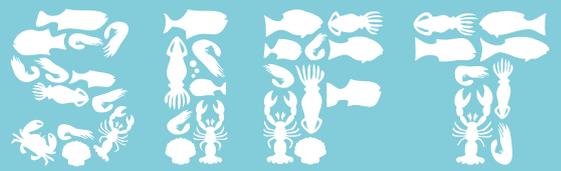




Information Pack on
**Proposed Firth of Clyde
Regulating Order**

November 2015



Sustainable Inshore Fisheries Trust



Introduction

This document summarises a proposal by the Sustainable Inshore Fisheries Trust (SIFT) for a Regulating Order (RO) for the Firth of Clyde to manage prawns (*Nephrops*), king and queen scallops only. Management of fisheries **for crab, lobster and other shellfish is not included in this proposal**. The document is for members of the Firth of Clyde fishery and other stakeholders. It details the background, proposed governance structure and management measures.

In October 2015 SIFT submitted its application for the Clyde RO to Scottish Government. The application document can be viewed at www.sift-uk.org/Publications.aspx. If it is decided that the application should proceed, a draft Order will be prepared by Scottish Government, following which a formal consultation period will commence. Further details of the application process are on page 11 of this document.

What the Regulating Order aims to achieve

The RO aims to alter the way that the Firth of Clyde (the Clyde), one of the UK's most altered fisheries, is managed. Its overarching aim is to:

- **Increase the productivity, value and resilience of the commercial shellfish fisheries.**

In addition, a vitally important benefit of the proposal will be to:

- **Promote the recovery of finfish stocks to commercially exploitable levels.**

Benefits of a Clyde Regulating Order

The RO has been designed to deliver **economic benefits** to the fishing industry and the wider community. SIFT's economic assessment finds that:

- The cumulative effect on the commercial fishery as a whole is expected to be positive at an estimated £2.5 million (net present value over a 20 year appraisal period). These direct fishing industry benefits will arise as a consequence of increases in scallop populations and recoveries in commercial finfish species such as cod, whiting and haddock. Additional benefits (including a reduction in gear conflict) are also predicted and these have been assessed in qualitative terms;

- The predicted increase in scallop, creel-caught prawns and finfish landings could support up to 121 additional jobs in commercial fishing from year 13 onwards;

- By restoring a mixed fishery, the RO will enable the Clyde to regain its former status as one of Scotland's most productive recreational sea angling waters. Additional expenditure from angling visits generated under the proposal is forecast to rise by £7.5m pa by year 13, and remain at that level thereafter. This level of increased expenditure will be sufficient to support an additional 130 jobs (rounded) in the leisure and tourism sectors.

The RO will also deliver **ecosystem benefits** including;

- A recovery in biodiversity within the short to medium term due to better spatial management of trawling within the *Nephrops* sector and dredging within the scallop fishery;

- Improved ecosystem resilience through the protection and enhancement of ecosystem elements.

The RO will also deliver **public policy benefits**.
The proposal;

Is consistent with the Scottish Government's 2015 Inshore Fisheries Strategy and the objectives set under the revised EU Common Fisheries Policy;

Aligns with the Marine Strategy Framework Directive's objective to promote an ecosystem approach to marine management to achieve Good Environmental Status by 2020;

Contributes to the delivery of fishery management proposals for the Clyde under the Clyde 2020 initiative.

Why the Clyde?

The Clyde has historically been an important commercial and recreational fishery producing landings of numerous finfish and shellfish species. However, from the 1970s stocks of commercially marketable finfish declined rapidly so that by the early 2000s it had effectively become a shellfish fishery. This situation remains; by 2013, 99% of the landings were shellfish, of which 89% were prawns or scallops (data sourced from Marine Scotland). The fishery is now dependent upon these species for its survival.

In the past decade, prawn stock abundance as assessed by the International Council for the Exploration of the Seas (ICES) has fluctuated markedly (see Figure 1). ICES advice for 2015 was that landings should be reduced by 33% on the level in 2014. 2016 advice is that catch should be raised by 28%.

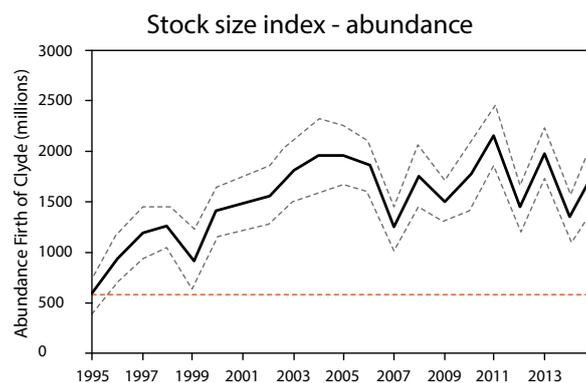


Figure 1 | *Nephrops* stock abundance from 1995-2015 (ICES Advice, 2015) showing number of *Nephrops* individuals (black line) with associated 95% confidence limits (blue dotted lines).

The scallop stocks have not been formally assessed, so the long-term health of this fishery is unknown - although analysis of size structure of scallops from the Clyde indicates that the stock is very heavily exploited (Howarth *et. al*, 2015).

Basing a fishery on only prawns and scallops is not compatible with good long term management practice. A resilient fishery would be more diversified. Fortunately, the recovery of the Clyde ecosystem, and hence the commercial and recreational fishery is plausible. The Clyde is not so much a desert as a resource needing restoration.

Decline of the Clyde Fishery

A wide range of reasons has been given for the decline of the Firth's commercial finfish stocks, including seal predation, pollution and sea temperature rise. There is some evidence that a few of these reasons, such as seal predation, can play a small role in the decline of finfish stocks. However for the most part the evidence is strong that overfishing has altered the mix of species in the Clyde, leading to the decline in fish landings (McIntyre *et al*, 2012). It is widely acknowledged that the excessive use of heavy fishing gear, particularly on complex areas of the seabed has exacerbated this decline (Bergmann *et al*, 2002).

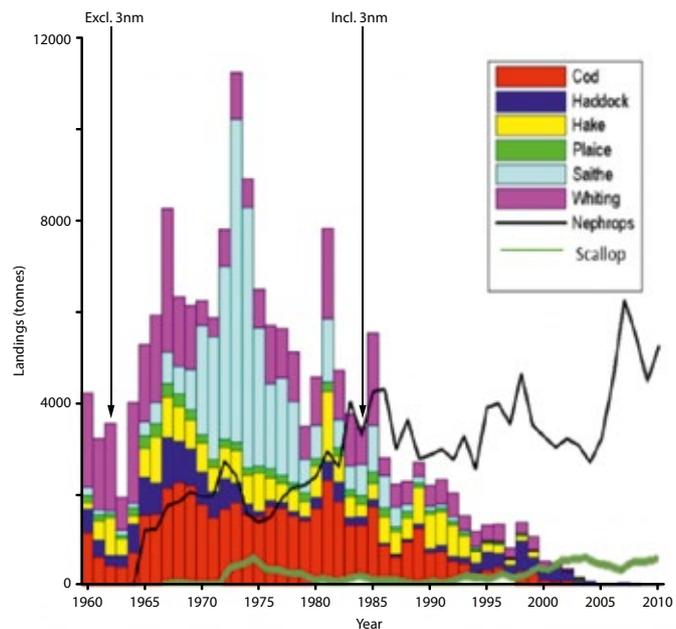


Figure 2 | Firth of Clyde landings 1960-2010. Adapted from Heath & Spiers (2011)

Future Threats

The Clyde fishery now faces new threats from disease, ocean warming, ocean acidification and pollution. Ocean warming and acidification are known to impact fishing by altering fish community structures, enhance sensitivity to stress, and impact adversely on the ability to form shells. Given the fishery's lack of resilience because of its dependence upon prawns and scallops, these threats reinforce the urgent need for management measures that will promote diversity of target species.

The Need for Change

Concerns about the decline of the Clyde's fisheries, as well its wider ecosystem health, and the impact these declines have on the socio-economic well-being of its coastal settlements, have been voiced by a wide array of stakeholders.

Calls for change have come from within the fishery – largely from the static gear sector, which despite producing iconic products, has been marginalised by current fishery practices and management measures.

Calls have also come from community groups and from interest groups like Recreational Sea Anglers and environmental NGOs concerned about the damage done to the seabeds in their neighbouring waters. Inevitably, these groups call for different solutions; however, there is a broad consensus that:

- In recent decades the Clyde has not been managed for the benefit of all stakeholders.
- The mobile sector has enjoyed relatively unrestricted access to the Clyde.
- There needs to be a return to greater use of spatial management of the fishery.

The Scottish Government has also recognised that change is necessary. It has established the 'Clyde 2020' initiative which aims to bring about scientific research and practical measures to improve the Clyde.

SIFT believes that this RO application, whilst not fully endorsed by all stakeholders, proposes the only workable solution to these calls for change. No other solution has been proposed which could balance the interests of all stakeholders.

Current fisheries management

Current marine management in the Clyde fisheries includes both spatial and technical measures. A number of these measures are for fisheries management purposes, others are nature conservation or wider marine planning designations.

The current spatial management restrictions on the Clyde have been implemented on a case-by-case basis. Where spatial restrictions have been implemented for fisheries management purposes there is generally insufficient monitoring and research to determine effectiveness.

For the Clyde *Nephrops* fleet, effort and technical restrictions are in place. These restrictions mainly affect the *Nephrops* trawl fleet. The *Nephrops* creel fleet is less restricted. Some technical measures for the king scallop fleet are extant, although no quota or overall effort restrictions are in place.

Current fisheries management does not adequately meet the needs of the fisheries or the wider Clyde ecosystem.

Regulating Orders

SIFT believes that a well-designed RO, incorporating local stakeholders, is the best instrument for managing the Clyde fishery.

A Regulating Order is a piece of legislation granted by Scottish Ministers under the Sea Fisheries (Shellfish) Act 1967. It aims to improve the management of shell-fisheries by granting rights to a 'Grantee' to regulate the fishery for one or more **named shellfish species in a designated area**. A RO does not cover finfish fisheries – at present no such legislation is available.

Why a RO is right for the Clyde

The Clyde fishery is currently a shellfish fishery, so the management needed to bring about change should fall under shellfish fishery legislation. Importantly, although a RO is for managing shellfish fisheries, if well designed it can also bring benefits to finfish fisheries.

A RO would also provide the following key benefits to static and mobile gear fisheries:

Local control

A Grantee which receives management powers under a RO can be a non-profit company made up of local stakeholders, so it can put local interests at the heart of its decisions. This should encourage the best stewardship of the fishery, and a wide representation of local stakeholders on the board should ensure that management decisions are made in the interests of local communities.

Flexibility

A RO allows the Grantee to open and close parts of the fishery and to set how much stock may be removed. It can act quickly in response to scientific and other advice; for example when favourable environmental conditions produce a stronger recruitment to the stock than anticipated. This gives greater flexibility than if management decisions are made by central government.

Sustainability

A RO ensures all fishing for the specified shellfish is carried out under a management plan. This can reduce the impact of the fishery on other parts of the ecosystem - whilst keeping the management of the designated shellfish species the priority.

The Clyde Regulating Order

The proposed RO would have the following features:

Area:

The RO would cover the full extent of the Firth of Clyde, as per the hatched area in Figure 3.

Species Included:

The RO would only cover prawns (*Nephrops norvegicus*), king scallop (*Pecten maximus*) and queen scallop (*Aequipecten opercularis*).

Duration:

The RO is initially sought for 10 years, with an expectation of renewal for a further 10 year period.

Enforcement:

Enforcement can be carried out either by the Grantee or Marine Scotland (Compliance).

Figure 3: Area covered by proposed Regulating Oder



Funding:

It is anticipated that three sources of funding will contribute to the RO's operation: philanthropic grants, governmental - especially EU - sources and from the fishing industry itself in the form of licences and levies. Crucially, costs to the fishing industry would be set at a low level until its health has recovered. It is anticipated that licence costs per vessel would be around £250 per annum.

Management Bodies

ROs are legal instruments that grant the right to a 'grantee' to manage a shellfish fishery in a given area for a specified duration. The grantee is entitled to issue licences, charge levies and enforce the fishery's rules. The grantee can be a private entity comprised of local stakeholders.

A key feature of the RO is that it will adopt a co-management approach to decision making. **The fishing industry will be strongly represented.** They will be supported by scientific and policy experts from academia and government, and representatives of other local community interests.

Clyde Shellfisheries Management Organisation

It is proposed that a newly formed not-for-profit company called The Clyde Shellfisheries Management Organisation (CSMO) would be the Grantee. **SIFT would not be the Grantee.** The CSMO will be responsible for management of the RO, including the issuing of licences, the setting of measures and monitoring. In order to ensure that it represents all stakeholders in the fishery and to reflect the fact that the fishery is a public asset the CSMO Board will consist of an independent Chairman and 12 stakeholder representatives. 50% will be fishermen (split between mobile gear and static gear sectors to reflect their equal right to operate) and the remainder will be from community groups, NGOs and government bodies. The CSMO will have a small executive team to deliver the Board's strategy.

Table 1 below sets out the proposed composition of the Board, and which stakeholder groups are represented.

Table 1 | Proposed Clyde Shellfisheries Management Organisation Board Composition

| SECTOR | BOARD REPRESENTATIONS |
|---------------------------------------|-----------------------|
| Independent Chair | 1 |
| Mobile gear fishermen | 3 |
| Static gear fishermen | 3 |
| Local Authority representatives | 2 |
| Clyde Scientific Trust representative | 1 |
| Environmental NGO representative | 1 |
| Marine Scotland: Policy, (Non-voting) | 1 |
| C2020 Steering Group representative | 1 |

Clyde Scientific Trust

The CSMO will be advised on scientific matters by a newly established scientific body; the Clyde Scientific Trust (CST). The CST, which will apply to be a Scottish Charitable Incorporated Organisation, aims to draw on the expertise of the marine science community to provide this advice. In so doing it would ensure that fishery management decisions are based upon the best science available and will also foster improved collaboration between the fishing industry and fisheries scientists.

The CST would undertake or oversee Clyde-specific scientific research on a wide range of issues and would employ an experienced fisheries scientist who would be guided by a board of senior fisheries scientists. With regard to the RO, the CST would inform the CSMO on:

- Identification of ecosystem baselines;
- Spatial management plans for the Firth of Clyde;
- Other management measures, if appropriate; and
- Monitoring of fisheries performance.

A key function of the CST would be to **foster collaboration between the fishing industry and fisheries scientists**, with the aim of increasing research into topics prioritised by the fishing industry.

Proposed Management Measures under the Regulating Order

The management measures proposed in the application only apply to the prawn and scallop fisheries - the species that underpin the existing Clyde fishery. No other fisheries would be managed by the RO, however, SIFT believes that by managing these fisheries sustainably, all other fisheries can benefit.

Management Measures would be the responsibility of the CSMO. However, in order to establish a shellfish management regime it is necessary that some core management measures are ‘hard wired’ into a **Strategic Management Plan** the key elements of which are set out in the RO application to Scottish Government and covers the first five years of operation of the CSMO.

Developing the Management Measures

The management measures proposed under the RO have been developed following consultation with stakeholders and with the assistance of an international range of fisheries management experts in academic institutions, and practitioners with experience of designing sustainable fisheries.

The measures are informed by a wide range of parameters including seabed substrates, slope morphology, and - crucially - recent fishing patterns (obtained from Vessel Monitoring Systems and ScotMap - a Marine Scotland project which provides spatial information on the fishing activity of Scottish registered commercial fishing vessels under 15m in overall length.).

The measures also take into account the Scottish Marine Protected Area network management proposals, relevant case studies, published scientific research and wider Scottish Government consultations.

Spatial Management

The key element of the Strategic Management Plan will be spatial management. Spatial management involves zoning different fishing activities by area. It already plays a key role in fishery management internationally, where it has enabled stock-recovery (by allowing seabed ecosystems to recover from the impact of heavy gear) and minimised interaction between gear types. Four types of Spatial Management Zone (SMZ) are proposed:

1. Creel & Dive Only
2. Trawl, Creel & Dive Only
3. Restoration
4. Multi-Use

The SMZ types and the rationale for designation of the SMZs are set out in Table 2 below.

The spatial management proposals are designed to:

- Ensure that the majority of the Firth’s existing shellfish grounds remain open;
- Create a balanced network of restoration areas that will enable spill over benefits around the Firth;
- Protect the most important complex seabed areas which will assist the recovery of shellfish and finfish; and
- Reduce incidences of gear conflict;

Table 2 | Types of Spatial Management Zones (SMZs) and Proposed Management

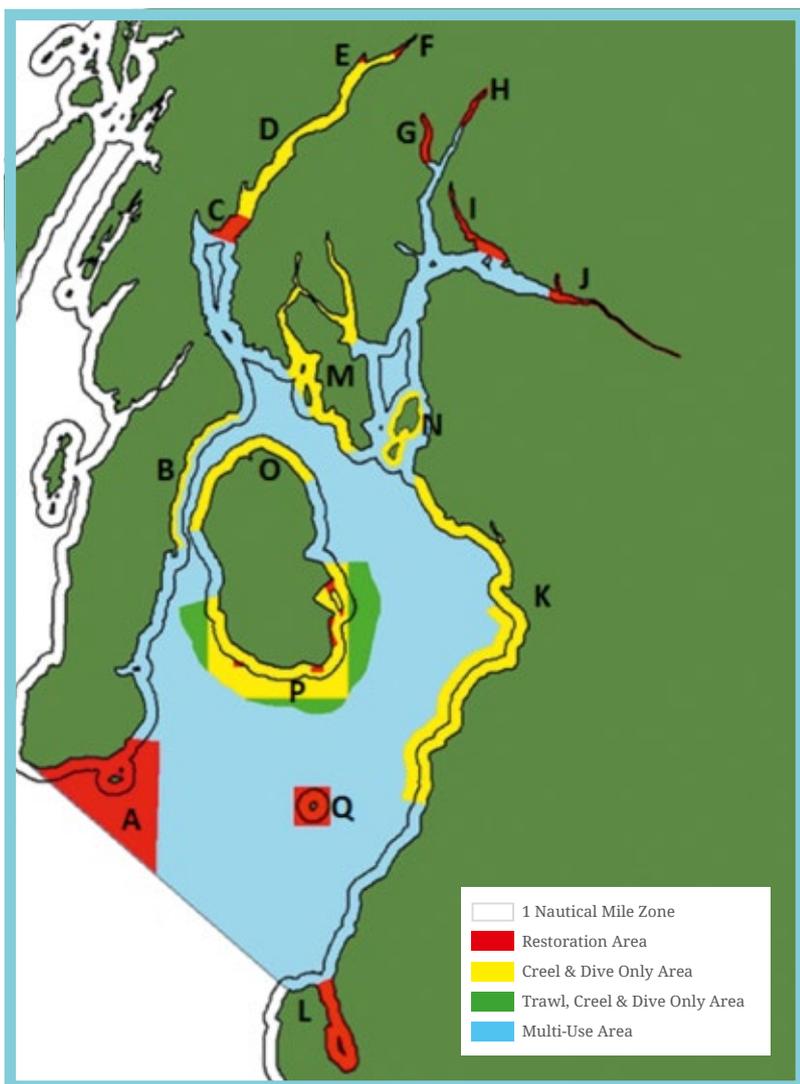
| SPATIAL MANAGEMENT ZONE TYPE | PROPOSED MANAGEMENT | | COVERAGE OF RO AREA (%) |
|------------------------------|--|---|-------------------------|
| | ALLOWED | PROHIBITED | |
| Creel and Dive Only | <ul style="list-style-type: none"> • Creeling for prawns • Hand diving for scallops • Other low impacts fishing practices | <ul style="list-style-type: none"> • Scallop dredging • Trawling for prawns | 17 |
| Trawl, Creel and Dive Only | <ul style="list-style-type: none"> • Trawling for prawns • Creeling for prawns • Hand diving for scallops | <ul style="list-style-type: none"> • Scallop dredging | 3 |
| Restoration Area | Closed to all commercial fishing gear and practices for prawns, king and queen scallops. | | 8 |
| Multi-Use Area | Open to all RO licence holders. | | 72 |

The network of Spatial Management Zones (SMZs) ensure that:

- 75%** of the Clyde remains open to prawn trawling;
- 72%** of the Clyde remains open to scallop dredging;
- 92%** of the Clyde remains open to static gear.

The spatial management proposal is based on the premise that the key requirement is to protect complex habitats in order to boost shellfish and finfish stocks, and to leave the more robust seabed areas (the muds and sands which are more capable of withstanding the impact of mobile gears) open to the existing fishery.

Figure 4 | Proposed Spatial Management Measures under the Clyde Regulating Order.



The SMZ network, although only covering 28% of the Clyde, protects:

- 62%** of the Clyde’s known complex substrates from scallop dredging;
- 61%** of the Clyde’s known complex substrates from prawn trawls;
- 33%** of known complex substrates from all fisheries regulated by the RO.

Figure 4 shows the proposed Spatial Management Zones indicated by letters A-Q and the identity of the 17 SMZs and their sizes and designations are set out in Table 3.

Table 3 | Identity of the 17 SMZs and their sizes and designations

| ZONE REF. | SMZ | SIZE (KM2) |
|-----------|---------------------|------------|
| A | Mull of Kintyre | 178 |
| B | Skipness | 23 |
| C | Otter Narrows | 12 |
| D | Upper Loch Fyne | 60 |
| E | Loch Shira | 1 |
| F | Cairndow | 2.3 |
| G | Loch Goil | 6 |
| H | Upper Loch Long | 4 |
| I | Gareloch | 15 |
| J | Upper Clyde Estuary | 9.4 |
| K | Ayrshire Coast | 192 |
| L | Loch Ryan | 39 |
| M | Kyles of Bute | 90 |
| N | The Cumbraes | 24 |
| O | North Arran | 50 |
| P | South Arran | 280 |
| Q | Alisa Craig | 30 |

| SMZ KEY |
|----------------------------|
| Creel and Dive Only |
| Trawl, Creel and Dive Only |
| Restoration Area |

Technical measures

In addition to the spatial management measures outlined above, the RO provides powers to implement a range of complementary technical measures. As a consequence of the impending introduction of the Landings Obligation under the Common Fisheries Policy, which is expected to mandate technical changes to the prawn fishery, the only technical measure to be proposed for prawns is a limit on creel numbers. The bulk of the proposed measures relate to the scallop fishery, including limits on the number of dredges used per side, phased increases in Minimum Landing Sizes, gear modifications and nocturnal curfews.

Strategic Management Plan

Prawn Creel

- Creel limits by vessel length

Scallop Dredge

- Minimum Landings Size (MLS) increase. Year 1 to 105mm, year 2 to 110mm
- Carriage restrictions to aid compliance with MLS
- A maximum of 6 standard (75cm) dredges per side
- Bar length restricted to that which can accommodate 6 standard (75cm) dredges per side
- French dredge prohibited
- Night-time curfew (daylight hours or 6am until 9pm)

Scallop Diving

- Increase MLS to 110mm
- Carriage restrictions to aid compliance with MLS
- Night-time curfew (daylight hours or 6am until 9pm)

Annual Management Plans

Proposals for measures under the Annual Management Plans (other than those proposed for the first year of operation) will not form part of the RO Application process; such decisions will be the responsibility of the CSMO as the RO Grantee. However the management measures which may be considered by the CSMO during the RO include:

- Further spatial management measures depending upon stock survey outcomes including
 - Rotational spatial closures;
 - Seasonal spatial closures.
- Vessel restrictions such as vessel length or engine size;
- Additional gear restrictions;
- Total Allowable Catch limits (scallops only as prawns are already under quota).

Licensing Arrangements

All commercial fishers who wish to fish in the area of the RO for the three species managed under the RO will need to hold a licence from the CSMO. In the event of oversubscription, licences will be allocated following a prioritisation process based on track record. Separate licences will be issued for each species covered by the RO; although an individual vessel may hold licences for all of the species licenced under the RO.

Allocation of licences will be undertaken by a Licensing Sub-Committee which will be comprised of non-fishing-interest members of the CSMO.

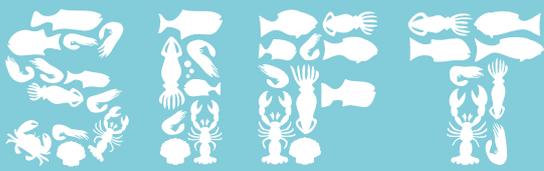
Process & timescale

The process of applying for a Regulating Order involves consideration by the Scottish Government, consultation with stakeholders and possible public inquiry and a determination by Ministers. This process can take over 1 year to complete. An overview of the stages involved are set out below.

- 1** The Regulating Order application has been submitted to Scottish Government which will now assess whether all information necessary has been provided and, if so, will carry out any preliminary consultations deemed appropriate with users of the seabed.
- 2** On the basis of an initial assessment of the merits of the application, and taking into account the comments from consultees, the Scottish Ministers will decide whether to prepare a draft Order for publication and consultation. If it is decided that the application should proceed, a draft Order will be prepared by the Scottish Government, following which a formal consultation period will commence.
- 3** Any objections and representations must be made in writing to Scottish Government within one month of publication of the draft Order. Following Ministerial consideration, Scottish Ministers may appoint an inspector to undertake an inquiry into the application for the Order. Twenty-eight days' notice of the holding of an inquiry will be given.
- 4** The Scottish Ministers will then review all the information available in relation to the application, taking full account of comments and objections made. They will also take account of the conclusions and recommendations of the inspector.
- 5** The Scottish Ministers will notify the applicant of their decision. If the application is to be refused, reasons for refusal will be given. If it is to be granted, either in the form applied for, or in an amended form, and whether with or without conditions, a copy of the Order will be laid before the Scottish Parliament.

References

- Heath, M.R. and D.C. Speirs (2011). Changes in species diversity and size composition in the Firth of Clyde demersal fish community (1927-2009). Proceedings of the Royal Society, B
- Howarth, L, M., Roberts, C, M., Hawkins, J, P., Steadman, D, J. & Beukers-Stewart, B, D. (2015). Effects of ecosystem protection on scallop populations within a community-led temperate marine reserve. *Mar Biol* (DOI 10.1007/s00227-015-2627-7)
- ICES 2014 Nephrops in Division VIa (ICES Advice 2014 Section 5.3.20). See (http://www.nwwac.org/fileupload/Opinions%20and%20Advice/Year%2010/Neph-VIa_WoS.pdf). (accessed 12th December 2014)
- ICES 2015 Nephrops in in Division Via (ICES Advice 2015 Section 5.3.26) See (<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/nep-13.pdf>) (accessed 1st November 2015)
- McIntyre, F, Fernandes, P.G and Turrell, W.R (2012) Clyde Ecosystem Review. *Scottish Marine and Freshwater Science*. 3: 1-119



Sustainable Inshore Fisheries Trust

The Sustainable Inshore Fisheries Trust (SIFT) is a Scottish charity that aims to promote the sustainable management of Scotland's inshore waters so they bring the maximum sustainable social and economic benefits to all of Scotland's coastal communities.

In line with numerous charities, SIFT receives its funding from philanthropic grants and donations from charitable foundations and grant givers. SIFT's report and accounts are publicly available through Companies House.

5 Rose Street Edinburgh EH2 2PR

www.sift-uk.org

Sustainable Inshore Fisheries Trust is a Registered Scottish Charity No. SC042334, Scottish Charitable Company Limited by Guarantee, Registered No. SC399582.

Cover Image Credit: Howard Wood