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. Anticipated timescale from scenario 1 to scenario 3: several years; from scenario 3 to scenario 5 . . . .: given the EU/UK/Scottish Governments' record over the past 30 years, possibly a generation or even longer? Let me know what you think? Peter Cunningham, 19 August 2014. email: 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 collaboration and joined-up thinking rather than 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.