

Scottish Sea Angling Conservation Network

Sound of Mull, Argyll Nature Conservation MPA Proposal based on the Priority Marine Feature Common Skate *Dipturus batis*.





Executive Summary

The Scottish Sea Angling Conservation Network (SSACN) welcomes the opportunity to submit a 3rd party Nature Conservation Marine Protected Area as part of the Scottish MPA Project.

We propose the designation of a Nature Conservation MPA in the Sound of Mull, Argyll between the Firth of Lorn in the south and Loch Sunart in the north. The MPA is part of a coherent ecological network of protected areas proposed by SSACN that runs northwards from the Sound of Jura, through the Firth of Lorne and Sound of Mull to Loch Sunart.

SSACN believe the area should be afforded MPA status on the basis of populations of critically endangered Common Skate *Dipturus batis* that inhabit the area.

The west coast of Scotland is one of few coastal regions where Common Skate remain in relatively high numbers. Tagging data collected by the Scottish Shark Tagging Programme identifies the Sound of Mull as an extremely important area for Common Skate: with a recapture rate of over 63% in the Sound of Mull it is evident that Skate in this area show a high level of site fidelity. Short migrations to neighbouring areas have been observed – namely to and from the Firth of Lorn and Loch Sunart – emphasizing the need for the spatial protection of ecological pathways to ensure that populations of endangered elasmobranchs do not become fragmented and areas isolated.

The Argyll area is widely regarded as one of Scotland's most valuable recreational sea angling destinations with many safe, easily accessible shore marks, boat launch sites and a number of charter boats. Each year over 250,000 angling days are spent in the region generating an estimated £22,500,000 in the region. Recreational sea angling for Common Skate is one of the region's most valuable unique selling points and attracts anglers from all over the country.

Other recreational activities include SCUBA diving and sight-seeing, it is expected that such activities would also benefit from the designation of a Nature Conservation MPA.

Allowing recreational sea angling in protected areas has consistently been shown to generate sustainable income to rural areas and increase public support and acceptance of MPAs. In addition to the direct benefits of such a designation to both the local communities and native marine life a host of indirect benefits exist: indirect benefits include the overspill of commercially important species and preservation of genetic diversity in marine organisms.

Complex migratory life strategies like those seen in the Common Skate may require a combination of fisheries management (with statutory instruments) and spatial management (through the identification and designation of MPA's to protect the species and critical habitats). It has previously been supported that additional spatial protection such as MPA's can be beneficial to many mobile species such as Common Skate, particularly in cases where populations show a high degree of site fidelity.

SSACN believe it is essential for the protection of Scottish Common Skate populations that the Sound of Mull is considered for MPA designation and included in the MPA search locations. The presence of multiple search features makes the site a particularly strong candidate for designation as a Nature Conservation MPA.

Sound of Mull, Argyll Nature Conservation MPA Proposal based on the Priority Marine Feature, Common Skate *Dipturus batis*.

1. Proposal

The Scottish Sea Angling Conservation Network welcomes the opportunity to submit a 3rd party marine protected area proposal and would like to propose the designation of a Nature Conservation MPA in the Sound of Mull, Argyll as shown in figure 1. It is proposed that the Sound of Mull is designated as a Nature Conservation MPA in order to protect populations of critically endangered Common skate *Dipturus batis* and their habitats.

This area has several pockets of Common skate and is believed to be an ecological corridor linked to Loch Sunart, the west of Mull and Firth of Lorn. Any ecological corridors linked to the population within the Sound of Jura should also be searched and suitably protected, such as the Firth of Lorn, in order to ensure that populations do not become fragmented and the area does not become an isolated hotspot for Common Skate. This will allow sufficient migration to take place, for the long term viability of this mobile species.

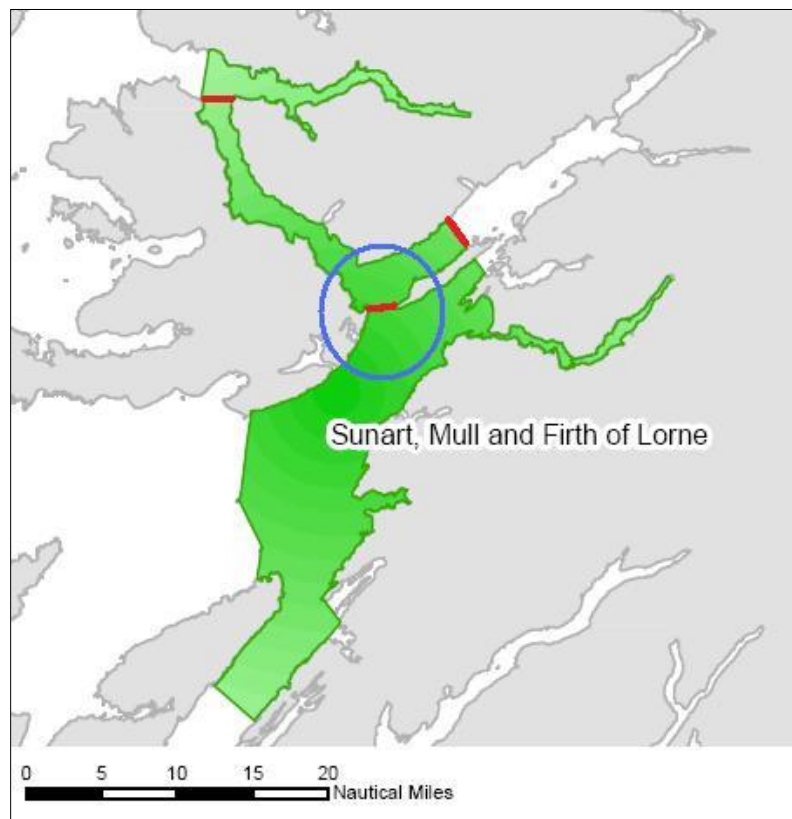


Figure 1: Nature Conservation MPA network proposed by SSACN based on priority marine features (Common Skate *Dipturus batis*). Boundary lines are marked in red. Cross-boundary movements of tagged Common Skate are often observed in the area indicated by the blue circle covering the Sound of Mull and Firth of Lorn, this emphasises the need to develop a coherent network of MPAs.

2. Sound of Mull

2.1 Site Description

The Sound of Mull is a stretch of deep water situated between the Morvern peninsula on the mainland of Scotland and the north-east shore of the Isle of Mull. The southern boundary is a line running from Rubha an Ridire (Morvern) to Duart Point (Mull) and the northern boundary runs between Auliston point (Morvern) and Ardmore (Mull), with an area of around 25 miles from north to south and 1-2 miles wide.

2.2 Important Marine Features

Common skate are the largest European batoid reaching lengths of up to 3 metres. They show typical elasmobranch life history characteristics with both females and males maturing late at an average of 11 years old at 180cm and 125cm respectively¹. Females have a low fecundity laying around 40 eggs every two years². Slow growth rates and low fecundity mean that Common Skate have a low intrinsic rebound potential and populations may suffer significantly from overfishing or habitat degradation: for these reasons it is felt that spatial protection is required - particularly in areas where juveniles reside - to effectively conserve Scottish populations of Common Skate.

Common Skate have seen drastic declines in the north-east Atlantic; the species is currently included on the OSPAR list of threatened or declining features³ and is considered '*critically endangered*' on the IUCN Red List⁴. Populations have been declining across European inshore waters since the early 20th century⁴. The west coast of Scotland is one of few coastal regions where Common skate remain in relatively high numbers. The high site fidelity seen in some areas makes this species particularly suitable for spatial protection in the form of an MPA.

SSACN believe the Sound of Mull may be an important area for Common Skate with recaptures of tagged fish recorded throughout the year. The area is also believed part of an important ecological network for Common Skate populations that includes the Firth of Lorn and Sound of Jura to the south and Loch Sunart to the north. SSTP tagging data shows a high level of site fidelity in Common Skate captured in the Sound of Mull making the area a strong candidate for spatial protection in the form of a Nature Conservation MPA.

The Community Plan of Action (CPOA) for the conservation and management of sharks (2009) aims to ensure a greater understanding of sharks and their role in ecosystems and fisheries and identified an urgent need for improved data collection. The work of SSACN through the Scottish Shark Tagging Programme (SSTP) plays a vital role in the collection of this essential data for many species found in Scottish waters and it is likely that this research will assist the Scottish Government in achieving their international commitments to protect vulnerable shark species.

SSACN believe that the data collected thus far indicates that spatial protection of Common Skate and their critical habitats in Scottish waters is required in addition to statutory instruments that may be put in place. This will allow the government to effectively manage and conserve this critically endangered species.

2.3 Residency

There have been a total of 551 Common skate tagged, and 351 recaptured within the Sound of Mull, including recaptures of tagged fish from neighbouring areas (Firth of Lorn, Loch Sunart and

west of Mull). SSTP data shows that Common Skate are captured in the Sound of Mull throughout the entire year. A total of 224 unique Common Skate recaptures have been recorded in the Sound of Mull though many of these fish have been recaptured more than once. A summary of tags and recaptures and the time of year during which captures were made is shown in figures 1 and 2.

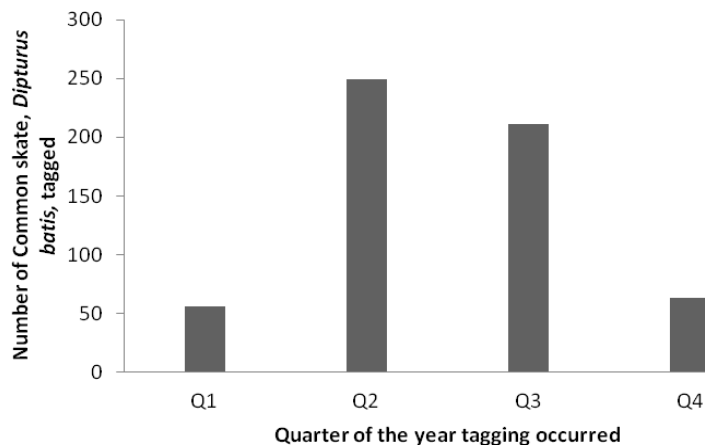


Figure 2: Number of tagged Common Skate in the Sound of Jura and the time of year they were tagged.

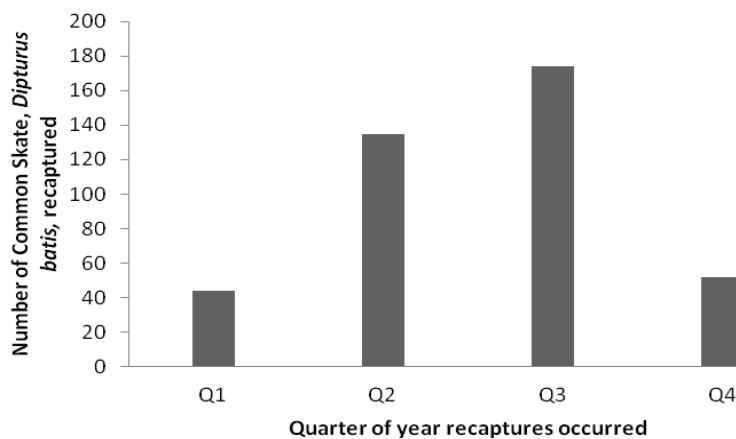


Figure 3: Number of Common Skate recaptured in the Sound of Jura and the time of year they were recaptured.

Recaptures have been recorded between Loch Sunart and the south end of the Sound of Mull (Lochaline), as well as between the Firth of Lorne and Loch Sunart. It is likely that skate travelling between the Firth of Lorn and Loch Sunart do so via the Sound of Mull. This suggests the Sound of Mull may be an important migration route for Common Skate populations on the west coast of Scotland.

Historical surveys found large numbers of Spurdog *Squalus acanthias* in the Sound of Mull⁵. However, the discovery of prolific angling spots - such as the Sound of Jura - means that sea angling effort in the area is now reduced. As a result Spurdog tagging data from the Sound of Mull is relatively sparse. It is thought that the Sound of Mull may play an important role in the movements of several species and as such the area is considered vital to conservation efforts in neighbouring areas including Loch Sunart and the Firth of Lorn.

The Sound of Mull accounts for ~28.5% of the tags and ~36% of the recaptures of Common skate on the SSTP database. There is a recapture rate of ~63.5% within the region as shown in table 1. It should be noted that neighbouring regions; Firth of Lorn and Loch Sunart have recapture rates of ~47% and 44%, respectively, showing how important this stretch of coast line is to the species.

Table 1: Summary of Common skate *Dipturus batis* captures within the main regions with the Sound of Mull highlighted. The percentage of tagging and recaptures, and rate of recapture is shown for each area.

Summary of captures and recaptures of Common Skate, <i>Dipturus batis</i>						
	Total Captures	Total Tagged	Total Recapt	% of Total Taggings on Database	% of Total Recapt on Database	Recapture rate within area
Sound of Mull	909	556	353	28.54	35.91	63.49
Firth of Lorn	656	446	210	22.90	21.36	47.09
Sound of Jura	570	334	236	17.15	24.01	70.66
Loch Sunart	72	50	22	2.57	2.24	44.00
West of Mull	430	349	81	17.92	8.24	23.21
Other	294	213	81	10.93	8.24	38.03
Total	2931	1948	983			

3. Current Protection & Alternative Management Options

3.1 Legislation

Common Skate are considered a prohibited species in all EU Waters meaning no vessel is allowed to land them in the EU. However, this prohibition on landings will not protect the species from any direct or indirect impacts of activities that are currently permitted within the Sound of Jura, or from activities that may be initiated the future. Common Skate are often captured as by-catch, although many commercial vessels discard the species there are still concerns over misidentification of many species of ray and skate.

Spatial protection of key areas where mobile species aggregate is required in order for this particular slow growing species to regenerate and MPA's have previously been supported as an effective option for mobile species⁵.

Further research into the population ecology of Common skate within Sound of Mull, migratory life strategies and genetic mixing will determine the best combination of management options throughout Scotland and Europe. Conservation nature MPA's are required for key regions such as Sound of Mull, where Common Skate may be residing, or spending a large proportion of their life before moving between neighbouring regions (Loch Sunart and Firth of Lorn). The current tagging programme (SSTP) hopes to facilitate future research at little cost utilising data gathered by volunteer anglers.

3.2. Activities & Management Recommendations

3.2.1 Recreational Sea Angling

The Sound of Mull is a well known and important recreational sea angling destination on the west



coast of Scotland. Recreational sea angling opportunities are available year round by boat with accessible launch sites and several charter boats available in the area. The year-round angling opportunity has allowed a constant feedback of tagging data and anecdotal evidence regarding Common Skate populations. Many anglers now regularly tag and release Common skate in the Sound of Jura as part of the Scottish Shark Tagging Programme (SSTP).

Based on the best available evidence, SSACN do not believe this has a negative effect on Common Skate or critical habitat, and therefore SSACN would expect these activities would continue should Sound of Jura be designated a Nature Conservation MPA.

Many countries have already successfully implemented MPAs whilst allowing recreational sea angling to continue as a means of generating income to rural areas and increasing public acceptance and support of MPA designations⁷.

The exact economic value of charter boat tourism in the Sound of Mull is difficult to assess. A review of marine tourism in the Sound of Mull including diving operators, charter boats and sailing facilities was carried out as part of a socio-economic report in 2010: total turnover from 6 operators based in the Sound of Mull was estimated at around £332,300⁸. However, this is likely to be a conservative estimate and may not include all charters taking out parties of recreational sea anglers to fish for elasmobranchs including Common Skate.

3.2.2 Aquaculture

There are currently several aquaculture facilities in the Sound of Mull with a number of aquaculture sites that may be lying fallow at present. There are also several shellfish farms around the Sound of Mull but only one within the Sound itself. Based on the best available evidence, SSACN do not believe this activity has a negative effect on Common Skate populations or critical habitats, therefore SSACN would expect these activities would continue should the Sound of Mull be designated a Nature Conservation MPA. Any future development would be assessed against the conservation objectives of the MPA and suitably managed.

3.2.3 Creeling

Creeling is carried out throughout the Sound of Mull by at least five local creelers. There is also at least one non-local creeler that regularly fishes in the area. Based on the best available evidence, SSACN do not believe this has a negative effect on Common Skate or the habitat, and therefore SSACN would expect these activities would continue should the Sound of Mull be designated a Nature Conservation MPA.

3.2.4 Recreational and Professional SCUBA Diving

The Sound of Mull is one of the most popular SCUBA diving destinations in the UK. Based on the best available evidence, SSACN do not believe this has a negative effect on Common Skate, and therefore SSACN would expect these activities would continue should the Sound of Mull be designated a Nature conservation MPA. Conversely, the SCUBA diving sector would most likely benefit from the designation of a Nature Conservation MPA generating sustainable income to a rural area of Scotland.

3.2.5 Mobile Fishing Gear

Details on inshore fisheries using the Sound of Mull area are difficult to quantify as the area is used by both local and non-local fishing vessels. It is thought that there is at least one prawn trawler



active in the Sound of Mull during summer months and that several non-local trawlers and scallop dredgers use the area seasonally, particularly when weather is unfavourable in other areas⁹.

SSACN are unaware of any current restrictions on the use of mobile fishing gear such as scallop dredgers or prawn trawlers. It is expected that current and future use of destructive mobile fishing gears within Sound of Mull would be required to be assessed against the conservation objectives of the MPA designation and would be managed accordingly.

4. Additional Research

As the migratory life history of the Common Skate is complex and inconclusive a Nature Conservation MPA would facilitate further research necessary to ensure the future viability and conservation of stocks. Continued collection of SSTP data by anglers would help determine the migratory life strategy and to what extent Common Skate show site fidelity on the west coast of Scotland.

It is hoped that the ongoing Marine Scotland acoustic tagging project in the Sound of Jura will yield more conclusive evidence regarding the movements of skate in the Sound of Jura and will provide information that may be applicable to other areas of Scotland. The project will run until October 2012.

SSACN have been gathering data on Common Skate through the SSTP since 2009; these records along with others from the Glasgow Museum and UK Shark Tagging Programmes are now held by SSACN in one master database. If required, further data can be provided. This database is currently being used by Marine Scotland and two PhD students at the University of Aberdeen to investigate the population dynamics of elasmobranchs in Scottish waters.

5. Implications of MPA status

SSACN believe that spatial management is required to ensure long term protection of the habitats and the species in the event that the current legislations or management plans are revised. Any activity returning to the area would need to be assessed against the conservation objectives of the MPA and managed accordingly.

In a Scottish Government study on the economic impact of recreational sea angling in Scotland the Argyll and Lochaber region was found to be one of the top areas for sea angling in Scotland¹⁰. Recreational sea angling in the Sound of Mull contributes to over 250,000 days annually spent sea angling in the region with an estimated annual expenditure of over £22,500,000 for Argyll and Lochaber¹⁰. The Sound of Mull, has two of the most popular launch sites in Argyll and Lochaber (Tobermory - 16.0% and Lochaline - 15.1%), covering both the north and south of the Sound.

It is expected that the positive economic impacts of recreational sea angling and tourism in the region could be maximised through the designation of a Nature Conservation MPA. Not only would MPA status and the development of a sea angling in Scotland benefit these elasmobranch species and the economy, but many other marine species would benefit indirectly from increased protection.

In a recent Scottish Study into the social and community benefits of angling in the Assynt region, it
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was concluded that *“local, regional or national governments, or statutory and regional agencies, should consider investment in angling-based tourism initiatives to increase economic benefits through increased numbers.”*¹¹

6. Conclusion

Spatial management measures are required in order to protect and allow regeneration of Common Skate in Scotland, and indeed throughout Europe. The Sound of Mull is believed to be a critical habitat for Common Skate. This is supported by SSTP tagging data of Common Skate which shows a reasonable abundance of Common Skate and a high degree of site fidelity in local populations.

Complex migratory life strategies like those seen in the Common Skate may require a combination of fisheries management (with statutory instruments) and spatial management (through the identification and designation of MPA's to protect the species and critical habitat). It has previously been supported that additional spatial protection such as MPA's can be beneficial to many mobile species such as Common Skate^{5, 8}.

Recreational sea angling has a low environmental impact and a significant positive socio-economic impact in rural areas whilst providing a low cost method of gathering valuable data through the SSTP. In addition to the direct socio-economic benefits of recreational sea angling, encouraging angling in protected areas has consistently been shown generate income to rural areas, and increase public acceptance and support of MPA designations⁶.

SSACN believe it is essential for the protection of Scottish Common Skate populations that the Sound of Mull is considered for MPA designation and included in the MPA search locations. The presence of multiple search features makes the site a particularly strong candidate for designation as a Nature Conservation MPA.



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