Shellfish Industry Development Strategy

National Shellfish Resource Group: The Concept, the Structure, the Pilot

June 2008

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EXECUTIVE SUMMARY

The '*English Shellfish Industry Development Strategy*', which considers what support is needed for the sustainable and profitable development of the sector, highlights the problems arising from the current limited resources available nationally for the provision of scientific advice to shellfish managers. This was not a revelation; section 9.5.1 of 'Net Benefits' notes that "*fisheries managers need a wider information base to achieve their objectives*" and this was supported in the UK Government response 'Securing the Benefits' in section 6.3. This need will be intensified when Sea Fisheries Committees are modernised under the provisions of the Marine Bill, and in fulfilment of the Defra Fisheries 2027 Vision.

An increased information base, whether from self-collection of data by the managers or from external sources, will greatly assist managers in investigating the distribution and structure of the local and regional stocks; the state of these stocks and their response to exploitation; the corresponding need or opportunity to manage the fisheries to ensure that harvesting is sustainable and in keeping with environmental obligations; and the most suitable or effective management measures for achieving this.

Ultimately, this knowledge will empower inshore shellfish managers[1] to ensure the sustainability & environmental suitability of existing and novel shellfisheries (meeting Defra's Vision 2027 "Stocks are plentiful and sustainably harvested" statement); to respond to marketing pressures for local seafood products from fisheries that are accredited (meeting Defra's Vision 2027 "Economic returns are optimised" statement); to underpin the necessary integration between management at the local, regional, national and European level (meeting Defra's Vision 2027 "Management is integrated and devolved to the most appropriate national, regional or local level" statement); to resolve disputes between local and high seas fishers, or between different sectors of the industry, with regard to access and management; and to provide independent information for Marine Spatial Planning.

The '*English Shellfish Industry Development Strategy*' proposes that consideration should be given to the formation of a National Shellfish Resource Group (NSRG) to 'coordinate existing technical and scientific expertise, develop appropriate national guidance on stock assessment and management, and establish best fisheries and environmental practice for shellfish production'. The Shellfish Industry Development Strategy (SIDS) received FIFG funding to scope out the feasibility, need and potential configuration of such a group. The scoping study confirmed both the need and merit of an NSRG through a detailed consultation of current shellfish managers and a thorough review of existing fishery advisory structures in use throughout the world.

We propose the group be established following the ICES advisory model: essentially, the NSRG will operate as a plenary body that receives requests from shellfish managers. The NSRG can either directly respond, or establish (or utilise an existing) NSRG working group to expertly explore the issue further. In the latter example, the working group will provide expert advice to the NSRG who will then respond to the original request appropriately. We propose a two-year pilot of the NSRG to assess efficiency and effectiveness and to refine the potential long-term establishment of the group. To ensure the full range of potential requests are covered in this pilot three working groups will be established covering stock assessments, environmental/ecosystem management and data collection/coordination and methodologies.

[1] If the pilot/full NSRG operates in England only, the 'inshore shellfish managers' will be the SFCs/IFCAs. The authors have keep this term loose to facilitate possible expansion of the scheme across the devolved administrations (see footnote 3).

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1. THE CONCEPT

1.1 BACKGROUND

The Prime Minister's Strategy Unit report '*Net Benefits: A sustainable & profitable future for UK fishing*' recognised the importance of the UK shellfish industry and the potential development opportunities therein. One of the recommendations specifically concerns the sector:

> Recommendation 6: Fisheries departments should focus on support for the development of the inshore/shellfish industry to take advantage of its large growth opportunities

In response, Defra's Inshore Fisheries Working Group recommended that a strategy for the development of the shellfish industry in England was needed to direct support for the sustainable and profitable development of this sector.

As a first step Defra and Seafish (supported by the Financial Instrument for Fisheries Guidance (FIFG)) commissioned Dr Colin Bannister to review the scale and activities of the current shellfish industry to identify any future development opportunities and to make recommendations on how this might be achieved. Many of the recommendations made in Dr Bannister's report, '*Towards a National Development Strategy for Shellfish in England*', have been explored further in the subsequent '*English Shellfish Industry Development Strategy*' which considers what support is needed for the sustainable and profitable development of the sector. The Strategy also built upon the Shellfish Association of Great Britain's (SAGB) '*Strategy for the Development of the Shellfish Industry*' (amended in 2004).

The Strategy lists a number of issues that affect the industry as a whole, as well as issues that are specific to each sector. In addition to the wide range of tasks for each sector, recurring overarching issues are the problems arising from the limited resources available nationally for collecting shellfish data; investigating shellfish stock structure and population dynamics; and developing management objectives, reference points, assessments, and management advice for all sectors of the production industry. Other gaps include the provision of advice on the impacts of fishing on the environment, and advice on the cultivation of shellfish. These problems impinge on achieving effective management and development, but are also likely to reduce the chance of achieving successful accreditation of shellfish fisheries by certification bodies, or the application of Strategic Environmental Assessments procedures, should they become necessary in the future. There is an urgent need to address these shortfalls. Accordingly, a key recommendation of the English Shellfish Industry Development Strategy was to "**Establish a national co-ordinating group on shellfish resource management**" (Para 6.1.1).

FIFG funding was received to carry out a scoping study to:

- To review existing advisory structures in the UK and beyond and, based on their structures and remits, develop appropriate terms of reference, remits, aims and objectives for the NSRG to enable it to carry out the functions listed below.

- To develop a Code of Practice for Members.

- To consider how the NSRG should interact with other relevant advisory bodies/fisheries forums that currently exist in the UK and to devise 'rules of engagement' for successful collaboration.

- To consider how the NSRG could specifically assist with implementation of the Shellfish Industry Development Strategy (SIDS).

- To propose the make-up of the NSRG in terms of required expertise to carry out the functions listed below.

- To develop detailed costings of a pilot of the NSRG including secretariat costs, travel expenses, member fees, venue hire and other necessary costs.

- To draft an application for EFF monies to establish pilot NSRG.

This report presents the results and outcomes of the scoping study and concludes that the National Shellfish Resource Group (NSRG) be established forthwith to ensure inshore shellfisheries are managed appropriately.

1.2 SPECIFIC NEED BY SHELLFISH MANAGERS

Shellfish Managers currently have a responsibility to manage the shellfisheries and other living marine resources within the area of their jurisdiction. After enactment of the Marine Act this will be a duty. To discharge these new responsibilities effectively, shellfish managers need access to appropriate scientific advice at both the local/regional level and at the national level. A detailed inventory of the perceived needs of inshore managers was solicited from them during a consultation, as described in detail in Annex 1, and key areas of knowledge and management activity requiring support are as follows:

Areas of knowledge

- The distribution and structure particularly of local and regional stocks;
- The state of these stocks and their response to exploitation;
- The most suitable or effective management measures to ensure that harvesting is sustainable, is in keeping with environmental obligations, and optimises the contribution to the local economy.

Activities

- Responding to marketing pressures for local seafood products from fisheries that are accredited;
- Implementing precautionary management for fisheries that are not well studied, and for fisheries that are developing or will be developed (e.g. under the Shellfish Industry Development Strategy); until sufficient data have been collected on which to formulate appropriate fisheries management measures;
- Underpinning the necessary integration between management at the local, regional, national and European level;
- Resolving disputes between local and visiting fishers, or between different sectors of the industry, with regard to access and management;
- Providing independent information for Marine Spatial Planning.

1.3 PURPOSE OF THE NSRG

In light of the above, the following purpose of the NSRG has been identified.

Strategically, the long-term purpose of NSRG is to enable English & Welsh inshore capture shellfisheries to reach the benchmarks for sustainable, economically viable fisheries with acceptable environmental impact in order to meet:

- The Defra Fisheries 2027 vision for sustainable fisheries and the environment
- The Wales Fisheries Strategy & Implementation Plan[2]
- The criteria for successful accreditation by global fisheries certification bodies
- Any future application of the Strategic Environmental Assessment process to the fisheries sector

Meeting this purpose requires the acquisition and provision of expert knowledge, data and advice under the following headings that correspond to the criteria and principles widely adopted in certification assessments:

- Fishery Aspects: the effects of shellfishing on shellfish resources;
- Ecosystem Aspects: the effects of shellfishing on the food chain, non-target species, and habitat;
- Management System Aspects: implementation of objectives, regulations, indicators, and compliance systems that achieve sustainable management of shellfisheries and their impact.

Tactically, to achieve these strategic goals, the NSRG requires a structure and process to harness or develop scientific/technical expertise on shellfish species and fisheries in order to advise inshore and, where necessary, national managers. Topics to be dealt with could include:

- Setting national standards for the acquisition and analysis of knowledge and data on shellfish catch and effort; shellfish biology, stock identity, and demographics; the effects of shellfishing and shellfishing gear on stocks and the environment.
- Developing analytical or empirical reference points, management objectives and plans, consistent with sustainable harvesting and acceptable impacts on the ecosystem.
- Assessing stock status and ecosystem impacts, relative to the above criteria, for shellfish stocks, non-target species, habitats, and food chains.
- Developing best practice advice for management of shellfisheries and their impact on the environment especially in relation to the conservation objectives of EU and proposed national marine sites
- Developing the management options, harvest rules, technical measures, and performance indicators required to fulfil plans & objectives for fisheries and their resource and conservation objectives.
- Identifying gaps in information, knowledge, & methods, and specifying work programmes that could be implemented to fill them.
- Evaluating the scope for achieving other objectives of SIDS.

It should be noted that the NSRG is intended to provide a service *in addition* to the responsibilities of the current set of key players. The NSRG is not intended (or should not be considered with a view) to replace, displace or supersede CEFAS, IFCAs or the proposed MMO shellfish functions.

Based on the foregoing, the **principal role** of the NSRG will be to advise inshore shellfisheries managers[3], taking into account the following priorities described by inshore managers in the study detailed in Annex 1:

- Coordination of data collection, work programmes, and assessments regionally and nationally
- Advice on best practice for survey methods/design, population analysis, and stock assessment

[2] Currently being developed by WAG
[3] The authors have not specified whether these managers will be English, English & Welsh, UK, UK plus Crown dependencies as this is a political issue. However, the model applies to any scenario.

- Advice on best practice methods for managing fisheries and sustainably maximising their productivity
- Specific advice on species, including the impact of gear on habitats
- Guidance on the requirements for accreditation, and related technical issues
- Framework for self-assessment/pre-assessment prior to entering an accreditation
- Guidance on reference points, management plans, spatial planning, appropriate assessments
- Dissemination of information
- Technical and skills training.

From a biological and management viewpoint, the NSRG must take into account the distribution of stocks relative to the areas of jurisdiction under EU, national, and regional/local managers. Where specifically requested or required, the NSRG could therefore also be a *potential* source of advice to national managers via the Defra Inshore Fisheries Group or Defra Policy Branches, and to EU managers via Regional Advisory Councils (RACs).

The strategic purpose and tactical objectives listed in this section are in effect the remit of the NSRG.

1.4 BENEFITS OF THE NSRG

Important benefits of establishing NSRG include:

- Developing a structure and process that rapidly provides inshore managers with the knowledge and advice required to propose effective local management measures for inshore shellfisheries,
- Improving the quality and efficiency of byelaw-making by working with and through the post Marine Bill Association of Inshore Fisheries and Conservation Authorities[4] (IFCAs) to ensure that byelaw proposals made to Defra by inshore managers represent best practice based on the best available knowledge, and should be uniform between districts,
- Assisting for inshore managers and shellfish scientists in identifying the management priories
- Ensuring the continuity required to develop long term management objectives, reference points, and harvest rules for capture shellfisheries consistent with best available knowledge,
- Utilising expert knowledge from a variety of sources, including Defra agencies, academic institutes, NGOs, consultants and stakeholders,
- Identifying knowledge gaps, and associated study objectives, that can be used to develop research projects and funding applications on shellfisheries.
- Facilitating the role of the Association of IFCAs as to improve communication and consistency between IFCAs on technical and scientific issues, and sharing knowledge/expertise for the procurement or lending of gear and equipment.

[4] The draft Marine Bill modernises inshore fisheries and environmental management arrangements in England and Wales. In England it replaces Sea Fisheries Committees with Inshore Fisheries and Conservation Authorities (IFCAs)

2. THE STRUCTURE

2.1 OVERVIEW

This section covers the 'nuts and bolts' of the NSRG and details how a group should be established and structured in order to meet the strategic and tactical purposes covered in section 1.3. Essentially, the NSRG will operate as a panel of experts that receives requests from shellfish managers. The NSRG can either directly respond, or establish (or utilise an existing) NSRG working group to expertly explore the issue further. In the latter example, the working group will provide expert advice to the NSRG who will then respond to the request appropriately.

2.2 THE PROPOSED MODEL

Despite existing provisions for the management of shellfisheries in England and Wales using national legislation and local byelaws, progress has been handicapped by the absence of a formal framework for routine ongoing assessment of stocks, and the provision of independent agreed advice, analogous to the frameworks described for ICES, Australia, and Ireland in Annex 2. Indeed, if a framework of this type existed for shellfish stocks, the development of a National Shellfish Resource Group would probably not be necessary. As it is, what is now required, based on best practice in ICES and Ireland, is a plenary body to provide advice to inshore managers and national managers based on best-practice science that the plenary body commissions from subordinate working groups of experts and stakeholders.

The proposed NSRG model is shown in Figure 1, to which the following key points apply.

- The NSRG (whose composition is described in Section 2.5.2) will meet regularly[5] to review requests for advice/information received from inshore shellfisheries manager(s), and to identify strategic issues
- Issues and requests will be assessed and prioritised by the NSRG
- The NSRG will establish and task NSRG Working Groups to address selected requests or areas of work. These Working Groups can consist of 1+ NSRG members and can co-opt or receive input from external experts and fishery stakeholders as required, as outlined in Section 2.5.2.
- Working Groups will report back to the NSRG for evaluation and endorsement of their work or the advice
- The NSRG will formally draft or channel advice to inshore shellfisheries manager(s) and to relevant policy makers, and disseminate it to stakeholders and the public as necessary
- Inshore shellfisheries manager(s) can act upon the advice as appropriate.
- There will a formal link between shellfish industry fora and the NSRG, and other links with stakeholders can be developed at the NSRG and Working Group level in the light of experience and need.

[5] To be determined by the NSRG; dependent on workload and work issues.

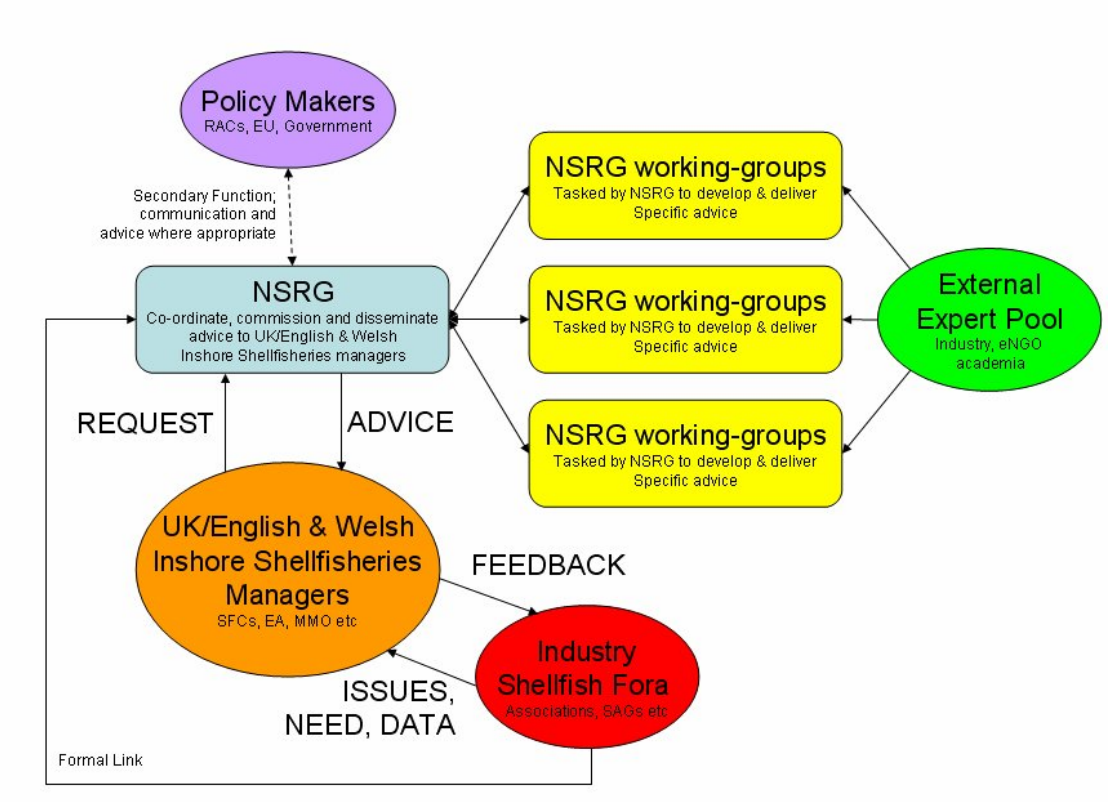

Figure 1: Diagrammatic representation of how the NSRG could operate

2.3 TERMS OF REFERENCE

The following Terms of Reference define the vision, objectives, scope and deliverables of the NSRG.

- Identify the priorities for advisory, scientific and methodological studies required to enable shellfish scientists and inshore managers to promote sustainable shellfisheries with acceptable impact on the ecosystem.
- Analyse, assess, and advise on the fishery status of shellfish stocks using information provided by managers, models, surveys etc.
- Analyse, assess and advise on the risks associated with the biological status of a fishery and current or proposed management strategies.
- Identify improvements and refinements to assessment methodology.
- Assist shellfish managers and decision-makers to develop, test, and refine sustainability reference points and performance indicators for the fishery. Advise on stock status and trends relative to these reference points and indicators.
- Evaluate alternative harvest strategies or effort settings. This may include providing advice on confidence limits or risk levels associated with particular management/harvest strategies.
- Identify and document fishery assessment and monitoring gaps, needs and priorities that could be incorporated into strategic research plans.
- Analyse, assess and advise on the effects of shellfisheries and their fishing methods on the ecosystem (habitat, food chain, non-target species)
- Provide advice and recommendations to shellfish managers on issues consistent with their functions (management of shellfisheries; strategic environmental assessments; appropriate assessments; and the pre-assessment of stocks being considered for accreditation)

- Facilitate peer review of assessment outputs.
- Maintain awareness of current issues by promoting close links with relevant bodies.
- Liaise with other researchers, experts and key industry members.

The strategic purpose and tactical objectives listed in section 1.3 are in effect the remit of the NSRG.

2.4 PRINCIPLES

Key principles that will be observed within the NSRG decision-making framework are:

- The NSRG is advisory rather than decision making.
- Members will provide expert advice that best pursues the NSRG objectives, independent of sectional or sectoral interests or biases
- Decisions will be made on the best advice (and information) available at the time.
- Scientific advice and reporting will be a transparent and open process.
- All advice presented by the NSRG will be given without bias and may be provided in the form of evidence-supported hypotheses or options. Where dissenting views on advice are held by members, this will be reflected in the written record.

2.5 FUNCTIONAL GUIDELINES

2.5.1 NSRG PROCESS

Initially it is proposed that as part of a Pilot Project described in Section 3, a prototype NSRG comprising the members listed in Section 2.5.2. will be established by an Enabling Group set up under the Pilot. It is proposed that the prototype NSRG will be approved by, and report to, the Defra Inshore Working Group, which should be the primary link with inshore shellfisheries and environmental managers. As described in Section 2.7, the Pilot Project will be tasked to negotiate for the provision of long term funding from Defra, at a level that is adequate for the prescribed functions and that secures the best available membership of NSRG.

As implied by the Terms of Reference, NSRG will be a standing body that meets regularly in order to:

- Review and prioritise requests for advice;
- Identify strategic issues;
- Prescribe, establish and task appropriate Working Groups, and solicit and approve their membership and work programme;
- Receive and review the Working Group reports;
- Agree and endorse, or draft, the appropriate advice; channel it to the relevant managers; and disseminate it to policy makers, stakeholders and the public as required or appropriate.

2.5.2 NSRG PARTICIPATION

The NSRG will function as an executive and an advisory board, with the following proposed membership (roles and responsibilities are discussed in section 2.6.1):

- Chair
- 3 IFCA Chief Fishery Officers (regionally represented)
- 5 shellfish scientists (representing molluscs, crustacea and wider benthic ecology)
- 3 executive members representing ‘decision-makers’ (Government, SCAs, executive agencies)

- Up to 2 independent members (consultant, academic, etc)
- Secretary
- Chair of working group(s)

This membership profile is chosen to provide a balanced spread of interest and experience between customers (the managers), experts (the scientists), policy advisors (government, and non-governmental agencies), and independent members but keeps numbers fairly small. Working group chairs will attend NSRG meetings when discussing/presenting their reports.

A Working Group will comprise:

- A chair expert in the field to be covered (who may or may not be on NSRG)
- One formal representative of NSRG
- Up to 3 scientific or technical experts in a relevant discipline (see below) which could include an expert from NSRG
- Relevant stakeholder representatives consulted or co-opted as required at the discretion of the Chair (likely IFCA officers).

The suitability and effectiveness of these membership profiles will be evaluated during the Pilot Project.

2.5.3 NSRG-SHELLFISH MANAGER INTERACTIONS

To ensure effective communication on management issues and to monitor progress, it is proposed that the NSRG and Inshore Shellfish Managers should meet jointly once a year. The Annual Shellfish Managers meeting could be an effective forum for this, with potential cost savings: one NSRG meeting could be scheduled for the same venue, and the Shellfish Managers meeting extended by, say half a day, to take in a joint session. An alternative could be the proposed national conference of IFCAs and those with whom they work. This would meet perhaps every 12 months or 18 months.

2.5.4 NSRG-GOVERNMENT INTERACTIONS

The NSRG must bear in mind that fisheries management is conducted within an over-arching international context established by the Common Fisheries Policy (CFP) and its implementing agreements. The CFP provides the international basis for fisheries management in the UK, and places on fishery managers certain obligations and responsibilities as well as rights. In addition, individual fisheries also are influenced by the decisions taken by the UK Government and devolved administrations. As a result there is a hierarchy of obligations on fisheries management, with international obligations taking precedence over domestic requirements.

As a matter of good practice, the NSRG and policy makers should meet formally once a year. Holding a joint meeting will enable close integration with national fisheries obligations and strategies (such as the Defra Fisheries 2027 vision for sustainable fisheries and the environment) and highlight the science needs of the sector directly to government. It may be possible to achieve this by scheduling one NSRG meeting in London, at around the same time as the annual meeting between Defra and the Association of Sea Fisheries Committees.

2.5.5 NSRG-SCIENTIST INTERACTIONS

As noted in section 1.3, the NSRG is not intended to replace the shellfish science provision by CEFAS (or FRS if extended across the UK). Rather it will strengthen the relationship between managers and scientists by providing a dedicated portal for interaction.

It is proposed that to facilitate and foster better communications between biological and technical officers working in shellfish management organisations, the NSRG workgroup members and

scientists and technical experts working in government agencies such as Cefas and FRS, Universities and the private sector, the NSRG will establish a central point of contact and dissemination.

This central communications function of the NSRG will likely take the form of a web-based resource maintained by the Secretary. In addition, outputs from the NSRG will be submitted to the trade press and general media for publication, and be widely circulated via email lists.

2.5.6 NSRG INTERACTIONS WITH OTHER BODIES

Stakeholders will be eligible to participate in NSRG and working group meetings either as an NSRG member, or by invitation as a co-opted member for specific issues. Direct links will also be established between the NSRG and the SAGB and NFFO. The link to the SAGB will be through representation by an appropriate NSRG member on the SAGB Crustacean, Mollusc, and Shellfish Development Committees. The link to NFFO will be through the Shellfish Committee. When needed, NSRG may also establish communication with other bodies such as Seafish, Natural England and other interest groups, as appropriate.

2.6 OPERATIONAL GUIDELINES

2.6.1 ROLES AND RESPONSIBILITIES

A stock assessment that engenders a strong management response may bring the NSRG into conflict with sectors of industry or attract political attention. Therefore, members of the NSRG must be credible, expert and impartial in undertaking their assessments.

As described above, the NSRG should comprise sufficient members with the expertise to carry out its functions. In addition to government scientific members, The NSRG should have external academic and/or applied industry membership to ensure that different perspectives and knowledge sources are recognised. It is preferable that the NSRG include a marine biologist/ecologist member.

Appointments to the NSRG must be formalised. Appointments to the NSRG will be expertise based, usually by selecting from open competition. The funding body will appoint members. The normal appointment period will be three years. Subsequent re-appointments will be permitted.

2.6.1.1 NSRG Chair

The NSRG Chair has a key role in ensuring thorough, effective discussion. The Chair is the primary communication link between the NSRG and the funder, reporting body and the relevant fishery managers, and accordingly must:

- Have good national standing in a field relevant to shellfisheries, whether as a scientists, administrator, or stakeholder;
- Be independent of commercial or other interests with the particular fishery;
- Have a demonstrated capacity to chair meetings, including a sound understanding of the meeting procedures and practices necessary for the efficient conduct of meetings;
- Be able to identify strategic goals and objectives, and facilitate their achievement through the NSRG process;
- Have a demonstrated capacity to communicate clearly and concisely to a wide cross-section;

The roles and responsibilities of the NSRG Chair include:

- Formal communication of NSRG meeting outcomes, recommendations and matters for information to the managers and decision-makers;

- Ensure NSRG members remain aware of and consider the NSRG objectives in the deliberations of the NSRG;
- Summarising outcomes for each agenda item during the course and at the end of a meeting;
- Ensuring that minutes and other material arising from the NSRG deliberations clearly and accurately describe NSRG recommendations, including dissenting views where they are expressed;

The chair of the NSRG will be offered to a figure of high standing with independence and objectivity. When a vacancy for the NSRG Chair arises, a shortlist of nominees considered to have relevant expertise and attributes may be drawn up and presented to the funding body for consideration.

2.6.1.2 NSRG Members

The role of NSRG members is to:

- Participate in general NSRG discussions;
- Contribute impartial expertise to NSRG deliberations;
- Provide advice to the NSRG on the latest scientific issues of relevance to the shellfisheries under discussion;
- Contribute fisheries management/ecological/shellfisheries expertise to NSRG deliberations;
- Contribute fisheries expertise to achieve the best resource assessment outcomes for the fishery;
- Advise the NSRG on environmental or conservation developments of relevance to the particular fishery;
- Advise on any implications that NSRG deliberations and recommendations may have in relation to shellfisheries management, environmental management, or the functioning of the shellfisheries and their markets.

Appointment of members will initially be done by the Enabling Group and in the long term by the funding body in consultation with the NSRG Chair. Appointments will be expertise based and will take into account the following criteria:

- Seniority and good standing in biological or fisheries science relevant to UK shellfisheries;
- Experience in liaison with shellfisheries research organisations at a high level;
- The absence of any direct or indirect interests in the particular fishery (i.e. members should not have, or be employed by an entity having or representing entities having, interests in UK shellfisheries)

2.6.1.3 Secretary

The role of the Secretary of the NSRG will be key to the efficient functioning of the group. As well as the administration of the meetings the Secretary will manage the internal and external communications of the NSRG. The following list details the likely responsibilities of the secretary though it should be noted that the pilot project will enable these to be refined further.

- Coordination of the NSRG and organisation of plenary meetings and working group meetings.
- Act as point of contact for inshore shellfishery managers and NSRG members
- Solicit requests for advice from shellfishery managers
- Direct requests for advice to appropriate NSRG members
- Dissemination of advice and support
- Produce final evaluation report

It is proposed that the Secretariat post could be linked to that of the re-structured Association of Inshore Fisheries and Conservation Authorities (AIFCA). However, it is proposed that Dr Tom Pickerell act as the Secretary of the NSRG for the duration of the pilot NSRG in his role as project manager of the Shellfish Industry Development Strategy (SIDS). This would negate the need to employ such a post in the pilot and will maintain links with SIDS following on from the original strategy recommendations and this scoping study.

2.6.2 MEETINGS

Proposed participants of NSRG and the Working Groups will face pressure from commitments to existing projects and meetings, so there is a need to minimise the effects of new meetings. Conceivably, Working Groups could function at least partly by email, but since the NSRG will be a clearing house for requests, coordination activities, and giving approved advice, it must work largely by physical meetings, at least at the very outset.

It is proposed that, dependent on the NSRG membership, a pattern of NSRG and Working Group meetings adjacent to existing meetings in the Defra, AIFCA, SAGB, and scientific calendars are devised (see section 3.3 in the Annex 1).

2.6.3 CONDUCT

NSRG Members should perform all duties associated with their positions diligently, impartially, conscientiously, in a civil manner and to the best of their ability. In the performance of their duties they should:

- Act in such a way, at NSRG meetings, in the field and at official functions that will be held in high regard by the community and by industry;
- Treat other NSRG Members and stakeholders with courtesy and sensitivity;
- Not take, or seek to take, improper advantage of official information gained in the course of their membership.

Whilst NSRG Members, as members of the community, have the right to make public comment and to enter into public debate on political issues, there are some circumstances in which public comment is inappropriate, in particular where there is an implication that the public comment, although made in a private capacity, is in some way an official comment of the NSRG. NSRG Members should avoid making private statements about matters relating to the NSRG unless it is made clear that they are speaking as a private citizen.

2.6.3.1 Conflict of Interest

NSRG members may, from time to time, face potential or direct conflicts of interest. Members should recognise the potential for conflict to occur and be aware that, in cases of direct conflict, the operations of the NSRG will be affected by an undisclosed conflict of interest. Accordingly, a commonsense approach should be taken and, if there is any doubt, a conflict of interest should be declared and recognised in the NSRG's discussions. The processes for declaring and dealing with a conflict of interest are as follows:

1. Where a member:
   - has a direct or indirect financial interest in a matter being considered, or about to be considered, by the NSRG;
   - the interest could conflict with the proper performance of the member's duties in relation to the consideration of the matter the member must, as soon as practicable after the relevant facts have come to the member's knowledge, advise the NSRG, at the meeting, of the nature of the interest. Such a disclosure must be recorded in the minutes/report of the meeting.

2. To ensure the smooth operation of the meeting, it is suggested that the NSRG deal with conflict of interest at the start of each meeting. Members will have papers and the agenda prior to the meeting and should be able to make a disclosure of a potential conflict of interest and its

nature at the start of the meeting. The NSRG should then decide the nature of the interest and what action should be taken.

If the NSRG decides that a direct conflict of interest exists, and that this conflict is likely to interfere with the NSRG's consideration of a particular issue or issues, the NSRG may:

- decide that the member who has disclosed his/her interest should participate in the discussions concerning the issue but not in formalising the decision (in such cases, the Member may be asked to retire from the meeting while the decision is made); or
- ask to hear the member's views on the issue and then ask him/her to retire from the meeting while it is discussed by the other members and a decision is formalised.

3. At the start of the meeting, the NSRG should also decide how each interest is to be recognised in the NSRG outcomes aside from recording it in the minutes/report of the meeting. For example, it may be appropriate to refer to an interest in documenting the discussion on some items. The Chair should then ensure that the minutes/report of the meeting reflect the NSRG's decision(s) in regard to the conflict of interest and that these are put into effect at the appropriate point(s) in the meeting.

2.6.3.2 Code of Practice for Members

NSRG members are expected to follow the principles set out in the Nolan Committee's First Report on Standards in Public Life. The "Seven Principles of Public Life" can be found in Annex 3. NSRG members should and at all times:

- observe the highest standards of propriety and impartiality:
    - selflessness - decisions should be made solely in the interests of sustainably developing the UK shellfish sector and not in order to gain financial or other benefits for members, their family or friends
    - integrity - NSRG members should not place themselves under any financial or other obligation to outside individuals or organisations that might influence them in the performance of their official duties.
- maximise value for money by ensuring that services are delivered in the most effective and economical way and within available resources.
- be accountable to appropriate scrutiny for the activities of the NSRG, and for their decisions and actions
- display as much openness as possible in all decisions and actions, giving reasons for decisions and restricting information only when absolutely necessary.

2.6.4 REPORTING ARRANGEMENTS

The NSRG will

1. Keep formal records of its proceedings and advice, and ensure the availability of appropriate reports and documentation. This may require the establishment of a web-site, or a link within an existing site such as the Seafish Information Network site.
2. Nominate appropriate members to represent NSRG at other meetings (e.g. Association of IFCAs, SAGB Committees), and on policy groups (e.g. Defra Inshore Working Group), as required.
3. Establish an approved pool of qualified external Scientific Experts and Stakeholders, nominated as willing to participate in or contribute to Working Groups. Experts in one or more of the following fields would be eligible:

    - Shellfisheries and shellfishing methods;
    - The collection and analysis of shellfish catch, effort, population and stock survey data

- The biology, stock identity, population structure and assessment of crustacean and molluscan species;
- Determination of analytical or empirical reference points, management objectives and plans, harvest rules, and the modelling and evaluation of management strategies;
- The effects of shellfishing and its methods on ecosystems and habitats; environmental impact assessments
- Coastal & estuarine studies, MPAs
- The management framework for local, regional and EU fisheries
- Identifying and drafting shellfisheries and environmental management advice;
- compliance issues
- Experience of the assessment of fisheries for accreditation
- Shellfish cultivation
- Water quality
- Climate change.

2.6.5 REMUNERATION AND TRAVELLING ALLOWANCES FOR MEMBERS

In the long-term members can expect to receive remuneration at the same rates as members of UK government committees and expert groups.

2.7 LONG-TERM RESOURCING

The pilot project will seek funding from the European Fisheries Fund (EFF) as it meets three of the funds goals:

- ensure the long-term future of fishing activities and the sustainable use of fishery resources;
- foster the protection of the environment and marine resources;
- encourage sustainable development and improve the quality of life in areas with an active fishing industry;

However, following the pilot project, *if* the group was deemed a success, there will be a need to secure long-term resourcing. Such resourcing will need to be put in place before the end of the pilot to ensure that the transition from pilot to established group does not encumber the provision of advice to shellfish managers. Accordingly, one of the roles of the pilot NSRG will be to explore the options for long-term resourcing for example from national or devolved administrations.

3. THE PILOT

3.1 STRUCTURE

3.1.1 AIM

The aim of the NSRG Pilot is to demonstrate and evaluate the utility of the NSRG model, as described in the current study, to provide inshore shellfish managers with timely scientific and technical advice.

3.1.2 DURATION

The NSRG Pilot will run for 24 months. This time-frame exceeds that identified in the initial FIFG application but allows sufficient time for at least a single 'issue' to be addressed by the group, for consequent action to be taken by the relevant manager and feedback on the outcomes of the counsel. This cycle of advice can then be evaluated to determine the efficiency and effectiveness of the NSRG.

3.1.3 ENABLING GROUP

The scoping study has examined the feasibility and practicalities of setting up an NSRG and the Shellfish Industry Development Strategy (SIDS) will seek funds through the European Fisheries Fund (EFF) for monies to fund and support the pilot.

Due to the timing of EFF and the need for members to be ready to join the NSRG on initiation of the pilot we propose the establishment of a small '*enabling group*' to operate for six months on receipt of EFF funds to establish the pilot NSRG, with an appropriate membership and meeting schedule. Such a group will enable the NSRG to 'hit the ground running' and begin working on issues rather than be forced to populate itself.

The group should comprise the following members/responsibilities:

Dr Tom Pickerell (SAGB) [link with SIDS and proposed Secretary of pilot NSRG]
Mr Tim Robbins (Devon SFC) [Inshore Shellfish Manager]
Dr Julian Addison (Cefas) [Shellfish Scientist]
Dr Sue Utting (Seafish) [Shellfish Industry Specialism]
Dr Rob Blyth-Skyrme (NE) [Marine environment Specialism]

3.1.4 STAFFING

As noted in section 2.6.1.3 it is proposed that Dr Tom Pickerell act as the Secretary of the NSRG for the duration of the pilot NSRG in his role as project manager of the Shellfish Industry Development Strategy (SIDS). This would negate the need to employ such a post in the pilot and will maintain links with SIDS following on from the original strategy recommendations and this scoping study.

3.1.5 PILOT GOALS

The Pilot should achieve the following:

1. Establish the NSRG as a working body
2. Refine the practicalities of organising the NSRG and Working Group meetings
3. Receive and review requests from inshore managers for three trial projects and their working groups:
    a. Pilot Working Group 1: Capture Shellfisheries Management project
    b. Pilot Working Group 2: Environmental/Ecosystem Management project
    c. Pilot Working Group 3: Data collection/coordination or Methods project
4. Disseminate existing best practice guidance and advice where it already exists in response to requests for assistance.
5. Solicit & appoint members for the pilot working groups.
6. Receive and review reports from the pilot working groups.
7. Review the success of the pilot NSRG and its projects, recommend any necessary changes, and prepare for the full time establishment of the NSRG Final report including recommendations for the future development of the NSRG.

3.2 COSTINGS

3.2.1 ENABLING GROUP

The Enabling Group will require the meetings and work days in table 1 to establish, monitor and review the pilot NSRG.

Function	Members	Costs - Days	Costs - other
1st plenary meeting to plan the pilot NSRG.	5	1	meeting room (1 day)
Home-based working to plan NSRG meetings, solicit members and secretariat, solicit topics from inshore managers for trial projects, liaise with potential NSRG chair over meeting plans and arrangements.	5	5	
Secretary travel to meet with potential members and canvass inshore managers	1		Travel
2nd plenary meeting to agree outcomes; appoint pilot NSRG members; draft NSRG meeting schedule; draft agenda and ToR for first NSRG meeting.	5	1	meeting room (1 day)

In summary, the enabling group cost can be estimated at:

- **Maximum people days of 35 @ £450 = £15,750**
- **2 medium meeting rooms @ £1000 = £ 2,000**
- **Postage & stationary £ 500**
- **Secretary travel £ 1,000**

Sub Total £19,250

3.2.2 PILOT NSRG

As recommended in section 2.5.2 the pilot NSRG will comprise 15 members:

- Chair
- 3 inshore shellfish managers representing each of the east, channel and west coast areas
- 5 scientific experts across the disciplines

- 3 executive members representing policy makers
- 2 independent members
- Secretary

Table 2 lists the meetings/activities the pilot NSRG will require to function efficiently and effectively. This table also calculates the costs in terms of 'people days'. These have been set at £450 a day for the pilot. This daily fee is pitched at a level to include any travel expenses incurred for the meetings, since travel expenses are hard to estimate in advance. However, as identified in section 2.6.5, NSRG members can expect to receive remuneration at the same rates as members of UK government committees and expert groups, in the full model.

Function	Members	Costs - Days	Costs - other
1st pilot NSRG plenary meeting to establish the NSRG, accept its To R, review priorities, select three Trial Projects from those solicited from inshore managers, plan the establishment of three Project Working Groups, and agree their T o R and report deadline.	15	1 day prep 1 day meeting	meeting room (1 day)
Home-based working for inter-sessional preparation / communication to establish pilot working groups (Chair, secretary & 5 scientists)	7	5 days	
2nd pilot NSRG plenary meeting (mid-project) to monitor progress of working groups; plan dissemination arrangements; identify longer term issues, priorities and constraints; establish list of scientific experts for future long term activities.	15	1 day prep 1 day meeting	meeting room (1 day)
3rd pilot NSRG plenary meeting (end of project) to receive and endorse reports from pilot working groups; prepare draft advice; review overall results of the Pilot Project; plan a Pilot NSRG report including any recommendations for changes in structure, function and processes; prepare scoping document for long term funding negotiations by Enabling Group. To undertake trial liaison with inshore managers and policy makers, this plenary should be adjacent to either a mid-year meeting of the Association of SFCs (IFCAs), or, the Annual Inshore Managers meeting, and have one half-day overlapping session.	15	1 day prep 1.5 day meeting	meeting room (1.5 day)
Home-based working for drafting and commenting on final Pilot Project Report.	15	3 days	

In addition to the above timetable there will be additional representational costs of 1 person representing NSRG on outside meetings including:

- 3 SAGB Committee meetings
- 1 NFFO Shellfish Committee meeting
- 2 Defra Inshore Fisheries Group meetings
- 1 Natural England meeting
- 3+ Seafish meeting (Common Language Group, Shellfish Advisory Group etc)
- 2+ meetings with policy makers

It is proposed that the pilot NSRG secretary attend these meetings to save on costs as the SIDS project manager regularly attends in a SIDS capacity.

In summary, the pilot NSRG plenary meeting cost can be estimated at:

- **Maximum people days of 177.5 @ £450 = £79,875**
- **2 medium meeting rooms @ £1000 = £ 2,000**
- **1 large meeting room @ £1500 = £ 1,500**
- **Postage & stationary £ 500**
- **Final report publication £ 750**

Sub Total £84,625

3.2.3 PILOT WORKING GROUPS

The structure and functions of the working groups are discussed in section 2.2. It is proposed that each pilot working group comprises:

- Expert chair
- One formal representative of NSRG
- Up to 3 scientific or technical experts/consultants
- Relevant stakeholder representative

It is proposed that each pilot working group will require the meetings/activities identified in table 3.

Function	Members	Costs - Days	Costs - other
1st working group plenary meeting to discuss and agree work objectives, methods, schedules, outputs.	6[6]	1 day prep 1 day meeting	meeting room (1 day)
Home-based working to undertake the work, draft sections of the report, and discuss progress by email	6	12 days (scientists) 3 days (others)	
2nd working group plenary meeting to discuss results and agree steps to final report	6	1 day prep 1 day meeting	meeting room (1 day)
2nd pilot NSRG plenary. Presentation of progress report by chair.	1	1 day	
Home-based working to undertake the final steps, draft sections of the report, and discuss progress by email	6	3 days	
3rd working group plenary meeting to discuss draft report, and agree steps to final report	6	1 day prep 1 day meeting	meeting room (1 day)
Home-based working to complete final report by email	6	3 days	
3rd pilot NSRG plenary. Presentation of final report by chair.	1	1 day	

In summary, the pilot working groups cost can be estimated at:

- **Maximum people days of 119 @ £450 = £53,550**
- **3 medium meeting rooms @ £1000 = £ 3,000**

Sub Total £56,550

Sub total for 3 working groups £169,650

3.2.4 TOTAL COSTS

Taking the above into account the estimated total cost of the two-year Pilot Project will be:

- **Enabling Group £19,250**
- **Pilot NSRG £84,625**
- **3 Pilot Working Groups £169,650**

Total £273,525

[6] We are estimating 2 stakeholders and 2 scientists per meeting

4. THE CONCLUSIONS

4.1 CONCLUDING REMARKS

Several key shellfish stocks, with economic values exceeding leading TAC finfish species, have limited management data and many shellfish stocks have little or no provision for assessment and monitoring to gather such data.

The present lack of national resources for shellfish stock assessments impacts on all sectors of the production industry. The static gear sector targets a wide range of species from whelks through a large number of crustacean and also highly mobile molluscs such as cuttlefish. The economic value of the main shellfisheries is highly significant in terms of the UK fish industry as a whole, yet in the majority of cases the information upon which stock management should be based is not gathered routinely because managers are restricted by lack of resources and/or expertise. Consequently, significant stocks have limited monitoring or control and this position is compounded by the wide-ranging distribution of some species, with stocks straddling fishery boundaries and national limits. The efforts and resources given to the management of finfish TAC stocks and species has become disproportionate in relation to their overall economic significance, with several shellfish species coming higher up in the statistics for UK landings and values. An example is the King scallop *Pecten maximus*, where the economic value of the resource exceeds virtually all individual finfish species landings, but scallop stocks have virtually no management and assessment data upon which to base fisheries controls. In addition, the mobile gear sector is unique in exploiting juvenile stock for relaying or cultivation purposes (e.g. mussel seed) but no national monitoring of such stocks within British Fishery limits is undertaken.

Given the scarcity of information on national shellfish stocks, scientific and technical resources should be allocated to establish the basic stock dynamics of the most economically important species, together with an estimation of stock levels throughout inshore waters. Sustainable exploitation levels need to be established for each species, and appropriate management programmes and controls put in place to help achieve these. The allocation of resources for such tasks will be finite and outcomes are unlikely to be achieved in the required timeframe using traditional assessment techniques. More simplistic and empirical methods are needed. Allied to this is the need for standardised catch and effort data. Such information could be generated by the inshore shellfish managers but a national system of co-ordination is required.

In addition to pure stock dynamics, inshore managers are increasingly being tasked with managing resources through an ecosystem based approach. Domestically, there are a number of drivers which relate to this approach, including Defra's 'Safeguarding our Seas' publication which stated Government's intention to put an ecosystem based approach at the heart of their marine policy. The follow-on report 'Charting Progress' also recommended the development and publication of indicators of ecosystem state. 'Securing the Benefits' provided the joint UK response to the Prime Minister's Strategy Unit 'Net Benefits' report on the future of the fishing industry in the UK. It highlights the importance of developing a more integrated approach to fisheries management and marine resource issues, within the wider context of the UK's Strategy on Sustainable Development. This Strategy sets out how the Government will work towards ecosystem-based management of natural resources. In addition, the UK Government has entered into a number of international commitments relating to ecosystem based management of the marine environment. The most relevant being the 'Bergen Declaration'.

With specific regard to fisheries management, Defra's 'Fisheries 2027 – a long-term vision for sustainable fisheries' notes "we also need to make sure that commercial and recreational

fisheries are managed in the context of all human activities in the marine environment, using an ecosystem-based approach (Para 7). The recent Draft Marine Bill notes that IFCAs must "seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation (clause 142 (2) (b)) and this will be achieved by the collection of "… such statistics as deemed necessary for carrying out their functions." (Para 3.98). This echoes the recommendations of the Review of Marine Fisheries and Environmental Enforcement (The Bradley Review) which noted "if the ecosystem approach is to be successfully adopted then resources will be required for monitoring and scientific research capabilities to provide data and information for evidence based management".

Inshore shellfish managers could undertake ecosystem-based management of shellfish resources in a co-ordinated way, if given dedicated technical support and guidance. In addition to expert advice on stock management issues, there is an increasing requirement for environmental considerations to be taken into account. This is clearly evident with the implementation of marine conservation zones covering areas of inshore waters. There is a requirement to ensure that all other areas are also subject to controls to prevent degradation from fishing activities. This indicates the need for techniques such as SEA to be encompassed. Drawing together a NSRG should be a cost effective solution for co-ordinating ecosystem-based fisheries management and an effective way of getting best practice ideas into the IFCA system.

4.2 HOW THE NSRG CAN ASSIST SIDS

The Shellfish Industry Development Strategy (SIDS) is aiming to sustainably develop the UK shellfish sector (both cultivated and wild-harvest). The primary development opportunity for the UK shellfish industry is to enhance its performance, and hence the economic value to the country as a whole. This can be achieved and viewed in a range of ways for the various UK species but the key principle to adopt is that of sustainability, in order to:

- Maintain economic viability long term;
- Alleviate concerns about harvesting in the context of statutory nature conservation designations;
- Give shellfish a positive image in a retail market that increasingly requires supplies from fisheries that are managed *sustainably* and are accredited.

This requires:

- managing the stocks effectively in order to maintain their favourable status;
- seeking appropriate accreditation;
- taking precautionary measures to ensure that developing fisheries do not overexploit stocks that are not currently assessed or managed, and for which there is little prior information;
- a commitment to achieving nature conservation management objectives.

This in turn requires:

- sound science and advice based on good data;

The NSRG can assist shellfish managers by giving them the tools necessary to achieve these data and/or the information itself. As noted in 'Net Benefits' (section 9.5.1) sound science will "*reconnect the fishing industry with the science base and develop a better sense of ownership and trust. This includes the need for better understanding of the limits of science by industry, and acceptance of the benefits of using a precautionary approach when information is poor*".

In addition to this overarching principle, the operational NSRG will fully or partly address 14 recommendations made in the '*English Shellfish Industry Development Strategy*' report which forms the workplan for SIDS:

Cross-Sectoral initiatives
Stock Assessment and Resource Management: National coordination of the district functions undertaken by inshore managers and fisheries agencies, by integrating existing shellfisheries and environmental management.
European Marine Sites: NSRG to give technical support for AA's.
Marine Spatial Planning: NSRG advice on needs of natural resources.

Hand Harvesting Sector
Sustainable Harvesting: Inshore managers & NSRG: codes of practice.

Static Gear Sector
Improved management control: NSRG advice on best measures for monitoring and controlling stocks, to be implemented via permit conditions.

Mobile Gear Sector
Environmental Assessment & Conservation Management: NSRG advice & protocols for SEA of mobile gear activities and ID of sensitive habitats.
Access to underutilised shellfish stocks: NSRG should ID low impact habitats, mobile gear, and revise the SEAs.
Access to shellfish seed stocks: Managers & NSRG to ID shellfish seed resources suitable for commercial use accessed through permits.
Market development & management: Managers, NSRG, industry to ID sustainable stock management measures to improve landing quality and volume.

Non Targeted production sector
Management of Fishery Bycatch Issues: Managers ID shellfish discard & by catch levels for all inshore fisheries, and NSRG & operators devise best practice management & technical measures to minimise these to make best use of resources.

Cultivation Sector
Developing cultivation sites: Advice from NSRG on site SEAs & best practice.
Access to wild seed resources: NSRG advice on best practice protocols for sustainable use of ephemeral seed resources, and to identify environmental issues. Access via permit conditions.
Improved management control and resource use: NSRG advice on best practice management measures for cultivation sites, & subject to SEA. Permit controls.
Market Assurance: NSRG guidance for a product assurance schemes.

Annex 1. IDENTIFYING THE SCIENTIFIC ADVICE NEEDS OF SHELLFISHERY MANAGERS

A consultation to inform the development of the National Shellfish Resource Group

Dr Andrew Woolmer
April 2008

Executive Summary

The 'English Shellfish Industry Development Strategy' (Lake & Utting, 2007) identified the pressing need for a co-ordinating group to facilitate the formulation and co-ordination of technical and scientific stock assessment and monitoring procedures for sustainable shellfish stock management in inshore waters. In order to address this need the Shellfish Industry Development Strategy (SIDS) is currently developing a National Shellfish Resource Group (NSRG) a central point of contact for all inshore (0-6 nm) shellfishery managers to access the best scientific and technical advice available in order to assist in achieving sustainable shellfisheries management.

A key requirement to enable the development of the NSRG is a process to enable the reception and acknowledgement of the scientific and technical advice requirements of these shellfish fishery managers. This information will ensure that the future development of the NSRG produces a structure that is fit for purpose delivering appropriate scientific and technical advice.

To this end a consultation of inshore shellfish managers was undertaken in order that the NSRG is developed to provide scientific and technical advice that they themselves have identified and that it is provided within a workable operational framework acceptable all parties.

All inshore fishery managers with statutory responsibilities for shellfish managers in England and Wales including the Channel Islands were approached for their views using a structured questionnaire and a series of follow-up telephone discussions.

Summary of advice needs of shellfishery managers and suggested roles of NSRG:

Key areas of scientific and technical advice needs identified by shellfishery managers:

- Advice on stock assessment techniques in existing and emerging fisheries
- Access to statistical expertise to facilitate survey design and data analysis
- Establishment of stock reference points and assistance in determining targets[7]
- Scientific development of appropriate management measures such as the production of models to investigate the biological, ecological and economic effects of different measures
- Advice on ecological effects of shell-fishing and the development of mitigation measures for adverse impacts
- Assistance with Appropriate Assessments and conservation management[8]
- Preparation for Marine Spatial Planning[9]
- Advice on accreditation schemes and development of self-assessment processes

Addition functions of the NSRG identified as desirable by shellfishery managers:

- Address the issue of shellfish permit data: promotion of accurate permit data recording
- Promotion of better understanding between fishery managers, nature conservation agencies and industry stakeholders
- Facilitate and enable the involvement of shellfishermen in the development of management plans and measures[10].

[7] SIDS is also carrying out a separate project on 'management proxies' for shellfisheries. It is hoped that the outcomes of this project be utilised by the NSRG and disseminated to managers.

[8] Sea Fish Industry Authority (Seafish) are currently developing advice and guidance on conservation legislation and progressing Appropriate Assessments for shellfish farm operators and harvest fishermen.

[9] SIDS is developing a 'marine use resource base' to assist in future MSP issues for shellfisheries.

[10] SIDS is working closely with MSC to provide guidance on development of management plans for inshore managers that lead to certification of fisheries under their jurisdiction, NSRG has a key role in assisting managers devise these plans.

CONTENTS

Acknowledgments
The author would like to thank all of the consultees that found time in their busy schedules to firstly respond to the initial questionnaire and then to engage in detailed discussions which added essential detail to the report.

1. INTRODUCTION

In order that existing and novel shellfisheries are developed in a sustainable manner it is vital that stock monitoring and assessment programmes are subject to scientific best practice and supported by the best possible technical and expert advice. At present Government funding into fisheries stock assessment is principally directed at 'quota-species' such as finfish and *Nephrops* to meet EU obligations. Consequently, funding of stock assessments of non-quota species, such as the vast majority of shellfish, is constrained and certainly do not reflect the full economic value, species diversity and specialist technical requirements of the shellfish sector.

In order to address this imbalance we can either advocate an assessment of current funding arrangements or promote and support 'self-assessment' of stocks by shellfish managers. The success of the former option is unlikely given the EU obligations therefore we must tackle the latter option. This requirement was highlighted in the ''English Shellfish Industry Development Strategy' (Lake & Utting, 2007) where the authors identified the urgent need for a co-ordinating group to facilitate the formulation and co-ordination of procedures for sustainable shellfish stock management in inshore waters.

This document forms part of a study aiming to assess the feasibility of establishing such a group, the National Shellfish Resource Group (NSRG), and to construct an operational framework acceptable by all existing inshore management bodies and fisheries agencies. This project sits under the "Giving managers the ability to manage shellfisheries appropriately" key workstream of the UK Shellfish Industry Development Strategy" (SIDS) and hence, is critical if we are to achieve the objectives of the Strategy.

A key requirement to enable the development of the NSRG is a process that enables the reception and acknowledgement of the scientific and technical advice requirements of inshore shellfish fishery managers. This information will ensure that the future development of the NSRG produces a structure that is fit for purpose delivering appropriate scientific and technical advice.
To this end a consultation of inshore shellfish managers was undertaken in order that the NSRG is developed appropriately to provide scientific and technical advice that they themselves have identified as a priority. The results of the consultation will provide guidance in the development of the NSRG operational framework which will be subject to review and revision taking in to consideration a wider stakeholder group including shellfish industry operators and representatives.

2. APPROACH AND METHODOLOGY

The extent of the consultation was limited to inshore managers and fishery agencies with responsibilities for shellfishery management in England and Wales and including the Channel Islands[11]. These were predominantly the Sea Fisheries Committees with the addition of the Environment Agency who act as a SFC in some areas.

Other stakeholder organisations who have a particular interest in shellfishery management and who expressed interest also provided input; these included the Nature Conservation Agencies and fishermen's representatives. A full list of consultees is presented in Table 1.

The consultation was centred on a structured questionnaire (Annex I) designed to extract key information on the specific scientific and technical advice required by the consultees. The form enabled the consultees to express their requirements and also provide as detailed a view on the development and structure of the NSRG as they wished.

The varied and often detailed responses were categorised for ease of collation and presentation. This approach allows numerical sorting of advice needs which will assist in the prioritisation of

[11] Inshore shellfisheries in Scotland are managed centrally by SEERAD and scientific support is provided by FRS

resources and influence the development of the NSRG. Consultation responses will be archived at SAGB.

Table 1. Categories of Consultees

Function	Organisation
Inshore fisheries managers	Cornwall SFC
	Cumbria SFC
	Devon SFC
	Eastern Joint SFC
	Kent and Essex SFC
	North Eastern SFC
	North Western and North Wales SFC
	Northumberland SFC
	Southern SFC
	South Wales SFC
	Sussex SFC
	Environment Agency (EA)[12]
	Department of Environment, Food and Rural Affairs (DEFRA)
	Guernsey Sea Fisheries
	Jersey Fisheries and Marine Resources
	Welsh Assembly Government (WAG)
Nature Conservation Agencies (NCA)	Countryside Council for Wales (CCW)
	Natural England (NE)
	Scottish Natural Heritage (SNH)
Industry Representative	Welsh Federation of Fishermen's Associations

3. RESULTS AND COMMENTS

3.1 Consultee Response

The consultation elicited responses from 18 organisations of the 20 approached. Many of the responses included detailed views and examples of advice needs. A number of these comments and examples have been included as examples in this report.

It was clear from the follow-up telephone discussions that the development of the NSRG was a welcome development and individuals were happy to participate in the consultation. Common comments made by consultees highlighted their urgent need for a wide variety of scientific advice reflecting the broadening scope of inshore shellfishery managers remit.

3.2 Determination of the type of scientific or technical advice

This section was structured around the question: *'1. What kind of scientific or technical advice do you require in order to achieve the following:' follow* by 5 specific subsections *1.1, 1.2, etc*.

The responses were varied and informative and although the initial objective was to simply categorise these into a limited number of categories the consultee felt it appropriate to include more specific detail in these tables.

[12] With the possible onset of the Marine Bill the EA will lose its management powers as an SFC

Stock assessment is a prerequisite for sustainable management of shellfish stocks. In order for the NSRG to provide adequate breadth in scope of advice consultees were asked to identify specific areas or issues on which they required scientific and technical advice.

1.1 Assessment of the distribution and structure of local and regional shellfish stocks

Advice Category **i.e. how to assess or how to achieve** (number of consultees highlighting need)	**Total requests**
Stock census/structure, e.g. • Distribution of stock during life stages **(1)** • Relative abundance/cohort strength **(1)** • Statistically advice on survey design/analysis **(3)** • Coordinated approach for regional/national fisheries **(4)** • Species specific advice on stock assessment **(3)** • General advice on survey methodologies **(3)**	**15**
Coordination of effort • Coordinated approach between Regional/National bodies – facilitation of joint agency working in assessments **(5)**	**5**
Wider ecological information pertaining to stocks • Essential Fisheries Habitats **(1)** • Distribution of stock and movements during life stages, particularly vulnerable phases (e.g. spawning aggregations) **(1)**	**2**
Access to 'Best Practice' methods and techniques • Review Best Practice methods across SFCs **(4)** • Information on new technologies such as acoustic methods (**1)** • Access to survey equipment 'pool' **(1)** • Access to library of literature and data **(1)**	**7**

The advice needs identified and requested by the shellfishery managers focus predominately on the fundamental information needs for effective fishery management. These centred on the assessment of stock structure such as the advice on assessing 'Relative Abundance/Cohort Strength'. The majority of consultees responding with advice needs in this section require advice or training on the principals of stock assessment and best practice.

Beyond this generic need for advice the need for specific advice on the assessment of particular species was highlighted by a number of the consultees. These consultees require a source of advice on a number of single species but all were new or emerging fisheries such as crustacean and cephalopod fisheries. In districts with established shellfish fisheries local managers have well developed assessment schemes although a number expressed the need for review and were open to more appropriate methodologies.

The most often cited request was for some national or regional coordination of effort in the assessment of wide ranging stocks such as the brown crab. Comments centred on the need not only for joint agency working but for coordinated analysis and reporting of results to enable a coordinated management approach to wide ranging regional shellfish stocks.

An issue needing clarification was raised by one of the consultees questioning whether it is currently within the remit of local managers to undertake stock assessment work outside of their districts when these tasks may fall under the responsibility of other agencies.

'.. Assuming 'Local' refers to geographic extent such as an SFC district and regional is regional sea areas (ICES sub divisions for Sussex this is VIID), ..it needs to be clarified whether in certain instances assessment of local/regional shellfish stocks are achievable or the remit of local

managers. For instance Sussex SFC could not or should not be expected to undertake a regional stock assessment on the scallop fishery given its remit in the VIID regional fishery, and the existence of CEFAS as DEFRA Exec Agency..' (with permission)

In order that shellfishery managers are able to monitor fisheries and their response to exploitation they need to be able to effectively gather real time information on both the stocks and fishing activity. To highlight specific issues and advice needs consultees were asked:

1.2 Assessment of the state of these stocks and their response to exploitation

Advice Category (How to Assess / Achieve.)	Total requests
Data Collection / Fishery Monitoring • The need for coordination of local/national data collection (permits and survey) **(4)** • Data analysis of local/national data programmes **(4)** • Methodologies / Best Practice **(6)** • Fishery statistics/analysis **(4)** • Species specific advice on assessment **(4)** • Determination of mortality from fishing effort (both retained and discarded) **(1)**	**25**
Other Management Issues • Establishment of surveys to be ongoing monthly/annual **(1)** • Estimate mortality from untargeted fishing activity e.g. scallop dredges on crab populations **(1)** • Development of management plans **(1)** • Development of industry data collection **(1)** • Establishment of stock reference points **(3)**	**7**

The majority of responses cited the need for better coordinated fishery monitoring data collection specifically high resolution data of landings and permit data. The response from Cumbria SFC was particularly detailed highlighting the need for a better coordinated and more accurate method of collecting crustacean fishery monitoring data:

'..previously we (the SFCs) administered our own local permit scheme which was, in our district at least, a pretty reliable source of information. The situation now where the national permit scheme is administered by the M&FA but the data coming out of it bears little relation to the real world. In the past if we thought a fisherman was submitting suspect data we would have a word with him and tell him to take the time to fill in his returns properly resulting in more accurate information being collected..' (with permission)

Further discussions with the consultee revealed the view that a nationally coordinated but locally administered scheme would provide a better level of accuracy and compliance.

There is an acknowledgement by the industry that better informed management can only come about with their involvement as highlighted by the WFFA response:

'..The industry is taking a proactive approach and irrespective of the future management structure for fisheries in Wales in the future, seeks to make a significant and more meaningful contribution to management through the advent of Species Advisory Groups, already starting to happen in some areas of Wales. In support of these initiatives, it will be of vital importance to have access to a range of guidance and information for the groups to utilise in support of management recommendations..'

Beyond the permit data collection issue the shellfishery managers highlighted the need for assistance in analysing this and other survey/assessment data.
What was clear from some of these responses is that SFCs are unsure of what targets they are aiming to achieve, for example SWSFC:

'*.. for all stocks we manage – state of whelks – scallops ? What targets do we aspire to? How near – far are we from delivering? All SFCs effectively manage in the "dark" to unspecified objectives. But we would need help to deliver..*'

This is a particularly candid response and this need for advice on target setting was echoed by other consultees identifying the need for advice on setting stock reference points may reflect the situation within many of the SFCs; they are expected to manage local and regional stocks but do not have a clear idea of what the targets are.

Shellfishery managers currently utilise a variety of management measures to manage their fisheries and in order to respond to new challenges require advice on the development of novel ones. Consultees were asked to identify specific areas where they required technical and scientific advice on appropriate management measures.

1.3 Identifying and implementing appropriate sustainable management measures

Advice/Assistance Category	Number
Best Practice in management measures • General advice on best practice **(4)** • Gear types and technical measures **(1)** • Forum to discuss/disseminate best practice **(1)** • Achieving long-term sustainability **(1)** • Achieving ecosystem management (protection of EFH) **(1)**	**8**
Scientific research to determine appropriate measures • The use of research/models to identify appropriate management measures to maximise fisheries productivity **(4)** • Advice on effects (biological and economic) **(1)** • Scientific advice on the fishery benefits of MPA's **(1)**	**6**
Species Management Plans and Spatial Management • Development on national/regional management plans **(1)** • Protection of essential habitats/nursery grounds **(1)**	**2**
Industry Involvement • Facilitation and development of industry liaison /management groups **(2)**	**2**
Enforcement Techniques/Approaches • Determine the resource requirements of measures **(2)**	**2**

General agreement between those SFCs requiring advice that they need to be made aware of Best Practice in management measures for specific species and that this needs to be science lead. The managers all identified a requirement for unspecified general advice such as being made aware of new developments and concepts. There were a number of issues that were highlighted such as technical measures for specific fisheries, e.g. the use of escape panels in lobster pots in areas where there is a velvet crab fishery. One consultee in discussion with the author thought that some type of web-based discussion forum could be established for this purpose.

The need for scientific research and evidence to develop and inform the choice of appropriate management measures was highlighted by shellfishery managers. An example of this type of work was cited as the CEFAS work on the berried hen proposals which modelled the effects of a variety of management options. This type of modelling work was also cited by managers for investigating the economic impacts of measures on the fishery.

Industry involvement in the development of management plans and measures was advocated by some consultees. The fact that many shellfishermen unilaterally implement their own management such as the return berried hens themselves and may have key insights and suggestions for the management of their target stocks was made by some managers, e.g.

'.. shellfish management is carried out between SFC officers, NGOs and government. Shellfishermen already manage their fisheries and have regard to environmental concerns. Rather than the industry being constantly told how to work would it not be better for the industry to lead the management discussion, this would allow greater input and would show the industry in a better and truer light..' (with permission)

Recent developments in environmental legislation have placed considerable burdens on inshore shellfishery managers. Outside of their statutory responsibilities there is a market led move to sourcing shellfish from environmentally responsible fisheries. In order to meet these statutory and economic drivers inshore shellfishery managers are likely to require scientific and technical advice and where therefore asked to identify them.

1.4 Achieving environmental statutory obligations and promoting industry best practice

Advice/Assistance Category	Number
Advice on effects of fishing and mitigation/alternatives • General advice on effects and mitigation **(3)** • Review and development of current techniques **(1)** • Specific advice on the impact of gear on habitats e.g scallop/oyster dredging, potting **(5)** • Best practice from other districts/case studies **(5)**	**14**
Legal Advice • Basic advice on legal definitions/interpretation of legislation **(2)** • Advice on national and European legislation **(2)** • Review of Case Law to determine legal obligations **(1)**	**5**
Environmental Management and Spatial Management • Mapping of activities and nationally important features (EFH and sensitive habitats) **(2)** • Promote regular inter agency meetings with NCAs to engender better understanding of issues **(2)** • Advice to support Appropriate Assessments **(2)** • Develop with NCAs Pro-forma approach to required data and permissions for activities **(1)** • Promote Recognition of expertise of fishery managers/shellfish operators in decision making process **(1)** • Technical advice on that can support development of regulatory framework to deliver ecosystem approach **(1)**	**8**

Shellfishery managers cite the need for advice on the impact of fishing methods on sensitive habitats also the need for information of alternative methods or mitigation information. Many cited fishing methods with particular importance to their districts such as scallop and oyster dredging but interestingly less obvious methods such as hand gathering and potting.

There was a broad need for advice and requests for help on aspects of environmental management such as advice on carrying out Appropriate Assessments and specific technical advice to deliver ecosystem management. Many of the consultees suggested that the NSRG could promote and facilitate better communication and understanding between nature conservation agencies, shellfishery managers and the industry operators.

In discussions with consultees it was apparent that there are instances of good practice in the disparate organisations which could be disseminated by the NSRG as this type of work was requested by many consultees.

As highlighted in the previous section there has been a recent trend in the market for sustainably produced shellfish and very often buyers, supermarkets and the general public preferentially select products from accredited fisheries. Inshore shellfish managers will likely require information and guidance on new developments in these accreditation schemes and were asked to specify these needs.

1.5 Accreditation of shellfish fisheries locally and regionally (MSC or equivalent)

Advice Category	Number
General Advice • Guidance on requirements of accreditation schemes **(5)** • Unspecified advice on accreditation **(1)** • Guidance of accreditation assessment units and processes **(1)** • Appropriate technical methods **(2)** • Advice on appropriate scientific/technical issues **(3)** • Funding sources **(1)**	**11**
Internal pre-assessment methods • Framework for self assessment/pre-assessment before attempting accreditation process **(4)**	**3**
Dissemination • Facilitation of dissemination of lessons learned and best practice from other accredited fisheries **(1)** • Engender recognition by NCAs for well managed shellfisheries **(1)** • Encourage industry groups to take the initiative **(2)**	**4**
Development of Shellfish Specific Accreditation Scheme/Initiatives • Possible development of national shellfish accreditation scheme **(1)** • Industry led scheme for shellfish management **(1)**	**2**

The overwhelming message from consultees was that shellfishery managers are in need of advice on a variety of aspects of accreditation schemes. This general advice covered technical advice on appropriate management and fishing methods and most often information on the requirements of the various accreditation schemes themselves.

Discussions with consultees highlighted the requirement for a framework to enable self assessment or pre-assessment of local and regional fisheries before a potentially costly formal assessment process is entered. This process may be assisted by the dissemination of best practice and lessons learned from already accredited fisheries as suggested by a number of managers.

The issue of funding and industry involvement was raised by a number of consultees. The perception among these was that accreditation should be an industry lead process and that external sources of funding should be sought to meet accreditation costs. Interestingly industry bodies in some regions are acknowledging the benefits of accreditation not only for the economic benefits derived from these fisheries but also from those provided by long-term sustainability of their fisheries. These industry groups are likely to need some support as they work in partnership with management bodies:

'..We are presently investigating the route for achieving MSC accreditation for selected, mainly crustacean fisheries in Wales. This will provide us with a blueprint for future management requirements as well as present scientific needs in support of this initiative. We will therefore require support from groups such as that suggested to underpin any studies identified within the accreditation process..' (J. Percy WFFA, with permission)

3.3 Identification of existing fora with shellfishery manager attendance.

In order to maximise efficiency in terms of staff time and resources it is hoped that the NSRG meetings and workshops take place in conjunction with existing regularly meeting fora. It is the intention that the NSRG structure does not duplicate existing advisory groups or fora. Consultees were asked to inform the consultation which existing fora they regularly attend.

3.1 Regular meetings of Sea Fishery Committee representatives

Chief Officer Group
ASFC meeting
National Liaison Meeting (EA,MFA,SFC)

3.2 Existing scientific advisory meetings/fora with SFC attendance

National Shellfish Managers Meeting (May/June)
Annual Science Meeting (CEFAS/SFC) (Sept/October TBC)
DEFRA Science Advisory Group (Both Sussex & NWNW Cos attend)
SAGB Crustacea and Mollusc Advisory Groups + Annual Conference

3.3 Inshore management and environmental groups that SFCs engage with:

RACS
Regional NGO Conservation groups (e.g. Dee Estuary Conservation Group, Tidal Dee Users Group)
MFA inshore meetings
Local Authority fora (e.g. South Downs Coastal Group, Pembrokeshire Coastal Forum)
Water Framework Directive fora
Aggregate/fisheries related fora (e.g. South Coast Liaison)
European Marine Site Management Groups
Inshore Fisheries Working Group (DEFRA)
Regional Fishery Fora (e.g. Eastern Region Liaison Group (with SFC, EA, M&FA)
SEA Pilot Fisheries Group

Although it was clear that inshore shellfishery managers attend a variety of fora there are relatively few that are regularly attended by representative of all organisations, these are the monthly SFC's Chief Officer Group and Association of SFCs meetings and the annual Shellfish

Managers Meeting. With the addition of the SAGB Molluscan and Shellfish working group meetings these are likely to be the most convenient fora to which to attach NSRG meetings.

4. DISCUSSION

The level of response and the multiparty support for the development of the National Shellfish Resource Group reflects the acknowledgement of the pressing need for such a group by shellfishery managers. The case for the development of a NSRG to provide scientific and technical advice was made by Lake & Utting in the ''English Shellfish Industry Development Strategy' (2007) and the results of the current consultation confirm their assertions.

The broad range of scientific and technical advice needs identified by shellfishery managers encompassed areas ranging from the generalities of stock assessment to specific advice on the management of single species in emerging fisheries. Although wide ranging, together many of these advice needs form the solid foundation of stock assessment; survey design, survey and assessment methodologies, data analyses. There is an urgent need to address this fundamental knowledge gap; without robust stock assessments managers are unable to set targets and manage shellfish stocks effectively.

It is possible that these fundamentals could be tackled by generic advice or training/workshops aimed at achieving a general level of understanding across all organisations. Many SFCs have developed expertise in assessment of their locally important shellfish stocks, this expertise may be a source of best practice that could be disseminated by the NSRG after a peer review process.

The need for specific advice on the stock assessment of particular species may require that individual requests are made to the NSRG. These are likely to be related to emerging fisheries such as the cephalopod fisheries on the south coast highlighted by Southern SFC which are targeting squid *Loigo forbesi* and cuttlefish *Sepia officinalis*. It is generally accepted that new fisheries should be managed sensitively both in terms of stock management but also accounting for wider ecological issues from the outset. In order that the NSRG is able to provide specific advice it will therefore require a broad range of expertise to be available to the group. This may be provided by recognised experts from government agencies, academia and the commercial sector.

A pertinent issue was raised during the consultation; the need for clarification of the role and remit of local managers in the stock assessment work; should local managers be assigning their often limited resources to undertake this type of work where CEFAS exists as a Defra Executive Agency and where this type of work may fall within its remit.

The consultation revealed that shellfishery managers require better and more accurate fishery monitoring data. Sea Fishery Committees which historically administered local shellfish permit schemes with a requirement for the fishermen to record details of their activities and landings indicated that the data arising from the current National Shellfish Licence returns are less than accurate or reliable. The need for review and evaluation of the current scheme was highlighted and it was suggested that the NSRG could facilitate this process[13]. Beyond data routinely collected shellfishery managers required specific advice and guidance on the collection of data on key species and specific management statistics such as fishing mortality from discards.

The establishment of targets such as stock reference points was emphasized as a key area which needed addressing. These targets are key for managers to monitor the fishery against and to work towards by implementing management measures in their toolkit. The NSRG may be a suitable vehicle to coordinate or promote the development of studies designed to establish vital stock management targets and reference points[14].

[13] SIDS is currently undertaking a parallel project on SFC permit schemes which will inform this issue through the NSRG
[14] SIDS has undertaken a study to develop readily determined 'proxies' to inform target setting and management measures

In order that shellfishery managers are able to implement appropriate management measures they identified the need for these to be based on robust scientific development. A number of examples were cited but probably the best example was the unpublished modelling work carried out by CEFAS in determining the biological and economical effects of a variety of lobster management measures. There was a common desire that management measures should aim to deliver long-term sustainability and achieve ecosystem management. This type of specialist work reflects the requirement that the NSRG have access to a wide range of experts from many disciplines and resources to access their assistance.

In long established fisheries many of the SFCs have already developed management methods in response to particular situations in their districts. As already touched upon, the NSRG may be act as a forum to disseminate these instances of best practice and provide solutions to managers from other districts.

The subject of industry involvement in the development of species management plans was raised by some of the consultees. There is industry support for this type of initiative in some regions e.g. the 'Species Advisory Groups' currently being advocated by the Welsh Federation of Fishermen's Association. These groups bring together fishermen with particular interest and knowledge of the fishery, for example the lobster fishery, with local fishery managers and conservation advisors with the aim of developing management plans acceptable to all parties. These groups also provide a conduit for the dissemination of best practice and scientific advice generated by the NSRG. It is possible that these groups through local managers could request or highlight the need for advice or guidance. There may be much to gain from this approach not least better communication and understanding between fishermen, fishery managers and conservation agencies.

Advice on ecological and conservation matters was a matter of priority for shellfishery managers. The most often cited type of advice was information on the effects of fishing methods on the seabed and specific habitats. Requests for advice of this type included information of examples of mitigation and alternative methods. These information needs are generally in response to the responsibilities of shellfishery managers managing fisheries within European Marine Sites. These responsibilities will almost certainly widen with the forthcoming Marine Bill and the designation of Marine Conservation Zones.

The responsibilities for shellfishery managers as competent authorities carrying out Appropriate Assessments of shellfish activities in designated sites lead to requests for procedural advice and supporting information. It was suggested by on consultee that the NSRG may be able to negotiate or develop a standard pro forma approach in partnership with the NCAs. This approach may streamline the process and reduce the time that industry and managers currently spend on this work.

Advice on environmental legislation was highlighted by many consultees. These requests ranged from basic advice on legal definitions and assistance with interpretation of legislation to a review of case law to determine shellfishery managers legal obligations. Although legal advice, and several other issues raised, are outside of the envisaged remit of the NSRG it is only appropriate that the needs are highlighted in the current report.

Wider ecological and environment management issues were also cited by shellfishery managers as areas where they required technical advice. An example of these is the need for regional and national programs to prepare for the development of Marine Spatial Planning. Suggestions for this type of work included mapping of shellfishery activities and essential supporting habitats to establish the spatial extent of the shellfish industry and to identify the location of supporting habitats requiring protection from development. Another suggestion was that the NSRG encourage or promote the development of a central GIS database of sensitive habitats and site feature to inform shellfishery managers.

Recent developments in the accreditation of fisheries and the inception of a number of eco-labelling schemes such as the Marine Stewardship Council and Seafish Responsible Fishing Scheme necessitate a need for detailed advice for shellfishery managers. The potential commercial and environmental benefits furnished by these initiatives are manifold and if the shellfish industry is to benefit from these the provision to shellfishery managers is vital. Outside the general guidance on accreditation schemes and their requirements shellfishery managers highlighted the need for guidance on self-assessment procedures. Accreditation can be a costly exercise and managers wish to establish that their fishery broadly meets the necessary criteria and avoid prematurely entering the formal accreditation process. Such self-assessment process would also enable shellfishery managers to assess their current management policies and measures to identify areas for improvement or review.

A number of consultees voiced the opinion that accreditation should be industry led, at least in the first instance, and should be approached in partnership. The question was mooted whether it was the responsibility of the shellfishery managers to drive the process at all. If applying for and developing the appropriate management plans to secure accreditation it may be the case that industry groups would be recipient of NSRG advice possibly though fora such as the 'Species Advisory Groups'.

The results and views received during the current consultation and study will now be used to inform the development of the National Shellfish Resource Group by the Shellfish Industry Development Strategy at the Shellfish Association of Great Britain.

4.1 Summary of advice needs of shellfishery managers and suggested roles of NSRG:

Key areas of scientific and technical advice needs identified by shellfishery managers:

- Advice on stock assessment techniques and best practice
- Advice on the assessment, management and monitoring of emerging fisheries
- Access to statistical expertise to facilitate survey design and data analysis
- Establishment of stock reference points and target setting
- Scientific development of appropriate management measures
- Advice on ecological effects of shell fishing and the development of mitigation measures
- Assistance with Appropriate Assessments and conservation management
- Preparation for Marine Spatial Planning
- Advice on accreditation schemes and development of self-assessment processes

Additional functions of the NSRG identified as desirable by shellfishery managers:

- Address the issue of shellfish permit data: promotion of accurate permit data recording
- Promotion of better understanding between fishery managers, nature conservation agencies and industry stakeholders
- Facilitate and enable the involvement of shellfishermen in the development of management plans and measures

National Shellfish Resource Group (NSRG) Questionnaire

To ensure that the NSRG is fit-for-purpose and fulfils the needs of shellfish fishery managers we need to determine precisely what kind of resource you require. This brief questionnaire will enable us to focus resources and develop an appropriate organisational structure that will provide you with the expert scientific and technical advice that you need to make the best management decisions.

The boxes will automatically expand to your text.

Your Name	
Your Organisation	
Main Shellfish Fisheries	

1) What kind of scientific or technical advice do you require in order to achieve the following:

1.1 Assessment of the distribution and structure of local and regional shellfish stocks *(e.g. study methodologies, assistance in coordinated approaches)*
1.2 Assessment of the state of these stocks and their response to exploitation *(e.g. data collection, assessment methodologies, establishment of stock reference points and subsequent monitoring)*
1.3 Identifying and implementing appropriate sustainable management measures *(e.g. advice on types of measures, their effects, and enforcement requirements)*
1.4 Achieving environmental statutory obligations and promoting industry best practice *(e.g. advice on habitats and ecosystems, impacts by fisheries, industry best practice, mitigation methods)*
1.5 Accreditation of shellfish fisheries locally and regionally (MSC or equivalent) *(e.g. advice on certification units, and on the likely questions and criteria for Principles 1, 2 & 3, industry best practice, fishing methods)*

2) The Sea Fisheries Committees in England and Wales have staff, committee members and independent experts with a variety of expertise and specialist skills. One of the aims of the NSRG is to be a forum for the cross-fertilization of these skills and knowledge. The first step towards this is the production of a register of experts to facilitate contact and dialog between experts and managers.

2.1 Expertise relevant to the NSRG that you have access to in your district *(e.g. staff, committee members or independent experts)*	
Name Job Title Affiliation	Scientific or technical expertise *(e.g. intertidal survey methods, crustacean biology)*
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Name Job Title Affiliation	Scientific or technical expertise *(e.g. intertidal survey methods, crustacean biology)*

3) It is our intention that the NSRG structure does not duplicate existing advisory groups or fora. It may be efficient in terms of staff time and resources that the NSRG meetings and workshops take place in conjunction with existing regularly meeting fora.

3.1 Regular meetings of Sea Fishery Committee representatives *(e.g. Chief Officer Group)*
3.2 Existing scientific advisory meetings/fora with SFC attendance *(e.g. Shellfish Managers Meeting)*
3.3 Inshore management and environmental groups that SFCs engage with *(e.g. RACs)*

4) Central to the advice provided by the NSRG could be information received from stakeholders such as shellfishermen and producers. We would like to begin this engagement process by consulting informed stakeholders from all districts on the draft structure and aims of the NSRG. We would be grateful if you could suggest people you think would be useful in providing feedback on proposed structures etc.

4.1 Expertise relevant to the NSRG that you have access to in your district *(e.g. staff, committee members or independent experts)*	
Name Profession / Expertise	Main Shellfishery or product *(e.g. lobster & crab fishery, shellfish processor)*
Name Profession / Expertise	Main Shellfishery or product *(e.g. lobster & crab fishery, shellfish processor)*
Name Profession / Expertise	Main Shellfishery or product *(e.g. lobster & crab fishery, shellfish processor)*
Name Profession / Expertise	Main Shellfishery or product *(e.g. lobster & crab fishery, shellfish processor)*

5) We would appreciate any further comments and suggestions that would help direct the development of the NSRG. The next stage of this project aims to develop a draft structure and outline the terms of reference, remit and aims of the group.

Annex 2. REVIEW OF EXISTING ADVISORY STRUCTURES

This annex provides a background to the proposed NSRG by summarising the assessment and advisory processes operated internationally by ICES (International Council for the Exploration of the Sea), and nationally in Australia and in Ireland.

The ICES system

In the North east Atlantic, the International Council for the Exploration of the Sea (ICES) organises international scientific research and assessments that are used to provide formal advice on the status and management of fisheries and of the environment. ICES is an international scientific organisation funded by national governments, and based in Copenhagen, Denmark. It operates under the ICES convention, using agreed structures, processes and house rules that are approved by national delegates.

Fisheries and environmental advice are based on the detailed work of individual stock assessment working groups, environmental working groups, and study groups, some of which are perpetual, and others of only limited duration. Working groups are attended by nominated national scientific experts. Most fisheries assessment working groups meet annually or biennially to collate data, assess the status of fish stocks using standard methods, and to forecast the likely effect of different management tools and options on future stock status. Other working groups and study groups are tasked with developing new paradigms, and new analytical or simulation methods. Working Group reports are reviewed and evaluated by the ICES Advisory Committees, which make short- and long-term management recommendations based on comparing how effectively different management options are likely to achieve stated fisheries management objectives linked to agreed reference points.

This is a formal system, with national representation by experts on the Advisory Committees, which meet annually to produce scientific recommendations that are used by national and international managers. Within the EU, managers and stakeholders evaluate the advice at a higher level at Regional Advisory Councils, and EU scientists evaluate the advice at the Scientific and Technical Committee for Fisheries. Inputs from ICES, the RACs, and STCF are used by the European Commission to make proposals that are negotiated and agreed by the Council of Ministers.

Traditionally, most of the assessment working groups in ICES deal with fish stocks and fisheries in international waters, and the only ICES assessment working groups on capture shellfish are those for *Nephrops norvegicus*, the Northern shrimp, *Pandalus borealis*, and, more recently, crabs (covering all the species). Most of the shellfish stocks fished nationally or regionally around the UK are therefore outside the current framework of ICES advice, hence the need for a body such as the NSRG.

The Australian Fisheries Management Authority (AFMA)

In Australia, the Australian Fisheries Management Authority (AFMA) draws its advice on fisheries management from Management Advisory Committees (MACs), based on research carried out by MAC Research Sub Committees, and on assessments carried out by Resource Assessment Groups (RAGs). The MAC is analogous to the ICES

Advisory Committee level, and the RAGs and the Research Sub Committees are analogous to the individual ICES working groups.

The Management Framework for Shellfisheries in Ireland

The following summary of the framework for obtaining advice on the management of shellfisheries in Ireland is based on information outlined in 2005 in the BIM (Irish Sea Fisheries Board) report 'Managing Ireland's Inshore Fisheries'. The system is species based, and involves a partnership approach between the state and the fishing industry. It is preferred that actions are implemented by voluntary codes rather than by enforced legislation. It is accepted that geographic scales for management can be local, regional or national. There are specific rules of engagement for each partner, and the whole system operates under the CFP.

Four Species Advisory Groups (SAGs) for crab, lobster, shrimp, and molluscs prepare local species fisheries management plans, based on scientific and stakeholder deliberations that include discussion of proposals made by industry-led Local Advisory Committees (LACs).LACs comprise relevant local fisheries representatives, and are facilitated by BIM in order to provide input to the SAGs.

Each SAG works under national guidelines for shellfish and is serviced by BIM who provide the chair and secretariat. An SAG comprises fishers, science and environment experts from the Marine Institute, national parks and wildlife interests, and Department of the Marine representatives for Seafood Policy, Sea Fisheries Administration, and Sea Fisheries Control.

SAGs submit local or national management plans to an Inshore Fisheries Review Group (IFRG). This comprises the secretaries of each SAG, the Department of the Marine reps on Seafood Policy, Control, and Administration, a member from BIM and from the Marine Institute) and plans or proposals that are approved are passed up for approval and legislation by the Minister.

To a degree the SAGs are part scientific working group, and part Advisory Committee.

In terms of local representation, LACs are somewhat analogous to an England & Wales Sea Fisheries Committee, but they do not have the powers to propose and enforce local byelaws. The IFRG is somewhere between an ICES Advisory Committee and an EU RAC.

Conclusion

Although there are provisions for the management of shellfisheries in England and Wales using national legislation or local byelaws, progress has been handicapped by the absence of a formal framework for routine ongoing scientific assessment of stocks, and the provision of independent agreed advice, analogous to the frameworks described above for ICES, Australia, and Ireland. Had a framework of this type existed for shellfish stocks, the development of a National Shellfish Resource Group would probably not be necessary. As it is, this annex suggests that what is required is a plenary body to provide advice to inshore managers and national managers, based on best-practice science commissioned from subordinate working groups of experts and stakeholders. The working groups should be set up on a time-limited basis to examine and develop specific issues (data collection, survey and assessment methods, species biology, assessments and management advice).

Annex 3. THE SEVEN PRINCIPLES OF PUBLIC LIFE

The Committee on Standards in Public Life has set out **'Seven Principles of Public Life'** which it believes should apply to all in the public service. These are:

Selflessness
Holders of public office should act solely in terms of the public interest. They should not do so in order to gain financial or other benefits for themselves, their family or their friends.

Integrity
Holders of public office should not place themselves under any financial or other obligation to outside individuals or organisations that might seek to influence them in the performance of their official duties.

Objectivity
In carrying out public business, including making public appointments, awarding contracts, or recommending individuals for rewards and benefits, holders of public office should make choices on merit.

Accountability
Holders of public office are accountable for their decisions and actions to the public and must submit themselves to whatever scrutiny is appropriate to their office.

Openness
Holders of public office should be as open as possible about all the decisions and actions that they take. They should give reasons for their decisions and restrict information only when the wider public interest clearly demands.

Honesty
Holders of public office have a duty to declare any private interests relating to their public duties and to take steps to resolve any conflicts arising in a way that protects the public interest.

Leadership
Holders of public office should promote and support these principles by leadership and example.

The Shellfish Industry Development Strategy (SIDS) is a UK industry-led project that aims to develop the UK wild-caught and cultivated shellfish industries in a manner that fully recognises the need for environmental and social sustainability as well as commercial development. SIDS was originally initiated by the UK Government when the Prime Minister's Strategy Unit was tasked by Tony Blair to address the problems faced by the UK fishing industry.

The subsequent Strategy Unit report *Net Benefits* recognised the importance of our shellfish industry and specifically stated that Government *should focus on support for the development of the inshore/shellfish industry to take advantage of its large growth opportunities.* Accordingly the Department for Environment, Food & Rural Affairs (Defra) recommended that a strategy for the development of the shellfish industry was essential.

In March 2007 high level discussions between Seafish (the UK seafood trade authority) and the Shellfish Association of Great Britain (SAGB) (the national body representing British shellfisheries) resulted in Seafish providing the funding for SAGB to facilitate SIDS.

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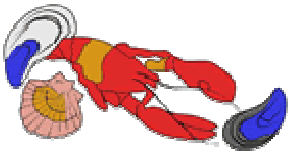

SEAFISH