above current management regimes without good evidence.

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vi. Development of site management measures

We are disappointed that guidance on the management of MPAs has not been produced, especially as a key objective in the strategy is to 'minimise disruption to sustainable marine activities' and to acknowledge the importance of voluntary measures. Recognised and respected world wide for initiating fish stock rebuilding measures and now rewarded by the EC through the conservation credit scheme, the Scottish fishing industry should be given the opportunity to tackle the challenge of demonstrating compatibility with MPA conservation objectives. The effectiveness of technical modifications for example to: reduce ground contact; increase selectivity to reduce the capture of non-target species and undersize target species; and increase the chances of escapement once caught, will take considerable time, from (a) agreement of the level of protection required to (b) technical development and then finally (c) research which will involve trials. Some of the protected species may be seasonal visitors to UK waters or undertake significant movements within UK waters, adding to the complexity of the work. More time should be granted to allow these measures to be fully monitored and evaluated.

Seafish with assistance from a range of stakeholders including English and Welsh fishermen, Defra, regulators (SFCs & MMO), Natural England and Plymouth University has initiated an inshore vessel tracking project, the aim of which is to develop a robust and widely accepted vessel tracking system that can enforce spatial restrictions and thereby demonstrate compliance with various fisheries management agreements, such as those being proposed in MPAs. It is anticipated that the technology will empower fishermen to provide assurances to managers that important habitats can be safeguarded from potentially damaging forms of fishing, thus we hope create a more flexible yet secure environment for effective management. The sooner guidance on MPA management measures is produced the sooner Seafish and the fishing industry can start working with the authorities to prove how fishing can co-exist with nature conservation MPA objectives.

Summary

A more flexible timeline would provide the fishing industry more opportunity to engage and provide information that only they hold and which would be invaluable to the MPA selection process. Better knowledge of the distribution of PMF habitats and species would provide more choice in the selection of sites and allow greater account of socio-economic impact. Information on grounds that aren't or rarely fished could also prove very important in reducing economic impact; such areas could include sites where existing activities preclude fishing and those subject to existing fishing restrictions. Seafish has considerable expertise in mapping such areas (Kingfisher Services) and an economics team that would be able to advise Marine Scotland on the socio-economic impact of MPAs.

We have outlined what and how fishermen can provide information together with ideas on how to involve the industry in the development of palatable management measures (such as inshore VMS and improving gear selectivity) and monitoring work greatly reducing the cost of such work to the Scottish Government and providing compensation to those whose livelihoods will be impacted. Some environmental data collection and monitoring methods have already been developed for industry by Seafish with assistance from Statutory Nature Conservation Agencies and regulators and our fishing

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gear technologists work closely with Marine Scotland and CEFAS to improve the selectivity of fishing gear

Seafish is currently helping industry to collaborate with MPA work, but in order to ensure that marine biodiversity receives the best level of protection, the fishing communities and fishermen themselves have to be committed to the cause. Winning the hearts and minds of fishermen will take time, but by adopting a partnership approach to the selection and management of MPAs, respecting the fishermen's information that can fill the current data shortfall, the task of delivering the Scottish Government's commitment to a network of MPAs will be made easier.

We hope that these comments are useful and we look forward to continuing working with you on MPA policy, designation and management, and helping the industry engage and support this unprecedented plan to protect marine biodiversity. Should you have any questions please do not hesitate to contact either Phil MacMullen or Mark Gray.

Yours sincerely

A handwritten signature in black ink that reads "Mark Gray". The signature is written in a cursive style with a large, stylized 'G' at the end.

Mark Gray
(Environmental Assessment Support Officer)

supporting the seafood industry for a sustainable, profitable future