



MOODY MARINE LTD
March 2010

Ref: 82124

Assessor: Dr Andrew Hough

Pre Assessment Report for
Wash Shellfish Fisheries (Cockle and Mussel)

Pre-Assessment Report for: *Wash Shellfish Fisheries (Cockle and Mussel)*

Carried out by: Moody Marine Limited
Merlin House
Stanier Way
Wyvern Business Park
Derby
United Kingdom
DE21 6BF

Team Leader: Dr Andrew Hough

Team Members: Dr Rob Blyth-Skyrme

Client Address: Natural England
Ceres House
2 Searby Rd
Lincoln, LN2 4DT

Contact for pre-assessment: Charlotte Bentley
Marine Adviser, Fisheries
East Midlands Region

CONTENTS

CONTENTS.....	3
1. INTRODUCTION	4
1.1 SCOPE OF PRE-ASSESSMENT	4
1.2 PRE-ASSESSMENT AIMS	6
2 INFORMATION SOURCES USED.....	7
2.1 MEETINGS.....	7
2.2 OTHER INFORMATION.....	7
3 BACKGROUND TO THE FISHERY	8
3.1 BIOLOGY OF THE SPECIES – COCKLE	8
3.2 BIOLOGY OF THE SPECIES – MUSSEL	8
4 HISTORY, LOCATION AND SCALE OF FISHERY	9
4.1 HISTORICAL BACKGROUND AND LOCATION AND SCALE OF ACTIVITY	9
5 FISHERY MANAGEMENT.....	9
5.1 MANAGEMENT BODIES	9
5.2 FISHERIES REGULATIONS.....	10
5.3 ENFORCEMENT AND SURVEILLANCE.....	10
6 EXTERNAL INFLUENCES.....	11
7 MAIN COMMERCIAL MARKET	11
8 OTHER ELIGIBLE FISHERS.....	11
10 KEY MSC STAKEHOLDERS	11
11 ONGOING CHAIN OF CUSTODY CONSIDERATIONS AND LIMIT OF FISHERY CERTIFICATION.....	12
12 PRELIMINARY EVALUATION AGAINST MSC PRINCIPLES & CRITERIA.....	12
13 PROBLEMS AND OBSTACLES TO MSC CERTIFICATION	28
14 RECOMMENDATIONS AND UNIT(S) OF CERTIFICATION	29

1. INTRODUCTION

This report sets out the results of a pre-assessment of the Wash Shellfish Fisheries (Cockles and Mussels) in relation to the Marine Stewardship Councils (MSC) Principles and Criteria for Sustainable Fishing (the 'MSC standard'). It must be stressed that this report can provide guidance only, and the outcome of a main assessment will be the subject of deliberation by an assessment team and may not be influenced by this pre-assessment.

1.1 Scope of pre-assessment

The MSC Guidelines to Certifiers specifies that the unit of certification is "The fishery or fish stock (=biologically distinct unit) combined with the fishing method/gear and practice (=vessel(s) pursuing the fish of that stock)."

The definition of the fisheries under pre-assessment is therefore as follows:

Species:	Cockle (<i>Cerastoderma edule</i>)
Geographical Area:	The Wash (within Wash Fishery Order bounds)
Method of Capture:	Hand Raked (Fishery 1) Suction Dredged (Fishery 2)
Management System:	ESFJC
Client Group:	n/a

Species:	Mussel (<i>Mytilus</i>)
Geographical Area:	The Wash (within Wash Fishery Order bounds)
Method of Capture:	Hand Raked (Fishery 3) Dredged (Fishery 4)
Management System:	ESFJC
Client Group:	n/a

There are therefore 4 separate 'Units of Certification' considered in this pre-assessment.

One of these (Fishery 4) involves the introduction of mussel spat from within or outside the Wash onto designated 'lays'. Mussels then grow in location until they reach harvestable size. They are then harvested using a mussel dredge.

MSC Policy Advisory 10 (MSC 2009) provides the most up-to-date guidance on assessing if enhanced fisheries are in or out of scope for MSC certification. That document requires that the scope criteria are explicitly discussed and examined at the pre-assessment stage in order to determine the suitability of any enhanced fishery for MSC certification. It also requires that a statement on an enhanced fishery's position in relation to the scope criteria be included in the assessment report.

There are three key areas of importance in regard of enhanced fisheries. These are replicated from the MSC's Policy Advisory 10, and then discussed, below.

A. Linkages to and maintenance of a wild stock

From the MSC Policy Advisory 10

Given the MSC focus on the sustainability of global wild fish stocks, the concept of 'wildness' plays a central role in scoping enhanced fisheries. The fishery must incorporate some element of harvest of a wild population, and must be managed so that the natural productivity and genetic biodiversity of that population is not undermined with respect to any impacts on long term sustainability.

Scope criteria

- A1. At some point in the production process, the system relies upon the capture of fish from the wild environment. Such fish may be taken at any stage of the life cycle including eggs, larvae, juveniles or adults.*
- A2. The species are native to the geographic region of the fishery and the natural production areas from which the fishery's catch originates.*
- A3. There are natural reproductive components of the stock from which the fishery's catch originates that maintain themselves without having to be restocked every year.*
- A4. Where fish stocking is used (in HAC), such stocking does not form a major part of a current rebuilding plan for depleted stocks.*

The mussel fishery relies on the capture of wild spat, either transferred from within the Wash, or introduced from other areas, most notably the adjacent Lincolnshire Coast. Mussel spat from elsewhere are taken from areas managed by local SFC's and from areas where loss of mussels is likely to occur before they reach a harvestable size (i.e. spat growing in areas exposed to storm action etc). All mussel are therefore derived from 'natural' populations.

Also from the MSC Policy Advisory 10

- 1. Enhancement activities shall be assessed against their impacts on the natural reproductive component of the associated wild stock. This mirrors the treatment of salmon in existing MSC fishery assessments.*
- 2. The extent of translocation shall be assessed against both the effect on the natural genetic characteristics of the stock and the environmental impacts of translocation.*

The mussel cultivation operation is based upon wild stocks from a defined areas within the UK. These seed mussel sources are not expected to be genetically isolated from one another or from the wild stocks found in The Wash. The risk of adverse effects on the genetics of the natural mussel stocks in either seed mussel areas or in the cultivation area in the Wash therefore seems to be limited.

The main risk of changes to the genetic structure of the mussel population could be the introduction of the congeneric species *M. galloprovincialis* and *M. trossulus*. Both species have been recorded elsewhere in the UK, and *M. galloprovincialis* is becoming more widespread. The presence of these species can only be confirmed by genetic testing. As below, there may be a need to ensure that any seed mussels introduced are gathered from wild stocks are likely to be compatible with the genetic structure of the local wild population

Nevertheless, on issues A1-A4, the mussel lay fishery appears within-scope for MSC assessment.

B. Feeding and husbandry

From the MSC Policy Advisory 10

The criteria included in this group emphasise the main focus of the MSC on wild fisheries. Production systems that show characteristics more consistent with closed and/or intensive aquaculture are out of scope.

Scope criteria

- B1. The production system operates without substantial augmentation of food supply. In HAC systems, any feeding is used only to grow the animals to a small size prior to release, such that most of the total growth is achieved during the wild phase. In CAG systems, feeding during the captive phase is only by natural means (e.g. filter-feeding in mussels), at a level and duration that provide only for the maintenance of condition (e.g. crustacean in holding tanks) rather than to achieve growth.*
- B2. In CAG systems, production during the captive phase does not routinely require disease prevention involving chemicals or compounds with medicinal prophylactic properties.*

Mussels within the Wash rely on naturally occurring food, and there is no supplemental feed. There is also no apparent use of chemicals or compounds with medicinal prophylactic properties.

On issues B1 and B2, the mussel fishery is within scope for MSC assessment.

C. Habitat and ecosystem impacts

From the MSC Policy Advisory 10

Habitat modifications in enhanced fisheries can include both physical changes to the sea bed or river course and the use of a range of man-made structures associated with the rearing or capture of fish that are not strictly 'fishing gear'. In the first case, modifications can range from the construction of simple ponds in intertidal areas or river floodplains through to watercourse management measures aimed at improving spawning habitats. In the second case, fish attracting devices (FADs), lobster casitas and mussel culture ropes (in CAG systems) are examples. Such artificial habitat modifications either enhance the productivity of the fishery or facilitate the capture or production of fish.

Scope criteria

- C1. Any modifications to the habitat of the stock are reversible, or potentially reversible, and do not cause serious or irreversible harm to the natural ecosystem's structure and function.*

The mussel lays do not appear to cause significant adverse or irreversible harm to the the overall structure or function of the Wash ecosystem. On issue C1, the mussel lay fishery appears within scope for MSC assessment.

It is therefore confirmed that each of these fisheries appear within the scope of the MSC Principles and Criteria.

1.2 Pre-assessment aims

The principal aims of the pre-assessment are to determine, on the basis of information made available by the client, the position of the fishery principally in relation to the Marine Stewardship Council (MSC) Principles and Criteria. In particular, the pre-assessment will:

- Outline the key components of the fishery and determine the scope of the main certification
- Identify any obstacles or problems for certification

No verification of information, or contacting of stakeholders, however, takes place at this stage. This will be part of the main assessment, which is open to public scrutiny and comment.

This report sets out:

- The information on which the pre-assessment report is based
- The background of the fishery
- The location and scale of the fishery
- Fishery management arrangements
- Other relevant fisheries
- Key stakeholders in the fishery
- Preliminary evaluation of the fishery against the MSC Principles and Criteria
- Limit of identification of landings from the fishery
- Obstacles or problems for certification
- A recommendation as to whether or not (and in what form) the fishery should move to main assessment

2 INFORMATION SOURCES USED

The pre-assessment is based upon the following information sources:

2.1 Meetings as follows:

25/2/10	Natural England ESFJC	Charlotte Bentley Duncan Vaughan
---------	--------------------------	-------------------------------------

2.2 Other Information

- Dare, P.J. et al (2004). Historical and current status of cockles and mussel stocks in The Wash. CEFAS, Lowestoft.
- ESFJC. SUMMARY OF MANAGEMENT MEASURES APPLICABLE TO THE 2009 HOLBEACH MUSSEL RELAYING FISHERY
- ESFJC. 2009/2010 COCKLE FISHERY Management Proposals
- ESFJC. Wash Cockle Fishery – Opening of the 2009/2010 Handwork Fishery
- ESFJC (2009). Notification of proposal to open a dredged and handworked relaying fishery on a regulated mussel bed in the Wash
- ESFJC. Management Measures Applied to 2009/10 handworked cockle fishery
- Appropriate assessment of proposal to undertake dredged and handworked mussel fishery on an intertidal mussel bed beds within the Regulated fishery of the Wash, May 2009
- Review of handworking practice in The Wash cockle fishery
- CD 08 01 24. Appendix 2: Wash mussel biotope
- ESFJC 2009. INDUSTRY MEETING 22nd June 2009. Invitation to meeting.
- Natural England. Wash and north norfolk coast European marine site
- ESFJC. Fisheries management Policies
- Mander, M.R. (2009). Eastern Sea Fisheries Joint Committee annual report 2008. ESFJC, King's Lynn, 75 pp.

3 BACKGROUND TO THE FISHERY

3.1 Biology of the Species – Cockle

The cockle *Cerastoderma edulis* is a common burrowing bivalve occurring on all British and European coasts. It is common in the intertidal and shallow subtidal, where it can occur in a variety of sediments, notably muds, sands and muddy gravels. It can tolerate salinities down to 10 ppt, although the normal salinity range is around 15 – 35 ppt. In broad, sheltered bays densities can be extremely high. Cockles live within a few cm of the surface and can be washed out en-masse during storms. Lifespan is typically 2-4 years in most situations, including Burry inlet, although individuals can live to 9 or 10 years. The sexes are separate and spawning normally occurs from May-July at a length of around 15 – 20 mm and an age of around 18 months, although large (>15mm) 1 year old individuals can sometimes spawn. The number of eggs released is extremely large (typically greater than 1 million per animal). Larvae are planktonic, and typically spend around 3-5 weeks in the plankton. Settlement of small cockles, known as spat, normally occurs during the summer, sometimes in densities of 10,000 / m². There may be a primary settlement low on the shore followed a few weeks later by movement to a secondary settlement higher on the shore. Cockles can be an important food item for many intertidal wading birds.

There are a few very similar species, notably the lagoon cockle *Cerastoderma glaucum*, usually distinguished as an adult by its thinner, less symmetrical shell, but only easily distinguishable by internal characteristics when young. It's geographical distribution and habitat preferences overlaps with those of the common cockle, but it is most abundant in saline lagoons, only infrequently occurring in estuaries where it is normally limited to the subtidal fringe.

3.2 Biology of the Species – Mussel

The mussel, *Mytilus edulis* is a sessile bivalve attached to the substratum by a byssus. Mussels can withstand wide variation in salinity, desiccation, temperature and oxygen concentration, resulting in the ability to occupy a large variety of microhabitats. Mussels can be found on any substratum providing a secure anchorage such as rocks, stones, gravel, shingle, dead shells, and even mud and sand. Where found, mussel beds are often dominant in terms of biomass, and form a key component of many marine communities. These beds support their own diverse communities as the mussel matrix, composed of layers of mussels with accumulated sediments and debris, provides numerous microhabitats and an organically enriched environment.

Mussels are filter-feeding bivalves filtering primary micro-algae and debris, but also zooplankton at lower rates. Males and female mussels follow a reproductive strategy of producing a very large number of gametes and hence planktonic larvae, of which a small proportion survive to settle and establish on the seabed. Mussels can adapt their reproductive strategy depending on environmental conditions; hence the reproductive cycle depends on the population's geographical situation. Mussels spawn from April – May, and release gametes (approx. 3 million eggs per female) into the surrounding water where fertilisation takes place. The planktonic life of *Mytilus edulis* varies from 2-4 weeks depending on temperature, food supply and availability of suitable settlement substratum; hence it can take 10 and more weeks between the fertilisation and the settlement of the mussel. The growth rate of mussels varies greatly and is dependent largely on

the availability of food.

4 HISTORY, LOCATION AND SCALE OF FISHERY

4.1 Historical background and Location and Scale of activity

The Wash has supported important shellfisheries for cockles (*Cerastoderma edule*) and mussels (*Mytilus edulis*) for more than a century. Mussel cultivation, through transplanting stocks onto 'lays' on the lower shore, has also been carried out since the early 1900s. Local fishing activities have been managed by the Eastern Sea Fisheries Joint Committee (ESFJC) since 1894.

Up until the late 1980s, The Wash shellfisheries were among the largest in the UK. In the mid-1980s, exploitation levels in both fisheries increased markedly after the introduction of new and more powerful vessels, and because of major investment in modern processing equipment. The stocks of cockles and mussels subsequently collapsed, and both fisheries were closed in 1992.

Since the early 1990s, the mussel fishery has relied mainly on spat being brought in from other locations, either by road or by sea, to stock the lays. The first significant wild settlement since 1992 occurred in the Wash in 2002, and the stock has continued to build from there. Significant wild mussel beds off the Lincolnshire coast have provided significant amounts of spat for the Wash lays in the most recent years. It is likely that adult mussel on the lays has contributed significantly to the recovery of the wild stocks.

The Wash cockle fishery has always been subject to large and unpredictable natural fluctuations, and only the 1997 spatfall was significant in the 1990s. A more regular spatfall has occurred since 2002 and, in common with the mussel fishery, a more reliable fishery has taken place.

In 2008 it was estimated that the shellfish stocks in the Wash totalled 29,000 tonnes of cockles and 12,600 tonnes of mussels within the regulated fishery, as well as an estimated 20,000 tonnes of mussels on the lays. The historic records of cockle and mussel stocks are fragmented, but the combined cockle and mussel stock of 61,600 tonnes present in 2008 is one of the highest on record.

5 FISHERY MANAGEMENT

5.1 Management Bodies

The ESFJC, based in King's Lynn, is the fishery management body responsible for managing and monitoring the Wash cockle and mussel fisheries. In common with other SFCs, the ESFJC has fisheries management responsibility out to the 6 nm territorial limit, and is made up of a Committee that is half local Councillors from the funding authorities, and half fishermen and other experts who are appointed by the Minister for Marine and Natural Environment from the UK Department of Environment, Food and Rural Affairs. The Committee also includes one member from the Environment Agency. Officers of the Committee undertake fisheries management, monitoring and enforcement duties on behalf of the Committee.

Natural England is the statutory body with responsibilities for advising Government and other management bodies, including the ESFJC, on nature conservation in England and English waters. The Wash is covered by a number of national and international nature conservation designations,

including being a Special Area of Conservation for habitats and species and a Special Protection Area for birds. As such, Natural England works closely with the ESFJC, but maintains an advisory rather than a management role.

An important change to all SFCs will occur on the 1st April 2011, through the Marine and Coastal Access Act. At this time, they will be renamed Inshore Fisheries and Conservation Authorities. The IFCAs will be required to have a stronger focus on sustainable development, including marine environmental protection, rather than fisheries management alone. Natural England, in common with the Environment Agency and the Marine Management Organisation, will hold a voting seat on each IFCA.

5.2 Fisheries Regulations

The ESFJC manages the Wash fisheries using measures defined under a set of Several and Regulating Orders and byelaws approved by Defra. The Wash Fishery Order 1992 provides the ESFJC with powers to define gears, manage daily and annual catch quotas, limit vessel size and specify minimum landing sizes for mussel. Seed movement from the regulated mussel and cockle beds is also permitted only with the written permission of the ESFJC. Byelaws allow the ESFJC to temporarily close shellfish fisheries, and to collect information such as catches, area fished and effort that allow the ESFJC to manage the fisheries.

The ESFJC also has responsibility for the protection of the wider marine environment. These responsibilities are laid out in the Environment Act, 1995, the Sea Fisheries (Wildlife) Conservation Act, 1992 and the Conservation (Natural Habitats Regulations &c.) 1994. These Acts allow SFCs to make byelaws to control fisheries for environmental reasons, as well as for fisheries management, and require SFCs to have regard to the conservation of marine flora and fauna when exercising their functions, as well as for specific features of SACs, SPAs, Ramsar sites and Sites of Special Scientific Interest.

5.3 Enforcement and Surveillance

The ESFJC has 16 Fishery Officers and normally operates two enforcement and monitoring vessels in the Wash. These are the FPV Protector III and the RV Three Counties. Both of these vessels also have a daughter vessel that can undertake enforcement activities as required. The FPV Pisces III, a rigid-hulled inflatable that is normally operated from the Suffolk coast, can be deployed in the Wash during busy periods.

Not including the Chief Officer and his Deputy, there are two shore-based Officers with responsibilities for the Wash coastline, who undertake shore-based surveillance and monitoring activities, including enforcing size limits and daily quotas as appropriate.

Monitoring of the Wash fisheries is undertaken routinely. Specific, targeted enforcement is also undertaken during intensive fishing periods, such as during the cockle suction dredge fishing season, when significant levels of fishing activity occur. At such times, most of the Committee's Officers and vessels may be engaged in monitoring the fishery both at-sea during fishing and ashore during landings. The ESFJC maintains an active weekend and overnight enforcement capacity.

Reports of enforcement action (i.e verbal warnings, written warnings and prosecutions) are maintained by the ESFJC. Successful prosecutions are listed on the ESFJC website.

6 EXTERNAL INFLUENCES

Cockles: growth of cockle will be affected by organic matter input to the Wash system, which will in turn depend on land management in river drainage systems. Such changes to growth and spat settlement will, however, be detected through surveys and addressed through fishery management. This issue is therefore not considered separately below.

Mussels: small mussels (aka spat) are introduced to the Wash from external sources, most notably in recent years from the Lincolnshire coast, but also in the past from the Thames and South Wales. Other sources are possible. Such introductions will affect both food availability to mussels within the Wash and increase spat production. This issue is considered below.

7 MAIN COMMERCIAL MARKET

The main market for both cockles and mussels is export to the continent. Processing takes place in plants adjacent to the Wash. Part-grown mussels may also be exported live for on-growing elsewhere.

8 OTHER ELIGIBLE FISHERS

All fishers operating within The Wash would be included within this certification. The Le Strange Estate is outwith this assessment. To be included within this assessment, the Le Strange fishery would need to operate as per fisheries under the Wash Fishery Order.

9 OTHER RELEVANT FISHERIES IN AREA

There are mussel fisheries taking place along the North Norfolk and Lincolnshire coast – for spat (provided to lays in The Wash) and marketable mussel. The nearest major cockle fishery is in the Thames Estuary, although a relatively small handworked cockle fishery may be prosecuted at Horseshoe point on the southern side of the Humber Estuary. This is managed by the North Eastern Sea Fisheries Committee.

10 KEY MSC STAKEHOLDERS

The following is not an exhaustive list but indicates the breadth of consultation that would be carried out. This list would be completed in consultation with the stakeholders identified below and additional stakeholders may be identified during the assessment. However, ‘stakeholders’ for consultation must have a valid and established interest in the fisheries under assessment.

Fishery/Environmental Management Bodies

ESFJC
Natural England
DEFRA
MOD

Fishing Industry Bodies

Boston and District Fishermen’s Association
Brancaster Staithe Fishermens Soc. Ltd
King’s Lynn Fishing Industry Co-operative

King's Lynn Fishing Vessel Owners & Skippers Association

Academic organisations etc

CEFAS

University of Hull

UEA

IEH

Non-Governmental Organisations

WWF

RSPB

WWT

MCS

BTO

Wash Estuary Strategy Group

Norfolk Wildlife Trust

Lincolnshire Wildlife Trust

11 ONGOING CHAIN OF CUSTODY CONSIDERATIONS AND LIMIT OF FISHERY CERTIFICATION

The extent of the fishery in terms of any future certification will extend to the landing of fish at ports where recording, verification and sampling of landings takes place. This is expected to be processing plants adjacent to The Wash. Such plants will require Chain of Custody certification. Fishers must also be able to provide evidence to buyers that mussels have been collected from within the certified fishery (i.e. not from the LeStrange estate) and have been collected within quota if from unenhanced fisheries (i.e. mussels from lays should be identified from those caught under TAC to ensure TACs are not exceeded).

From the point of landing, fish from the certified fishery would then be subject to separate MSC Chain of Custody certification if they are to be marketed under the MSC logo.

12 PRELIMINARY EVALUATION AGAINST MSC PRINCIPLES & CRITERIA

The certification of a fishery depends upon its compliance with the MSC Principles and Criteria. A series of questions have therefore been developed to determine:

- the availability of sufficient information to measure the fishery against the requirements of the Principles and Criteria
- the implementation of management measures to ensure that the fishery is both well managed and sustainably managed

During the certification assessment, compliance with the Principles and Criteria will be determined by applying a scoring system to these questions (or 'performance indicators').

For this pre-assessment, the information available has been used to determine the general position

of the fishery in relation to a series of generic performance indicators. This will also aid the evaluation team in modifying the performance indicators to best suit the fishery in question during the assessment.

The position of the fishery in relation to the generic performance indicators is presented in the following table, and provides an indication of the availability of information in relation to the various requirements of the MSC Principles and Criteria for Sustainable Fishing. It also indicates, on the basis of available evidence, the extent to which the fishery meets these requirements. Where potential issues are identified, these are highlighted in ***bold italics***.

<p>Principle 1</p>	<p>A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.</p>
<p>Stock status It is <u>highly likely</u> that the stock is above the point where recruitment would be impaired.</p> <p>The stock is at or fluctuating around its target reference point.</p>	<p>It has been established that, due to their productivity, only limited numbers of both cockles and mussels are required to provide very large spatfall.</p> <p>Cockle. ESFJC have established a minimum spawning biomass level of 3 000 tonnes of adult cockle, below which the fishery would not be opened. When open, the fishery operates under a TAC limited to up to 33% of adult stock.</p> <p>Additional targets are in place based on maintaining the ecosystem function of cockles (a minimum 11 000t of cockle and maintain cockle stocks on a specified number and distribution of known cockle beds). Whilst current stock levels are at or above this 11 000t target, stocks have been known to fall below this. As this target appears in excess of that required to meet the MSC standard for this performance indicator, it is recommended that the assessment progress on the basis of the lower of the targets consistent with the MSC standard (i.e. fishing of 1/3 of cockle stock harvested).</p> <p>Mussel. ESFJC have established a minimum overall stock biomass level of 10 000 tonnes, of which 5 000 t should be adult mussel, below which the fishery would not be opened. When open, the fishery operates under a TAC limited to up to 20% of total adult stock.</p> <p>Additional targets are in place based on maintaining the ecosystem function of mussels (a minimum 12 000t of mussels, 7 000t adult and maintain mussel stocks on a specified number and distribution of known beds). Whilst current stock levels are at or above this 12 000t target, stocks have been known to fall below this. As this target appears to be in excess of that required to meet the MSC standard for this performance indicator, and given the natural variability in stocks, it is recommended that the assessment progress on the basis of the lower of the targets consistent with the MSC standard (i.e. fishing of 20% of mussel stock).</p>

	<p>Notwithstanding the above, it is also highly likely that all fisheries would perform well if considered under the MSC risk-based assessment framework (RBF). We would therefore consider this option during the earlier stages of the main assessment, which would avoid any confusion around target reference points.</p>
<p>Reference Points Reference points are appropriate for the stock and can be estimated.</p> <p>The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.</p> <p>The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.</p> <p>For low trophic level species, the target reference point takes into account the ecological role of the stock.</p> <p>Not applicable in RBF situation</p>	<p>As outlined above, limit RPs exist for both cockle and mussel. TACs provide fishing (F) reference points that would (when combined with the LRP) be expected to maintain stock levels that would maintain reproductive capacity.</p> <p>Both cockles and mussels are low trophic level species. The conservation requirements (target stock level and distribution of beds) would meet the requirements to take into account the ecological role of the two species. However, it is noted that these may not always be met due to natural variability in recruitment, rather than fishing-related effects. To avoid future variability compromising the continued certification of a fishery, we would recommend use of the RBF during a main assessment.</p> <p>If the RBF is used, then this PI would score 80 by default.</p>
<p>Criterion 1.2: Stock Rebuilding Where stocks are depleted rebuilding strategies are in place.</p> <p>There is <u>evidence</u> that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within</p>	<p>Neither stock (cockle or mussel) appears in need of rebuilding.</p> <p><i>MSC Criterion 1.2 will necessarily be included in the early parts of the assessment, as a matter of procedure, but we should be able to exclude this criterion from the assessment proper under current stock conditions.</i></p>

<p>a <u>specified</u> timeframe.</p> <p>Not to be used in RBF situation</p>	
<p>Harvest Strategy</p> <p>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <u>work together</u> towards achieving management objectives reflected in the target and limit reference points.</p> <p>The harvest strategy may not have been fully tested but monitoring is in place and <u>evidence</u> exists that it is achieving its objectives.</p>	<p>Wild stocks of both cockles and mussels are closely monitored on an annual basis. This provides reliable quantitative information on wild stock status. TACs are then determined (under the harvest strategy) based on the available adult stock, the Limit Reference Point and other conservation objectives.</p> <p>The harvest strategy (represented in Fisheries Management Policies) has been in operation for 2+ years. Regular and reliable monitoring is in place which shows successful implementation.</p>
<p>Harvest Control -Rules and Tools</p> <p><u>Well defined</u> harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The <u>selection</u> of the harvest control rules takes into account the <u>main</u> uncertainties.</p> <p><u>Available evidence</u> indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p>	<p>Uncertainties are reduced through reliable surveys of stocks for both species on the wild beds. Control rules govern a minimum spawning stock biomass, a TAC, licence entitlement, gear restrictions (including head width for dredges and number of dredges), and selection of beds to be opened (for mussels).</p> <p>Tools for implementation are quotas (daily vessel quota), duration of fishing time, minimum size, riddling of catch in situ, smash rate limit.</p> <p>Beds can also be closed if ESFJC deem that fishing activities are damaging to the site.</p> <p>Similar rules and tools apply to cockles, intertidal mussels and subtidal mussels.</p> <p>The tools have been evaluated through agreement with Natural England (NE) and appear entirely appropriate and effective.</p>

<p>Information / Monitoring</p> <p><u>Sufficient</u> relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are <u>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule</u>, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.</p> <p>There is good information on all other fishery removals from the stock.</p>	<p>Stock structure is surveyed directly, as is productivity (adult and spat components of stock, indicating recruitment). Fleet composition is known through licensing and surveillance. Sufficient information is available to support the harvest strategy.</p> <p>All fishery-based removals from wild stocks are controlled by ESFJC and included within this assessment. The only exception is a separate fishery on the Le Strange Estate which is outside of this evaluation.</p> <p><i>We understand that much less information is available on the mussel lays; this may require further quantification and recording by fishermen directly.</i></p>
---	---

<p>Assessment of Stock Status</p> <p>The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points.</p> <p>The assessment takes uncertainty into account.</p> <p>The assessment of stock status is subject to peer review.</p> <p>Not applicable in RBF situation</p>	<p>The assessment is based on direct survey information. Survey designs are reviewed by NE and CEFAS.</p> <p>If the RBF is used, then this PI would score a default 80.</p>
---	---

<p>Principle 2</p>	<p>Fishing operations should allow for the maintenance of the structure,</p>
---------------------------	--

	productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends
--	--

Retained Species – i.e. commercial by-catch / by-product

<p>Stock Status Main retained species are <u>highly likely</u> to be within biologically based limits, or if outside the limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> management measures in place such that the fishery does not hinder recovery and rebuilding.</p>	<p>There are no other retained species in either fishery</p>
<p>Management Strategy There is a <u>partial strategy</u> in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being <u>implemented successfully</u>.</p>	<p>Not applicable. As there are no retained species, this should score a minimum of 80.</p>
<p>Information/ monitoring <u>Qualitative information</u> and some quantitative</p>	<p>Good information is available through ESFJC monitoring control and surveillance.</p>

<p>information are available on the amount of main retained species taken by the fishery.</p> <p>Information is <u>sufficient</u> to estimate outcome status with respect to biologically based limits. (This requirement not apply in RBF situation)</p> <p>Information is adequate to support a <u>partial strategy</u> to manage <u>main</u> retained species.</p> <p>Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p>	
--	--

By-catch Species – i.e. non-commercial species/discards

<p>Main bycatch species are <u>highly likely</u> to be within biologically based limits or if outside such limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> mitigation measures in place such that the fishery does not hinder recovery and rebuilding.</p>	<p>During harvesting, sediment which is hand-raked or passed through dredges return directly to the beds. There is not, therefore, a by-catch. It is noted, however, that sediment characteristics of beds are monitored and indicator species (one bivalve, two polychaetes) are also monitored. Muddy sediments are excluded from harvesting.</p> <p>Colonisation of sandy areas occurs rapidly (on a scale of days to weeks) and species present have high reproductive potential and widespread distributions. All would therefore be expected to be within biologically based limits.</p> <p>RBF could be used (SICA) to avoid any doubt in a main assessment on demonstration of a lack of significant effect, but this is not considered essential for this fishery.</p>
<p>There is a <u>partial strategy</u> in place, if necessary, for managing bycatch that is expected to maintain main bycatch species at levels which</p>	<p>Controls on the areas where fishing activity occurs would constitute a highly effective partial strategy, being successfully implemented.</p>

<p>are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>There is <u>some objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or the species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p>	
---	--

<p><u>Qualitative information and some quantitative information are</u> available on the amount of main bycatch species affected by the fishery.</p> <p>Information is sufficient to estimate outcome status with respect to biologically based limits. (This requirement not apply in RBF situation)</p> <p>Information is adequate to support a <u>partial strategy</u> to manage main bycatch species.</p>	<p>Quantitative information is available on by-catches (i.e none). Monitoring, Control and Surveillance (MCS) is sufficient to control which beds are fished.</p>
--	---

Endangered, Threatened and Protected Species

<p>The effects of the fishery are known and are <u>highly likely</u> to be within limits of national and international requirements for</p>	<p>There are no direct effects of the fishery on ETP species.</p> <p>Indirect effects will involve disturbance of seals, disturbance of feeding waterfowl, and reduction in cockle and mussel feeding resource for waterfowl (wildfowl and waders).</p>
---	---

<p>protection of ETP species.</p> <p>Direct effects are <u>highly unlikely</u> to create <u>unacceptable impacts</u> to ETP species.</p> <p>Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.</p>	<p>Indirect effects have been specifically considered and management measures have been implemented for both seals and waterfowl which would render unacceptable impacts highly unlikely to occur. These issues are considered annually through the appropriate assessment process, as required under the SAC and SPA designations.</p>
<p>There is a <u>strategy</u> in place for managing the fishery's impact on ETP species, including measures to minimise mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>There is an <u>objective basis for confidence</u> that the strategy will work, based on <u>information</u> directly about the fishery and/or the species involved.</p> <p>There is <u>evidence</u> that the strategy is being implemented successfully.</p>	<p>Measures are in place to minimise disturbance of seals through protection of haul-out sites, particularly during pupping, moulting or breeding.</p> <p>TAC's are based on maintaining 66% (of cockle) or 80% (mussel) of biomass for waterfowl foraging and stock maintenance. Additional targets are in place to maintain stock spatial distributions and biomass at levels appropriate for waterfowl feeding requirements.</p> <p>Measures have been evaluated, including through modelling of wader feeding, and are considered appropriate (NE Appropriate Assessment review).</p> <p>Measures are being implemented with success (within bounds of natural recruitment).</p>
<p>Information is <u>sufficient</u> to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a <u>full strategy</u> to manage impacts.</p>	<p>Fishing activities are monitored by ESFJC and others.</p> <p>Seals are monitored formally by the Sea Mammal Research Unit seal breeding survey. Information on seal distributions is also collected by Natural England, ESFJC and other agencies.</p> <p>Shorebirds are recorded through Wetland Bird Survey (WeBS) counts at roosts and through low water counts.</p>

<p><u>Sufficient data</u> are available to allow fishery related mortality and the impact of fishing to be <u>quantitatively</u> estimated for ETP species.</p>	<p>These all provide quantitative information for ETP species.</p>
---	--

Habitat

<p>The fishery is <u>highly unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p>	<p>Fishing is restricted to mobile sediment types. These are surveyed prior to fishing and studies have been conducted on the effects of fishing on habitat structure.</p> <p>Effects leading to serious or irreversible harm would not be expected.</p> <p>RBF could be used (SICA) to avoid any doubt in a main assessment, although this should not be essential.</p>
---	--

<p>There is a <u>partial strategy</u> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.</p> <p>There is some <u>objective basis for confidence</u> that the partial strategy will work, based on information directly about the fishery and/or habitats involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p>	<p>Activities undertaken by all methods of harvesting are reviewed by ESFJC and, through appropriate assessments, by Natural England. For example, the process of 'blowing out' cockle areas using vessels prior to hand-gathering has been evaluated and prohibited. A strategy is therefore in place to manage the effects of the fishery on habitats.</p> <p>Due to the largely intertidal nature of the fishery, the effects of the fishery, and the effects of management measures, can be directly observed. Information is therefore directly available from the fishery and the habitats affected.</p> <p>There is clear evidence of appropriate implementation through monitoring of habitat distributions and direct observations of shellfish harvesting.</p>
---	--

<p>The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery.</p> <p>Sufficient data are available to allow the</p>	<p>Biotope mapping throughout The Wash has established habitat types and distributions with a relatively high level of accuracy.</p> <p>Bivalve beds are known, and fishing locations known and monitored accurately.</p> <p>Data collection continues at an appropriate level.</p>
--	---

<p>nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.</p> <p>Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p>	
---	--

Ecosystem (Communities, trophic impacts etc)

<p>The fishery is <u>highly unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</p>	<p>Maintenance of cockle and mussel stocks, habitat structures, dependent predators (waterfowl) and effects on other ETP species (disturbance of seals) are all controlled. No other sources of ecosystem effects are identified. There is no evidence of serious or irreversible harm.</p>
--	---

<p>There is a <u>partial strategy</u> in place, if necessary, that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.</p> <p>The partial strategy is considered likely to work, based on <u>plausible argument</u> (eg, general experience, theory or comparison with similar fisheries/ ecosystems).</p>	<p>Strategies have been described above relating to target stocks, habitats and ETP species, which would achieve at least 80 levels of performance for each. Each strategy is implemented appropriately and is expected to be effective.</p>
---	--

<p>There is <u>some evidence</u> that the measures comprising the partial strategy are being implemented successfully.</p>	
--	--

<p>Information is adequate to <u>broadly understand the key elements</u> of the ecosystem.</p> <p>Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>may not have been investigated in detail</u>.</p> <p>The main functions of the Components (i.e. target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are <u>known</u>.</p> <p>Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.</p> <p>Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p>	<p>As discussed above, relatively accurate information is available, and continues to be made available, relating to each element of ecosystem structure and function relevant to these fisheries.</p>
---	--

<p>Principle 3</p>	<p>The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that</p>
---------------------------	--

require use of the resource to be responsible and sustainable.

Governance and policy

<p>Legal and/or customary framework</p> <p>The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.</p> <p>The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes which is <u>considered to be effective</u> in dealing with most issues and that is appropriate to the context of the fishery.</p> <p>The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges.</p> <p>The management system has a mechanism to <u>observe</u> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The ESFJC operates within a management structure as laid out by a series of Acts of Parliament (e.g., mainly, the 1966 and 1967 Shellfish Acts), but also has responsibilities for the marine environment through the Environment Act, 1995, the Sea Fisheries (Wildlife) Conservation Act, 1992 and the Conservation (Natural Habitats Regulations &c.) 1994.). These pieces of legislation define the processes and focus of the Committees and are consistent with MSC Principles 1 and 2.</p> <p>Committees are required by law to include fishermen and other interested and expert parties in their membership. The Defra Minister appoints these Committee members. Decisions are made in a public forum, and decisions are minuted. Where illegal fishing is thought to have taken place, prosecutions may be taken to court where a fully transparent mechanism exists to review cases and prosecute as required.</p> <p>Any disputes can be raised with members of the committee, or with ESFJC directly. Disputes not resolved within the committee may be referred to the English or EU legal system.</p> <p>There are not known to be any existing legal challenges to either fishery. It seems likely that any binding judicial decisions relevant to the ESFJC would be dealt with swiftly.</p> <p>The Wash Fishery Order severs the public right to fish within the Wash and, instead, has created a system whereby only the fishery entitlement holders have access to the fisheries within the site. The implementation of this system did, however, require that local fishermen were consulted to ensure that the entitlements were made available to local fishermen and historic users of the site. The inaccessibility of the site limits or prevents anyone with only a casual interest in the fishery from participating.</p>
---	---

<p>Consultation, roles and responsibilities Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood</u> for <u>key areas</u> of responsibility and interaction.</p> <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.</p> <p>The consultation process <u>provides opportunity</u> for all interested and affected parties to be involved.</p>	<p>The roles of relevant agencies (ESFJC, Natural England, Defra, EA) is well defined and roles and responsibilities defined.</p> <p>Sea Fisheries Committee members are required to represent the fisheries being managed. A code of conduct for members is available on the Committee's website.</p> <p>The membership of each Sea Fisheries Committee, including the ESFJC, includes representatives of local fishermen and other interested parties to ensure that stakeholders are an integral part of the management process. Additionally, the Councillors who form the other half of the Committee are elected officials who can be contacted by the public on management issues.</p> <p>In writing the Wash cockle and mussel fishery policies, and when any changes are proposed to existing management practices, the Officers of the Committee write to Wash Fishery Order entitlement holders in order to obtain input. Meetings are also held prior to the cockle and mussel season openings to discuss the fisheries with fishermen.</p> <p>Sea Fisheries Committees are required to meet quarterly. These statutory meetings are open to the public, and minutes are taken which are available for scrutiny.</p>
<p>Long term objectives <u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within management policy.</p>	<p>As a Sea Fisheries Committee, the ESFJC has a clear remit for sustainable fisheries and environmental management. ESFJC literature states that their aim is "To regulate, protect and develop the fisheries within the Committee's District in a manner that ensures sustainable viability for the foreseeable future and compliance with the Committee's environmental responsibilities".</p> <p>This appears to be consistent with the MSC Principlea and Criteria, and should allow the fisheries to score 80 or more on this critertia.</p>
<p>Incentives for sustainable fishing The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC</p>	<p>As well as the overall aim of the ESFJC, which requires that the Committee manages fisheries sustainably, the Wash cockle and mussel policies have clearly defined thresholds and goals which allow fishermen to understand and plan around the data presented and the decision making undertaken by the Committee. Seasonal and daily quotas, as well as the vessel size limit in the Wash minimize the potential for perverse incentives to occur, while positive incentives are</p>

Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	provided through the clear indication within the policies that as stocks build, more of the stock can be fished.
--	--

Fishery- specific management system

<p>Fishery- specific objectives <u>Short and long term objectives</u>, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>explicit</u> within the fishery's management system.</p>	<p>For the Wash cockle and mussel fisheries, and with the support of Natural England, the ESFJC developed management policies which require the sustainable and precautionary management in order to proceed through the appropriate assessment process. There are four basic principles for the policies which cover the MSC principles 1 and 2:</p> <ol style="list-style-type: none"> 1) Sustainable resource exploitation, 2) Fishery protection, 3) Fishery development, and 4) Environmental protection. <p>The plans are agreed for five years and are subject to review.</p> <p>Short term objectives for stock and ecosystem are contained within TACs, allocation of fishing areas etc.T</p>
--	--

<p>Decision-making processes There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious and other important</u> issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes use the</p>	<p>Decision-making by the Sea Fisheries Committee is undertaken through a clearly defined structure. Relevant information is collected and presented to the Committee by the Officers, and then a decision is taken through a standard 'propose, second and vote' procedure. Sub-Committees may be involved in some decisions, for example on setting fishery TACs where appropriate.</p> <p>The process of collecting and presenting data enables relevant information to be considered during the Committee decision-making process. Appropriate assessments also require that information is collected and considered against the specific objectives of the SAC or SPA. Where information is considered inadequate to determine that a likely significant effect is not occurring on a SAC or SPA, research must be carried out to satisfy the information need.</p> <p>Because of the regular and SAC/SPA related research needs, a significant number of research projects have been carried out through the years. Novel research has included verification and testing of the mussel stock assessment process, the work to reduce cockle smash rates and surveying of habitat types. More regular research includes the production of stock assessments for Wash cockles and mussels.</p> <p>Explanations for decisions can be derived from the minutes of Committee meetings, while all members of the Committee can be contacted to ask for feedback on decisions if required.</p>
---	--

<p>precautionary approach and are based on best available information.</p> <p><u>Explanations</u> are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>	
<p>Compliance & enforcement</p> <p>A monitoring, control and surveillance <u>system</u> has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</p> <p>Sanctions to deal with non-compliance exist, <u>are consistently applied</u> and thought to provide effective deterrence.</p> <p><u>Some evidence exists</u> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p>	<p>The ESFJC maintains one enforcement and one research vessel almost full time in the Wash. Fishing activity is monitored carefully, including ashore during landings.</p> <p>Sanctions are applied, apparently consistently and fairly. Enforcement responses may include a verbal or written warning. Prosecutions may also be sought through the courts.</p> <p>It is understood that required information is provided by fishermen.</p> <p>The high level of enforcement of fishery regulations and generally low level of prosecutions suggests that compliance levels are good. Typically, however, a number of prosecutions are sought each year following apparently serious infringements of fishery regulations. This is unlikely to be considered to constitute systematic non-compliance.</p>

<p>Research plan A <u>research plan</u> provides the management system with a strategic approach to research and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion.</p>	<p>The ESFJC employs a team of three staff to undertake routine and novel research as required in order to manage the fisheries that occur within the Committee's district. The research must be planned carefully in order to support the needs of the different fisheries.</p> <p>The work includes annual cockle and mussel stock surveys, sublittoral surveys to determine the presence of seed mussel beds, cockle smash rate and post-discarding mortality rates, sediment particle size analysis and other habitat description and sensitivity work.</p> <p>Specific results related to particular issues are provided to relevant parties, usually in a letter, while the Committee also publishes an annual research report which details the results of work undertaken during the preceding year.</p>
<p>Management performance evaluation The fishery has in place mechanisms to evaluate <u>key parts</u> of the management system and is subject to <u>regular internal</u> and <u>occasional external</u> review.</p>	<p>Management measures, as proposed by the Officers, are reviewed internally as part of the normal Committee process.</p> <p>The appropriate assessment process is undertaken annually for the cockle and mussel fisheries within the Wash, and this requires that all key parts of the management system are reviewed in order to ensure the fisheries do not impact the European site. This constitutes an annual external review.</p> <p>Wherever Sea Fisheries Committees and Natural England fail to agree an approach to fisheries management within protected European sites, Defra and the Fisheries Minister may be approached to provide a final decision. This would likely also constitute an external review.</p>

13 PROBLEMS AND OBSTACLES TO MSC CERTIFICATION

The MSC standard is based upon three principles, Principle 1 relating to the status of the target stock, Principle 2 relating to the condition of the ecosystem upon which that stock depends, and Principle 3 relating to the management system. To be certified, a fishery must 'pass' each Principle. Also, a fishery must not fall below the minimum required standard for any of the questions (Performance Indicators) posed.

Based on the information discussed above, there are a number of areas where performance is below the required level to meet the MSC standard. These are:

Principle 1:

No issues have been identified. However, use of RBF is recommended to provide flexibility in applying future certification during periods of variable/poor recruitment

Principle 2:

No issues have been identified. RBF is recommended for by-catch and should be considered for habitat effects to avoid any doubt on the risk posed by the fishery to each ecosystem component.

Principle 3:

No issues have been identified. We note the difference in monitoring and control on the Le Strange fishery and the mussel lays. This will be an issue for Chain of Custody control (clearly identifying and separating catches from Le Strange and the rest of The Wash and landings from lays versus TACs for other sites).

14 RECOMMENDATIONS AND UNIT(S) OF CERTIFICATION

It is therefore recommended that the WASH COCKLE AND MUSSEL FISHERIES (as defined below) proceed to Main Assessment against the MSC Principles and Criteria for Sustainable Fishing.

If the client chose to proceed with a main assessment the unit of certification should be:

Species:	Cockle (<i>Cerastoderma edule</i>)
Geographical Area:	The Wash (within Wash Fishery Order bounds)
Method of Capture:	Hand Raked (Fishery 1) Suction Dredged (Fishery 2)
Management System:	ESFJC only (i.e. not currently including LeStrange Estate)
Client Group:	n/a

Species:	Mussel (<i>Mytilus</i>)
Geographical Area:	The Wash (within Wash Fishery Order bounds)
Method of Capture:	Hand Raked (Fishery 3) Dredged (Fishery 4)
Management System:	ESFJC only (i.e. not currently including LeStrange Estate)
Client Group:	n/a

There would therefore be 4 separate 'Units of Certification' in a main assessment.