MSC Public Comment Draft Report

The Basse-Normandie Granville Bay Whelk Fishery

MAY 2015

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Glossary

Term / acronym	Definition
AAMP	Agence des Aires Marines Protégées
BN	Basse-Normandie
BTS	Beam Trawl Surveys
CPUE	Catch per unit effort
CRPMEM	Comité Régional des Pêches Maritimes et des Elevages Marins
CRPM-BN	Comité Régional des Pêches Maritimes et des Elevages Marins de Basse-Normandie
DDTM	Direction départementale des territoires et de la mer
DIRM	Direction Interrégionale de la Mer
DML	Délégation à la mer et au littoral
EC	European Community
ETP	Endangered Threatened or Protected species
EUNIS	European Nature Information System
IBTS	International bottom trawl surveys
ICES	International Council for the Exploration of the Sea
IFCA	Inshore Fisheries and Conservation Authority (England)
JAC	Granville Bay Joint Advisory Council
JMC	Granville Bay Joint Management Council
MLS	Minimum landing size
MMO	Marine Management Organisation (England)
MSDF	Marine Strategy Framework Directive
NFM	Normandie Fraicheur Mer
PACOMM	Programme d'Acquisition de Connaissances sur les Oiseaux et les Mammifères Marins
PI	Performance Indicator
PSA	Productivity Susceptibility Analysis
RBF	Risk-Based Framework
SAC	Special Area of Conservation (under EC Habitats Directive)
SICA	Scale Intensity Consequence Analysis
SMEL	Syndicat Mixte pour l'équipement du Littoral
SPA	Special Protection Area (under EC Birds Directive)
SSB	Spawning Stock Biomass
ULAM	Unité Littorale des Affaires Maritimes
WGEF	ICES Working Group on Elasmobranch Fishes

1. Executive Summary

This report is the Client Draft Report for the Basse-Normandie Granville Bay Whelk Fishery. The assessment team consisted of Dr Jo Gascoigne (Team Leader, Principle 1), Chrissie Sieben (Principle 2), and Dr Sophie des Clers (Principle 3). The site visit for the assessment took place in Granville, France on the 8th and 9th July, 2014.

The client for this assessment is the Comité Régional des Pêches Maritimes et des Elevages Marins de Basse-Normandie (CRPM-BN), with representation by Normandie Fraicheur Mer (NFM). The UoC for this fishery is defined by whelk fishermen from West Cotentin, Basse-Normandie, i.e. those with a current whelk permit issued by the CRPM-BN, targeting whelks from the Western Channel stock with whelk pots (‘casiers bulot’) in Granville Bay. The Granville Bay area is shared between Normandy, Brittany and Jersey, with a system of co-management in place for shared areas based on the Granville Bay Treaty

The fishery under assessment is only open to vessels <12m length; the fishery is therefore based around day trips only. The smallest vessels in the fishery are 7-8m; many of these vessels are based in small ports along the Cotentin west coast, while larger vessels of 10m or more tend to be based in Pirou, Carteret or the main port of Granville. 73 licenses were issued in 2013, with the majority of licensed vessels fishing for whelks as their main activity. In Basse-Normandie whelks are caught in coastal waters at depths shallower than 30-40m between Diélette and Granville as far as around Jersey, preferably on sandy grounds. All vessels involved in the fishery under assessment complete ‘fiches de pêche’ which ensures that catches can be traced back to the fishing area. No processing takes place on board and whelks are sold live at auction or to fish merchants directly.

The whelk fishery takes place entirely inside 12 nautical miles. Its management system is defined by the French fisheries management arrangements although local management measures are also coordinated with the Jersey management system through the Bay of Granville Treaty arrangement. The Basse-Normandie whelk fishery is managed by the CRPM-BN on behalf of the French government, with representation by elected members from the various categories of professional fishers in the local area. The CRPM-BN delivers annual fishing permits which take account of historical involvement and are not transferable. The current conditions for the whelk fishery are defined in bylaws which includes closed areas, seasons, minimum legal size and other technical measures, in response to local proposals. In the UK, the fishery is managed through the Southern IFCA and the Devon and Severn IFCA.

For Principle 1, the Risk-Based Framework (RBF) approach was applied. No work has been done on the population structure of whelks in the Western Channel; the 'stock' is therefore managed in a pragmatic way based on appropriate political units, while ensuring some cooperation with neighbouring jurisdictions – as is often done in the case of shellfish fisheries. Monitoring of stock status is based on following trends in nominal CPUE, with somewhat conflicting trends suggested by Basse-Normandie (increase) and Jersey (decline, followed by fluctuations without trend) survey data. It is not clear whether these differences between the datasets are real (e.g. driven by different trends in different areas) or an artefact of sample size, sample technique or length of time series. The current overall harvest

strategy in Basse-Normandie is to continue with gradual reduction of effort in the fishery, by reduction of the total number of whelk permits (as well as continuation of the other measures for regulation of effort), which has cut landings in half compared to the peak in 2001. A quantitative target as far as effort (number of licences) or CPUE is concerned has yet to be committed to, however, and the strategy is to continue to monitor the fishery both biologically and economically and to reach a point at which stakeholders agree that an appropriate balance between biological sustainability and economic return has been found.

For Principle 2, the information on retained species was obtained from the fiches de pêche and from stakeholders during the site visit. Other than whelks, no other species tend to be retained. Bait use in this fishery can, however, be significant and the lesser spotted dogfish ('roussette', *Scyliorhinus canicula*) was evaluated as 'main' retained species. The information on discards was obtained from stakeholders during the SICA workshop, as part of the RBF approach. Stakeholders identified the netted dogwhelk ('nasse', *N. reticulatus*) as being by far the most dominant bycatch species and this species was retained for further SICA analysis. Key ETP species and habitats of concern to the assessment were those designated under the EC Habitats Directive. Impacts on those species, however, were not thought to be significant.

In terms of scoring, the three Principles scored an average score of 81.4 (Principle 1), 88.3 (Principle 2) and 84.5 (Principle 3). No PI scored less than 60 and 4 PIs scored less than 80. For these PIs conditions were raised as summarised below.

Condition number	Condition	Performance Indicator
1	The harvest control rule needs to be better defined, specifically in terms of the management target, which does not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. This target could be set at the level of the Basse-Normandie fishery or at the Granville Bay level, as long as there is confidence that the management actions in place could act to maintain the stock at or around the target level. The target should also consider spatial variability in stock status, if the analysis under Condition 2 suggests that this might be important.	**1.2.2**
2	There should be a review of the data being used to monitor the fishery and stock status, with an appropriate statistical analysis carried out to try as far as possible to reduce uncertainties associated with external variability or spatial variability in stock structure and dynamics and fishing pressure. The analysis may be used to inform future data gathering, such that data is gathered following a suitable statistical methodology where possible.	**1.2.3**
3	There needs to be explicit management objectives for both Principle 1 (stock) and Principle 2 (ecosystem). They do not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. The objectives could be at the level of the Basse-Normandie fishery or at the Granville Bay level.	**3.2.1**
4	A formal research plan as a framework for guiding research should be prepared and adopted	**3.2.4**

One recommendation was also put forward by the team: the team recommends that any lost whelk pots are reported on so that this can be monitored by the CRPM-BN/SMEL and any increase in risk to habitat structure and function can be determined.

2. Authorship and Peer Reviewers

The authors of this report (MEC assessment team) are:

Dr Jo Gascoigne (Team Leader): Dr Gascoigne is a shellfisheries expert and former research lecturer in marine biology at Bangor University, Wales. She is a fully qualified MSC Team Leader with particular expertise in the assessment of Principle 1 (target species stock status and management). She has been involved as expert and lead auditor in all of MEC's previous MSC assessments and numerous pre-assessments. For this assessment, Dr. Gascoigne was the team leader and responsible for Principle 1.

Chrissie Sieben: Chrissie Sieben has a Master's Degree in Marine Environmental Protection which she obtained at the University of Wales, Bangor. She is MSC fisheries manager at MEC and specialises in marine and fisheries ecology, marine environmental impact assessment and sustainable fisheries. As a fully qualified MSC assessment team member she is involved in MSC pre and full assessments and fishery surveillance audits and participates regularly in MSC CAB training sessions and workshops. During this full assessment she was in charge of Principle 2.

Dr Sophie des Clers: Dr des Clers is an independent consultant, specialising in economic and social aspects of fisheries management. She has collaborated to several MSC assessments since 2008, including UK Fisheries Ltd cod, haddock and saithe, Euronor/ Compagnie des Pêches cod and haddock, Brittany sardine seine fishing and Normandy-Jersey lobster. Sophie is an expert in fisheries public policy, management systems and legislation at international, regional and national levels, with particular focus on the EU. During this full assessment she was in charge of Principle 3.

The peer reviewers for this report are:

Dr Andrew Brand: Andy Brand holds a PhD and has worked for the University of Liverpool for 40 years on the academic staff of the Port Erin Marine Laboratory, Isle of Man, retiring in 2006 as Director of the Laboratory. During this time he developed large, well-funded, research programmes on the biology, ecology, aquaculture and fisheries of bivalve molluscs, especially scallops, and on the environmental impact of scallop dredging. He has had extensive fishery management and environmental assessment consultancy experience, including contracts with government departments and industry, and has been a member of ICES Working Groups on herring, scallops and ecosystem effects of fishing. In addition to work in the Irish Sea, he has advised on scallops and fisheries management in Alaska, Argentina, Australia, Bermuda, Chile, Ireland, France and the Philippines. He is now an Honorary Senior Fellow of the University of Liverpool and works as an independent shellfisheries consultant. He has recent experience as an Assessor and Independent Reviewer for Marine Stewardship Council certifications for scallop, mussel and oyster fisheries in the Irish Sea, Faeroes, Denmark and Canada.

Dr Mike Bell: Mike Bell has 24 years' experience as a research scientist, with 17 years in fisheries. He has wide experience of research into assessment, monitoring and management of sustainable fisheries, particularly shellfish, as well as the ecological consequences of marine fisheries and renewable energy developments. Mike has worked for the past 7 years

as a research associate at the International Centre for Island Technology based at the Heriot-Watt University in the Orkneys, where he has provided consultancy on fisheries and environmental effects of wave and tidal energy developments. Prior to this, he worked as a Senior Shellfish Biologist at the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), based in the UK, and then as a private fisheries research consultant, mainly relating to the sustainable exploitation of shellfish stocks. At CEFAS, he undertook research on the population and fisheries biology of shellfish, providing fishery management advice to the UK government and at an international level. He has published a series of papers including recently on the management of sustainable fisheries alongside marine renewables and on trawl composition of Norway lobster. He was the chairman of the ICES Working Group on Nephrops Stocks from 2002 to 2004. Mike has also recently been involved as an assessor in a number of Marine Stewardship Council pre- and full assessments for shellfish fisheries.

3. Description of the Fishery

3.1. Unit(s) of Certification and scope of certification sought

MEC confirms that the fishery under assessment is in conformity with Principle 3, Criterion A1 and Principle 3, Criterion B14 of the MSC Certification Requirements v1.3:

- Criterion A1: A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

- Criterion B14: Fishing operations shall not use destructive fishing practices such as fishing with poisons or explosives.

Therefore, MEC concludes that the fishery is within the scope of the MSC certification process.

The 'unit of certification' (UoC) is the definition of the fishery under assessment (stock/fleet/gear type/management jurisdiction). The first act of the assessment was to define the UoC, as described in the following table:

Species	whelk, bulot, buckie, *Buccinum undatum*
Geographical range	Granville Bay (Basse-Normandie exclusive zone in West Cotentin, plus shared Normandy/Brittany/Jersey zone as defined under the Granville Bay Treaty, plus zones A, B and C as defined under the Granville Bay Treaty for those Normandie vessels with rights to fish in those areas (see Figure 1).
Method of capture	whelk pot / casier bulot
Stock	The stock structure of whelks is unclear (see detailed analysis in Section 3.3.1.2). Although they have lower dispersal capacity than most marine invertebrates (because they have no planktonic larval phase) there is no evidence of genetic structure over a wide area (the NW European shelf) (Weetman et al., 2006). Although the definition of 'stock' in an MSC UoC is often based on genetic information (either directly or via the basis for a stock assessment), the team felt that in this case, the NW European shelf was in appropriately wide. Conversely, defining the stock as just 'Granville Bay', although administratively convenient (because this is the management unit), does not allow for the fact that the whelk population is very likely continuous over a much wider area, most of which is unfished. **As a compromise, the team concluded that the Western Channel should be used as an appropriate definition of the 'stock'.** Note: This definition has been reviewed and changed following a variation request submitted to and approved by the MSC on the 5th May 2015. Previously, the stock was defined as 'Granville Bay whelks' although it was made clear that this had no biological basis.
Management System/s	French management of the Basse-Normandy whelk fishery is via the Comité Regional de Pêche de Basse-Normandie (CRPM-BN), with regulations being implemented via the regional government of Basse-Normandie (préfecture de Region Basse-Normandie). There is also a trans-regional/national Granville Bay management system in place

	covering all fisheries in the area shared between Basse-Normandie, Brittany and Jersey, but in the case of this fishery, this has acted more as a forum for discussion and data sharing than as a regional management body. In the UK, the fishery is managed through the Southern IFCA and the Devon and Severn IFCA. All the fishers in the UoC are from Basse-Normandie and are covered by the Basse-Normandie management system.
Client group	Whelk fishermen from West Cotentin, Basse-Normandie, i.e. those with a current whelk permit issued by the CRPM-BN (see Table 1).
Other eligible fishers	A few boats from Brittany and Jersey target whelks in the same area, and may land their catch in Basse-Normandie (Granville or Carteret). These fishers are, however, not eligible until the management systems of Jersey and Brittany are evaluated in more detail. There are no other eligible fishers at the present time.

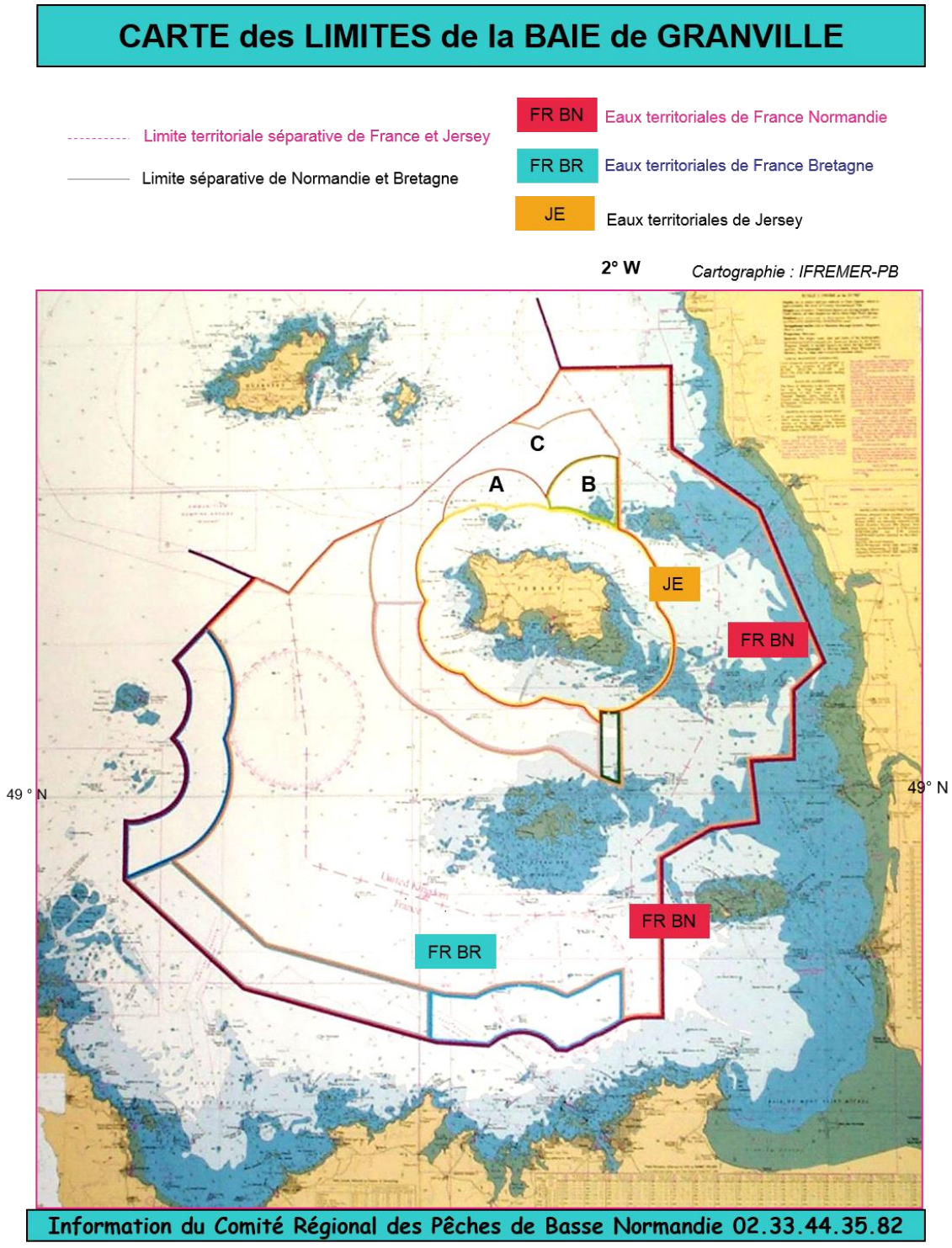

Figure 1. Map of the Granville Bay area, showing how the fishing area is delineated. The area is bounded i) to the north and northwest by a line of latitude from the Nez de Jobourg to the 40m depth contour; and ii) to the south by the administrative boundary between Normandy (FR BN) and Brittany (FR BR). The boundary between the French and Jersey zones is given in by the hatched line (on the original chart). The zone directly around Jersey is Jersey coastal waters, which are not accessible to French fishermen. Outside Jersey coastal waters, Basse-Normandie fishermen may fish in the Jersey zone (JE), under the Granville Bay Treaty (subject to agreed management requirements), as well as in Basse-Normandie coastal waters (along the Cotentin coast). Zones A, B and C are shared zones with special status under Granville Bay Treaty, accounting for vessels with historic rights.

3.1.1. Scope of Assessment in Relation to Enhanced Fisheries

The MSC defines enhanced fisheries as: Any activity aimed at supplementing or sustaining the recruitment, or improving the survival and growth of one or more aquatic organisms, or at raising the total production or the production of selected elements of the fishery beyond a level that is sustainable by natural processes. It may involve stocking, habitat modification, elimination of unwanted species, fertilisation or combinations of any of these practices (MSC Certification Requirements v1.3).

The fishery under assessment is a wild capture fishery and does not meet the above definition. This fishery is therefore not considered enhanced.

3.1.2. Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)

The MSC defines Introduced Species Based Fisheries (ISBF) as: Any fishery which prosecutes a target fin or shellfish species that was intentionally or accidentally transported and released by human activity into an aquatic environment beyond its natural distribution range. This does not include species that are “introduced” into a location due to an expansion in their natural geographic range (MSC Certification Requirements v1.3).

The fishery under assessment does not meet the above definition. This fishery is therefore not considered ISBF.

3.2. Overview of the fishery

3.2.1. History of the fishery

Whelks have been fished in the Granville Bay area for centuries, traditionally on foot during large low tides (noting that this area has one of the largest tidal ranges in the world). These tides were known as ‘marées à chucherolles’ – whelk tides. (Chucherolle is a local name for a whelk, along with calicoco, ran, bavous, torion, teutré and goglu – they are now more prosaically known as ‘buccins’ or ‘bulots’ as per standard French.)

The professional fishery for whelks started in the 1970s, when whelk pots were introduced and the vessels installed pot haulers and other equipment. A time series of landings to the auction in Granville from 1976 to 2013 is given in Figure 2, which shows that the fishery expanded from the mid-1980s: almost 7,000 tonnes of whelks were sold at the Granville Bay auction in 2001, and the total landings in that year were ~12,000 tonnes. Since then, landings have dropped back to ~6,000 tonnes, for reasons explained below. Unlike in the UK, this expansion was not strongly driven by the Far East market; the market for Normandy whelks has always been and continues to be mainly European (mainly French). In fact, no matter where you are around the French coast, if you order a ‘plateau de fruits de mer’ (seafood platter) it may well include a handful of Granville Bay whelks, which account for 75% of total French production.

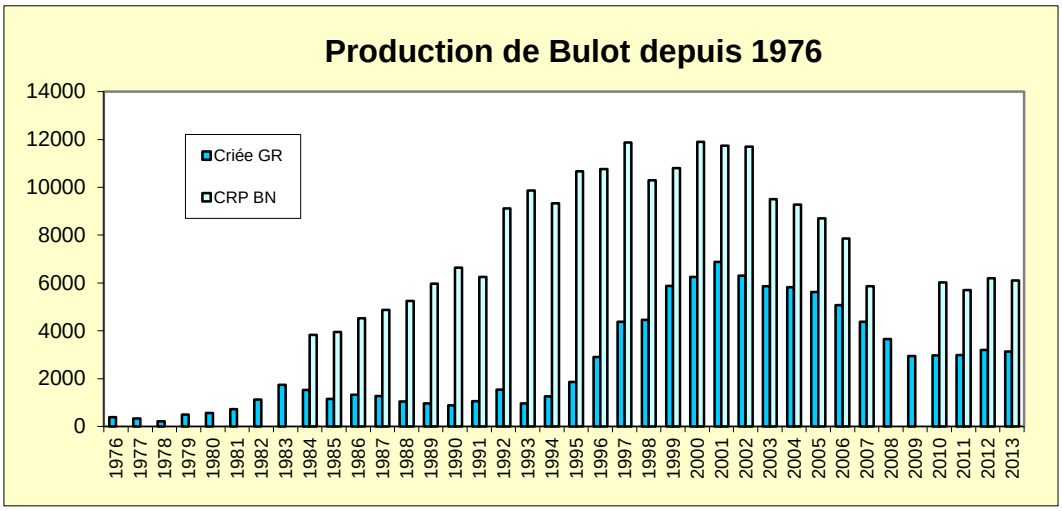

Figure 2. Time series of whelk landings, in tonnes: to the auction in Granville (dark blue 'criée GR') and total as estimated by the Comité Regional de Pêche using data from auction and from fiches de pêches (see below) (light blue 'CRP BN'), 1976-2013. From CRPM-BN.

The high rates of production in the 1990s led (it is assumed) to a decline in catch per unit effort (CPUE) and concerns about over-exploitation. Some management measures were put in place from the early 1980s, e.g. a minimum landing size (MLS) of 45mm, weekend closure of the fishery, but a liberalisation of the license regime in 1997 led to an increase in the number of licences (from 65 to 85) and increased daily quota of 400 kg/crew member, resulting in an increase in landings overall (see Figure 2). Since that point, the management of the fishery has focused on bringing effort back down to sustainable levels. A timeline of the introduction of management measures is given in Section 3.2.8.2

3.2.2. Gear and operation of the fishery

The gear used by the fishery is whelk pots ('casiers bulot'). The pots are basically a round, plastic mesh tub with a hole in the top and a weighted (concrete) bottom (Figure 3). Pots are fished in strings of 40 pots for the smaller boats, 60 for the larger ones. Each pot is equipped with a bait mixture consisting of a combination of fish and crustaceans – reportedly the fish attracted the whelks while the crustacean detains them feeding in the pot until it is lifted. Bait use in this fishery is further discussed under Section 3.4.1.

Figure 3. Image of whelk pot ('casier bulot') used by the fishery under assessment. The pot is made of a plastic top, which detaches from a concrete base. Image provided by Ghislaine Hervieu, CRPM-BN

As noted previously, the fishery is only open to vessels <12m length; the fishery is therefore based around day trips only. The smallest vessels in the fishery are 7-8m; many of these vessels are based in small ports along the Cotentin west coast, and usually have two crew members (sometimes three in winter). Larger vessels of 10m or more tend to be based in Pirou, Carteret or the main port of Granville (see

Figure 5 in the following section).

The majority of the licensed vessels fish for whelks as their main activity. Note that the 73 licences in 2013 were estimated by the Comité Régional des Pêches Maritimes et des Elevages Marins de Basse-Normandie (CRPM-BN) to make up about 60 full-time equivalents. Most vessels are reported to fish the maximum permitted number of pots (720), with pots being left in the water and hauled in rotation until the daily quota is met. Note that there is no means of verifying directly how many pots are in the water from a given vessel, so it is certainly possible that some vessels fish more than the permitted limit. Since whelks tend to leave the pots when the bait has been consumed, pots left for longer periods (e.g. over the weekend) fish at a declining rate (also see Section 3.4.4 on ghost fishing). Fishermen reported '*Mondays we catch more but not double'*. Some vessels bring all their pots in in the closed season (January) but others do not.

Pots are strung in lines (filières) of 40 to 60 pots, with one pot every ~15m, weighed down at each end and marked with a float and flag, as shown schematically in Figure 4.

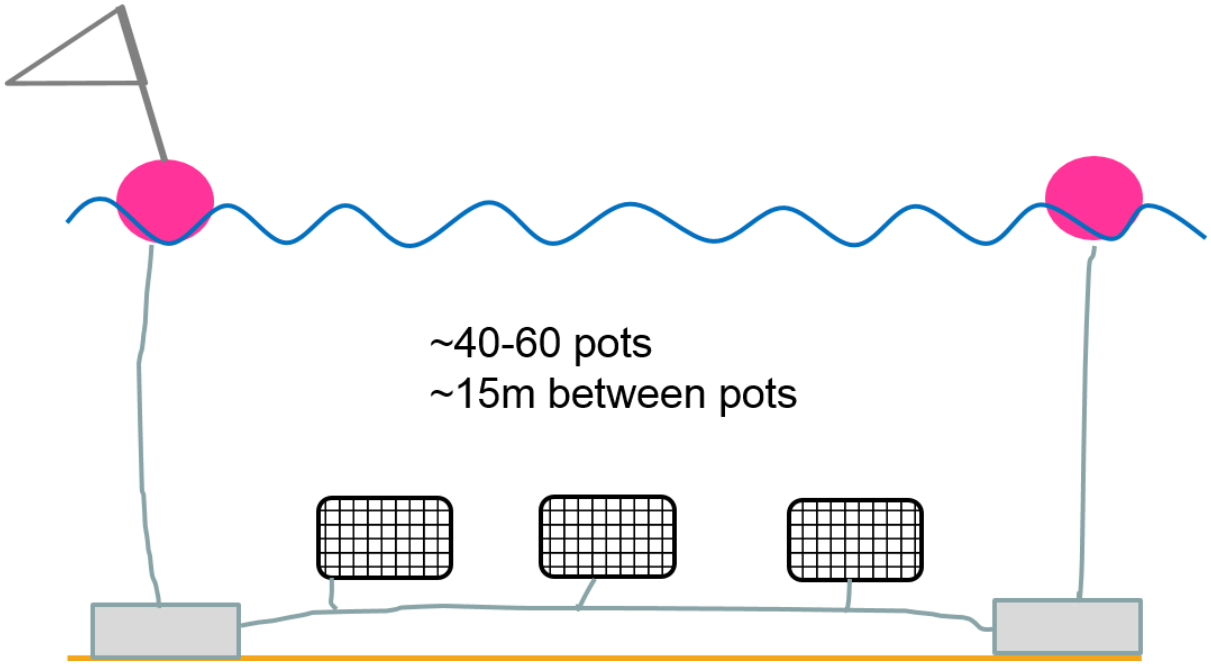

Figure 4. Diagram of how a pot string is deployed. A string would consist of 40-60 pots about 15m apart, with a weight at each end.

3.2.3. Fishing areas

In Basse-Normandie whelks are caught in coastal waters at depths shallower than 30-40m between Diélette and Granville as far as around Jersey, preferably on sandy grounds (

Figure 5). The region is at the southern edge of the whelk's geographical range and catches are lower in August and September as whelks burrow to shield from higher water temperatures.

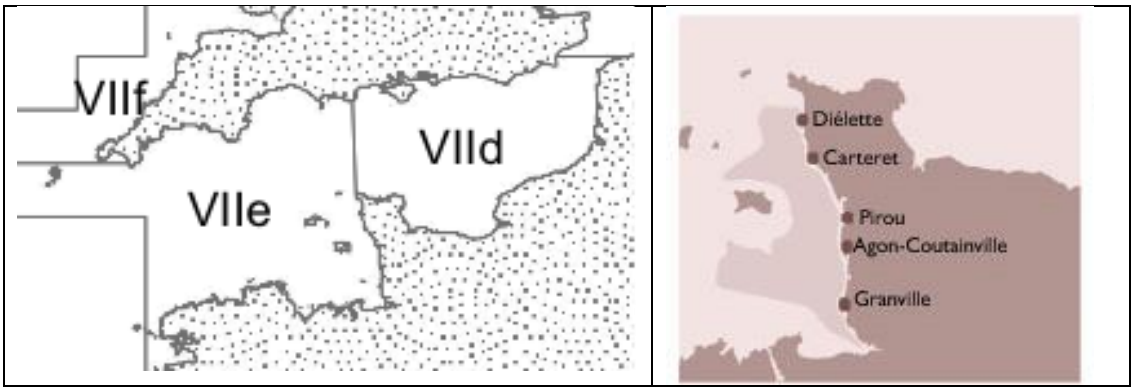

Figure 5. Map showing the Western Channel (ICES division VIIe - left) and a detail of the Cotentin peninsula and Basse-Normandie fishing grounds (grey to 30m depth excluding grounds around Jersey - right). From Ices.org and Normandie Fraîcheur Mer

3.2.4. Vessels

The vessels included in the UoC are those that have been issued whelk fishing licenses by the CRPM-BN, as shown in Table 1.

Table 1. Vessels with whelk fishing licenses issued by the CRPM-BN (up to date as of March 2015)

Vessel name	Home port	Registration number
A TOI DE JOUER	GO	518418
ADELAIDE 1	BL	878899
ALBATROS	PI	518412
ASTRAGALE	GR	750734
AU GRES DES FLOTS	AG	827378
BELLE EPOQUE	GR	638760
BONNE FORMULE	BL	878711
BOUKALOT II	CA	613692
BULOTIER 2	PI	929558
BULOTIERE 3	PI	922540
CAP LIZARD	CA	918522
C'EST L'AMERIQUE	DEN	925064
CHERIE D'AMOUR	GR	922419
CHEZ WAM	BL	922428

CYMALISE II	BL	879303
DAUDJY	BL	922429
DAUPHIN II	GO	922416
DEFI II	SG	922381
DOBERMAN	SG	922567
EMILIEN MATHILDE	BL	922402
FILS DU VENT	CA	922393
FLASH	PI	925050
GERLEAN	GR	681985
GREBA	GO	878373
GUILLAUDE	BL	922403
JOKER	GR	775898
JPAUL HENRY	BRI	640361
KAN A DISKAN	GR	221408
KERSTIMAEL	BL	922430
LA BETE A BON DIEU 2	BL	922502
LA CHUCHEROLLE	GR	907974
LA MONDREE 2	PI	922450
LA PIROUAISE 3	PI	711630
LA PRESQU'ILE 2	GR	922541
L'AMI SINCERE	GR	923117
LAURA VINCENT	PBL	775921
LE CEOL II	AN	930262
LE PROLETAIRE	PI	711420
LE RESCATORE	BL	922499
LE SRI LANKA	PBL	922497
L'ENZAUDE	BL	907926
L'EQUINOXE	CA	775925
LES ANTILLES	DIEL	590411
M.TETHYS	GR	713087
MA FE DES ILES	GR	659690
MA LOUTE	PI	922415
MALIGO	BL	929824
MARIA LUCA	CA	922384
NAUSITHOE	GR	925094
NJORK	CA	827481
NORMALAND	GO	639190
NOTIJU	BL	930264
OCTOPUSSY II	GR	883742
O-GRE-DES-VENTS	DIEL	922599
OLAF 4	GO	922427
PASANMAL	AG	922422
PERE JULES 2	PI	922539
PETITE MARION	GO	922431

PETITE PRINCESSE 2	PI	922494
PI14 TEXIER A	CA	Inactive
PIRHANA	GR	735995
PRINCESSE	GO	878374
QUO VADIS	GO	627959
REGINA MARIS	BRI	460509
ROCALAMAUVE	GR	517594
ROCAVI	GR	775960
ROSE DES CHAMPS II	CA	925078
RSB	GO	Inactive
SERPICO 2	CA	607610
SPARTIATE	GR	711421
VERIC II	GO	878935
WILLIAM MARINE	GR	783442

3.2.5. Catch data

3.2.5.1. Basse-Normandie landings

In order to explain how catch data are collected, it is first useful to describe briefly a few of the organisations involved – more detailed information is given below:

- Direction départementale des territoires et de la mer (DDTM) – Government services in charge of local maritime, coastal and agricultural sustainable development, natural risk management and transport (département Manche number 50)
- Délégation à la mer et au littoral (DML - DML50 for département Manche) – part of DDTM responsible for fisheries monitoring, control and enforcement for the département of Manche
- FranceAgrimer – central French body responsible for agriculture and fisheries statistics

All vessels in the UoC are under 12m in length and are therefore exempt from having to complete EU logbooks. Other sources of landings data for whelks in Basse-Normandie are available, however, and these include: i) landings declarations, ii) fiches de pêche (logbooks for vessels <10m) and iii) sales notes. Unfortunately each source of data has its own pace and path into the national database, and some data are not systematically copied to the CRPM-BN before being entered into the national database managed by FranceAgrimer.

Landings declarations concern all landings into the Granville fish market (or other designated port), whether the whelks are just passing through or are temporarily stored and sold through contracts, or sold at the market's auction. Landings declarations (Fiches de vente) are forwarded daily to DML50 for Département de la Manche - see below), with a copy to the CRPM-BN. After some crosschecks DML50 forwards the data to FranceAgrimer to collate and publish weekly landings figures (volume and value) for key species at selected ports.

These data are considered very reliable. For whelks, landings declarations account for about half of total landings in volume and they also provide price information.

Fiches de pêche are mandatory for all under-10m vessels (and professional fishermen on foot but they are not relevant here). They provide monthly tables of daily fishing effort, fishing area, duration and type of pot or other gear) and daily catch by species. The fiches de pêche have to be submitted no later than the 5th for the following month to DDTM. A copy is sent to the CRPM-BN. Within the DDTM, DML50 collates the fiches de pêche, does some crosschecking validation and forwards them to FranceAgriMer. A number of local vessels (10-15 in addition to those landing at the market) give a copy of their fiches de pêches to the CRPM-BN directly.

By contrast, non-auction landings can take place at multiple small ports along the west Cotentin coast, with sales to multiple buyers (usually wholesalers – direct sale to the consumer is not common for whelks). These are declared through sales sheet, which are forwarded to the authorities but not systematically copied to the CRPM-BN.

FranceAgriMer is the national statistical organisation for agriculture and fisheries, with regional offices for Basse-Normandie based in Caen. Small-scale fisheries have not been well served by FranceAgriMer, because its focus is on meeting European requirements for statistics on catch of quota species. As a result, by the time these catch statistics become available to end users, including the CRPM-BN, they may be two or more years out of date and are not necessarily completely accurate. In fact, data for 2009 were lost, as a result of upheaval associated with the creation of FranceAgriMer, and these data were eventually re-entered by CRPM-BN and Ifremer from the original logsheets. DDTM/DML are also new organisations (replacing the former Affaires Maritimes) so this system is still to some extent bedding in – it may be possible in the future for DDTM to provide these fiches de pêche data directly to CRPM-BN in a shorter timeframe than FranceAgrimer, although there are some issues around confidentiality of personal data to be addressed. It is also worth noting that catches recorded on the fiches de pêche are estimated by the skipper, while landings are weighed – landings data are therefore more accurate. FranceAgrimer also sends a copy of all data to Ifremer for stock assessment purposes. Ifremer has all fiches de pêche and logbook data. So far only 2011 and 2012 data have been fully cross-checked but Ifremer is currently processing the data from 2009 to 2014 and expects to be able to show results at the end of 2015.

Scientists at CRPM-BN therefore have to be somewhat ingenious in piecing together estimates of total landings from these various sources. They use good information from a 'flotille de reference' (reference fleet) of about 20 boats, who voluntarily provide their fiches de pêche directly to the CRPM-BN as well as to DDTM (as well as providing other data – see below). (In general, the various organisations have tried to avoid multiple entry of the same data, but in this case it is the only way to have the data without too much delay.) Part of the reference fleet lands to the auction and part elsewhere, so the reference fleet is considered to be a representative sample of the fleet as a whole. CRPM-BN has used the data from the auction at Granville, plus extrapolation from the fiches de pêche of the reference fleet not landing to the auction, plus correction by comparison between landings declarations and fiches de pêche from the reference fleet landing to the auction, to estimate overall landings (Table 2).

3.2.5.2. Jersey landings

Jersey annual landings are likewise presented in Table 2. As of 2014 there are two French-owned Jersey-registered vessels actively fishing whelks in the Granville Bay area, and both provide logbook data to the Jersey authorities. They mostly land in France being based in Carteret, and when they do, their landings are systematically checked by the French customs.

3.2.5.3. Brittany landings

The CRPM Brittany allocates 12 licences a year to Breton vessels in this area (the coast of département Ile et Vilaine – to the east of the Rance estuary), plus 12 licences to Basse-Normandie vessels under an agreement with the CRPM-BN for sharing of fisheries in the Mont St. Michel area – these vessels do not have general access to Breton waters, however – only in this area. It is not known how active the vessels holding these licences are in the fishery – the information below suggests that not all of them are active.

Estimates of Brittany landings were requested from the CRPM Brittany but could not be provided. It may be that because this fishery is much less significant for Brittany than for Basse-Normandie, that the Comité Régional does not invest the same effort in estimating non-auction landings as in Basse-Normandie. FranceAgrimer does not provide estimates of total landings publically, but does provide landings by species by auction, for auctions for which sales of that species exceed a certain quantity (one tonne per year for whelks). The main auctions for this area of the Brittany coast (St. Malo and Cancale) do not feature in their data, although there were significant landings to the auction at Erquy, to the west of this area (415 t in 2013), some of which may be from the vessels licensed to fish in the Granville Bay zone.

Note that although the Breton boats may land their catch to the auction in Granville, these landings are subtracted out of the data used to estimate landings by the Basse-Normandie (BN) fleet, which include only BN-licensed boats. However, from this information, the landings of non-BN vessels to the auction in Granville can be calculated. Since the only Jersey vessels in the fishery are currently, reportedly, landing in Carteret, this can be assumed to represent Breton landings to Granville auction. Further assuming that ~~50% of landings are non-auction, as for BN vessels, then overall, Breton landings are estimated to be of the same order of magnitude as Jersey landings, or ~~5-10% of BN landings (Table 2).

Table 2. Landings of whelks from the Granville Bay area, 2010-2013 (tonnes)

Year	Basse-Normandie		Jersey*	Brittany (landings to Granville)
	Total sales CRPM-BN (incl. non-auction estimated as above)	Total sales DML50 (Fiches de pêche / logbooks)		
2010	6030		497	60
2011	5700	6000	244	7
2012	6100	6700	218	83
2013	6000	**6293**	**253**	225

* This is total landings by Jersey vessels, but a proportion come from Guernsey waters, which are not part of the shared Granville Bay zone (reportedly ~50% in 2007 – see PV BG Granville 2008)

3.2.6. Whelk discards

There is an EU minimum size of 45mm. The minimum size in France and in Southern and Devon and Severn IFCA districts is 45mm but in Jersey it is 50mm. The minimum size in Basse-Normandie is enforced via a requirement for a 22mm on-board sorting grid, which in fact results in a minimum landing size of around 47-48mm (see discussion of management, Section 3.2.1). This means that a good percentage of the catch is discarded as the pots are emptied onto the sorting grid on board, but apparently without any damage or significant mortality. The lines of pots are baited and shot immediately after being emptied, and therefore the whelks are returned close to the grounds where they were caught.

3.2.7. Other data

As well as the monitoring of landings as described above, there are four other key sources of data on the fishery based on work undertaken by the CRPM-BN and, on its behalf by the Syndicat Mixte pour l'équipement du Littoral (SMEL):

i. monitoring of commercial CPUE for the reference fleet;

ii. an onboard observer programme which takes place every two years;

iii. a programme of self-sampling ('autoéchantillonage') by fishermen in the reference fleet, consisting of 5 or 6 vessels sampling 2 lines (‘filières’) per year; and

iv. an annual survey carried out by the Jersey Department of the Environment (Marine Resources) in Jersey waters (details given in Table 3 and Figure 6).

There have also been various scientific studies done by SMEL with other partners on aspects of whelk biology in Granville Bay. These datasets provide time series of CPUE, which are shown in the section discussing stock status (Section 3.3.3). The onboard sampling also provides detailed data on population size structure, below as well as above the MLS, as well as collecting data on the environment, size at first maturity and on bycatch (see Section 3.1).

Table 3. Information about the CPUE data provided by the various surveys taking place for the whelk fishery. Basse-Normandie information from CRPM-BN, Jersey information from Annual Report (2013) and Morel and Bossy (2004).

Data set	Basis	Whelk size	Time series	Area covered	Sample size
Commercial CPUE, Basse-Normandie	Declared landings by ref. fleet	>MLS only	2009-date	2009-10: zones 1-3, 2011: zones 2-3, 2012-13: zones 1-2	~20 reference vessels, all landings, all trips
Onboard sampling, Basse-Normandie	Measurement of whelks caught on a given day/vessel	>MLS, <MLS	from 2007, alternate years	2007, 09, 11: zones 1-3; 2013: zones 1-2	Trips on 12 à 15 points/year 3 pots/station biennal (every 2 years)
Self-sampling, Basse-Normandie	Fishermen record whelk volume per line caught in pot lines	>MLS	2009-date	2009-10: zones 1-3, 2011: zones 2-3, 2012-13: zones 1-2	2009-11 : 4 points/day and for all trips ; 2012-13 : 2 points/day and

					for all trips
Survey, Jersey	Annual survey of 10 fixed sampling stations	>MLS, <MLS	1996-date except 1997, 2006.	2 stations north coast, 3 east coast, 5 south coast / Minquiers	10 stations, strings of 8 pots/station, annual (Feb.)

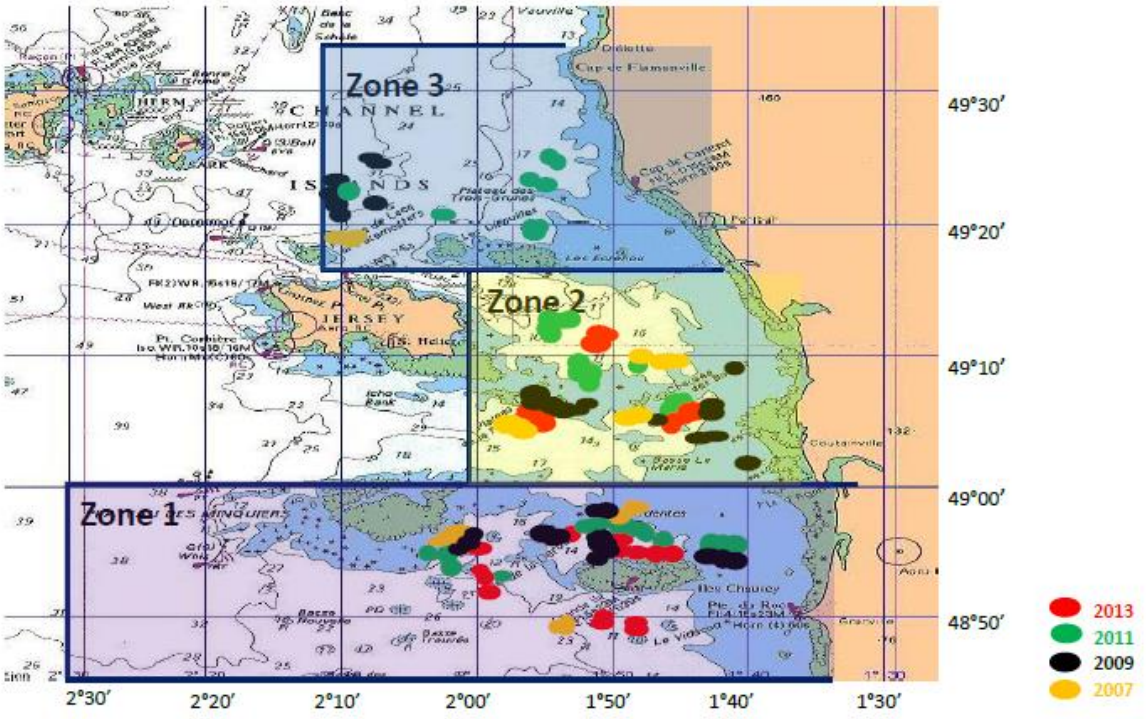

Figure 6. The sampling zones used for stratification of Basse-Normandie whelk data collection, with sample areas for 2013 (red), 2011 (green), 2009 (black) and 2007 (yellow).

3.2.8. Fisheries Management framework

3.2.8.1. Institutions

In France, the Granville Bay whelk resource is managed through the French fisheries management arrangements, which come under the recently reformed Common Fisheries Policy. Local management measures are coordinated with the Jersey management system through the Bay of Granville Treaty arrangement.

The French fisheries management system is a decentralised form of co-management, in which fishing rights holders, here mostly vessel owner-skippers, actively initiate management measures through elected representatives sitting on the CRPM Basse-Normandie regional fisheries committee or CRPM-BN for short.

In the UK, Inshore Fisheries and Conservation Authorities (IFCAs), replaced Sea Fishery Committees in 2009 and introduced target-driven cooperative management of inshore marine areas. IFCA members are local government elected members, professional and recreational fishermen and representatives of nature conservation agencies and

environmental NGOs. The Western Channel whelk fisheries are managed through the Southern IFCA and the Devon and Severn IFCAs.

The institutions involved are listed in Table 4.

Table 4. Institutions involved in the Granville Bay whelk fishery management system

National level	
Ministère de l'Écologie, du Développement Durable et de l'Énergie (DPMA)	Direction des pêches maritimes et de l'aquaculture – DPMA Central government legislative level also on the basis of the EU Common Fisheries Policy Regulations.
Comité National des Pêches maritimes et des élevages marins (CNPMEM)	• Policy and regulatory recommendations for national-level licence and conservation measures • Licensing and other bylaws; • Represents BN at national fisheries level and on JMC; • Undertakes some scientific research projects; • Commission Bulot / Whelks Committee : obtains and provides expert advice to regional committees
Sub-national 'région' level	
Préfecture de Région (DIRM), based in Cherbourg	Direction inter-régionale de la mer (DIRM) Manche Est-Mer du Nord represents the wider regional (Haute+Basse-Normandie) coastal jurisdiction (formerly the DRAM). • Executes ministerial instructions (from DPMA) and CFP measures. • Its Unité Ressources Réglementation publishes Departmental bylaws ('arrêtés') from CRPM proposals ('délibérations') • Coordinates enforcement on the quayside and at sea • Regional pole (formerly DRAM Direction Régionale des Affaires Maritimes).
Comité Régional des Pêches Maritimes de Basse-Normandie (CRPM-BN)	Regional Committee, its commission régionale *Bulot Manche Ouest* makes management recommendations, initiates data collection and research projects
Ifremer	Scientific research and stock assessment – a national organisation with headquarters in Brest (Brittany) but with various regional offices dealing with locally-relevant issues, including one in Port-en-Bessin, Basse-Normandie.
Local level 'Manche (50) département'	
Délégation Départemental des Territoires Marins (DDTM/ DML50)	Direction Départementale des Territoires et de la Mer (formerly the DDAM): Délégation de la Mer et du Littoral, Département Manche (50). The DML50 is in charge of monitoring and control.
Syndicat Mixte pour l'Equipement du Littoral (SMEL)	Local partner and sponsor of scientific research into coastal marine environmental issues.

Normandie Fraîcheur Mer (NFM)	• Promotes and supports Normandy seafood production, including quality and geographical origin ("Bulots de la Baie de Granville") standards; • Project managers for this assessment
Granville Bay Treaty	
Joint Management Committee (JMC)	Committee made up of management authorities from Jersey, Basse-Normandie and Brittany (CRPM from Basse-Normandie and Brittany, and Jersey Department of Fisheries). Take decisions at Granville Bay Treaty level – Includes representatives of sub-national and local levels.
Joint Advisory Committee (JAC)	Committee made up of four fishermen from each of Jersey, Basse-Normandie and Brittany, Jersey and French government representatives, and Ifremer – to debate and propose management measures to JMC for decision-making.
Institutions involved in the management of other W. Channel fisheries	
Southern IFCA	Participatory management body made up of a committee of local authority representatives, fishers and other stakeholders, plus a small executive of professional scientific / management and enforcement staff, responsible for management of inshore fisheries (out to 6 nautical miles) and marine conservation in the area of the central Channel (Hampshire and Dorset). Analogous in operation to the CRPM, they can draft local management bylaws, monitor and control fishing activities and carry research projects.
Devon and Severn IFCA	As above, for the coasts of Devon (south coast relevant here)

3.2.8.2. Management Plan

The management framework is provided by the French fisheries legislation at national and local levels and by the Bay of Granville arrangements for shared waters. A timeline of the introduction of management measures for the Basse-Normandie whelk fishery is shown in Table 5.

Table 5. History of management, and progressive introduction of management measures in the fishery (from 2004 in particular). Source: CRPM-BN, 2014. Historique de la pêche du bulot.

Year	Measure
1983 or before	MLS 45mm, fishery closed on weekends (total fishing days ~250), fishery licences introduced, limited to vessels <12m
1985	Fishery closed Saturdays, Sundays and bank holidays
1994	65 licences, daily quota 300kg/crew member
1997	Limit on licences lifted; licences increase to 85, daily quota increased to 400kg/crew member, sorting grid gap increased to 19mm

1999	Licences reduced to 82
2000	Granville Bay Treaty: agreement with Jersey and Brittany for fishermen to operate in each other's waters in certain zones. Normandy whelk fishery expands into Jersey shared waters.
2001	Quota of 400kg/crew member, max. 1200 kg/vessel (i.e. additional crew members above 3 provide no additional quota)
2004	Start of management plan to reduce effort in the fishery: each year for x licences that become available, x-1 licences are redistributed (half to current fishermen wishing to diversify and half to new entrants). Daily quota reduced to 300kg/crew member and 900kg/vessel.
2005	Increased controls on landings of undersized whelks – tolerance fixed at 3.5%. Most vessels enlarge their sorting grid to 20mm.
2006	Introduction of mechanical controls on whelk size in the auction in Granville, 1-2 times per month (conducted by NFM).
2007	Fishery closed in January (total fishing days ~220).
2008	80 licences. Limit on total number of pots/vessel of 240/crew member, up to a maximum of 720 pots. Plan adopted to decrease 1 in 3 licences that are relinquished each year.
2009	Sorting grid gap increased to 22mm (in practice increasing minimum size to ~47-48mm although MLS remains 45mm). 77 licences.
2010	76 licences
2011	75 licences
2012	74 licences
2013	73 licences
2014	72 licences

Around the coasts of England, the Association of IFCAs is currently developing a common Shellfish management framework (Devon & Severn IFCA, 2014)1, based on annual planning for management, research, and risk-based enforcement, monitoring and surveillance. Management measures include specific licence permits and daily cap, pot tagging, capped numbers, escape holes (size, position and number), sorting riddles gap, and the mandatory submission of catch and effort information per area. IFCAs on the south coast of England have also set up a bylaw harmonisation group and are working together to issue specific fishing permits in protected European Marine Sites. Finally, the Devon & Severn and the Sussex IFCAs have a common voluntary code of conduct limiting whelk pot numbers in the Lyme Bay reserve (Defra, 2015).

[1] See http://nffo.org.uk/uploads/attachment/112/ifca-shellfish-management.pdf

3.3. Principle One: Target Species Background

3.3.1. Biology and ecology of the target species

3.3.1.1. Biology

The common whelk (*Buccinum undatum*) is a gastropod in the family Buccinidae (the true whelks). It is distributed in temperate / polar regions of the North Atlantic, from Northern Europe / Gulf of Maine northwards to the Arctic. The Granville Bay / Channel populations are therefore on the southern edge of the range of this species. The species is less common elsewhere in France, and this fishery represents ~75% of French whelk production. In terms of habitat, the species appears to occur over a range of bottom substrata wherever food is available, from the low tide line down to ~200m. It is not commonly found in the intertidal, since it is not tolerant to exposure to air or to low salinities.

The common whelk is a predator and scavenger. They can open live bivalves such as mussels and cockles with their foot, and are also commonly found feeding on dead animal material of more or less any kind. They can reportedly detect proteins given off by prey or food 30m or more upstream using their proboscis (Ruppert et al., 1994). In whelk pots, the fishermen use a combined bait of fish ('roussette', small spotted catshark, *Scyliorhinus canicula*) to attract the whelks, and crustaceans to provide tempting food to detain them in the pots.

Relatively extensive work has been done on the life history of whelks in Granville Bay, including work on age, size at maturity and reproductive output (e.g. Heude-Berthelin et al., 2011). Ageing is done by reading the striae on the operculum, as well as via evidence of different age class peaks in the size distribution. The size at 50% maturity was estimated to be 49mm for males and 52mm for females, corresponding to an age of 3-4 years (it is estimated that males reach 50% maturity during their third year, and females during their fourth year). A similar study at various sites around the English coast (Lawler, 2013) found that size and age at maturity were highly variable, being as low as 45mm / 2 years in the Solent and as high as 70mm / 4 years in sites in the Western Channel (Exmouth) as well as sites further north. It is not clear why this should be, although presumably temperature plays some role.

Unlike most molluscs, whelks do not broadcast spawn and do not have a planktonic larval stage. Instead, fertilisation is internal, and females subsequently produce egg capsules, within which the larvae grow and mature before emerging as small versions of adult whelks. This obviously means that dispersal rates are much lower than for most molluscs, and the fishermen are well aware that they are easily able to deplete whelks in local areas by concentrated fishing in that area.

An egg mass consists of ~30-40 egg capsules, regardless of female size. However, the size of the capsules and the number of eggs they contain varies significantly with female size, from ~100 eggs per capsule at first maturity to up to 1000 or more. The females may lay egg masses several times over the course of a season. Histological analysis showed that the highest percentage of ripe gonads (for both sexes) is in October, and spawning takes place mainly from October to December (V. Legrand, CRPM-BN and L. Hégron-Macé, SMEL, pers. comm.). In general, the whelks are active (available to the fishery) during the autumn, winter and spring, but not during the summer, and it is assumed this is because they are less

tolerant of high water temperatures during this period. The summer 'low season' varies from year to year but typically runs from ~June to ~September.

3.3.1.2. Stock definition

As far as the assessment team and the client are aware, no work has been done on the population structure of whelks in the Western Channel. Since there is no planktonic life history stage, an appropriate spatial scale cannot be inferred from the oceanography of the system. On this basis, the only option is to manage the 'stock' in a pragmatic way based on appropriate political units, while ensuring some cooperation with neighbouring jurisdictions – as is done in this case. This fishery is far from unique in having this difficulty, particularly for shellfish fisheries. This is, however, not sufficient here because the PSA (used to score PI 1.1.1 under the risk-based framework – details below) requires a definition of the stock with some biological basis. In this section, therefore, we consider the existing evidence as to how a 'stock' might suitably be defined for the purposes of an MSC assessment.

It is known that whelks have a reduced ability to disperse compared to most other marine invertebrates, because they do not have planktonic larvae. Larvae develop in an egg case and hatch out as small benthic whelks. The assumption on this basis has been that populations may be structured at quite a local scale. Conversely, the egg cases themselves can disperse – they are a familiar site on beaches around France and the UK, for example. Individual whelks may also move – a recent (non-peer-reviewed) study in North Wales suggests a minimum movement rate of >100m per day (Turtle, 2014). It is not known whether adults make directed movements (e.g. if they have a 'home range' or if they move at random, although they are known to respond strongly to food cues). The net impact of egg-case plus adult dispersal on overall dispersal rates is not known.

Phenotypic differentiation between different areas is known, as discussed above. There is, however, no information as far as we know as to whether this implies some underlying population structure (i.e. if it has a genetic basis) or whether it is simply a plastic phenotypic response to different environmental conditions. No detailed genetic information could be found for the general area of this fishery (the Channel or Western Channel). A 2006 study, however (Weetman et al., 2006) considered whelk genetics at a wider scale – across the whole range of the species in the northern Atlantic. They found four main genetic clusters in their samples: Nova Scotia, Iceland, Skagerrak and the NW European shelf, which included samples from the east, west and south coasts of the UK mainland, Jersey and the south coast of Brittany. Within this large grouping there was genetic differentiation, but no clear evidence of finer spatial genetic structure, with two exceptions: a north-south trend on the UK east coast (samples from Kent to Fife), and a differentiation of samples from the Solent from elsewhere, which the authors speculate results from a population bottleneck caused by past TBT poisoning (imposex) and perhaps exacerbated by fishing.

Looking in detail at the samples in this study, which may be informative for this fishery: a sample is included from Jersey – i.e. within the area of this fishery. The closest samples, for comparison, are one from Hastings (from the other main whelk fishery in the Eastern Channel), three from Carmarthen Bay in SW Wales and one from Carnac on the south coast of Brittany – i.e. none of them very near. Five loci were tested for significant allelic differentiation, with the following results for each comparison:

- Jersey-Hastings – 0 samples out of 5 showed significant differentiation
- Jersey-Carnac – 1/5
- Carmarthen Bay A – 1/5
- Carmarthen Bay B – 0/5
- Carmarthen Bay D – 2/5 (but this sample also showed significant differences at 1/5 and 2/5 loci with the other Carmarthen Bay samples)

The authors summarise their overall results as follows:

In summary, our results show that Buccinum undatum *exhibits widespread population structure, but high differentiation only across very large geographical scales. Low* F_{ST} *levels across most of the European continental shelf appear at odds with the limited potential for dispersal of* B. undatum*, and are unlikely to be attributable solely to either high marker polymorphism or historical connectivity of populations. We suggest that semi-continuity of populations may permit exchange of migrants, despite low individual vagility.*

The authors also note that where smaller-scale differentiation was found (e.g. for one sample in Carmarthen Bay and some others) this appears to be correlated with inshore populations. They suggest that gene flow from inshore to offshore is greater than vice versa, and hence that populations in small bays or estuaries may be more isolated than other populations. The assessment team notes that the population exploited by this fishery does not come into this category.

Overall, the authors hypothesise that high local movement rates (although the definition of 'local' is unclear), combined with continuous, unfragmented populations, result in population connectivity over large spatial scales. Of course, the amount of connectivity required to maintain genetic homogeneity is most likely a lot smaller than the amount required to give populations the same dynamics in the short-term when some sub-populations are fished and some are not – this is also the case for fin fish, of course, although the timeframes will vary with species life history and the spatial scale under consideration.

A brief review of the practice in MSC assessments where stocks have a complex structure suggests that in circumstances such as this, a basic 'stock' is defined on some genetic basis or for migratory fish via tagging, and this is used as the unit used in the scoring of Principle 1 and the first part of Principle 3, but that scoring may be adjusted based on evidence at some lower or higher level. An example would be North Sea herring, where scoring has been based on the whole North Sea stock, but adjusted to consider smaller 'spawning components' (e.g. see FROM Nord herring (Gascoigne et al., 2015) and DPPO and DFPO North Sea herring[2]).

In this case, fixing the basic unit of analysis at the lowest possible level (Granville Bay) results in a false impression of a stock ('stock') that is much more heavily fished than is actually the case, because as estimated above, about three quarters of the fishing effort in the whole Western Channel area comes from this fishery, which appears, from genetic information, to be operating on a part of a much larger, continuous population. The outcome of setting the basic stock unit at this level is a distorted scoring of Principle 1. Conversely,

[2] Public Comment Draft Report: https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/dppo-and-dfpo-north-sea-herring/reassessment-downloads-folder/20150430_PCDR_HER34.pdf

fixing the unit of analysis based on the genetic information available (Weetman et al., 2009) again gives a misleading impression since defining the stock as 'the NW European shelf' does not take account of the authors' own interpretation of their results – that the lack of genetic structure results from a continuous population with low individual dispersal. The team concluded that the best approach was to define the stock unit at a spatial scale intermediate between these two extremes, and the Western Channel was selected as a suitable 'compromise' stock unit (the selection of the whole Channel was also reviewed and does not make any difference to the overall outcome). This means that P1 and the first part of P3 must take account of other fisheries in this area, and their management, as per the information provided above.

3.3.2. Other fisheries on the stock

The Granville Bay area is shared between Normandy, Brittany and Jersey, with a system of co-management in place for shared areas based on the Granville Bay Treaty (see Figure 1). The vast majority of the fishery is based in Basse-Normandie (72 whelk permits issued in 2014), but there are also small fisheries based in Brittany (12 permits for this area in 2014, number of active vessels unknown) and Jersey (2 active vessels in 2014). These Breton and Jersey vessels are not part of the UoC. The Breton and Jersey management systems and the shared Granville Bay system have been considered in the evaluation of the fishery to the extent that they impinge on the management of the stock, and the definition of the general management framework (Principle 1, Principle 3.1).

There is a small amount of whelk fishing on the east side of the Cotentin peninsula (Baie de Seine) but it is assumed for management purposes that the Eastern Channel operates on a different stock.

There is no recreational or land-based fishery ('pêcherie à pied') for whelks in this area.

Since the 'stock' is defined as an area wider than just Granville Bay (the Western Channel – for details see Section 3.3.1.2), the team reviewed whelk fisheries in this wider area.

France:

As noted above in relation to Breton landings, the only information available was auction data from FranceAgriMer, but a comparison of landings to other auctions with landings to the Granville auction gives a general idea of the relative size of these fisheries in relation to the Basse-Normandie fishery (Table 6).

Table 6. Landings of whelks to auctions* around France in 2013. Data from FranceAgriMer[3].

Auction market	Location	Western Channel 'stock'?	FR Quantity sold (t) in 2013	%t compared to Granville auction (%)
France Western Channel				
Granville		Y	3111	100
Erquy	N. Brittany	Y	415	13
St Quay Portrieux	N. Brittany	Y	279	9
Cherbourg	N. Cotentin	Y	25	0.8

[3] See http://www.franceagrimer.fr/content/download/32976/297669/file/BIL-MER-Bilan_HAM-2013.pdf

France Eastern Channel				
Grandcamp	E. Cotentin	N	664	
Port en Bessin	E. Cotentin	N	289	
France other areas				
Le Grau du Roi	Mediterranean	N	158	
Dieppe	E. Normandy	N	134	
Fécamp	E. Normandy	N	26	
Boulogne /mer	Pas de Calais	N	9	
Le Grau du Roi	Mediterranean	N	158	
Les Sables d'Olonnes	W. coast	N	10	
Le Croisic	S. Brittany	N	5	
Lorient	S. Brittany	N	5	
La Rochelle	W. coast	N	3	
Noirmoutier	W. coast	N	1	
Total FR landings			5134	

*Annual landings less than 1 tonne do not figure in annual reports

Aside from the Granville auction, there are landings of whelks from the Western Channel 'stock' in Erquy and St. Quay Portrieux (Brittany). These ports are to the west of the Granville Bay zone, with Erquy quite close and St. Quay Portrieux a little further away. Both ports are important scallop ports (the largest and second largest in France, respectively, landings of scallops to St Quay ~3000 t and Erquy ~2500 t in 2013 – data source as above). It is likely that most of the whelks landed are taken as bycatch in the scallop dredge fishery, which is outside the Granville Bay zone. The landings form E. Cotentin, E. Normandy and Pas de Calais correspond to a different fishery, on the Western Channel 'stock'.

England:

In England, whelk fisheries are inshore fisheries and managed by the Inshore Fisheries and Conservation Authorities (IFCAs). Two IFCAs in the Western Channel have sizeable whelk potting fisheries, the Southern IFCA and the Devon and Severn IFCA. Catches are very low in the more rocky inshore areas of the Cornwall IFCA and the Scilly Isles IFCA.

The spatial distribution of whelk landings around the UK is given in Figure 7. The most important fisheries are in the Eastern Channel, the Thames estuary, the Bristol Channel and west Wales, but there are also some landings from the Western Channel, mainly from the eastern part of the area in the Southern IFCA area. There are, however, some landings to ports in the Western Channel area (Table 7). (Note that these landings are compared in the table with total Granville Bay landings, rather than just landings to the Granville auction as above – this is to compare like with like, since the MMO figures include non-auction landings, unlike the FranceAgriMer figures.)

Table 7. Landings of whelks to English ports in the Western Channel area (tonnes, 2013, data from MMO)[4], and comparison with Basse-Normandie landings for 2013.

Port	IFCA	Landings (t) in 2013	Relative size compared to 6293 t (%)
Weymouth	Southern	722	11
Brixham	Devon and Severn	32	0.5
Teignmouth	Devon and Severn	12	0.2
Total UK	**Western Channel**	**766**	

Conclusion:

Overall, taking into account non-Granville Bay landings from north Brittany and SW England, the other fisheries on the Western Channel 'stock' (UK, Jersey, Northern Brittany) add up to (766t + 253t + 719t) 1738t; the Granville Bay fishery accounts for about ¾ of the whelks production in the Western Channel.

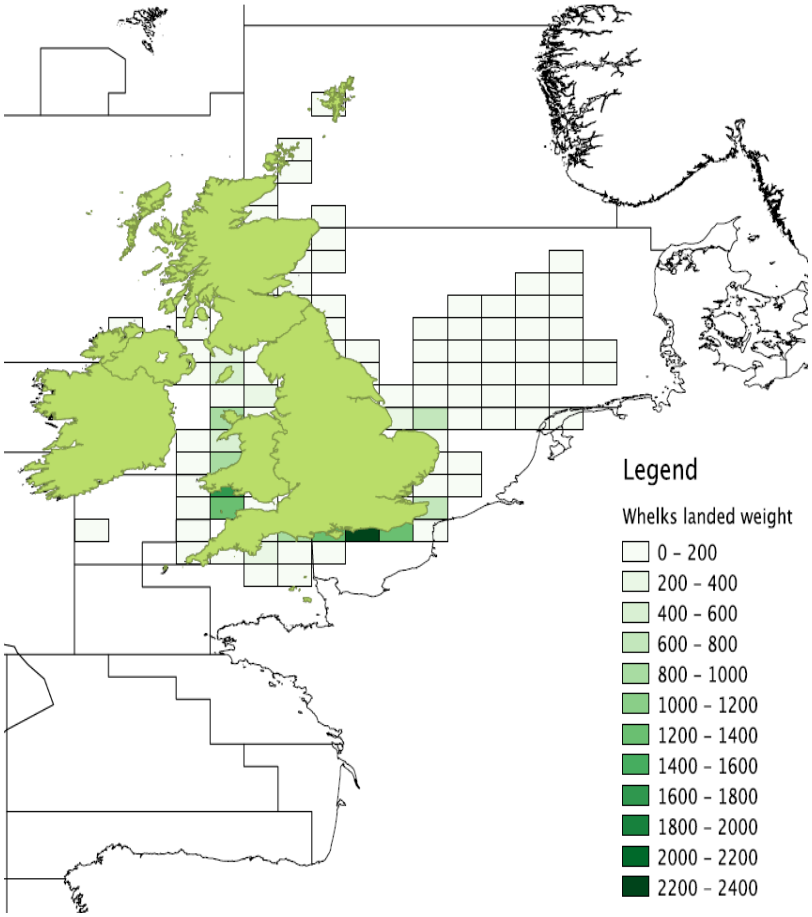

Figure 7. Spatial distribution of whelk landings around the UK, 2012. Produced from MMO data.

[4] See https://www.gov.uk/government/statistical-data-sets/uk-sea-fisheries-annual-statistics-report-2013, Chapter 3, Table 3.14a

3.3.3. Current stock status

Monitoring of stock status is based on following trends in nominal CPUE (kg/pot) (Figure 8). The various datasets give somewhat conflicting pictures of the trends in CPUE. The longest dataset, from the Jersey survey, suggests a decline in CPUE in whelks >MLS from the early 2000s and smaller size classes from the mid-2000s, while recent survey results are apparently fluctuating without trend.

Conversely, the shorter time series from Basse-Normandie, but with a considerably larger sample size, suggest a significant improvement in CPUE trends for whelks >MLS in Basse-Normandie waters (e.g. 28% increase in CPUE from observations at sea in 2013 compared to 2007; 55% increase from self-sampling, 2013 compared to 2009; and 71% ditto from landings). It is not clear whether these differences between the datasets are real (e.g. driven by different trends in different areas) or an artefact of sample size, sample technique or length of time series.

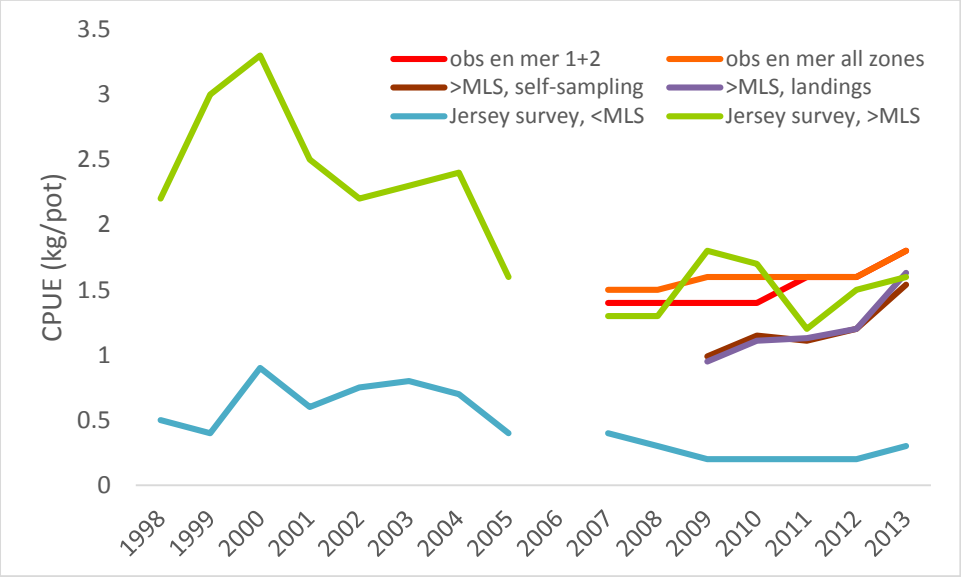

Figure 8. Trends in CPUE from various sources, as set out in Table 3, Section 3.2.5.

The Basse-Normandie CPUE data is exclusively for animals over the MLS – CPUE has not been estimated for the undersized animals, perhaps because coming from the onboard sampling, the measure of effort would not be very representative of the normal situation, and the sample size would be much smaller. The onboard sampling data does, however, provide information on the size structure of the population, which does not appear to have changed significantly from 2007-2013 – the various annual cohorts are consistently apparent (see Figure 9 below).

Overall, there is a consensus among the scientists and managers involved in the fishery (in Basse-Normandie and Jersey) that the stock in this area was heavy exploited (perhaps overexploited) in the late 1990s, and is now most likely recovering. There is no information, however, which allows managers to evaluate absolute rather than relative stock status (e.g. to evaluate the point of recruitment impairment, the biomass associated with maximum sustainable yield or other such biological reference points). For this reason, Basse-Normandie scientists have not for the moment set targets in terms of CPUE, or determined an end point objective in relation to the on-going strategy to reduce effort.

In relation to other areas of the Western Channel, no information could be found on stock status. For English fisheries, over the last 5 years (the time series available from MMO) landings have been rather variable into the three ports defined in the previous section, and trends are reportedly more likely to reflect changes in the market than in stock status (D. Lamort, Normandie Fraicheur Mer, pers. comm., Table 8).

Table 8. Landings into Brixham, Teignmouth and Weymouth (t landed weight) 2009-2013. Data from MMO[5].

Year	Landings (t landed weight)
2009	641
2010	1109
2011	1443
2012	836
2013	766

3.3.4. Recruitment

The Jersey survey gives trends in CPUE for whelks below the minimum size (as shown in Figure 8 previously). As for the adults, it appears that there may have been some decline since ~2000, with the situation now apparently stable.

On the Basse-Normandie side, data are also available giving the size structure of the population both above and below the minimum size (to the extent that the smaller size classes can be sampled by whelk pots) (Figure 9). Data from 2007-2013 also do not suggest any particular changes in recruitment coming through during this period, in terms of the proportion of the sampled population above and below the MLS. The size classes coming into the fishery are clearly visible, suggesting that recruitment is basically quite regular.

3.3.5. Harvest strategy and control rules

3.3.5.1. Harvest strategy, Granville Bay

The history of management of the whelk fishery in Basse-Normandie is given in Table 5, Section 3.2.8.2. The current overall harvest strategy in Basse-Normandie is to continue with gradual reduction of effort in the fishery, by reduction of the total number of whelk permits (as well as continuation of the other measures for regulation of effort), which has cut landings in half compared to the peak in 2001. The scientists involved in the management of the fishery are reluctant to commit to a quantitative target as far as effort (number of licences) or CPUE is concerned; the strategy is to continue to monitor the fishery both biologically and economically and to reach a point at which stakeholders agree that an appropriate balance between biological sustainability and economic return has been found.

[5] See https://www.gov.uk/government/statistical-data-sets/uk-sea-fisheries-annual-statistics-report-2013

For the whole Granville Bay fishery (including Jersey and Brittany), there is no explicit harvest strategy. Although whelk stock status and the whelk fishery has been extensively discussed by the Granville Bay Joint Advisory Council (JAC) and Joint Management Council (JMC) (e.g. meeting minutes of the Granville Bay JAC, 15th session, 9 and 10 December 2008, Granville), there has never been any success at agreeing formal joint management measures between the three parties, and management measures have therefore been put in place on a unilateral basis. The Breton and Basse-Normandie regulations, are, however, similar, although not the same (Jacques Doudet, CRPM Bretagne, pers. comm. – see details below).

The perception of the stock status on the French and Jersey side has always been different – most likely informed by the somewhat different datasets obtained by each side (see Figure 8). Jersey has at times used words such as 'collapse' to describe the stock status, while on the French side, although there is agreement that the stock has declined, this interpretation has always been vigorously refuted, and there is now a perception of recovery which is not shared by Jersey.

These different perceptions have obviously led to a different sense of urgency in terms of the need for additional management measures. Jersey has always urged more significant proposals for action from Basse-Normandie, who control most of the fishery, while Basse-Normandie has taken a more gradual approach to reducing effort and introducing other measures, with the aim of controlling effort without causing economic hurt to fishermen (as shown by the meeting minutes of the Granville Bay JAC, 15th session, 9 and 10 December 2008, Granville).

In addition, Jersey and Basse-Normandie have taken different approaches to the type of regulation used to control effort, with Basse-Normandie preferring to control catches or effort directly through the number of licences, pot limits and catch limits, while Jersey prefers technical measures such as size limits (see below). This reflects the preferences of fishermen on each side, since both management systems are stakeholder-driven.

In practice it does not really matter if coordinated actions are taken at the Granville Bay level or if each side takes different individual actions, as long as actions are effective (although the Granville Bay system is 'neater'). Jersey does, however, have a valid concern about the management objectives on the Basse-Normandie side – as noted above, no particular targets have been defined, and it is not clear what would be regarded as an appropriate end point for management, or a suitable reference point to define 'good' stock status.

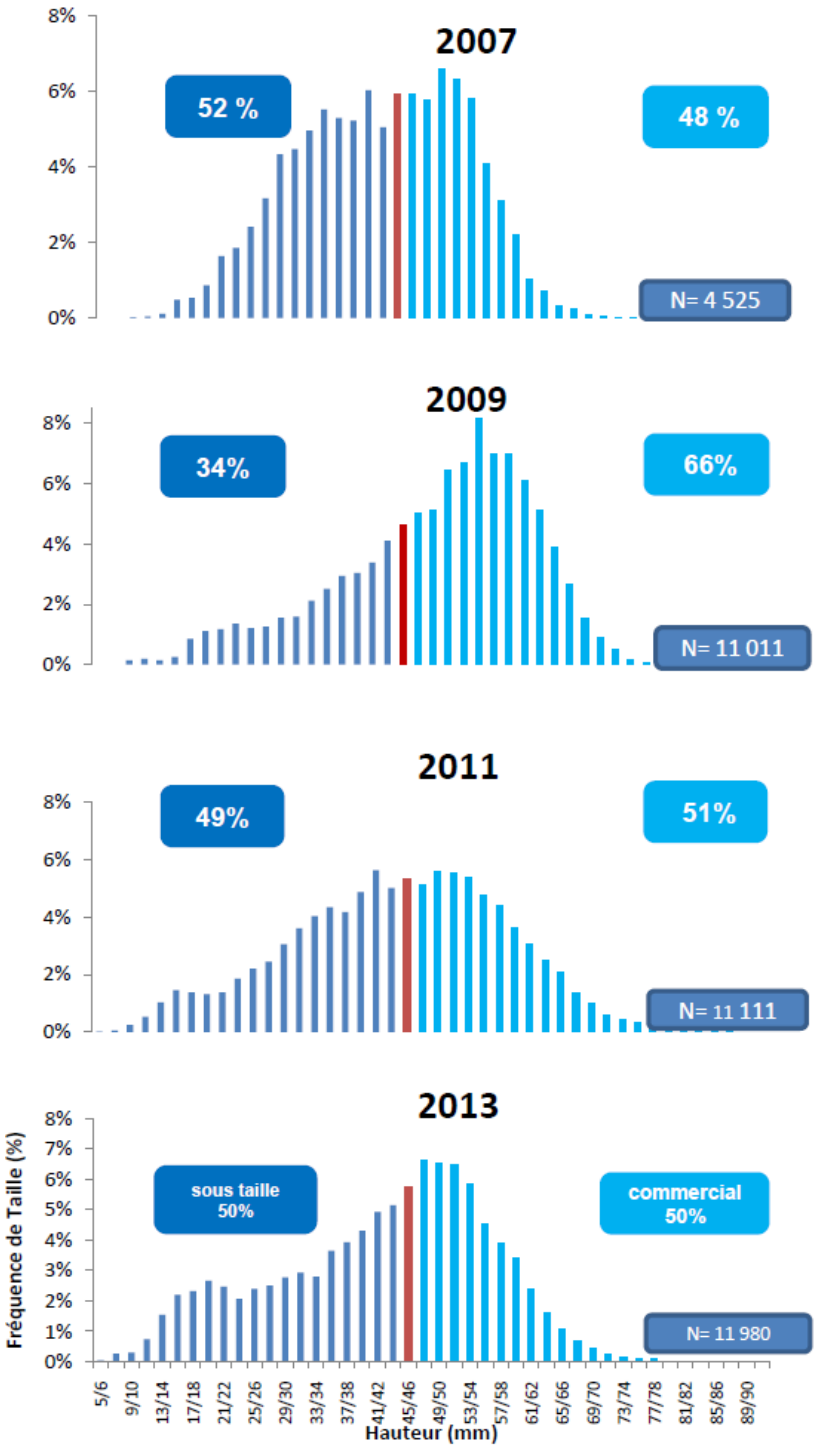

Figure 9. Size structure from onboard whelk sampling, 2007-2013 (alternate years). Red line=MLS, percentages given are undersize ('sous taille') and commercial size. Data from CRPM-BN / SMEL

3.3.5.2. Control rules, Granville Bay

The current regulations controlling landings and effort for Basse-Normandie vessels are as follows:

- whelk permit required; only available to vessels <12m, total number limited to 72 (2014)
- 22mm sorting grid enforcing MLS of 45mm SL
- daily quota of 300 kg/crew member
- daily quota of 900 kg/vessel
- fishery closed weekends, holidays and January
- pots limit of 240 pots/crew member

These harvest control tools are employed with the objective of continuing to reduce effort in the fishery until all parties are happy that an appropriate point of biological and economic sustainability has been found. This point has not yet been defined quantitatively.

The regulations for Jersey vessels are as follows:

Inside 3 miles (Jersey exclusive zone):

- 50 mm MLS
- pot tagging required
- pot limit per vessel based on a 2 year track record (the maximum number of pots used in the period 2012-2013)
- whelk permit required; provides for the number of pot tags up to the vessel's limit
- (Note that the pot tagging system is currently in a two year trial period)

Outside 3 miles (shared Granville Bay zone):

- pot limit 900 per boat (same as Basse-Normandie)
- no tags

The regulations for Brittany vessels are as follows (comparison given with Basse-Normandie):

- whelk permit required; total number limited to 12 (2014)
- 20mm sorting grid enforcing MLS of 45mm SL (Basse-Normandie = 22mm)
- daily quota of 1 tonne per vessel (Basse-Normandie = 0.9 tonnes)
- annual quota of 250 tonnes per vessel (Basse-Normandie – no annual quota)
- fishery closed weekends from January to June inclusive, and 15 July to 12 August (Basse-Normandie – closed at weekends all year, also holidays; closed period in January rather than summer)

- pots limit of 720 pots/vessel – pots must be tagged (Basse-Normandie = 240 per crew member, tagging not required)

3.3.5.3. Harvest strategy and control rules, other fisheries

France: The other French fisheries are in Brittany, which is discussed above.

UK (England): Neither the Southern nor the Devon and Severn IFCAs have significant management in place for whelks at present, aside from the 45mm minimum size; the fishery is not among the most significant for them in either case. Both IFCAs, however, have work underway to identify and put in place management as required. At the western edge of Area VIIe Figure 5), the Cornwall and the Isles of Scilly IFCAs have no targeted whelk fisheries in their areas.

The Southern IFCA has in place a Byelaw Working Group that is reviewing the IFCA bylaws (management regulations) under five priority headings, including static gear management and shellfish and cephalopod management, both of which include the whelk fishery. The work of the Byelaw Working Group was side-tracked by the requirement to put in place appropriate assessments for fisheries within European Marine Sites (which resulted from a UK court case), but according the most recent IFCA Research and Evidence Plan[6], the work of reviewing the management framework in these areas should be finished during 2015. The IFCA also has a project in place to develop harvest control rules for all its key fisheries, as a follow-up from Project Inshore (Southall et al., 2013).

The Devon and Severn IFCA has recently put in place a new potting bylaw[7], which for the first time requires an explicit permit for potting, which includes for whelks. The bylaw provides a framework for management by allowing the IFCA to include as conditions of the permit restrictions on catch or gear, or spatial and/or temporal closures. As far as the team can tell, no such restrictions are in place at present, but the bylaw requires the IFCA to review the situation at least every three years.

3.3.6. Information and monitoring

The key sources of data on the fishery and the stock are described in detail above. In summary, these are:

- landings data, Basse-Normandie, i) from auction records and ii) non-auction landings extrapolated from the fiches de pêche from the ‘reference fleet’
- landings data, Jersey, from logbooks
- landings data, Brittany, from auctions – non-auction data unclear, although fiches de pêches / logbooks are reportedly provided to FranceAgriMer (J. Doudet, CRPM Bretagne, pers. comm.)
- landings data, UK, from Marine Management Organisation (MMO)

[6] https://secure.toolkitfiles.co.uk/clients/25364/sitedata/files/ResearchandEvidencePlan.pdf
[7] https://secure.toolkitfiles.co.uk/clients/15340/sitedata/byep/Potting%20Permit%20Byelaw.pdf

- Basse-Normandie at-sea observer research campaign every two years (commercial CPUE above and below MLS, size distribution)
- Basse-Normandie self-sampling (commercial CPUE above MLS, size structure)
- Jersey annual survey (survey CPUE above and below MLS, size structure)

3.3.7. Stock assessment

There is no formal stock assessment. The stock status is tracked via trends in nominal CPUE from the Basse-Normandie Granville Bay fishery.

3.3.8. Key LTL species

Whelks are predators / scavengers. They are not, therefore, key low trophic level species.

3.4. Principle Two: Ecosystem Background

This section of the report outlines the fishery's potential impacts on the wider ecosystem. Five key components are considered to cover the range of potential ecosystem elements that may be impacted by the fishery. These are:

i. Retained, non-target species: species that are retained by the fishery (usually because they are commercially valuable or because they are required to be retained by management rules).

ii. Bycatch (discarded) species: organisms that have been taken incidentally and are not retained (usually because they have no commercial value).

iii. ETP species: Endangered Threatened or Protected species

iv. Habitats: the habitats within which the fishery operates

v. Ecosystem: broader ecosystem elements such as trophic structure and function, community composition, and biodiversity.

Under each of those five components, particular attention was paid to:

i. Outcome: the status of the impact or the risk that the fishery poses to that component.

ii. Management: the management strategy for the component.

iii. Information: the monitoring and information available to inform the outcome and management of the component.

3.4.1. Retained species

The information on retained species was obtained from the fiches de pêche and from stakeholders during the site visit. Other than whelks, no other species tend to be retained. Although some netted dog whelk (*Nassarius reticulatus*, "nasse") can occur in the landings in very small quantities, this is only through sorting error and most "nasse" are discarded. This species is therefore discussed in Section 3.4.2.

Within the MSC context, bait is considered under retained species. The volume of bait used in this fishery can be important and averages at approximately 200 - 300g per pot, generating about 1 to 1.6 kg of whelks. One baited pot requires a mix of fish and crustaceans and species used include:

- dogfish ("roussette"), from directed (mixed) demersal finfish fisheries – either from French sources, or sometimes imported from elsewhere in Europe
- edible crab ("tourteau"), low quality or individuals that died in viviers
- spider crab ("araignées"), low quality or individuals that died in the viviers
- green crab ("crabe vert"), from local sources although also imported from the UK and Ireland
- Pouting/bib ("tacaud")
- sausages made from a mixture of fish and crustaceans

Roussette, i.e. small-spotted catshark or lesser spotted dogfish (*Scyliorhinus canicula*) is by far the dominant species used in the bait, accounting for about a third of the total bait volume. The remaining two thirds tend to be a mix of the various crustaceans. On this basis, the team considered that the use of *S. canicula* as bait merited further investigation. The annual volume used by the fishery was estimated on the basis of 300g bait (i.e. 100g of *S. canicula*) generating on average 1,300g whelks per pot. In 2013 the total production of whelks in this fishery was 6,100 kg, according to CRPM-BN estimates, corresponding to an estimated 462 tonnes of *S. canicula* used as bait in that year or 7.7% of the total whelk catch[8]. Note that for France, the 2013 landings of all Scyliorhinidae in the North Sea ecoregion combined was 2,146 tonnes (WGEF, 2014), to which the bait use by this fishery appears to have contributed approx. 22%. As such, the team considered *S. canicula* as a main retained species and the species is further discussed in the following section.

In relation to the crustaceans, the dominant source of bait is the local crustacean fisheries, with individuals unsalable on the crab/lobster market (dead, moribund, missing claws) going for bait. On this basis, their use as bait has no impact on fishing mortality on these stocks – they are 'discards'. Green crabs may potentially be fished for use as bait (i.e. with an impact on fishing mortality) but the use of green crab in this fishery is very minimal.

3.4.1.1. Lesser spotted dogfish / Roussette (*Scyliorhinus canicula*)

Outcome:

S. canicula is a small, common catshark and is one of the most abundant shark species in the Northeast Atlantic and Mediterranean, with a distribution ranging from Norway and the Shetland Islands to Senegal and found throughout the Mediterranean Sea. Reproduction is oviparous and the species appears to be relatively productive biologically, thus may be able to withstand higher levels of exploitation that most shark species (Ellis et al., 2009). Though commercial landings are made and large individuals are retained for human consumption, the species is often discarded and studies show that post-discard survival rates are high. The species is listed as Least Concern on the IUCN red list (Ellis et al., 2009).

Due to the locality of the fishery, the stocks under consideration here are defined by ICES as those occurring in Division IIIa (Skagerrak and Kattegat), Subarea IV (North Sea), and Division VIId (Eastern Channel) and in Subarea VI and Divisions VIIa–c, e–j (Celtic Seas and west of Scotland). ICES considers both stocks to be data-limited and advice is issued on a biennial basis; the most recent advice was issued in 2012 (valid for 2013 and 2014) and is based on a qualitative evaluation of stock status relying on fisheries-independent data provided by beam trawl surveys (BTS) and international bottom trawl surveys (IBTS).

For the Eastern Channel stock, according to ICES (2012a) the BTS-Q3 and IBTS-Q1 (North Sea) averages, both assumed as stock size indicators, were respectively 35% and 26% higher for the period 2010-2011 than the average of the five previous years (2005-2009). Given the increase in abundance, and stable/increasing catches, ICES (2012a) infers that fishing mortality is stable or decreasing (Figure 10). Based on the ICES approach to data-limited stocks, the advice is given that catches could be increased by a maximum of 20% for

[8] During the site visit fishermen estimated that 500 to 600 tonnes of *S. canicula* are used by the fishery each year. The team's estimate is therefore not far off.

2013 (note that this is not further recommended for 2014). ICES (2012a) for the time being does not advise that an individual TAC be set for this stock.

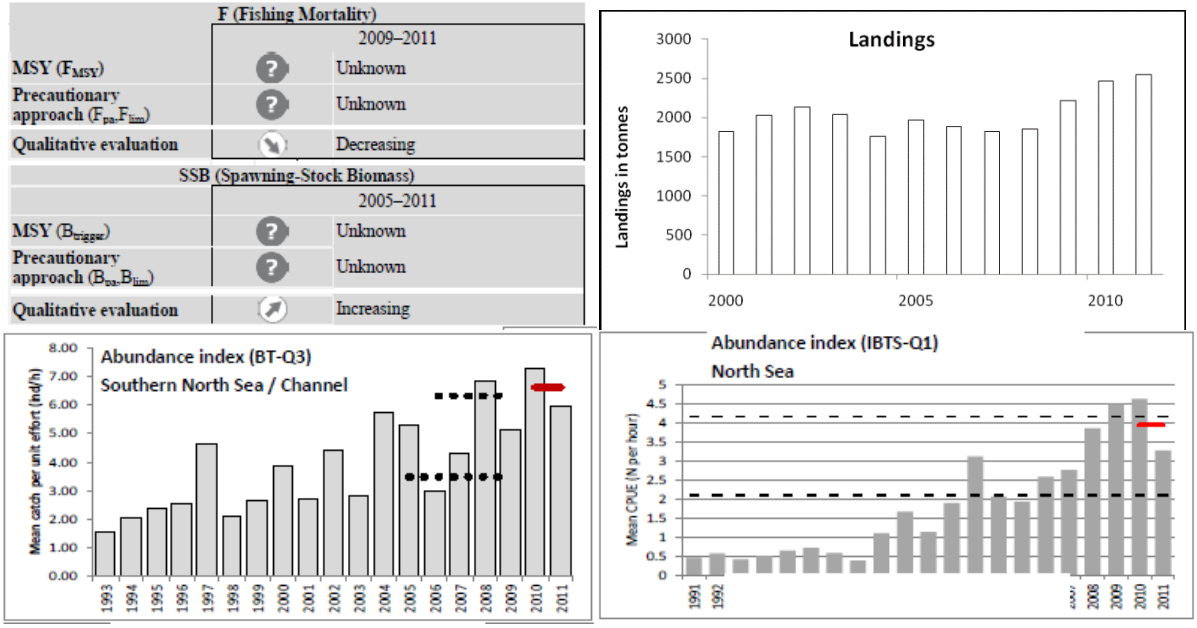

Figure 10. Top left: stock status summary of lesser-spotted dogfish in Subareas and Divisions IIIa, IV, and VIId. Top right: Reported landings (tonnes). Bottom left: Mean catch per unit effort of BTS-Q3 survey in Divisions IVc–VIId. Bottom right: catch per unit effort of IBTS-Q1 in Subarea IV. Dashed lines show the mean (± 1SD) cpue for 2005–2009, the red line shows the mean CPUE for 2010–2011 (From ICES 2012a)

For the Celtic Seas and West of Scotland stock, according to ICES (2012c) the abundance is estimated to have increased by more than 20% between 2005 and 2009 (average of the five years) and 2010–2011 (average of the two years) in the UK E&W BTS VIIaf survey.. This implies that catch could increase by a maximum 20% in relation to the last three years average catch (ICES, 2012c). Based on the ICES approach to data-limited stocks, the advice is given that catches could be increased by a maximum of 20% for 2013 (note that this is not further recommended for 2014). ICES (2012c) for the time being does not advise that an individual TAC be set for this stock.

F (Fishing Mortality)		
	2009–2011	
MSY (F_{MSY})	?	Unknown
Precautionary approach (F_{pa},F_{lim})	?	Unknown
Qualitative evaluation	↘	Decreasing
SSB (Spawning-Stock Biomass)		
	2005–2011	
MSY ($B_{trigger}$)	?	Unknown
Precautionary approach (B_{pa},B_{lim})	?	Unknown
Qualitative evaluation	↗	Increasing

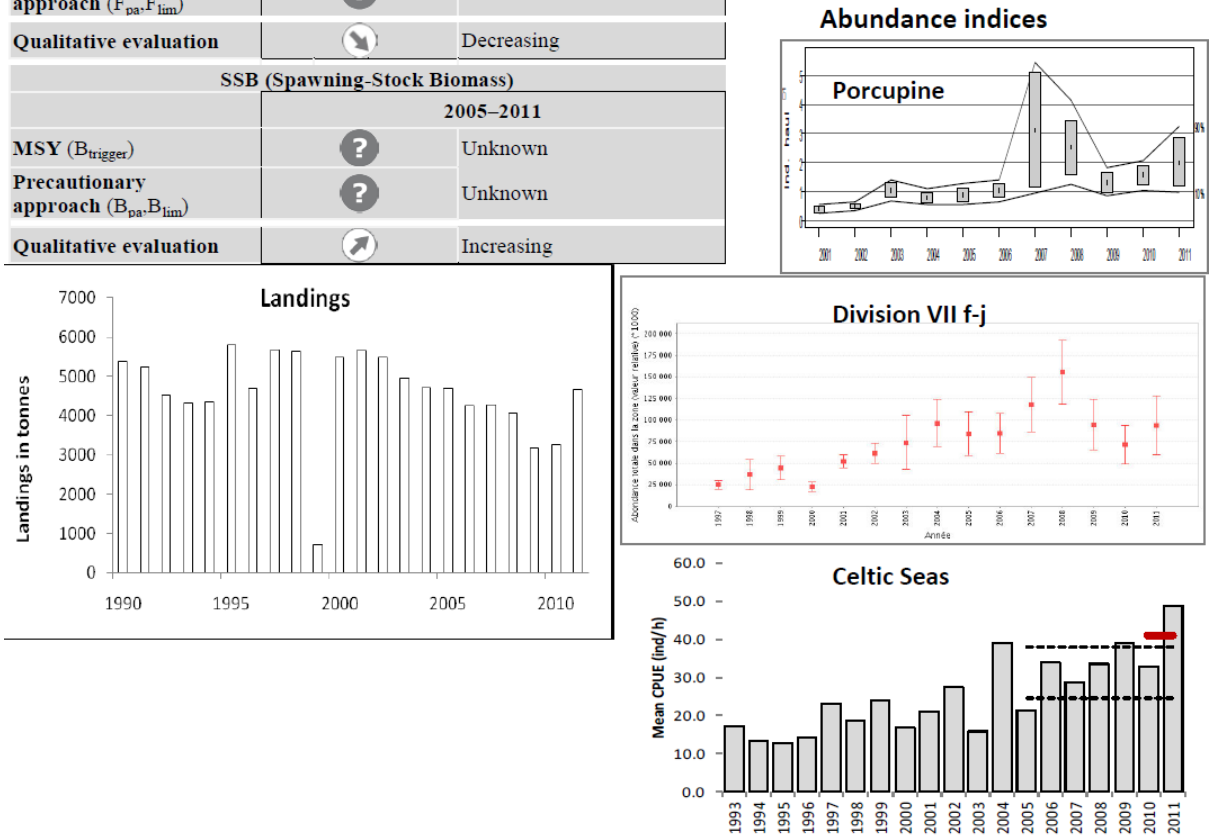

Figure 11. Lesser-spotted dogfish (*Scyliorhinus canicula*) in Subarea VI and Divisions VIIa–c, e–j. Left: Reported landings of lesser-spotted dogfish in Subareas VI and VII. Right: Abundance indices from surveys in: (top) SpPGFS-WIBTS-Q4 (numbers per haul; boxes mark parametric standard error of the stratified biomass index; lines mark bootstrap confidence intervals (a = 0.80, bootstrap iterations = 1000)); (middle) EVHOE-WIBTS-Q4 in Divisions VIIf–j (relative abundance in numbers); (below) UK (E&W) BTS in Divisions VIIa–f (mean catch per unit effort; dashed lines = mean annual cpue for 2005–2009, red line = mean annual cpue for 2010–2011). From ICES (2012c).

More up-to-date data were considered by the ICES Working Group on Elasmobranchs (WGEF) – although the 2014 report was still in draft version, the preliminary results indicate that the abundance of both *S. canicula* stocks is increasing (WGEF, 2014).

Management

Management for these stocks follows the ICES approach to data-limited stocks, which fall under Category 3. This category includes stocks for which survey indices (*inter alia*) are available that provide reliable indications of trends in stock metrics such as mortality, recruitment, and biomass. The general concept of survey-based catch advice is based on the assumption that decreasing surveys suggest catch should be incrementally decreased and vice versa (ICES, 2012b). For these types of stocks, ICES therefore uses a harvest control rule based on an index-adjusted status quo catch. The advice is based on a comparison of the two most recent index values with the five preceding values, combined with recent catch or landings data. Knowledge about the exploitation status also influences

the advised catch (ICES, 2012a). Based on ICES' estimate that SSB for these stocks has increased by more than 20% between the periods 2005-2009 and 2010–2011 (based on BTS and IBTS CPUE trends), an increase of catches of at most by 20% in relation to the last three years average is implied. However, because the data for catches of lesser-spotted dogfish are not fully documented, these 20% are not translated into an actual catch volume (ICES, 2012a and c). ICES considers this approach to be sufficiently precautionary given that there has been a consistent increase in survey catch rates over an extended period of time and that current exploitation levels are not thought to be detrimental to the stock (ICES, 2012a and c).

Information

This stock comes under the remit of the ICES Working Group on Elasmobranch Fishes (WGEF), which has been responsible for providing assessments and advice on the state of the stocks of sharks, skates, and rays throughout the ICES area since 2002. WGEF reviews and defines data requirements (fishery, survey and biological parameters) for stock identification as well as analytical models assessment methodologies to evaluate the status of the stocks, and adopts and extends the methodologies and assessments for elasmobranchs.

For *S. canicula*, there is no obligation to report catches at the species level, and the species is often included in generic categories such as "dogfish and hounds". Therefore, landings data are not considered reliable. Furthermore, high levels of discarding take place and these are poorly quantified (ICES, 2012a). While some fisheries-dependent data are obtained through national observer programmes (WGEF, 2014), the stock assessments rely primarily on fisheries-independent data provided by the Beam Trawl Surveys (BTS) and International Bottom Trawl Surveys (IBTS). The stocks are therefore considered by ICES under category 3 of its data-limited approach as explained in the previous section.

3.4.2. Discards

The information on discards was obtained from stakeholders during the SICA workshop, as part of the Risk-Based Framework (RBF) approach. Other species encountered in whelk pots can include netted dog whelk (*Nassarius reticulatus*, "nasse"), dog whelk (*Nucella lapillus,* "nucelle"), hermit crabs disguising as whelks (Paguroidea,), small velvet swimming crabs (*Necora puber*, "etrille") and edible crab (*Cancer pagurus*, "tourteau").

During the SICA workshop, stakeholders identified *N. reticulatus* as being by far the most dominant bycatch species and this species was retained for further SICA analysis, as discussed in the following section.

3.4.2.1. Netted dog whelk / Nasse (*Nassarius reticulatus*)

Outcome

During the SICA for this species, the fishery was identified as the most significant risk-causing activity, representing the worst plausible case scenario. The species can reach up to 3cm in height and occurs predominantly in coastal habitats in sedimentary areas of the lower rocky shore and sublittorally to 15 m on soft sediments, where it often buries itself and feeds on dead and decaying animal matter (MarLIN). The results of the SICA are presented in

Appendix 2.2 (see Principle 2 SICA Scoring Table). The assessment and the stakeholders arrived at a consequence score of 1, indicating an MSC score of 100. In accordance with the MSC Certification Requirements v1.3 no further PSA was therefore required.

Management

After each pot is lifted, the catch is sorted immediately with an average time delay of approximately 3 seconds. A sorting grid of 22mm is used (Figure 12) and any small bycatch (<22mm) falls straight back into the sea. Larger bycatch is picked out and discarded. All stakeholders agreed that survival rates of discards were likely to be high. Pots are also equipped with small holes at their base, which allow bycatch to escape/fall through/be pushed out as the volume of whelks in the pot increases.

Figure 12. Images of sorting grid used aboard whelk vessels. A sorting grid of 22mm is used by the fishery under assessment (this is 20mm for Bretagne-based boats) (Left: image by MEC; Right: image by NFM/CRPM-BN/SMEL).

Information

Information on the fishery's bycatch, including *N. reticulatus* is collected through fishermen's observations (through a self-sampling programme which started in 2009, and which takes place every day during the fishing season aboard a number of participating vessels) as well as through data collection by the SMEL during at-sea observer campaigns, which take place every 2 years. Although so far no attempt at stock assessment has been made, any trend in bycatch of this and other species is likely to be detected (see SMEL, 2014)

3.4.3. Protected species interacting with the fishery

There is a number of protected areas designated under the EC Habitats and Birds directives within Granville Bay, the most relevant of which are listed in Table 9. Species of conservation concern include over 20 birds species, allis shad (*Alosa alosa*), twaite shad (*A. fallax*), river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), Atlantic salmon (*Salmo salar*), grey seal (*Halichoerus grypus*), common seal (*Phoca vitulina*), harbour porpoise (*Phocoena phocoena*), European otter (*Lutra lutra*) and bottlenose dolphin (*Tursiops truncatus*).

In the context of the EC Birds and Habitats Directives (Natura 2000), the Agence des Aires Marines Protégées (AAMP) evaluated the interactions of various gear types with the

qualifying habitats and species of designated protected sites (see le Fur, 2010). For pot fisheries, it was concluded that there is no accidental bycatch of any of the bird, fish and marine mammal species listed. Furthermore, stakeholders present at the site visit and SICA workshop agreed that interactions with birds or any other protected species are not an issue in this fishery. Whelk pots sink very quickly (due to their concrete base) and those birds able to dive to the pots once settled would be unable to access the bait due to the small diameter of the pot opening (max 9cm). During and after hauling there is also limited opportunity for interaction as discards sink very quickly. Cetacean species are known to occur in Granville Bay, and are spotted from the vessels but are not reported to interact with the fishery. The risk of entanglement is also low as the pots are weighted with concrete bases and the lines between pots are taut (good weighting is important as the tidal currents in the area can be strong). In terms of the other ETP species listed, any risk of interaction with the fishery is extremely low and these are thus not considered further.

Table 9. List of protected areas and their qualifying features (species and habitats) within Granville Bay.

Protected area	Type	Relevant qualifying features
Ile Chausey	SPA (EC Birds Directive)	28 bird species (see this link)
Baie du Mont Saint Michel	Ramsar Convention on Wetlands	Low marshes and tidal coasts
	SAC (EC Habitats Directive)	Species: Allis shad, twaite shad, river and sea lamprey, Atlantic salmon, grey seal (amongst others) Habitats: sandflats, mudflats, estuaries, reefs (also see this link)
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard	SAC (EC Habitats Directive)	Species: Allis shad, twaite shad, common seal, harbour porpoise (amongst others) Habitats: sandflats, mudflats, estuaries, reefs (also see this link)
Tregor Goëlo	SAC (EC Habitats Directive)	Species: Allis shad, twaite shad, sea lamprey, Atlantic salmon, grey seal, European otter (amongst others) Habitats: sandflats, mudflats, estuaries, reefs (also see this link)
Anse de Vauville	SAC (EC Habitats Directive)	Species: grey seal, common seal, harbour porpoise, bottlenose dolphin Habitats: sandbanks and reefs (also see this link)
Banc et récifs de Surtainville	SAC (EC Habitats Directive)	Species: grey seal, common seal, harbour porpoise, bottlenose dolphin Habitats: sandbanks and reefs (also see this link)
Havre de la Sienne	SPA (EC Birds Directive)	20 bird species (see this link)
Récifs et landes de la Hague	SAC (EC Habitats Directive)	Species: grey seal, common seal, harbour porpoise, bottlenose dolphin Habitats: sandbanks, mudflats and reefs (also see this link)

The French government has instructed the AAMP to implement the programme PACOMM (Programme d'Acquisition de Connaissances sur les Oiseaux et les Mammifères Marins) that commenced in 2010 and is due to finish by the end of 2014. The programme aims to acquire data on birds and marine mammals (species distributions, population dynamics, etc.)

within French metropolitan waters in order to meet France's commitments under the EC Habitats and Bird Directives and the Marine Strategy Framework Directive. The programme includes aerial surveys (SAMM), boat-based surveys, acoustic harbour porpoise surveys (MARSAC), and telemetric surveys of birds through the project FAME in collaboration with the UK, Ireland, Spain and Portugal.

3.4.4. Habitats

In Granville Bay, benthic habitats are strongly scoured by tidal flows in most places, and any soft bottom habitat is therefore generally comprised of coarse mobile sand (see dark brown in Figure 13). Sensitive habitats do, however, exist in some places (as shown in Figure 14) and these include *Zostera* fields, maerl beds, sand mason (*Lanice conchilega*) banks and *Sabellaria* reefs.

Zostera occurs in shallow inshore areas and does not overlap with the fishery, which takes place at depths from about 7m to 40m (owing to topography and whelk abundance). In any case, the preferred habitat for whelks is sandy/muddy sediment and is therefore highly unlikely to be fished in these areas. The other sensitive habitats listed also occurred in inshore areas where overlap with the fishery is unlikely. Although maerl beds were known to exist further offshore in Granville Bay, these have degraded in the last 30 years (Olivier Abellard, AAMP, pers. comm.) and recent data suggest that these too are now concentrated in inshore areas (see Figure 14). Fishermen present at the site visit further indicate that they actively avoid any areas where reefs are known to be present as it reduces fishing efficiency and increases the likelihood of the line of pots snagging.

As already explained in Section 3.4.3 (Table 9), a number of sites in Granville Bay have been designated as SACs (Special Areas of Conservation) under the EC Habitats Directive. Protected habitats include sandbanks, mudflats and biogenic reefs (including *Sabellaria* reefs). In the context of Natura 2000, the AAMP evaluated the interactions of various gear types with the qualifying habitats of designated protected sites based on available literature (see le Fur, 2010). For pot fisheries, it was concluded that this gear type has a low physical impact on the benthic features they encounter (references cited include Chuenpagdee et al. (2003) and Brown et al. (2005)).

The occurrence of ghost fishing was also considered in this section. Individual pots are rarely lost; however entire lines can be lost especially because of incidents with trawlers (closer to the English Channel where there is more traffic). Whelk pots are not marked[9] and gear is generally not recovered, especially as the buoys have often been removed by trawlers, or are submerged when other lines are dragged on top. Work has, however, been done to try and avoid conflicts between active and passive gear fishermen in this area. Stakeholders present at the site visit estimated that approximately 5 pots are lost per vessel per year. The residual fishing capacity of lost pots is low as the longer the pots stay on the seabed, the more sand enters, leaving less room for any whelks or other animals to enter. The bait also degrades quickly, which further reduces the risk of ghost fishing. Finally, the way the pots are configured means they open easily (the concrete base detaches from the plastic top) and therefore would not trap anything. Nevertheless, a recommendation was

[9] It is reportedly more common to lose whelk pots than lobster pots – one of the reasons why there is no pot tagging system in Basse-Normandie for whelk pots.

made by the team that lost whelk pots are reported on so that this can be monitored by the appropriate body (see Section 6.3.1).

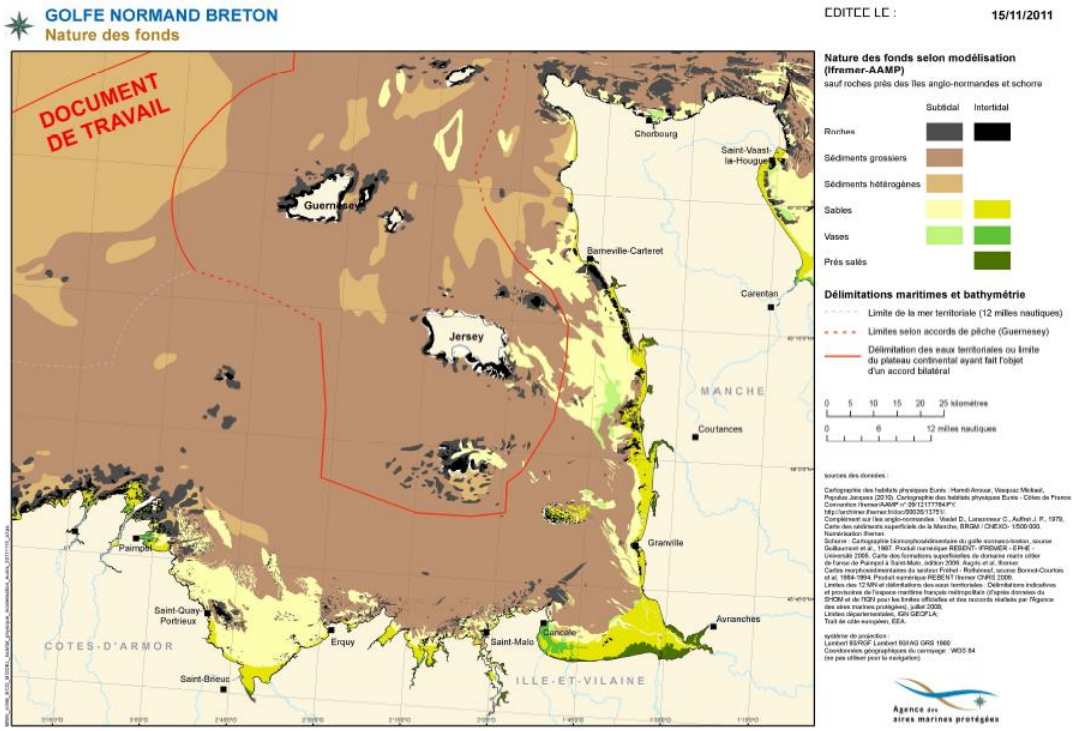

Figure 13. Distribution of habitats according to EUNIS classification. Dark grey and black: subtidal and intertidal rocks; dark brown: coarse sediments; light brown: heterogeneous sediment; beige and yellow: sand; green: mud (source: AAMP)

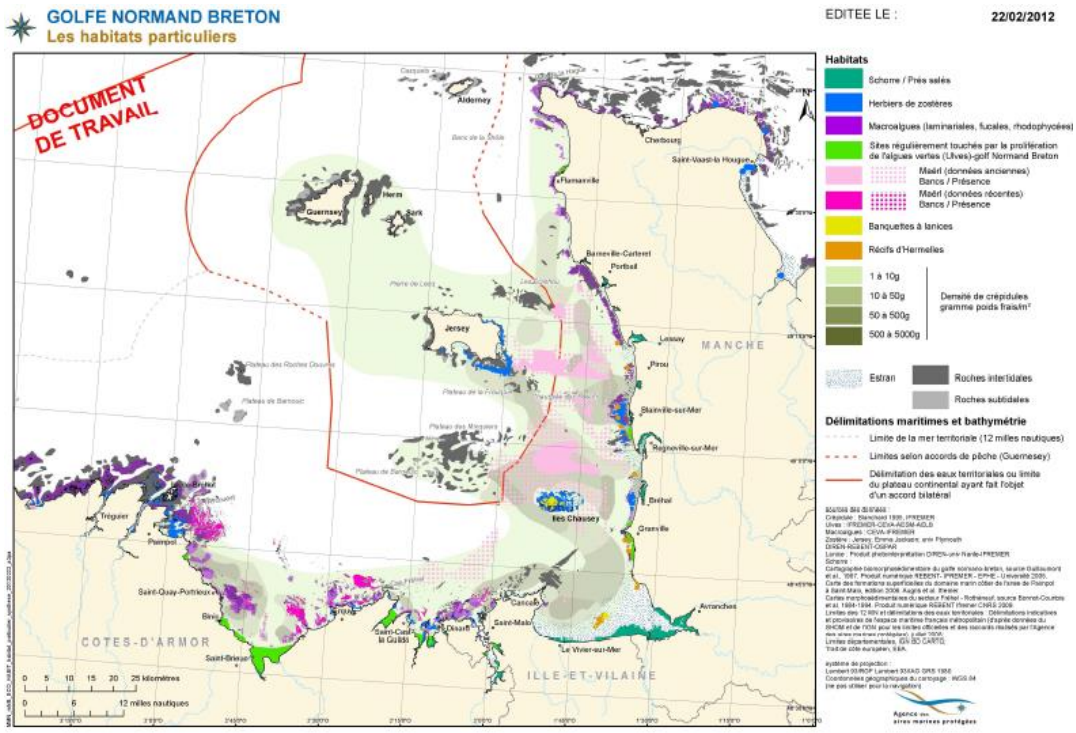

Figure 14. Sensitive habitats in Granville Bay. Blue: *Zostera* fields, light pink: maerl beds (old data); dark pink: maerl beds (recent data); yellow: sand mason (*Lanice conchilega*) banks; orange: *Sabellaria* reefs (source: AAMP)

3.4.5. Ecosystem

Granville Bay is one of the more ecologically interesting marine areas in Western Europe. Its position at the confluence of warm and cold currents leads to high biodiversity, with species surviving at both the northern and southern limit of their distributions. Oceanographically, the ecosystem is characterised by large tidal amplitude (among the largest in the world) and very strong tidal currents, which dictate almost every aspect of the marine environment (and human activities within it). Granville Bay itself appears to be contained within a tidal gyre which may promote retention of planktonic larvae such as lobster (Bertrand, 1982; Bossy and Morel, 2001), for which there is an important (and MSC-certified) fishery. The strong currents also provide a plentiful supply of food to suspension feeders (an energy input which is propagated through the food web by the many species that feed on suspension feeders such as bivalves) (MEP, 2011).

The common whelk is a predator and scavenger, feeding off live bivalves such as mussels and cockles as well as dead animal material of any kind. Although the role of the common whelk in Granville Bay is not very well understood, the species is necrophagous and the fishery under assessment is therefore highly unlikely to cause irreversible ecosystem impacts. Nevertheless, aspects of the species' biology, including its relatively long lifespan, gregarious nature and relative lack of population mobility (i.e. absence of planktonic larval phase and limited mobility of the adults) (KEIFCA, 2012) make the species potentially susceptible to both growth- and recruitment-overfishing (Lawler and Vause, 2009). Over-exploitation of whelk stocks and a subsequent crash in stocks has been documented in the southern Irish Sea whelk fishery (Fahy et al., undated). Although not published there are also some anecdotal accounts of whelk stocks along the coast of England and Wales being severely over-exploited, to the extent that the fishery crashes and becomes uneconomic to fish (KEIFCA, 2012). In Granville Bay, however, following past declines in whelk catch rates in the 1990s, management of this fishery by CRPM-BN has significantly improved and is apparently succeeding in keeping the whelk stock relatively healthy (see Principle 1, Section 3.3.3), thereby avoiding any ecosystem-level impacts.

3.5. Principle Three: Management System Background

3.5.1. Governance and policy

3.5.1.1. Legal framework

The Basse-Normandie whelk fishery takes place entirely inside 12 nautical miles. Its management system is defined by the French fisheries management arrangements (Code rural et de la pêche maritime Livre IX: Pêche maritime et aquaculture marine[10] and application decree n°2011-776). Local management measures are also coordinated with the Jersey management system through the Bay of Granville Treaty arrangement (see Table 4). However, the fisheries prosecuted by vessels registered in Jersey or in Brittany are not included in the Unit of Certification.

The Basse-Normandie whelk fishery is managed by the CRPM-BN on behalf of the French government (Décret n°2011-776 du 28 juin 2011), which delivers annual fishing permits (specific shellfish licence) (Article L921-1) through the government's delegated administrative authority. The permit allocation takes accounts of historical involvement and is not transferable. The current conditions for the whelk fishery are defined in the bylaw (DIRM arrêté n°09/2012[11]) and may be changed; they include closed areas, seasons (DIRM arrêté n°185/2013), minimum legal size and other technical measures, in response to local proposals. The award of a licence West-Cotentin by the CRPM-BN and its conditions are discussed by the Licence Committee (Délibérations BUMW17-2009 and ATT-D11-2013 and arrêté N°83/2013), which regularly considers mechanisms to allow young entrants. A refusal may be challenged in the competent administrative court (Préfecture de région – Haute Normandie).

The legal framework for the management system with Jersey and Brittany is provided by the Agreement on Fishing arrangements in the Bay of Granville, known as the Granville Bay Treaty, signed in 2000 between the United Kingdom and France. The broad scope of the agreement is to ' *[…] conserve fisheries resource in the seas situated in the region of the Island of Jersey and the neighbouring coast of France" and to […] contribute to the prosperity of the local communities which depend […] on the fisheries resources of those seas'*. The regulations implemented under the Agreement have to be set on the basis of a precautionary approach, but with regard to socio-economic factors. The Treaty recognises and is consistent with laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2 (see also MEP, 2011).

Under the Treaty, the Joint Management Committee (JMC) has the mandate to '*ensure the conservation and effective management of the fishery resources in the area covered by the Agreement*', with conservation meaning '*the rational use and the maintenance or re-establishment of stock of species at levels which ensure constant maximum yield*'. The JMC meets three times per year in ordinary session, but may hold extraordinary sessions.

[10] See http://www.legifrance.gouv.fr for latest consolidated version
[11] Rendant obligatoire la délibération EXP-BU-ME5-2011 du CRPMEM-BN portant création de la licence spéciale de pêche du bulot (*Buccinum undatum*) en Manche Est et portant organisation de cette pêche.

Decisions taken under the Treaty are translated into the French regulatory system for the fishery by Basse-Normandie and at national level if needed, and under the States of Jersey and UK system by Jersey. Both systems of fisheries management have a clear hierarchy of legal frameworks, management institutions and responsibility under the European Common Fisheries Policy.

The JMC is under an obligation to seek the views of the Joint Advisory Committee (JAC) before it reaches a decision. The JAC brings together fishermen's representatives, government officials and scientists and meets three times a year in ordinary sessions held in turn in Granville (Basse-Normandie), St Malo (Brittany) and Jersey in rotation (these meetings are generally held just before the JMC meetings). The JAC provides a forum for discussion and a transparent mechanism for the resolution of disputes including emergency arbitration procedures (Art. 4 and Art. 1 and 2 annex D) that is appropriate to the context of the fishery. The role of the JAC as a conduit to discuss, for example, gear conflicts and resolve them through the proposal of targeted management measures regarding fishing season and areas has been tested and proven to be effective (e.g. for spider crabs management measures). Through the JAC, the management system acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges (Art. 3l).

The Bay of Granville Agreement puts a cap on the total fishing effort in the Area through an access permit that was awarded to vessels registered in Jersey, in certain French ports and to those out-of-Area boats that can demonstrate a track record. The recognition and formal commitment to the legal rights created explicitly or established by custom on people dependent on fishing for livelihood in a manner consistent with the objectives of MSC Principles 1 and 2 is at the core of the Treaty.

The CRPM of Brittany manages the other fisheries on the stock in the Western Channel on the French side outside Granville Bay. It function on the same basis as the CRPM-Basse Normandy.

On the UK-England side, by the Southern and the Devon and Severn IFCAs manage the whelk fisheries. IFCAs were created under the UK Marine and Coastal Access Act 2009, to replace Sea Fisheries Committees. Their responsibilities include inshore fisheries management, enforcement and marine conservation (e.g. management of European marine sites) in their district of responsibility, which extends out to 6 miles.

The CFP has a limited role to play in whelk fisheries, which are overwhelmingly inshore, but it does set a minimum size (shell height) of 45mm for whelks throughout Europe – local management may set a larger minimum size if desired.

3.5.1.2. Consultation, roles and responsibilities

The day-to-day management of a coastal fishery is the responsibility of the professional organization CRPM-BN[12], with elected members representing the various categories of professional fishers in the local area. The regional level is supported at national level by the Comité National des Pêches Maritimes et des Elevages Marins (CNPMEM or CNPM for

[12] http://www.crpbn.fr/reglementation/cadre-general/

short), which examines and recommends legislation on strategic aspects of fisheries management, such as crustacean specific national licence types, principle and implementation of effort control, and minimum legal sizes. The CRPM-BN calls upon scientists (Ifremer, SMEL) to advise on stock status, data collection and fishing operations, and provides expert advice on management actions. Propositions from the CRPM-BN ('delibération') provide the basis for local fisheries co-management regulations.

The Granville Bay Treaty arrangement has a consultative committee, which sits at least twice a year and where the cooperative management of the whelk fishery by the CRPM-BN and Jersey are discussed.

On the French and the English side, fisheries in the Western Channel outside the Granville Bay area are managed separately, currently without any provision to integrate management of the various fisheries. Individual fisheries have consultation processes via the CRPMs and the IFCAs, which are more or less similar to those set out above for the CRPM-BN (i.e. decisions are taken by a committee of stakeholders, on the basis of advice provided by professional staff who collect and analyse data from the fishery).

3.5.1.3. Long-term objectives

French and UK fisheries legislation defers to the European Union and its Common Fisheries Policy (CFP), to cooperate with other States, to apply the precautionary approach to conservation, management and exploitation of fish stocks, to ensure compatibility of conservation and management measures where marine resources occur in sea areas of different jurisdictional status. Long-term objectives are clearly stated for the newly reformed IFCAs (see Defra 2011) and fully consistent with the international conservation and cooperation obligations, as are French inshore conservation and management measures .

There is no specific 'objectives' section in the Granville Bay Treaty, but it states that management should be in accordance with the precautionary approach; that it should take into account socio-economic issues; and that it should be on the basis of 'constant maximum yield'.

3.5.1.4. Incentives for sustainable fishing

The French fisheries management system provides regular incentives for sustainable fishing, through the support of the co-management process and of the Bay of Granville Treaty process. Local and region-level grant and budget support to the CRPM-BN and various projects (most of which are part-funded by the European Fisheries Fund) have supported data collection and research to inform the management plan. The provision of state support from the European Maritime and Fisheries Fund[13], at both English and French levels, is carefully scrutinized to ensure that negative incentives do not arise (e.g. see Cappell et al. 2010). For example, support provided by the French government in the past to mitigate fuel price increases, were deemed incompatible with EU regulations, and had to be paid back by those who had received it.

[13] http://ec.europa.eu/fisheries/cfp/emff/index_en.htm

3.5.2. Fishery-specific management system

3.5.2.1. Fishery-specific objectives

Management measures put in place since 2009 all aim to decrease fishing mortality and ultimately increase production – these can be regarded as implicit objectives. There is not, however, a specific management plan for this fishery and explicit objectives are not set out for the fishery (e.g. in the form of reference points such as target CPUE levels). This was a concern expressed by Jersey during the consultation process for this assessment.

3.5.2.2. Decision-making process

The decision-making processes in the fishery have largely been set out above. For the Basse-Normandie fishery, the management body is the CRPM-BN. The CRPM-BN has a Commission Bulot (whelk commission) which is open to all stakeholders but tries to ensure a wide geographical spread of representation, including having two sub-presidents, one from Granville and one from outside. The Commission Bulot provides advice and proposals to the CRPM-BN, who take decisions. These decisions are given legal force by the regional (Basse-Normandie) prefecture, via 'arrêtés préfectoraux' – e.g. licence conditions and regulations (conditions d'exploitation). These conditions usually last 5 years but can be renewed or revised at any time.

For the joint Granville Bay process, decisions are taken by the JMC – the JAC provides advice. Decisions are taken by consensus. Decisions of the JMC must be put into force in each of the three areas (Basse-Normandie, Brittany, Jersey) following their own national procedures – hence for Basse-Normandie it would be as described above (decision by the CRPM-BN put into force by an arrêté préfectoral).

3.5.2.3. Compliance and enforcement

A number of agencies come together to deliver monitoring, control and surveillance (MCS) of French coastal fisheries. For the Basse-Normandie whelk fishery, compliance and enforcement matters are coordinated by the pôle P–M - Pôle pêches et activités maritimes of the Délégation à la mer et au littoral (DML50 of the DDTM).

The 'note technique du 2 juin 2014' regarding control of landings declarations for marine fisheries[14] defines control priorities for local services, obligations of skippers, of those involved in the first sale ('première mise sur le marché') and of those who transport fisheries products. It provides a summary of the different obligations and processes, in particular for the under-12m vessels operating in the whelk fishery:

1. Catch declarations: 'fiche de pêche' for under 10m vessels and log-books for those over 10m (art. 14 and 15 of EC regulation 1224/2009)
2. Landing declarations (art. 23, 24 et 54)
3. Sales slips (note de vente art. 62 to 64)
4. Transfer declarations (art. 66 and 67)
5. Transport documents (art. 68).

[14] http://circulaire.legifrance.gouv.fr/index.php?action=afficherCirculaire&hit=1&r=38395

The note aims to improve the quality of the data collected. It defines the roles of local services (for this fishery the DML50-DDTM Table 4), the national fisheries surveillance centre (Centre national de surveillance des pêch–s - CNP), FranceAgrimer and the central government Directorate (DP–A - Direction des pêches maritimes et d' l'aquaculture), for the control and check of these documents.

The DML50 systematically crosschecks commercial catch declarations with the sales notes as these are received (within 48 hours for over-10m, and monthly for under-10m), and reports no specific concerns for the fishery. Although there is a reporting gap when the vessels do not use the auction market ("criée"), it is essentially a time delay. The collection of sales slips for landings sold directly ("hors-criée") provides a satisfactory coverage, as there are no direct sales to the public.

The DML replaced the Affaires Maritimes (DDAM) in January 2010 to implement the government policy in marine and maritime matters. It has a dual role of collecting data in support of regulations and of controlling fishing activities and landings, and has police powers at sea and on land. The DML50's powers to enforce maritime and fisheries regulations are exercised in the field by ULAM's vessels and fisheries enforcement agents (ULAM–0 - Unité Littorale des Affaires Maritimes Manche, based in Cherbourg), in collaboration with the Gendarmerie Maritime, Customs, Gendarmerie nationale and the French Navy (Marine Nationale). The DML50 main office is in Cherbourg, and a local office in Granville ("Station Maritime").

In addition, French vessels in the Bay of Granville Treaty area may be checked at sea by the Jersey authorities and vice-versa for the French control of Jersey vessels. Jersey-registered vessels landing in France are systematically checked by Customs. The monitoring, control and surveillance system in Granville Bay for the whelk fishery is able to enforce all relevant management measures.

Sanctions to deal with non-compliance exist for the fishery and are consistently applied. According to the fishermen, the CRPM-BN and the DML50, the combination of legal prosecutions and administrative sanctions provides an effective deterrence.

One concern raised by stakeholders during the site visit was the question of whether there is a loophole in the licensing process for Granville Bay as a whole, due to the presence of three separate licensing jurisdictions. Initially, it was assumed by the CRPMs in Basse-Normandie and Brittany that it was a requirement to have either a Basse-Normandie or a Brittany whelk permit in order to fish whelks in the Jersey part of the Granville Bay shared area. However, an opinion from the French Ministry suggested otherwise – French whelk permits have no power outside French waters, and at that time there was no equivalent whelk permit for Jersey. This raised the possibility that French vessels with no whelk permit could nevertheless fish for whelks in the Jersey shared zone. This has, reportedly, been solved by the creation of a Jersey equivalent of a whelk permit, plus an agreement in the JMC that vessels must have one of the three permits to fish for whelks in the Granville Bay area (J. Doudet, CRPM Bretagne, pers. comm.).

3.5.2.4. Research Plan

The SMEL and CRPM-BN organise a survey every two years with at-sea observers to follow the stock recovery through CPUE, recruitment and size distribution in the fishery. The

information is supplemented by a voluntary self-sampling programme from the reference fleet.

Several projects complement the scientific monitoring programme including research on size/age at maturity, reproductive output and the reproductive cycle, and the BULOCLIM project (SMEL) on the effect of water temperatures on survival, growth, maturity and age. Full details of the various monitoring and research projects are provided above.

3.5.2.5. Monitoring and performance evaluation of the fishery management system

The effect of management measures is followed closely by the CRPM-BN, and is discussed with Jersey at the JAC meetings. An annual stocktake ('bilan') is presented to the 1st Bulot Committee meeting of the year (CRPM-BN meeting report 22 January 2013, 7 February 2014). More generally, the Granville Bay process can be seen as a process whereby each of the three jurisdictions is overseen by the other two. In typical JAC and JMC meetings, there are presentations of recent research, survey results and fisheries by representatives of the three areas, along with robust discussion about the interpretation of data, status of stocks and most appropriate management actions to take.

4. Evaluation Procedure

4.1. Harmonised Fishery Assessment

No other whelk fisheries are currently engaged in the MSC programme. The Normandy/Jersey lobster fishery is the only other MSC certified fishery, which takes place in Granville Bay. The Basse-Normandie client for this fishery was the same as for the whelk fishery and two of the three assessment team members (Principle 1 and 3) participated in both assessments.

4.2. Previous assessments

There have been no previous assessments of this fishery.

4.3. Assessment Methodologies

The assessment methodology is given in Table 10.

Table 10. Assessment methodology used.

Version of Certification Requirements used	1.3
Version of Full Assessment Reporting Template used	1.3
Default assessment tree used with adjustments?	No
Details of adjustments made	N/A
Risk-Based Framework used?	Yes

4.4. Evaluation Processes and Techniques

4.4.1. Site Visits and consultations

During the assessment process, one site visit was held in Granville, France on the 8th and 9th July 2014. During the site visit a wide range of stakeholders were met with (see Table 11).

Table 11. Consultees and other participants in the Granville site visit –8 - 9 July 2014)

Name	Organisation	Type of consultation	Present at SICA workshop?
Roland QUARANTE	CRPM – co-président de la commission Bulot Manche Ouest	Provision of information	yes
Ghislaine HERVIEU	Antenne Ouest Cotentin du CRPM Basse-Normandie	Provision of information	no
Didier LEGUELINEL	CRPM – co-président de la commission Bulot Manche Ouest	Provision of information	yes
Laurence HEGRON MACE	SMEL	Provision of information	yes
Dominique LAMORT	NFM	Client	yes
Véronique LEGRAND	CRPM Basse-Normandie	Provision of information	yes

Béatrice HARMEL	CRPM Basse-Normandie	Provision of information	no
Olivier ABELLARD	Agence des Aires Marines Protégées	Provision of information	yes
Margaux FAVRET	MSC	Observer	yes
Régine TAVERNIER	DDTM/DML/PAM	Provision of information	no
Jacques DOUDET	CRPM Bretagne	Provision of information	no
Jo GASCOIGNE	MEC	Assessor	yes
Sophie DES CLERS	MEC	Assessor	yes
Chrissie SIEBEN	MEC	Assessor	yes

On the [1]6th July a conference call took place with Greg Morel and Jonathon Shrives of the Jersey Sea Fisheries Department who were unable to attend the Granville site visit. Jacques Doudet of the CRPM in Brittany provided information and responded to questions by email.

At key stages of the assessment process, stakeholders were contacted and provided with an opportunity to comment (for a full list of stakeholders, please see Appendix 8). Stakeholders were contacted at the following stages:

i. Fishery announcement – 28 April 2014
ii. Assessment team and timeline – 28 April 2014
iii. Assessment team confirmation – 19 May 2014
iv. Use of Risk-Based Framework – 29 May 2014
v. Granville site visit notification – 29 May 2014
vi. Proposed peer reviewers – 3rd March 2014

4.4.2. Stakeholder comments during evaluation

The majority of consultations with stakeholders focused on the provision of information for the assessment and few concerns were raised about the fishery. Those concerns raised by the Jersey Fisheries Department are summarised below:

- How can Jersey fishermen get involved if they want to? Can we include some discussion of Jersey management system to facilitate this? They do not have the resources to participate directly. For example, if a Jersey fisherman agreed to abide by Basse-Normandie rules, would they be able to be included?
- Jersey fishermen and politicians will find it strange that there is a well-recognised certification for a fishery that operates in Jersey waters, but does not include Jersey fishermen.
- If Jersey stops some of their work on whelks (e.g. stop doing their annual survey) will that potentially impact on the Basse-Normandie certification? They ’on't want to affect their Basse-Normandie partners, but resources are getting tight and the Normans cannot assume that they will carry on with this.
- The Granville Bay system has not worked as well for whelks as for lobster – they feel that the Normans have been unilateral in their management decision-making.
- Action Plan – t’ey'd like the Client Action Plan to be put through the Granville Bay system if possible rather than being unilateral – but at least t’ey'd like some discussion.

- Unclear what the Norman objective of management is in terms of CPUE. Agree that improvement from 0.8-1.5kg/pot is positive, but they used to get 2-3kg/pot at the start of the fishery. Question of what is their management baseline – what is an appropriate level at which the fishery h's 'recove'ed'.
- MLS – size at 50% maturity is actually >50mm – thinks 45 is not adequate.
- Closed season in January – question if this is the best month
- We discussed why the approach to management has been different between Jersey and Basse-Normandie – ultimately, Basse-Normandie prefers to control effort and Jersey prefers technical measures. This comes down to what the fishermen prefer on each side, since both systems are very driven by agreement of stakeholders. This is why harmonised Granville Bay regulations have never been achieved for whelks. This may not matter, as long as there are no loopholes and as long as both regimes are reasonably effective, and as long as the French regime does not result in displacement of French effort into Jersey waters.
- Nevertheless, they want the Granville Bay system to be considered as the preferred management system for whelks in the area – unilateral measures are a second best option.

4.4.3. Evaluation Techniques

a) Media announcements

MEC selected two media outlets: the Aquaculture Directory and the MSC website. Aquaculture Directory was selected as it requires no subscription and reaches a wide range of seafood professionals, while the MSC press release targeted a wide range of stakeholders within the sustainable seafood industry. The combination of both ensured that key stakeholders were notified of this fishery's announcement.

b) Methodology for information gathering

Information for the assessment was gathered during the site visit and through separate consultation and correspondence with individual stakeholders. The CRPM-BN and SMEL were key in providing most of the information regarding the science and management of the fishery, while representatives of the whelk producers provided crucial, first-hand information on how the fishery operates. Despite their concerns raised, the Jersey Fisheries Department were also very cooperative throughout the assessment process.

c) Scoring process

Scoring was partly completed during the site visit and partly completed afterwards. Some Principle 2 information was lacking during the site visit (for reasons outside the control of the assessment team or the client) and PIs 2.3–1 - 2.5.3 were therefore mainly scored after the site visit, by remote discussion. The scores were decided as follows:

How many scoring issues met?	SG60	SG80	SG100
All	60	80	100
Half	FAIL	70	90
Less than half	FAIL	65	85
More than half	FAIL	75	95

Note that where there is only one scoring issue in the SG, the issue can be partially scored – in this case the team used their judgement to determine what proportion of it was met, e.g. at the 100 level, a small part met = 85, about half met = 90, nearly all met = 95.

For PIs where the RBF was used (PI 1.1.1 and 2.2.1), the following rules applied:

- For PI 1.1.1, regardless of the SICA outcome the PSA score was retained as overall score
- For PI 2.2.1, the SICA score was the final score of the PI if the consequence score of the most vulnerable scoring element was calculated at 1 or 2. For a higher consequence score the PSA score was retained as overall score.

d) Decision rules for final outcome

The decision rule for MSC certification is as follows:

- No PIs scores below 60;
- The aggregate score for each Principle, rounded to the nearest whole number, is 80 or above.

The aggregate score for each Principle is calculated by taking the average score for each section followed by the average of all the section scores (see Section 6).

e) Scoring elements

For Principle 1, only one scoring element was considered, i.e. Granville Bay whelks. The set of scoring elements that were considered for each outcome PI in Principle 2 is listed in Table 12.

Table 12. Scoring elements

Component	Scoring elements	Main/not main	Data-deficient or not
2–1 - Retained species	Small-spotted catshark	Main	No
2.2 – Discards	Netted dogwhelk	Main	Yes

f) Use of the Risk-Based Framework

The risk-based framework (RBF) is an alternative evaluation system for some Performance Indicators (PI), based on an acknowledgement by the MSC that in some cases quantitative data and formal stock assessments may not be available. In this case, the use of the default assessment tree becomes difficult and the RBF is triggered.

The RBF can be used for outcome PIs (PIs which are scored on the basis of the actual situation as opposed to the management system or the information available). These PIs are:

- 1.1.1 (target species outcome)
- 2.1.1 (retained species outcome)
- 2.2.1 (discarded bycatch outcome)
- 2.3.1 (endangered, threatened and protected (ETP) species outcome)

- 2.4.1 (habitats outcome)
- 2.5.1 (ecosystem outcome)

In the absence of a formal stock assessment and reference points for the Granville Bay whelk stock, PI 1.1.1 was scored using the RBF. For Principle 2, although some biennial observer data were available for PI 2.2.1 (bycatch) via the SMEL observer-at sea programme, these data were not considered quantitatively sufficient to permit use of the default assessment tree. The RBF was thus also triggered for this PI.

The RBF is implemented via two methods – a Scale-Intensity Consequence Analysis (SICA) and a Productivity-Susceptibility Analysis (PSA).

The SICA is effectively a structured risk assessment exercise with stakeholders. The use of the RBF and the SICA workshop was announced to stakeholders in the site visit notification, sent on the 29th May 2014. The SICA workshop was organised in Granville on the 8th July when the greatest number of stakeholders were present during the site visit (see Table 11). The results of the SICA for PIs 1.1.1 and 2.2.1 are shown in Appendix 2. Overall, there were no disagreements between stakeholders and a consensus could be reached for both PIs.

The PSA is an analysis of the susceptibility of the population in question to the fishery in question, by review of the productivity of the population and its overlap with the fishery. For PI 1.1.1, a PSA is required regardless the score of the SICA. For Principle 2, a PSA is only required if the SICA scores <80.

The SICA for Principle 1 (PI 1.1.1) focused on anecdotal information provided by the fishermen present, trends in CPUE, survey data stemming from the SMEL's biennial at-sea observer campaigns, information from the Jersey annual reports (survey trends) and expert opinion from the CRPM-BN representatives. It was agreed that the directed catch from the fishery was the main risk-causing activity, and no other activities were considered further. The consensus of opinion among stakeholders at the SICA was that, because the stock size in Granville Bay is apparently growing, the fishery should be scored as having no impact on the stock (MSC score 100). The team, however, considered that it was most likely that the stock was recovering from past impacts, and the fishery was most likely still having an impact on the rate of recovery – a lower score was therefore given. Full details are provided in Appendix 2.1.

The SICA for Principle 2 (PI 2.2.1) focused on anecdotal information provided by the fishermen present, survey data stemming from the SMEL's biennial at-sea observer campaigns and expert opinion from the CRPM-BN representatives. The netted dog whelk (*Nassarius reticulatus)* was selected as the most vulnerable bycatch species in this fishery, with fishing the sole risk-causing activity. A consequence score of 1 was determined for this PI, leading to an MSC equivalent score of 100. No further PSA was therefore required.

5. Traceability

5.1. Eligibility Date

The target eligibility date for this fishery has been set as the date of certification.

(REQUIRED FOR PCR ONLY)

1. The report shall include: a. The actual eligibility date. b. The rationale for any difference in this date from the target eligibility date

5.2. Traceability within the Fishery

All vessels involved in the fishery under assessment complete 'fiches de pêche' which ensures that catches can be traced back to the fishing area. No processing takes place on board and whelks are sold live at auction or to fish merchants directly. As previously explained in Section 3.5.2.3, the DML50 systematically crosschecks commercial catch declarations with the sales notes as these are received (within 48 hours for over-10m, and monthly for under-10m), and reports no specific concerns for the fishery. Although there is a reporting gap when the vessels do not use the auction market ("criée"), it is essentially a time delay. The collection of sales slips for landings sold directly ("hors-criée") provides a satisfactory coverage as there are no direct sales to the public.

At sea and quayside inspections are carried out by the DML50 in collaboration with the Gendarmerie Maritime, Customs, Gendarmerie nationale and the French Navy (Marine Nationale). In addition, French vessels in the Bay of Granville Treaty area may be checked at sea by the Jersey authorities and vice-versa for the French control of Jersey vessels. Jersey-registered vessels landing in France are systematically checked by Customs. The monitoring, control and surveillance system in Granville Bay for the whelk fishery is able to enforce all relevant management measures and stakeholders report that the combination of legal prosecutions and administrative sanctions provides an effective deterrence.

The boats under assessment only fish in the UoC waters as specified in Section 3.1: Granville Bay (Basse-Normandie exclusive zone in West Cotentin, plus the shared Basse-Normandie /Brittany/Jersey zone as defined under the Granville Bay Treaty, plus zones A, B and C as defined under the Granville Bay Treaty for those Norman vessels which have rights to fish in those areas (see Figure 1). There is therefore minimal risk of mixing MSC and non-MSC product as the UoC is both defined by the Granville Bay geographical area and the Basse-Normandie licensed whelk boats which are subject to the BN management system wherever they fish. All whelk catch aboard the vessels listed in Table 1 would therefore be MSC certified.

No transhipment takes place in this fishery.

A list of landing sites authorised under the whelk-fishing license is given in the Arrêté préfectoral 110/2009 of 21 September 2009. The sites are the following:

- Granville (quai ouest)
- Bricqueville sur Mer (les Salines)
- Agon Coutainville (cale de l'école de voile)
- Blainville sur Mer (cale principale)
- Gouville sur Mer (cale principale)
- Pirou
- Saint Germain sur Ay (cale principale)
- Portbail
- Bretteville/Ay
- Denneville
- Carteret (port de pêche)
- Dielette
- Cherbourg (quai de la criée)

Upon landing at the criées, a specific code is allocated to Granville Bay whelks (see Figure 15). The ticket also shows the name and registration number of the vessel, the fishing zone, species and live weight. This ticket therefore ensures that any MSC product is identified as such through its designation as Granville Bay-caught and permits the product to be traced back to the vessel and catch area.

Whelks are also sold to fish merchants ('mareyeurs') directly and these would have to be subject to separate CoC certification.

Figure 15. Image of ticket issued by the Granville auction. The Granville Bay-specific code is encircled in red. (Image taken by MEC)

5.3. Eligibility to Enter Further Chains of Custody

Granville Bay whelks caught by the vessels listed in Table 1 after the date of certification will be eligible to enter further chains of custody. Based on the information presented above, separate chain of custody will be required from the first point of landing.

The eligible points of landing are as shown in Section 5.2 previously.

5.4. Eligibility of Inseparable or Practically Inseparable (IPI) stock(s) to Enter Further Chains of Custody

There are no IPI stocks involved in this assessment.

6. Evaluation Results

6.1. Principle Level Scores

Table 13. Final Principle Scores

Principle	Score
Principle 1 – Target Species	81.4
Principle 2 – Ecosystem	88.3
Principle 3 – Management System	84.5

6.2. Summary of Scores

Principle	Component	Weighting	PI number	Performance Indicator	Score
1	Outcome	0.5	1.1.1	Stock status	83
			1.1.2	Reference points	80
			1.1.3	Stock rebuilding	N/a
	Management	0.5	1.2.1	Harvest Strategy	95
			1.2.2	Harvest control rules and tools	75
			1.2.3	Information and monitoring	75
			1.2.4	Assessment of stock status	80
2	Retained species	0.2	2.1.1	Outcome	80
			2.1.2	Management	85
			2.1.3	Information	80
	Bycatch species	0.2	2.2.1	Outcome	100
			2.2.2	Management	95
			2.2.3	Information	80
	ETP species	0.2	2.3.1	Outcome	100
			2.3.2	Management	100
			2.3.3	Information	100
	Habitats	0.2	2.4.1	Outcome	80
			2.4.2	Management	80
			2.4.3	Information	95
	Ecosystem	0.2	2.5.1	Outcome	80
			2.5.2	Management	80
			2.5.3	Information	90
3	Governance and Policy	0.5	3.1.1	Legal and customary framework	95
			3.1.2	Consultation, roles and responsibilities	95
			3.1.3	Long term objectives	90
			3.1.4	Incentives for sustainability	80
	Fishery-specific management system	0.5	3.2.1	Fishery specific objectives	60
			3.2.2	Decision making processes	100
			3.2.3	Compliance and enforcement	85
			3.2.4	Research plan	70
			3.2.5	Management performance evaluation	80

6.3. Summary of Conditions

The conditions are summarised in Table 14 (also see Appendix 1.2).

Table 14. Summary of Conditions

Condition number	Condition	Performance Indicator
1	The harvest control rule needs to be better defined, specifically in terms of the management target, which does not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. This target could be set at the level of the Basse-Normandie fishery or at the Granville Bay level, as long as there is confidence that the management actions in place could act to maintain the stock at or around the target level. The target should also consider spatial variability in stock status, if the analysis under Condition 2 suggests that this might be important.	**1.2.2**
2	There should be a review of the data being used to monitor the fishery and stock status, with an appropriate statistical analysis carried out to try as far as possible to reduce uncertainties associated with external variability or spatial variability in stock structure and dynamics and fishing pressure. The analysis may be used to inform future data gathering, such that data is gathered following a suitable statistical methodology where possible.	**1.2.3**
3	There needs to be explicit management objectives for both Principle 1 (stock) and Principle 2 (ecosystem). They do not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. The objectives could be at the level of the Basse-Normandie fishery or at the Granville Bay level.	**3.2.1**
4	A formal research plan as a framework for guiding research should be prepared and adopted	**3.2.4**

6.3.1. Recommendations

The team recommends that any lost whelk pots are reported on so that this can be monitored by the CRPM-BN/SMEL and any increase in risk to habitat structure and function can be determined.

6.4. Determination, Formal Conclusion and Agreement

(REQUIRED FOR FR AND PCR)

1. The report shall include a formal statement as to the certification determination recommendation reached by the Assessment Team about whether or not the fishery should be certified.

(Reference: CR 27.16)

(REQUIRED FOR PCR)

2. The report shall include a formal statement as to the certification action taken by the CAB's official decision-makers in response to the Determination recommendation.

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Appendices

Appendix 1. Scoring and Rationales

Appendix 1.1 Performance Indicator Scores and Rationale

Evaluation table 1 - PI 1.1.1

PI 1.1.1		**The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?			
	Justification	Scored using RBF – see SICA and PSA in Appendix 2.1		
b	**Guidepost**		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?			
	Justification	Scored using RBF – see SICA and PSA in Appendix 2.1		
References		SICA Scoring Table and PSA (Appendix 2.1)		
Stock Status relative to Reference Points				
		Type of reference point	**Value of reference point**	**Current stock status relative to reference point**
		n/a	n/a	n/a
OVERALL PERFORMANCE INDICATOR SCORE:				**PSA = 83.0**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 2 - PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	Not relevant	Not relevant	
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
	Guidepost		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	Met?		Not relevant	Not relevant
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
c	**Guidepost**		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.	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, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	Met?		Not relevant	Not relevant
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		

d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		Not relevant	
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				**80 by default**
CONDITION NUMBER (if relevant):				**N/a**

PI 1.1.3 – only scored if PI 1.1.1 scores between 60 and 80

Evaluation table 3 - PI 1.2.1

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
	Met?	Y	Y	N
	Justification	MSC defines a harvest strategy as 'the combination of monitoring, stock assessment, harvest control rules and management actions, which may include an MP or an MP (implicit) and be tested by MSE' (MSC CR v1.3). The evaluation of this PI has focused on the harvest strategy in relation to the Granville Bay fishery, but has also (as required by the definition of the 'stock' – see Section 3.3.1.2) considered the whole population and all fisheries in the Western Channel area. Because the Granville Bay fishery makes up ~3/4 of the total fishery (in terms of landings) from the Western Channel area (see Section 3.3.2), the PI is scored primarily on the basis of the harvest strategy for this fishery, but scoring is adjusted as required based on the situation in other areas. Basse-Normandie harvest strategy: Overall strategy: The harvest strategy for this fishery can be summed up as follows: Continue to reduce effort in the fishery for as long as benefits can be seen in terms of the stock status (as monitored by landings, CPUE and size structure) while remaining compatible with the maintenance of a robust fishery. Monitoring and stock assessment: In common with many invertebrate fisheries and all the whelk fisheries in this region (France and UK), there is no formal stock assessment for this fishery (in the form of a population or statistical model), but the population is monitored using a series of indicators. On the Basse-Normandie side, these all come from the fishery, but there is also one fishery-independent survey carried out by Jersey. Further details of monitoring are given in the rationale for PI 1.2.3 below. These indicators have been used to inform management. Reference points: Although the PI relating to reference points (1.1.2) is scored 80 by default when using the RBF for P1, there are in fact some *de facto* proxy reference points used as part of the harvest control rule for the fishery. In terms of CPUE (of whelks >MLS), 1.5 kg/pot is a *de facto* target, while 1 kg/pot (~the lowest level in the time series) is an explicit limit. There is also an objective to keep the fishery around the level of 6000 t landings, since this is considered to be a sustainable long-term level. Note that the Jersey authorities question the suitability of the CPUE target, since they argue that their longer time series suggests that a CPUE of 2-3 whelks/pot is achievable, although it is not clear that it is compatible with the target catch level. Since the most recent data available (from 2013) suggest that the target CPUE level has ~been achieved, but the strategy of continuing to reduce effort remains in place, the team assumed that the target is in practice sliding upwards towards the best situation achievable within the constraints of the current fishery – which seems a reasonable approach. Another de facto target (albeit indirect) is the level of 65 licences, which was the situation before the limits on licences was lifted in 1997 (a move that is now considered to have been a mistake). Currently there are 72. Harvest control rules: The harvest control rule situation is discussed in detail under PI 1.2.2 below. In essence, the team considered that there are 'generally understood' harvest control rules, but that they are not 'well-defined'. Management actions: The harvest strategy is implemented via a set of management tools, including a minimum size, a minimum sorting grid size, trip quotas, limited licences and a vessel size limit. There is also a pot limit per vessels, although stakeholders were less convinced about its		

		usefulness than for the other measures. A history of the implementation of management measure is set out in Table 5 of the main report. It is clear from this table that the harvest strategy is responsive to the state of the stock – the introduction of the various management measures has been an iterative and adaptive process. In this sense, the team considered that the harvest strategy was 'designed' to achieve stock management objectives: not in the sense that a system has been designed from scratch, but rather in the sense that stakeholders and managers have worked together to try out, adjust, adapt and expand measures, according to what seems to be working both for the stock and for the fishery. This is a suitable and effective approach for a fishery for this one which is relatively small-scale and which has a co-management type system. Jersey management system: Jersey has various tools in place to control harvest (see under PI 1.2.2 below). The harvest strategy for whelks in Jersey has been based around an analysis of CPUE and an annual fishery-independent survey carried out by the fisheries staff of the Department of the Environment, on the basis of which the harvest tools may be adjusted. Jersey feels, however, that it would be better to develop a joint harvest strategy at Granville Bay level (particularly given that the Basse-Normandie fishery is much larger) – so far, however, differences in opinion about the tools that should be used in the harvest strategy have precluded closer cooperation. Brittany management system: There are also tools in place in Brittany to control effort (see under PI 1.2.2 below), which apply inside and outside the Granville Bay zone. As far as the team was aware, Brittany does not carry out any analysis on its own whelk fishery, but participates in the JMC and JAC, where the analyses carried out by Basse-Normandie and Jersey are regularly presented; the CRPM Bretagne would therefore also be able to respond to changes in CPUE or survey trends as required. UK management system: The IFCAs have structures for management in place (potting bylaw – Devon and Severn IFCA) or are putting them in place (bylaw review and development of harvest control rules), but there is not currently a responsive harvest strategy in these areas. In an evaluation of the Basse-Normandie harvest strategy alone, the team considered that SG100 is met, because the strategy has been responsive to the status of the stock, and has been empirically adjusted based on an analysis of fishery and survey data – the team considered that this constituted adaptive 'design'. The Jersey harvest strategy is likewise responsive to the stock status, with the elements (data analysis and adjustment of harvest control rules) working together, so meets at least the SG80 level. The management of these two fisheries, as well as the Brittany Granville Bay fishery, is linked via the JAC/JMC process in the sense that data from each fishery is reviewed at JMC meetings, allowing management to take CPUE and survey information from the whole Granville Bay fishery into account. Overall, therefore, the team considered that the management of the Granville Bay fisheries as a whole meets the SG80 level, particularly given that the Brittany fishery, with the least comprehensive management system, is small compared to the other two. The lack of cooperation on management targets and measures (as opposed to data sharing) at the Granville Bay level, however, precludes SG100 being met. Considering the whole Western Channel area, the much smaller UK fisheries (~12% of the size of the Granville Bay fishery) do not have a strong management framework, although work is underway to put one in place. The team considered that this is offset, at the wider stock level, by the fact that the whelk stock over most of the Western Channel area is unfished (i.e. outside coastal areas – see PSA scoring for details). Overall, the team considered that SG80 is met, but SG100 is not met.

b	**Guidepost**	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	N
	Justification	The evidence from the fishery (CPUE, size structure) suggests that the harvest strategy is working. The Jersey survey does not show the same trends in CPUE as on the Basse-Normandie side, for reasons which are not clear – it may be because the data are more uncertain, or because trends are different in different places, or because the Basse-Normandie CPUE data is unstandardised (although the last major change in the fishery was in 2009 when the dataset started). Nevertheless, the Jersey survey suggests that the stock is stable and that recruitment is not impaired (see Figure 8 of the main report). The stock was at the target level of CPUE as of 2013. The harvest strategy is subject to regular evaluation by stakeholders (the Commission Bulot, Granville Bay JAC), and actions taken are adapted according to perceptions of stock status and the operation of the fishery, as described above. The Jersey survey dataset suggests that there remains further possibility for the CPUE (stock biomass) to increase. The policy of continuing to reduce effort gradually (a key part of the harvest strategy) remains in place, suggesting that the target CPUE level of 1.6 kg/pot should be regarded as an interim target. For fisheries in other areas of the Western Channel, there are few data on stock status as from trends in landings, which are erratic and likely to be influenced by poor data and by market factors as much as stock biomass (see Section 3.3.3). They represent, however, a relatively small proportion of the landings from the Western Channel compared to this fishery. Overall, the evidence suggests that the harvest strategy is keeping the stock at (or bringing the stock to) target levels – SG80 is met. There are, however, some issues, including potential conflict between the Jersey survey data and other data sets, the fact that the strategy relies mainly on unstandardised CPUE data, and lack of data from outside Granville Bay, albeit that these fisheries are small. More generally, since the target is not clearly defined, and hence moves de facto with the status of the fishery, it is easy on this basis to say that the target is always being met (although in fairness this would not be the case if the fishery started to decline again – the targets only move upwards). It is also not true to say that the performance of the harvest strategy has been full evaluated, since this implies a simulation or MSE approach, while the harvest strategy is strictly empirical. On this basis, the team concluded that SG80 is met, but SG100 is not met.		
c	**Guidepost**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Monitoring is described in detail in the rationale for PI 1.2.3.		
d	**Guidepost**			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Y

	Justification	As noted above, the harvest strategy is iterative, and over the last 15 years has been subject to continual improvement following the results of monitoring (see Table 5 of main report). There is also an implicit strategy of sliding the target reference points upwards. Jersey and Brittany also review data (independently and/or via the JAC/JMC) and can adjust management measures empirically as required. In the UK, both IFCAs concerned have projects to develop a more robust management framework.		
e	**Guidepost**	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification			
References		Meeting minutes of the Granville Bay JAC, 15th session, 9 and 10 December 2008, Granville https://secure.toolkitfiles.co.uk/clients/25364/sitedata/files/ResearchandEvidencePlan.pdf https://secure.toolkitfiles.co.uk/clients/15340/sitedata/byep/Potting%20Permit%20Byelaw.pdf		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 4 - PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined 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.	
	Met?	Y	N	
	Justification	Harvest control rules (HCR) are defined as the adjustment of one or several management measures based upon the evaluation of an indicator against an established reference point (Rice and Connolly, 2007). Harvest control tools are the means by which the harvest control rules (and more broadly, the harvest strategy) are implemented. For this fishery, there is empirical evidence that harvest control tools have been adjusted based on monitoring data on the stock status. For example: 2001: daily vessel quota introduced; 2004: plan to reduce licence numbers introduced, maximum daily quota reduced; 2005-6: more controls on MLS; 2007: January closure introduced; 2008: pot limit introduced; 2009: 22mm sorting grid introduced. Since 2007, the CPUE has suggested a significant recovery of stock biomass (although possibly not in the Jersey zone). As described above (see rationale for PI 1.2.1), there are some de facto target and limit reference points used in management. On this basis, the team considered that generally understood harvest control rules are in place for the Basse-Normandie fishery. There is, however, no explicit rule along the lines of: if stock is below target, X will be done, if stock is below limit, Y will be done. The team considered that something along these lines is required for a well-defined harvest control rule, particularly so since there are several sources of potential uncertainty in the current and future stock status: the Jersey survey trends give a more pessimistic picture than trends in CPUE from Basse-Normandie, perhaps because of local depletion in some areas; also since this population is at the southern end of the range of the species, climate change poses a risk. The situation is similar for the other Granville Bay fisheries: data are shared and management measures adjusted as required. For the fisheries outside Granville Bay, it is hard to argue that even 'generally understood' harvest control rules are in place at present, but given that these fisheries are a relatively small proportion of the total fishing effort in the area, and bearing in mind that much of the Western Channel 'stock' is unfished, the team considered that the Granville Bay HCRs were sufficient to meet the requirements of SG60, but not SG80.		
b	**Guidepost**		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		Y	N

	Justification	The management of the fishery has been adaptive and based on empirical data – and in that sense, key uncertainties are taken into account. The continuing policy of reducing effort is also precautionary. Some key uncertainties, such as impacts of climate change, are also being addressed in research. The management of the smaller fisheries elsewhere in the Western Channel is also in the process of being addressed at least partially (by the UK IFCAs). However, as noted above, some uncertainties remain, including why the trends in the Jersey survey are not coherent with trends in Basse-Normandie waters, stock structure, risks of local depletion and the size of the unfished stock in the Western Channel area and its role in dynamics. In addition, the key dataset (CPUE trends) is not standardised to account for external sources of variability.		
c	**Guidepost**	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	Y	Y	N
	Justification	The tools used to implement management objectives are set out in the main report. For the Basse-Normandie fishery, they consist, in brief, of controls on effort (reductions in the number of licenses, restrictions on vessel size and pot limits); controls on landings (daily quotas) and technical measures (22mm sorting grid). According to stakeholders, these are of mixed effectiveness. There was some scepticism about the enforcement of the pot limit, since pots are kept at sea most of the time, conversely it was reported that the other measures are respected. In terms of their practical effectiveness in achieving objectives, Basse-Normandie CPUE has increased, being measured to be at the target reference point level in 2013; gradual reductions in effort remain ongoing. Analysis of size distribution does not show any particular trends in relation to reproductive output or recruitment. Conversely, the Jersey survey data do not show a similar recovering trend in CPUE, but instead suggest that the stock in the survey areas remains stable but at a lower biomass than previously. Measures are also in place in the other two Granville Bay jurisdictions and Brittany outside Granville Bay, as set out in the main report; UK fisheries are currently managed via the 45mm minimum size, but a more robust framework is being developed. Overall, the team considered that since i) available evidence indicates either a recovery or stability in the Granville Bay area; ii) since the target level of CPUE has been achieved; and iii) since fisheries with less effective management tools in place are small, then SG80 is met. Conversely, the Jersey survey suggests that the tools in use in Granville Bay may not have allowed the stock to recover everywhere, and the situation may be spatially quite variable. In addition, one data point (2013) is not sufficient to say with certainty that the target level of CPUE is definitively 'met'. On this basis, SG100 is not met.		
References		Rice and Connolly (2007)		

OVERALL PERFORMANCE INDICATOR SCORE:	**75**
CONDITION NUMBER (if relevant):	**1**

Evaluation table 5 - PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	N
	Justification	Stock structure: Data are available on biomass (from the proxy measure of fisheries or survey CPUE) and size structure. Stock structure is unclear (see details in Section 3.3.1.2) and management has been arranged on a pragmatic basis by jurisdiction, although there is cooperation between jurisdictions in place in Granville Bay. Stock productivity: There has been quite extensive research on size/age at maturity, reproductive output and the reproductive cycle, as part of the 'BuloClim' project. Similar information is available for other areas in the Channel (see for example Lawler, 2013). Fleet composition: For all three fleets involved in this fishery, a permit is required to harvest whelks, and therefore the fleet composition is known with certainty. For the UK fisheries, no specific whelk permit is required at present, but Devon and Severn IFCA require a potting permit. All the vessels in all the fisheries are required to submit landings declarations, so landings can be matched to individual vessels. On the Basse-Normandie side, the harvest strategy is supported by the following key datasets: i) at sea sampling by researchers; ii) self-sampling by fishermen; iii) fiches de pêche from the reference fleet; iv) landings data from the Granville auction. The Jersey survey has been important in informing the management approach on the Jersey side. The biology and ecology of whelks in Granville Bay is also quite well understood. Elsewhere, only landings data are collected, although the life history of whelks, including spatial variation, is quite well known throughout the Western Channel area. Overall, the team considered that the information available is sufficient to support the harvest strategy for Granville Bay, given that the harvest strategy is empirical. For the overall Western Channel area, the Granville Bay fishery represents most of the fishing effort as already noted. SG100 requires a 'comprehensive range of information', and this is not met. For example, the only fishery-independent survey (the Jersey survey) is quite limited in scope, historic catch data from France remain approximate, CPUE is not standardised and data from outside Granville Bay is quite limited.		
b	**Guidepost**	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	N	N

	Justification	Stock abundance in Granville Bay is monitored using a proxy measure of nominal CPUE from the reference fleet. The Jersey survey also measures biomass via the proxy of nominal CPUE. Fisheries removals are monitored in France via landings to the auctions and via fiches de pêche (as noted in Section 3.2.5 of the main report, the data are available although the data entry and archiving system is over-complicated and inefficient) and in Jersey and England via logbooks. The key indicator which supports the Basse-Normandie harvest strategy is nominal CPUE. The team were concerned that there has been no attempt to standardise the CPUE data set. The data sets start in 2009 which means that the change in the sorting grid size is not an issue, but, other inter-annual differences are noticeable – for example, for 2012 and 2013 there no data were available from zone 3. Likewise, sampling at different times of year might be an issue, given that whelk activity is somewhat related to water temperature, which varies by season and by year. It may be that the data set so far is too rather short for meaningful standardisation, but a more sophisticated analysis is essential in the long term, if trends related to biomass are to be disentangled from other factors. Overall, since catch and CPUE are monitored with sufficient frequency to evaluate progress in the fishery and stock, SG60 is met. In relation to SG80, the team was concerned about the 'level of accuracy' in the data set, and concluded that SG80 is not met.		
c	**Guidepost**		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	Jersey: Vessels submit catch data to the authorities, who were confident that these are reliable – since there are no quotas there is no reason for the vessels to alter data (G. Morel and J. Shrives, pers. comm.). Some concern was expressed during the site visit by some stakeholders that Jersey vessels were landing large amounts in Carteret which did not match with logbook submissions, but the Jersey authorities suggested that this was most likely due to both vessels amalgamating their catch for landing by one vessel. Brittany: Although full information on catch data from the Brittany fishery was not available to the team, the CRPM Bretagne reported that landings data (fiches de pêche / landings declarations) are passed on to FranceAgrimer as required by law. (The complicated process gone through by CRPM-BN to estimate total landings is essentially to avoid a long delay in receiving the data back from FranceAgrimer.) These data are, therefore, available, at least to interested parties such as CRPMs, albeit not very quickly. UK: Landings data are available via MMO as given in Table 4 and Table 5 of the main report.		
References		Laurence Hégron-Macé, SMEL et Véronique Legrand, CRMP-BN, pers. comm., Jersey Fisheries Annual Report (2013), Lawler (2013).		
OVERALL PERFORMANCE INDICATOR SCORE:				**75**
CONDITION NUMBER (if relevant):				**2**

Evaluation table 6 - PI 1.2.4

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**		The assessment is appropriate for the stock and for the harvest control rule.	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
	Met?			
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
b	**Guidepost**	The assessment estimates stock status relative to reference points.		
	Met?			
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
c	**Guidepost**	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?			
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
d	**Guidepost**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		

e	**Guidepost**		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?			
	Justification	Given a default score of 80 when the RBF is used for PI 1.1.1		
References		SICA Scoring Table and PSA (Appendix 2.1)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 7 - PI 2.1.1

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	Y	Y	N
	Justification	Also see Section 3.4.1. The only main retained species identified by stakeholders and the assessment team was roussette, i.e. small-spotted catshark or lesser spotted dogfish (*Scyliorhinus canicula*), used as bait. The stocks under consideration here are defined by ICES as those occurring in Division IIIa (Skagerrak and Kattegat), Subarea IV (North Sea), and Division VIId (Eastern Channel) and in Subarea VI and Divisions VIIa–c, e–j (Celtic Seas and west of Scotland). – both of which are considered to be data-limited (ICES, 2012a). The most recent advice for both stocks was issued in 2012 (valid for 2013 and 2014) and is based on a qualitative evaluation of stock status relying on fisheries-independent data provided by beam trawl surveys (BTS) and international bottom trawl surveys (IBTS). On the basis of stable/increasing catch rates (assumed as stock size indicators), it is inferred that SSB is increasing and F is stable or decreasing. Based on the ICES approach to data-limited stocks, the advice is given that catches could be increased by a maximum of 20% for 2013 (note that this is not further recommended for 2014) (ICES, 2012a and c). More up to date data were considered by the ICES Working Group on Elasmobranchs (WGEF) – although the 2014 report was still in draft version, the preliminary results indicate that the abundance of both stock of *S. canicula* is increasing (WGEF, 2014). ICES considers that the current approach for *S. canicula* is sufficiently precautionary given that there has been a consistent increase in survey catch rates over an extended period of time and that current exploitation levels are not thought to be detrimental to the stocks. Based on the ICES (2012a and c) assessments, ICES does not advise that an individual TAC be set for these stocks. On this basis the team felt that the stocks are highly likely to be within biologically based limits. SG80 is therefore met. However, considering the fact that these are data-limited stocks and that the stock evaluation relies primarily on fisheries-independent data there is no high degree of certainty that the species is within biologically based limits. SG100 is not met.		
b	**Guidepost**			Target reference points are defined for retained species.
	Met?			N
	Justification	Both stocks are considered to be data-limited (ICES, 2012 and c) and as such no reference points have been defined. This scoring issue is not met.		

c	**Guidepost**	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	Y	Y	
	Justification	The *S. canicula* stocks under consideration here is not thought to be outside biological limits. Both SG60 and SG80 are met by default.		
d	**Guidepost**	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.		
	Met?	Y		
	Justification	Although fisheries-dependent data for *S. canicula* are not considered to be reliable (ICES, 2012a and c), sufficient fisheries-independent data continue to be collected that provide reliable indications of trends in stock status (ICES, 2012b). SG60 is therefore met.		
References		ICES (2012a) ICES (2012c) WGEF (2014) ICES (2012b)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 8 - PI 2.1.2

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are measures in place, if necessary, that are 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.	There is a partial strategy 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.	There is a strategy in place for managing retained species.
	Met?	Y	Y	N
	Justification	Also see Section 3.4.1.1. Management for these stocks follows the ICES approach to data-limited stocks which fall under Category 3 in which advice is based on survey indices providing reliable indications of trends in stock metrics such as mortality, recruitment, and biomass. The general concept of survey-based catch advice is based on the assumption that decreasing surveys suggest catch should be incrementally decreased and vice versa (ICES, 2012b). For these types of stocks, the advice is based on a comparison of the two most recent index values with the five preceding values, combined with recent catch or landings data. Knowledge about the exploitation status also influences the advised catch (ICES, 2012a). Based on ICES' estimate that SSB for this stock has increased by more than 20% between the periods 2005-2009 and 2010–2011 (based on BTS and IBTS CPUE trends), an increase of catches of at most by 20% in relation to the last three years average is implied. However, because the data for catches of lesser-spotted dogfish are not fully documented, these 20% are not translated into an actual catch volume (ICES, 2012a and c). ICES considers this approach to be sufficiently precautionary given that there has been a consistent increase in survey catch rates over an extended period of time and that current exploitation levels are not thought to be detrimental to the stocks. Although precautionary TACs for data-limited stocks have been applied for other species (e.g. monkfish, megrim), ICES does not advise that an individual TAC be set for these stocks (ICES, 2012a and c). The team felt that this constituted at least a partial strategy expected to maintain the species within its biologically based limits. As such SG80 is met. There is, however, no strategy in place to manage all retained species (including all bait species); SG100 is therefore not met.		
b	**Guidepost**	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Y	Y	N
	Justification	Given that there has been a consistent increase in survey catch rates over an extended period of time and that current exploitation levels are not thought to be detrimental to the *S. canicula* stocks, there is some objective basis for confidence that the partial strategy is effective. SG80 is met. As there is no full strategy in place, SG100 is not met.		

c	**Guidepost**		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	ICES advice for these stocks is issued on a biennial basis and survey catch data are considered regularly by the WGEF, as shown in their working group reports (e.g WGEF 2014). This constitutes evidence that the partial strategy is being implemented successfully. SG 80 is met. However, in the absence of a full strategy, SG 100 is not met.		
d	**Guidepost**			There is some evidence that the strategy is achieving its overall objective.
	Met?			N
	Justification	In the absence of a full strategy, this scoring issue is not met.		
e	**Guidepost**	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Y	Y	Y
	Justification	*S. canicula* is the only shark species that this fishery interacts with (through its bait use) and there is a high degree of certainty that shark finning of this or any other shark species does not take place in this fishery.		
References		ICES (2012a) ICES (2012c) ICES (2012b) WGEF (2014)		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 9 – PI 2.1.3

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	Met?	Y	Y	N
	Justification	See Section 3.4.1. Qualitative information on the amount of *S. canicula* (the only main retained species identified) was provided by stakeholders and on this basis a quantitative estimate could be made, i.e. the *S. canicula* volume used as bait corresponds to approx. 7.7% of the overall annual whelk catch. In 2013 this corresponded to approx. 22% of the overall French landings for all Scyliorhinidae combined in the North Sea ecoregion. The team felt that some quantitative information was therefore available. SG80 is met. However, quantifiable information was not available for all bait species concerned. As such, SG100 is not met.		
b	**Guidepost**	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	Met?	Y	Y	N
	Justification	Although fisheries-dependent data for *S. canicula* are not considered to be reliable (ICES, 2012a and c), sufficient fisheries-independent data continue to be collected that provide reliable indications of trends in stock status (ICES, 2012b). SG80 is therefore met. The information available, however, is not sufficient for outcome status to be estimated with a high degree of certainty. SG100 is not met.		
c	**Guidepost**	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	Y	N
	Justification	As explained in PI 2.1.2, management for this stock follows the ICES approach to data-limited stocks which fall under Category 3 in which advice is based on survey indices providing reliable indications of trends in stock metrics such as mortality, recruitment, and biomass (ICES, 2012b). ICES considers this approach to be sufficiently precautionary given that there has been a consistent increase in survey catch rates over an extended period of time and that current exploitation levels are not thought to be detrimental to the stocks. On this basis, information is considered adequate to support a partial strategy for *S. canicula*. SG80 is met. In the absence of a full strategy for all retained (and bait) species however, SG100 is not met.		

d	**Guidepost**		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	Met?		Y	N
	Justification	The same rationale as given in scoring issue b applied. SG80 is met but not SG100.		
References		ICES (2012a) ICES (2012 c) ICES (2012b)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 10 - PI 2.2.1

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	Met?	Y	Y	Y
	Justification	The RBF was used to score this PI. The consequence score for the SICA was 1 corresponding to an overall MSC score of 100 (see Appendix 2.2, Principle 2 SICA Scoring Table).		
b	**Guidepost**	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	Y	Y	
	Justification	As above		
c	**Guidepost**	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.		
	Met?	Y		
	Justification	As above		
References		SICA Scoring Table (Appendix 2.2)		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 11 - PI 2.2.2

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are measures in place, if necessary, that are expected to maintain the main bycatch 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.	There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch 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.	There is a strategy in place for managing and minimizing bycatch.
	Met?	Y	Y	Y
	Justification	Also see section 3.4.2. After each pot is lifted, the catch is sorted immediately with an average time delay of approximately 3 seconds. A sorting grid of 22mm is used (see Figure 12 in main report) and any small bycatch (<22 mm) falls straight back into the sea. Larger bycatch is picked out and discarded. All stakeholders agreed that survival rates of discards were likely to be high. Pots are also equipped with small holes at their base which allow bycatch to escape/fall through/be pushed out as the volume of whelks in the pot increases. The team felt that these measures constitute a strategy for managing and minimizing all bycatch. SG100 is met.		
b	**Guidepost**	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Y	Y	N
	Justification	Information on the fishery's bycatch, including *N. reticulatus* is collected through fishermen's observations (through a self-sampling programme) as well as through data collection by the SMEL during at-sea observer campaigns which take place every 2 years. Data collected by the SMEL indicates a gradual reduction in the amount of bycatch in the two sampled zones during the period 2007 - 2013, from 46% to 29% in zone 1 and from 33% to 24% in zone 2. This decrease occurred in parallel with the increase in sorting grid spacing (from 19/20mm to 22mm) as well as the installation of holes at base of the pots (SMEL, 2014). Furthermore, landings of bycatch species are rare (although minimal amounts of N. *reticulatus* can be included through sorting error). This constitutes some objective basis for confidence that the current management strategy is working. SG80 is therefore met. However, the effectiveness of the strategy has to the team's knowledge not been tested – SG100 is not met.		
c	**Guidepost**		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	Y
	Justification	While the holes at the base of the pots are not a legal requirement but rather a voluntary action by the fishermen, the 22mm sorting grid is a condition of the license and no systematic non-compliance has been reported to date (see Section 3.5.2.3). The arguments listed under scoring issue c also apply. For this reason, the team considered that this is clear evidence that the strategy is being implemented successfully and that SG100 is met.		

d	**Guidepost**			There is some evidence that the strategy is achieving its overall objective.
	Met?			Y
	Justification	As already explained under scoring issue b, there is some evidence that the strategy is achieving its objective. This scoring issue is therefore met.		
References		SMEL (2014)		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 12 - PI 2.2.3

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	Met?	Y	Y	N
	Justification	Information on the fishery's bycatch, including *N. reticulatus,* is collected through fishermen's observations (through a self-sampling programme which started in 2009, and which takes place every day during the fishing season aboard a number of participating vessels) as well as through data collection by the SMEL during at-sea observer campaigns which take place every 2 years (SMEL, 2014). Qualitative and some quantitative information is therefore available on main bycatch species taken by this fishery and SG80 is met. This information, however, is not considered sufficient for the status of all bycatch species to be estimated. As such SG100 is not met.		
b	**Guidepost**	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	Met?	N/a	N/a	N/a
	Justification	This scoring issue is not scored when the RBF is used.		
c	**Guidepost**	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	Y	N
	Justification	The data collected through the fishermen' self-sampling programme as well as those collected by the SMEL are sufficient for any obvious trends in bycatch abundance to be detected and for appropriate management measures to be taken (although not for bycatch, a precedent was set by the SMEL in 2002 - in cooperation with NFM and CRPM-BN - when significant amounts of under-sized whelks were detected. A 19mm sorting grid was in place at the time and this was gradually increased to 22mm in 2009, leading to a reduction in the number of retained under-sized whelks). On this basis the team felt that SG80 is met; however the information collected is not sufficient for impacts to be estimated with a high degree of certainty. As such SG100 is not met.		

d	**Guidepost**		Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectively of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	Met?		Y	N
	Justification	As per scoring issue c, SG80 is met. The SMEL observer-at-sea programme only takes place every 2 years and this would not provide sufficient detail for all ongoing mortalities of bycatch species to be assessed. SG100 is not met.		
References		SMEL (2014)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 13 - PI 2.3.1

PI 2.3.1		The fishery meets national and international requirements for the protection of ETP species The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
	Met?	Y	Y	Y
	Justification	Also see section 3.4.3. There is a number of protected areas designated under de EC Habitats and Birds directives within Granville Bay, the most relevant of which are listed in Table 9 of the main report. Species of conservation concern include over 20 birds species, allis shad (*Alosa alosa*), twaite shad (*A. fallax*), river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), Atlantic salmon (*Salmo salar*), grey seal (*Halichoerus grypus*), common seal (*Phoca vitulina*), harbour porpoise (*Phocoena phocoena*), European otter (*Lutra lutra*) and bottlenose dolphin (*Tursiops truncatus*). In the context of the EC Birds and Habitats Directives, the Agence des Aires Marines Protégées (AAMP) evaluated the interactions of various gear types with the qualifying habitats and species of designated protected sites (see le Fur, 2010). For pot fisheries, it was concluded that there is no accidental bycatch of any of the bird, fish and marine mammal species listed. Furthermore, stakeholders present at the site visit and SICA workshop agreed that interactions with birds or any other protected species are not an issue in this fishery. There is therefore a high degree of certainty that the effects of the fishery are within national and international protection limits. SG100 is met.		
b	**Guidepost**	Known direct effects are unlikely to create unacceptable impacts to ETP species.	Direct effects are highly unlikely to create unacceptable impacts to ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.
	Met?	Y	Y	Y
	Justification	Based on the information gathered during the SICA workshop and from the AAMP (see above and see section 3.4.3), there is a high degree of confidence that there are no significant detrimental effects of the fishery on ETP species.		
c	**Guidepost**		Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
	Met?		Y	Y
	Justification	As per scoring issues a and b, SG100 is met.		
References		le Fur (2010)		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 14 - PI 2.3.2

PI 2.3.2		The fishery has in place precautionary management strategies designed to: • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species.		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	Y	Y	Y
	Justification	Within Granville Bay a number of sites and their qualifying features have been designated under the EC Birds and Habitats Directives (see Table 9 in main report). In accordance with EU legislation an appropriate assessment (i.e. impact assessment) must be carried out prior to any project (which may include fisheries) taking place within these sites. There is therefore a framework in place which manages any human activities which may affect protected habitats and species. Considering that pot fisheries have been assessed by the AAMP as having no impact on the qualifying features of these sites, the team concluded that there is a comprehensive strategy in place for managing the fishery's impact on ETP species. SG100 is therefore met.		
b	**Guidepost**	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.	The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
	Met?	Y	Y	Y
	Justification	Stakeholders (including fishermen, SMEL and AAMP) confirm that this fishery does not impact on ETP species. This is further supported by the AAMP assessment (Le Fur, 2010) that pot fisheries do not interact with any of the qualifying features of sites designated under the EC Birds and Habitats Directives (see section 3.4.3). Furthermore, every two years the SMEL carries out observer trips aboard the vessels involved in the fishery. To date, no interactions with ETP species have been recorded (SMEL, 2014). The team considered that this provided sufficient evidence to conclude with high confidence that the fishery does not impact on ETP species and that SG100 should be met.		

c	**Guidepost**		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	Y
	Justification	As per scoring issue b, the absence of any impacts on ETP species means SG100 should be met.		
d	**Guidepost**			There is evidence that the strategy is achieving its objective.
	Met?			Y
	Justification	As per scoring issue b, the absence of any impacts on ETP species means SG100 should be met.		
References		le Fur (2010) SMEL (2014)		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 15 - PI 2.3.3

PI 2.3.3		**Relevant information is collected to support the management of fishery impacts on ETP species, including:** • **Information for the development of the management strategy;** • **Information to assess the effectiveness of the management strategy; and** • **Information to determine the outcome status of ETP species.**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
	Met?	Y	Y	Y
	Justification	Stakeholders (including fishermen, SMEL and AAMP) confirm that this fishery does not impact on ETP species. This is further supported by the AAMP assessment (Le Fur, 2010) that pot fisheries do not interact with any of the qualifying features of sites designated under the EC Birds and Habitats Directives (see section 3.4.3). Furthermore, every two years the SMEL carries out observer trips aboard the vessels involved in the fishery. To date, no interactions with ETP species have been recorded (SMEL, 2014). The team considered that this is sufficient information to quantitatively estimate outcome status of ETP species with a high degree of certainty. SG100 is therefore met.		
b	**Guidepost**	Information is adequate to broadly understand the impact of the fishery on ETP species.	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.	Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	Y	Y	Y
	Justification	As per scoring issue a, accurate and verifiable information is available from the AAMP (Le Fur, 2010) and the SMEL (SMEL, 2014) on this fishery's impacts on ETP species. SG100 is therefore met.		
c	**Guidepost**	Information is adequate to support measures to manage the impacts on ETP species.	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Y	Y	Y
	Justification	As per scoring issues a and b, SG100 is met.		
References		le Fur (2010) SMEL (2014)		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 16 - PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Y	Y	N
	Justification	Also see Section 3.4.4 Some sensitive habitats exist within Granville Bay. These include *Zostera* fields, maerl beds, sand mason (*Lanice conchilega*) banks and *Sabellaria* reefs. A number of sites have also been designated as SACs (Special Areas of Conservation) under the EC Habitats Directive (see Table 9 in the main report). As explained in Section 3.4.4, there is minimal overlap between the fishery and these habitat types as they occur predominantly in inshore waters and the fishery takes place in deeper water from about 7m to 40m. In the context of Natura 2000, the AAMP evaluated the interactions of various gear types with the qualifying habitats of designated protected sites based on available literature (see le Fur, 2010). For pot fisheries, it was concluded that this gear type has a low physical impact on the benthic features they encounter. Eno et al. (2001) examined the effects of fishing with traps on benthic species in Great Britain by means of qualitative and quantitative experiments. The results suggested that four weeks of fairly intense fishing did not have immediate detrimental effects on the abundance of the species selected for study which included sponges, soft corals, bryozoans, tube worms, ascidians and gorgonians. Some pots can be lost (mostly due to incidents with trawlers) and gear is generally not recovered. The residual fishing capacity of lost pots, however, is low as the longer the pots stay on the seabed, the more sand enters, leaving less room for any whelks or other animals to enter. The bait also degrades quickly, which further reduces the risk of ghost fishing. Finally, the way the pots are configured means they open easily (the concrete base detaches from the plastic top) and therefore would not trap anything. On this basis, the fishery is considered highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. SG80 is met. There is, however, no direct evidence which demonstrates this for the fishery in question. As such, SG100 is not met.		
References		Eno et al. (2001) Le Fur (2010)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 17 - PI 2.4.2

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Y	Y	N
	Justification	As for ETP species, in accordance with EU legislation an appropriate assessment (i.e. impact assessment) must be carried out prior to any project (which may include fisheries not previously taking place in these areas) taking place within the SACs designated in Granville Bay (see Table 9 in the main report). The whelk fishery is perceived as a low-impact fishery and occurred prior to the creation of the SACs; as such no appropriate assessment has been carried out – there are also no specific management measures which affect the whelk fishery in these areas. The team considered that although the EC Habitats Directive provides to framework for a partial strategy which is at least expected to achieve the habitat outcome SG80, there is no full strategy in place for managing the impact of this specific fishery on all habitat types (either via direct interactions or through ghost fishing). SG100 is therefore not met.		
b	**Guidepost**	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Y	Y	N
	Justification	Based on the information available on benthic interactions in pot fisheries (see le Fur, 2010; Chuenpagdee et al. 2003; Brown et al. 2005 and Eno et al. 2001 cited in Section 3.4.4) there is some objective basis for confidence that any impacts are low and that the partial strategy is therefore effective. SG80 is met. However, in the absence of a full strategy and without interactions between the whelk fishery and habitats in Granville Bay having specifically been tested, SG100 cannot be met.		
c	**Guidepost**		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	As per scoring issue b, there is some evidence (inferred from literature on benthic interactions in pot fisheries) that the partial strategy is being implemented successfully. SG80 is met. However, in the absence of a full strategy, SG100 is not met.		
d	**Guidepost**			There is some evidence that the strategy is achieving its objective.
	Met?			N

	Justification	In the absence of a full strategy, this scoring issue is not met.
References		le Fur (2010) Chuenpagdee et al. (2003) Brown et al. (2005) Eno et al. (2001)
OVERALL PERFORMANCE INDICATOR SCORE:		**80**
CONDITION NUMBER (if relevant):		**N/a**

Evaluation table 18 - PI 2.4.3

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	Y	Y	Y
	Justification	As shown in Figure 13 and Figure 14 in the main report, the distribution of habitat types, including that of vulnerable habitats such as *Zostera* fields, maerl beds, sand mason (*Lanice conchilega*) banks and *Sabellaria* reefs is known throughout Granville Bay. On this basis, the team felt that SG100 is met.		
b	**Guidepost**	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Sufficient data are available to allow the 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.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	Y	Y	N
	Justification	The distribution of vulnerable habitats and the spatial and temporal footprint of the fishery are known and are sufficient for any overlap to be detected. Further information is based on scientific literature investigating benthic interactions in pot fisheries (see le Fur, 2010; Chuenpagdee et al. 2003; Brown et al. 2005 and Eno et al. 2001 cited in Section 3.4.4). On this basis, the team felt that sufficient data are available for SG80 to be met. However, no research has been done assessing benthic interactions in the whelk fishery specifically. Furthermore – and although this is not reported to be an issue in this fishery - no attempts have been made to quantify the extent of gear loss in the fishery. On that basis SG100 is not met.		
c	**Guidepost**		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).	Changes in habitat distributions over time are measured.
	Met?		Y	Y
	Justification	Within the framework set by the EC Habitats Directive, habitat distributions are monitored over time and are fed into EUNIS (European Nature Information System). This information is sufficient for any increase in risk to vulnerable habitats to be detected. As such, the team considered that sufficient data continue to be collected to detect any increase in risk to habitat (SG80 is met) and changes in habitat distributions over time are measured (SG100 is met).		
References		EUNIS, AAMP websites		

OVERALL PERFORMANCE INDICATOR SCORE:	**95**
CONDITION NUMBER (if relevant):	**N/a**

Evaluation table 19 - PI 2.5.1

PI 2.5.1		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Y	Y	N
	Justification	Also see Section 3.4.5 Although the role of the common whelk in Granville Bay is not very well understood, the species is necrophagous and the fishery under assessment is therefore highly unlikely to cause irreversible ecosystem impacts. Although aspects of the species' biology, including its relatively long lifespan, gregarious nature and lack of population mobility make the species potentially susceptible to both growth- and recruitment-overfishing (Lawler and Vause, 2009) and some population collapses have been recorded in other areas (e.g. in the South Irish Sea – see Fahy et al. (undated)), improvements in the fishery's management over the last decade have thus far succeeded in maintaining the stock at a healthy level (see Principle 1). On the basis that the current status of the stock is healthy, the team considered it highly unlikely that the fishery would disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. SG80 is therefore met. More targeted research could, however, be carried out into the role of the whelk in the Granville Bay ecosystem and for this reason SG100 is not met.		
References		Fahy et al. (undated) Lawler and Vause (2009)		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 20 - PI 2.5.2

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are measures in place, if necessary.	There is a partial strategy in place, if necessary.	There is a strategy that consists of a plan, in place.
	Met?	Y	Y	N
	Justification	The management measures pertaining to the whelk fishery are listed under Principle 1. Furthermore, under the Marine Strategy Framework Directive (MSFD) (2008/56/CE) each member state should achieve 'good ecological status' by 2020 and establish an action plan on how this will be achieved. For the implementation of the MSFD, four sub-regions have been defined within French waters, including the sub-region of the Channel/North Sea. The action plan for the sub-region includes an initial diagnostics and data gap analysis of the status of the marine environment, a definition of what 'good ecological status' is within the context of the sub-region, environmental objectives and management measures to reach that status (to be established by 2015 and implemented in 2016) and a monitoring programme to see how the objectives are being reached (to be established in 2014). The report providing the initial diagnostic for the sub-region is available via this link: http://webissimo.developpement-durable.gouv.fr/IMG/pdf/Evaluation_initiale_Manche_-_mer_du_Nord_cle72511e.pdf. The report provides in-depth analysis on the ecological characteristics and status of the marine environment within the sub-region and the anthropogenic influences acting on this environment. Following the issuing of this report a number of objectives were identified in 2012. These objectives are very generic however, and more specific ones are due to be identified by 2015. Similarly, work also continues on the management plan. Although the activities under the MSFD are work in progress, the management measures put in place by the CRPM-BN for the whelk fishery ensure that the fishery does not pose a risk to the whelk stock and therefore to the wider ecosystem. The team therefore felt that at least a partial strategy is in place and that SG80 is met. However, in the absence of in-depth knowledge about the role of whelks in the Granville Bay ecosystem, it cannot be said that there is a full strategy in place. For this reason SG100 is not met.		
b	**Guidepost**	The measures take into account potential impacts of the fishery on key elements of the ecosystem.	The partial strategy 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.	The strategy, which consists of a plan, contains measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem. This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.
	Met?	Y	Y	N

	Justification	As per scoring issue b, the management measures put in place by the CRPM-BN for the whelk fishery ensure that the fishery does not pose a risk to the whelk stock and any bycatch and therefore to the wider ecosystem. The CRPM-BN regularly considers new data collected by the SMEL as part of its biennial at-sea observer programme (SMEL, 2014) and management measures are adapted as required (see section 3.2.8.2). On this basis, the partial strategy 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. SG80 is met. In the absence of a strategy which consists of a plan, however, SG100 is not met.		
c	**Guidepost**	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.
	Met?	Y	Y	N
	Justification	Management measures put in place by the CRPM-BN for the whelk fishery have thus far succeeded in maintaining the whelk stock in a healthy state. There are further no issues in this fishery with retained or discarded bycatch, benthic habitats or ETP species. On this basis, the partial strategy is considered likely to work and SG80 is met. In the absence of a strategy which consists of a plan, however, SG100 is not met.		
d	**Guidepost**		There is some evidence that the measures comprising the partial strategy are being implemented successfully.	There is evidence that the measures are being implemented successfully.
	Met?		Y	N
	Justification	Compliance with the management measures put in place by the CRPM-BN is verified by the DDTM/DML. The absence of non-compliance records (see Section 3.5.2.3), constitutes evidence that the measures comprising the partial strategy are being implemented successfully. SG80 is met. In the absence of a full strategy, SG100 is not met.		
References		http://webissimo.developpement-durable.gouv.fr/IMG/pdf/Evaluation_initiale_Manche_-_mer_du_Nord_cle72511e.pdf. SMEL, 2014		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 21 - PI 2.5.3

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	Y	Y	
	Justification	Information on key elements of the ecosystem continues to be collected under the Marine Strategy Framework Directive (see PI 2.5.2, scoring issue a), the EC Habitats (e.g. EUNIS) and Birds Directives as well as by the SMEL as part of this fishery's monitoring programme (SMEL, 2014). Information is thus adequate to broadly understand the key elements of the ecosystem. SG80 is met.		
b	**Guidepost**	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail.	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated.
	Met?	Y	Y	N
	Justification	Impacts from this fishery on the whelk stock and on other bycatch species are investigated in detail by the SMEL (SMEL, 2014). Information on interactions with other ecosystem components such as habitats can be inferred from information on other, similar fisheries (see Section 3.4.4). Although main interactions between the fishery and the affected ecosystem elements have been investigated, some questions remain as to the role of the whelk in the Granville Bay ecosystem, which has to date not been investigated. Although SG80 is met, SG100 is not met.		
c	**Guidepost**		The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.	The impacts of the fishery on target, Bycatch, Retained and ETP species are identified and the main functions of these Components in the ecosystem are understood.
	Met?		Y	Y
	Justification	As detailed in the sections relating to retained and discarded species, ETP species and habitats, the impacts of the fishery on the corresponding ecosystem components are known and are well understood. Both SG80 and SG100 are therefore met.		

d	**Guidepost**		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.	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		Y	N
	Justification	As per scoring issue c, sufficient information is available on the impacts of the fishery on retained species, bycatch and ETP species to allow the main consequences for the ecosystem components to be inferred. As such SG80 is met. Considering however that the role of the whelk in the ecosystem and therefore its interactions with all ecosystem elements has not yet been investigated, SG100 is not met.		
e	**Guidepost**		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).	Information is sufficient to support the development of strategies to manage ecosystem impacts.
	Met?		Y	Y
	Justification	Information on key elements of the ecosystem continues to be collected under the Marine Strategy Framework Directive (see PI 2.5.2, scoring issue a), the EC Habitats (e.g. EUNIS) and Birds Directives as well as by the SMEL as part of this fishery's monitoring programme (SMEL, 2014). Sufficient data are therefore collected for any increase in risk level to be detected. SG80 is met. Under the Marine Strategy Framework Directive, information has been collected and analysed for the elaboration of an action plan to achieve 'good ecological status' of the French North Sea/Channel sub-region by 2020. This information is already available is the relevant report for the sub-region: http://webissimo.developpement-durable.gouv.fr/IMG/pdf/Evaluation_initiale_Manche_-_mer_du_Nord_cle72511e.pdf. The report provides in-depth analysis on the ecological characteristics and status of the marine environment within the sub-region and the anthropogenic influences acting on this environment. Based on this report, environmental objectives and management measures are being identified which will ultimately permit the achievement of 'good ecological status' by 2020. The available information is therefore sufficient to support the development of strategies to manage ecosystem impacts. SG100 is also met.		
References		SMEL, 2014 http://webissimo.developpement-durable.gouv.fr/IMG/pdf/Evaluation_initiale_Manche_-_mer_du_Nord_cle72511e.pdf.		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 22 - PI 3.1.1

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework.		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Y	Y	N
	Justification	Note: The first four PIs of Principle 3 (PIs 3.1.x) should be scored at the level of the 'stock' as far as possible. As set out in Section 3.3.1.2, the area of the 'stock' in a biological sense is difficult to define, but for the purposes of this assessment it has been defined as the Western Channel. This fishery is by far the largest in the Western Channel area, and landings from Granville Bay make up ~3/4 of the total landings from this area, so scoring has focused on the Basse-Normandie and Granville Bay management frameworks, but the frameworks applying to other fisheries are also considered. The French system of central (DPMA) and devolved administrations (DIRM, DDTM-DML50) and Comités des Pêches (Comité national CNPM and Comité régional Basse-Normandie CRPM-BN) recognises and is consistent with laws and standards aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The CRPM-BN is in charge of management of the whelk fishery. Management measures consistent with MSC Principles 1 and 2 are proposed in its 'délibérations' which become bylaws upon agreement of the government representative (Préfet de region). The Granville Bay Treaty system provides a framework and procedures for cooperation with the other relevant parties (Jersey and Brittany). These are binding, in the sense that Basse-Normandie (or any other party) cannot opt out of it –although it is not a requirement that all fisheries management must pass through the Granville Bay structure, if this is not possible or appropriate or necessary. For Granville Bay, the team considered that i) there is an effective national legal system, ii) there are binding procedures for cooperation, and iii) these two systems deliver management consistent with P1 and P2, as shown above. For Breton fisheries outside the Granville Bay area, a similar system is in place (management is the responsibility of the CRPM – Bretagne). For English fisheries, management is the remit of the IFCAs (Southern and Devon and Severn are concerned here), which operate in a similar way. Management is likewise empirical and operates by individual fisheries (in England is it not well developed, but improvement is underway). For the wider Western Channel area, there is currently no cooperation between parties. Given the overwhelming importance of the Granville Bay fishery compared to the others, and the fact that most of the Western Channel 'stock' is not fished, the assessment team did not consider this to be necessary at the SG80 level, but SG100 does not allow for 'if necessary', so is not met.		

b	**Guidepost**	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective.
	Met?	Y	Y	Y
	Justification	The decisions of the CRPM-BN can be argued against during the Bulot (whelk) Committee meetings, and are adopted by a majority vote. Once validated by the Préfet into bylaws ('arrêté'), the measures can be contested as any administrative decisions in the local administrative court. The bylaws may be revised annually. Measures are discussed at the Bay of Granville level by the JAC three times a year, and so far remain different between BN and Jersey for lack of agreement – the parties have 'agreed to differ'. Any legal disputes between the French and Jersey authorities and vessels are settled in the Court of the prosecuting authority, according to the dispute resolution system set out in the Granville Bay Treaty. The system is transparent and has been tested and proven to be effective for the fisheries – for example, in relation to access to zones A, B and C (see Figure 1 of the main report). Disputes between BN and Brittany are resolved by the French legal system – an example was a dispute about licensing in the Mont St. Michel area, which was resolved by tribunal, after which a system of shared licences for limited spatial areas was created. Overall, for Granville Bay, the team considered that there is a transparent dispute resolution mechanism – both non-legal (e.g. discussion in the Commission Bulot or in the JAC and JMC) and legal (via French administrative tribunal or the Granville Bay Treaty mechanism). It has been tested and proved effective. Fisheries outside the Granville Bay area, being much smaller and not subject to multiple jurisdictions, are less likely to be subject to disputes, but mechanisms for dispute resolution are in place in these systems. An example for Brittany is given above; in the Western Channel on the English side, several disputes in relation to, for example, towed vs. fixed gear have been resolved within the IFCA system (or actually by their predecessors, the Sea Fisheries Committees) – see for example the South Devon Inshore Potting Agreement in the Devon and Severn IFCA area.		
d	**Guidepost**	The management system has a mechanism to generally respect 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.	The management system has a mechanism to observe 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.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Y	Y	Y
	Justification	The French policy formally recognises, is committed and to respects the legal rights attached to historical involvement and track records for the annual delivery of licences and fishing entitlements. This also the case for the Jersey fisheries Policy and the Bay of Granville Treaty. There is no issue with subsistence or recreational fishers, or pêcheurs à pied in this fishery. SG 100 is met.		
References		Code rural et de la pêche maritime Livre IX: Pêche maritime et aquaculture marine Délibérations CRPM-BN EXP BUMW 17/2009 portant création de la licence spéciale de pêche du bulot; DRAM-HN, DIRM Seine Maritime et Eure, Arrêté Préfectoral N°110/2009 Granville Bay Treaty, 2000. Agreement concerning the Fishing in the Bay of Granville; Explanatory memorandum on the Agreement between the UK		

	and France concerning fishing in the Bay of Granville, Presented to Parliament in 2004. http://www.fco.gov.uk/en/about-us/publications-and-documents/treaty-command-papers-ems/explanatory-memoranda/explanatory-memoranda-2004/FishingGranville Arbitration of the Tribunal Administratif de Rennes Nos 01-1806 and 01-1807, May 2004. Blyth et al. (2002)
OVERALL PERFORMANCE INDICATOR SCORE:	**95**
CONDITION NUMBER (if relevant):	**N/a**

Evaluation table 23 - PI 3.1.2

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	Y	Y	N
	Justification	Granville Bay was considered by the team to be the key area of responsibility for management, even if the 'stock' has been defined more widely. Functions, roles and responsibilities are well understood, within the French and Jersey systems, and through the Bay of Granville Treaty. This applies to most areas of activity, as set out in detail in the main report, so SG 80 is met In relation to SG100, the team questions whether this is the case for all areas of responsibility and interactions. Specifically, within the French system, a duplication of some data entry remains necessary until FranceAgriMer is able to restitute cross-checked information in a timely fashion or delegates the process to the local level – overall, the process for data handling and data entry for these small-scale fisheries is unnecessary complex and confusing, creating confusing, delay and sometimes the need for duplicate data entry. SG100 is not met, on this basis.		
b	**Guidepost**	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.
	Met?	Y	Y	Y
	Justification	The Basse-Normandie whelk fishery is managed by the CRPM-BN (Basse-Normandie) on behalf of government. Membership of the CRPM-BN is compulsory for all involved in commercial fishing in the region, from catching to selling to processing. One of the roles of the CRPM-BN is to participate in the drafting of fisheries management regulations. It is apparent that the functions, roles and responsibilities of its members are clearly defined in the 1992 legislation (art. 21), and that they are well understood in all areas. Within the CRPM, its “Commission Bulot” discusses matters specifically related to whelks. The Commission also includes the CRPM’s and other scientists involved in fisheries research and assessment projects (from NFM, SMEL and Ifremer), although these do not have voting rights. Minutes of the “Commission Bulot” provides evidence that the management system directly relies on information provided by professional fishers, including local knowledge and debates how information is used or not. The management systems for the other two parties in the Granville Bay Treaty are likewise stakeholder driven. Brittany does not (as far as we can		

		tell) have a Commission Bulot (because this fishery is much less important) but likewise has a structure, which ensures representation via the CRPM. Jersey has a similar system (see full details given in MEP, 2011). The Granville Bay Treaty is also consultative and participative, via both the JAC and the JMC. Full minutes of all meetings are available to interested parties, summarising the discussion and showing how information is used or not used. The English system (IFCAs) likewise has a system, which ensures representation of both fisheries and environmental stakeholders (e.g. Natural England), and produce quarterly and annual reports and annual plans. Non-fisheries stakeholders (e.g. environmental NGOs) have never shown any interest in involvement with this fishery. SG100 is met.		
c	**Guidepost**		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	Met?		Y	Y
	Justification	The French, Jersey and English systems provide for regular consultation and decision making with interested and affected parties and the two systems are discussed at the JAC. Overall, the team concluded that further to the description above, the fishery management system 'facilitates the effective engagement of interested parties'. SG100 is met.		
References		Décret n°2011-776 du 28 juin 2011 fixant les règles d'organisation et de fonctionnement du Comité national des pêches maritimes et des élevages marins ainsi que des comités régionaux, départementaux et inter-départementaux des pêches maritimes et des élevages marins; minutes of JAC 2010 and 2013 presenting both management systems and list of attendees. MEP, 2011. Public Certification Report Normandy and Jersey lobster (Homarus gammarus) fishery http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/normandy-and-jersey-lobster/assessment-downloads-1/Public_Certification_Report.pdf Membership of the Southern IFCA: http://www.southern-ifca.gov.uk/the-committee; Membership of the Devon and Severn IFCA: https://secure.toolkitfiles.co.uk/clients/15340/sitedata/Misc/List%20of%20IFCA%20members%20Nov%2014%20names.pdf ; Quarterly reports and annual plans: http://www.devonandsevernifca.gov.uk/Quarterly_Report		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 24 - PI 3.1.3

PI 3.1.3		**The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
	Met?	Y	Y	P
	Justification	Fisheries management systems in France, the UK and Jersey (through its Agreement with UK) have clear and explicit long-term objectives that guide decision-making and are consistent with MSC Principles and Criteria and the precautionary approach. For Principle 1, these are required and set out explicitly in the Granville Bay Treaty, SG100 is met. For Principle 2, national level objectives meet SG80 but not 100. The overall score is 90.		
References		Décret n°2011-776 du 28 juin 2011 CNPM, CRPM; Bay of Granville Treaty 2000 (art. 1 and Annex C- JAC p15 and art. 2) IFCA success criteria and higher level objectives: see for example http://www.southern-ifca.gov.uk/ifca-success-criteria-and-higher-level-objectives		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 25 - PI 3.1.4

PI 3.1.4		**The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they do not contribute to unsustainable fishing practices.
	Met?	Y	Y	N
	Justification	The French, Jersey and English systems provide incentives consistent with achieving the outcomes expressed by P1 and P2 through collaborative management. The most important for the small-scale coastal whelk fishery is security of tenure and the co-management arrangements ensure active representation that involve all interested parties. The system of allocation is seen to be fair and transparent. Subsidies may occur through EU-funded (the EMFF) locally supported projects that are carefully scrutinized against providing perverse incentives. However, since there is no specific regular review explicitly considering incentives, only SG 80 is met.		
References		General management system		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 26 - PI 3.2.1

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
	Met?	Y	N	N
	Justification	The Basse-Normandie management of the fishery aims specifically to match fishing pressure to the whelk resource available. In the short term this is translated into a phased reduction of fishing licences and other measures. Objectives relating to P2 concern protected habitats and waste management. In Jersey, fisheries management is objective-driven. Short and long-term objectives are set out in the Planning and Environment annual Department Business Plan, and performance against these are discussed in the Fisheries and Marine Resources (FMR) annual reports. Some objectives are measurable – and measured, but not brought together in an explicit set for the whelk potting fishery. SG80 is therefore not met.		
References		Décret n° 83/2013 and Délibération CRPM-BN ATT-D11-2013 on licences for the whelk fishery; Jersey annual report 2013; Granville Bay Treaty JAC minutes 2013.		
OVERALL PERFORMANCE INDICATOR SCORE:				**60**
CONDITION NUMBER (if relevant):				**3**

Evaluation table 27 - PI 3.2.2

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Y	Y	
	Justification	The CRPM-BN management system for the whelk fishery has clear established decision-making processes reinforced in 2011 by setting up a Whelk Committee ('Commission Bulot). This is evidenced by the detailed set of measures proposed by the CRPM-BN and translated into bylaws (arrêtés) by the prefecture. The decision-making processes for the Granville Bay Treaty process are well established by the French and Jersey systems and are strengthened by being brought together, even though management measures for the whelk fishery differ. Decision-making processes are described in detail in Section 3.5.2.2 of the main report. SG80 is met.		
b	**Guidepost**	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important 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.	Decision-making processes respond to all 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.
	Met?	Y	Y	Y
	Justification	The whelk fishery experienced decreasing catches that became a serious issue in 2007, when a new set of management measures was introduced. Measures differ In BN and Jersey, but they were nevertheless introduced in a timely manner. They were discussed at the JAC and took account of the different contexts and evidence and wider implications in BN and in Jersey, hence the different systems. SG100 is met.		
c	**Guidepost**		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Y	
	Justification	A precautionary approach and use of the best available information are intrinsic to the French, Jersey and Treaty decision-making processes (see Section 3.5.2.2 of the main report). The precautionary approach is enshrined in the Granville Bay Treaty.		

d	**Guidepost**	Some information on fishery performance and management action is generally available on request to stakeholders.	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	Y	Y	Y
	Justification	Reports on the fishery's performance are presented at least annually by the CRPM-BN and Jersey (annual report) and discussed at the JAC meeting as necessary. The CRPM-BN Whelk Committee minutes are not widely distributed, but are available to all those who express an interest. To develop the "Bay of Granville whelk" brand, NFM has widely distributed research findings and information on management measures. SG100 is met.		
e	**Guidepost**	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	Y	Y	Y
	Justification	Both French and Jersey management systems have been presented with challenges regarding whelk license conditions in the past, or instances of gear conflicts between crustacean and whelk potting, which were dealt with immediately. Since 2004, the Bay of Granville whelk-potting permit is part of the Treaty discussions, providing an additional forum to avoid legal disputes. In combination and separately, the management systems act proactively to avoid disputes. SG100 is met.		
References		CRPM-BN, Commission Bulots deliberations and bylaws, 2011 and 2013; Calendar of historical management measures from CRPM-BN; Jersey FMR Advisory Panel; JAC minutes 2008, 2011 and 2013; NFM – project of geographical origin label 'Baie de Granville' for the whelk fishery since 2010 (IGP Indication Géographique Protégée).		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 28 - PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Y	Y	N
	Justification	The French MCS system mobilises a number of agencies and mechanisms at sea and onshore, which are taken to be proportionate and effective. The systems put in place by the CRPM-BN and the DDTM-DML50 together are able to monitor and control the fishery. In a context of co-management, where fishers propose management measures and rules, the system in place has demonstrated its ability. SG80 is met. For Jersey-registered vessels, the system is also demonstrably effective, and the agreement on controls of vessels in the Granville Bay Treaty area by both French and Jersey agencies provides added coverage. The FranceAgrimer database systems are not yet entirely joined up for all data to be cross-referenced in a timely manner so SG 100 not met.		
b	**Guidepost**	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	Y	Y	Y
	Justification	There are no recreational catches in the whelk fishery (too deep on foot, and not prosecuted by recreational sailors) and no direct sales to the public. Therefore the MCS system developed by and for professional fishers is well adapted and provides full coverage. Both French and Jersey separate systems provide effective deterrence and are consistently applied. SG 100 is met.		
c	**Guidepost**	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Y	Y	N
	Justification	Evidence exists to demonstrate that fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery – both via the legal requirements to submit fiches de pêche and landings declarations, as well as through voluntary schemes such as the self-sampling and voluntary reporting directly to the CRPM-BN. Overall, there did not appear to be any major concerns with compliance that threatened the management of the fishery. However, at the site visit, the team got the impression that the pot limit per vessels is not really enforceable (since pots are mainly left at sea) and hence all fishers may not be in full compliance with this measure.		

		Even if this does not have significant implications for the fishery (since there are limits as to how many pots a vessel can lift in a given time period), it nevertheless means that there cannot be said to be 'a high degree of confidence' that all parts of the management system are complied with. SG100 is not met.		
d	**Guidepost**		There is no evidence of systematic non-compliance.	
	Met?		Y	
	Justification	Communications from CRPM-BN and DDTM-DML50 during the site visit, and consultations with the Jersey state Department have confirmed that there is no-evidence of systematic non-compliance.		
References		SMEL and CRPM-BN reports to 'Commission Bulot' on auto-échantillonnage		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				**N/a**

Evaluation table 29 - PI 3.2.4

PI 3.2.4		The fishery has a research plan that addresses the information needs of management		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	Y	N	N
	Justification	Research is conducted as required and in a timely fashion, by the SMEL principally, Ifremer providing additional analyses of catch data. Jersey also conducts some annual monitoring of whelk catches. However, there is no Research Plan to give evidence of a strategic approach, only part of SG80 is met.		
b	**Guidepost**	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	Met?	Y	Y	N
	Justification	The results are presented to a wide audience of professional fishermen, scientists and managers through the CRPM-BN, national Committee CNPN and at JAC meetings in a timely fashion. Some of the research is published in the scientific literature (e.g. results of BuloClim) All elements of SG 80 are met		
References		Synthèse des études techniques menées par le CRPM (22/01/13), le SMEL et NFM entre 2002 et 2007; SMEL annual presentations to CRPM-BN Commision Bulot, and to JAC - 2013 Bilan 2009-2012, SMEL UMR Caen University on whelk reproduction, powerpoint presentations (2008, 2010);Ifremer synthesis for JAC meeting June 2010. Jersey Department of Marine Resources Annual Report 2013. Heude-Berthelin et al., 2011		
OVERALL PERFORMANCE INDICATOR SCORE:				**70**
CONDITION NUMBER (if relevant):				**4**

Evaluation table 30 - PI 3.2.5

PI 3.2.5		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guidepost**	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.
	Met?	Y	Y	N
	Justification	The management system is scrutinized regularly by the CRPM-BN 'Commission Bulot'. The review concerns all parts of the French management system. The Bay of Granville Treaty JAC reviews key parts of the management system. However, the difference between French and Jersey management measures for the whelk fishery are often brought up, but the impact of these differences on overall management is not reviewed. Only SG 80 is met.		
b	**Guidepost**	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	Y	Y	N
	Justification	The CRPM-BN reviews management measures for their effect on the CPUE regularly, and at least annually. The new information and reviews are presented by CRPM-BN to Jersey and discussed at some JAC meetings (2008, 2010, 2013), which amounts to occasional external reviews. The national research institute Ifremer provides occasional external reviews discussed at the JAC meetings mentioned. SG 80 is met.		
References		CRPM Commission Bulot see for example 14/10/13 and 7/02/14, procès verbal (PV) JAC 10/12/08 and 16/06/10, then 25/06/13.		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**N/a**

Appendix 1.2 Conditions

Table 15. Condition 1

Performance Indicator	PI 1.2.2
Score	75
Rationale	Although the general objective of management is relatively clear (continue to reduce effort), there is not a well-defined management target, whether expressed in terms of CPUE, landings, effort or a combination (i.e. reduce effort up to what point?).
Condition	The harvest control rule needs to be better defined, specifically in terms of the management target, which does not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. This target could be set at the level of the Basse-Normandie fishery or at the Granville Bay level, as long as there is confidence that the management actions in place could act to maintain the stock at or around the target level. The target should also consider spatial variability in stock status, if the analysis under Condition 2 suggests that this might be important.
Milestones	Year 1: Start a process to agree a management target via the Commission Bulot, the JAC/JMC, or both, or some other process as appropriate. Year 2: Agree an appropriate target, consistent with maintaining the stock at a level of high productivity. Year 3: Implement additional management, if required, to ensure that the target can be met. Year 4: Keep target under review based on outcome of data analysis (Condition 2)
Client action plan	See Appendix 7
Consultation on condition	Stakeholders within Commission Bulot, JAC participants

Table 16. Condition 2

Performance Indicator	PI 1.2.3
Score	75
Rationale	The most important index used for the monitoring of stock abundance is nominal CPUE. The team were concerned about the level of accuracy in this dataset – specifically that it is not standardised, despite some year-to-year differences, e.g. in fishing areas and periods. Because the data time series is short, at present, it may not be feasible to impose too much statistical analysis on it, but there needs to be an appropriate level of analysis, consistent with what the data will bear.
Condition	There should be a review of the data being used to monitor the fishery and stock status, with an appropriate statistical analysis carried out to try as far as possible to reduce uncertainties associated with external variability or spatial variability in stock structure and dynamics and fishing pressure. The analysis may be used to inform future data gathering, such that data is gathered following a suitable statistical methodology where possible.
Milestones	Year 1: Review of the data set, first attempt at analysis Years 2-3: On-going review Year 4: establishment of a long-term analysis protocol as appropriate.
Client action plan	See Appendix 7
Consultation on condition	SMEL (for letter of support for Action Plan – see Appendix 9) Stakeholders within Commission Bulot JAC participants

Table 17. Condition 3

Performance Indicator	PI 3.2.1
Score	60
Rationale	As already noted in the condition for PI 1.2.2 (Condition 1), there are no formal, explicit objectives for the target stock.
Condition	There needs to be explicit management objectives for both Principle 1 (stock) and Principle 2 (ecosystem). They do not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. The objectives could be at the level of the Basse-Normandie fishery or at the Granville Bay level.
Milestones	Year 1: Start a process to agree a management target via the Commission Bulot, the JAC/JMC, or both, or some other process as appropriate. Year 2: Agree set of objectives, consistent with maintaining the stock at a level of high productivity and minimizing ecosystem impacts. Year 3: Implement additional management, if required, to ensure that the target can be met.
Client action plan	See Appendix 7
Consultation on condition	Stakeholders within Commission Bulot, JAC participants

Table 18. Condition 4

Performance Indicator	PI 3.2.4
Score	70
Rationale	Although considerable research has been carried out in the fishery, there is no formal research plan.
Condition	A formal research plan as a framework for guiding research should be prepared and adopted
Milestones	Year 1: Prepare draft plan Year 2: Consult stakeholders and adopt research plan
Client action plan	See Appendix 7
Consultation on condition	Stakeholders within Commission Bulot, JAC participants

Appendix 2. SICA and PSA Tables with scores and justifications

Appendix 2.1 Principle 1 SICA and PSA tables.

1. SICA Tables

SICA scoring table for PI 1.1.1 Stock Status

Performance indicator	Activities producing risk	Spatial scale	Temporal scale	Intensity of activity	Relevant sub-components	Consequence score	MSC Score
1.1.1 **Outcome for target species: whelks**	Fishing	4	5	3	Population size.	2	80
Rationale for selecting worst plausible case scenario	Fishing is the only activity, which impacts in any significant way on whelk populations. There is no evidence that any activities associated with the fishery (e.g. depositing of pots on the bottom) have any significant impact on whelk habitat (see rationale for PI 2.4.1), and no reason why other activities such as navigating would have any impact on whelks. Bait is obtained by purchase from other fisheries and has no impact on whelks.						
Rationale for Spatial scale of activity	Stakeholders estimated that the fishery covers ~40% of the area in which whelks are distributed within Granville Bay (see Figure 1 in main report for map of the Granville Bay area). This is because the vessels in the fishery are limited in their travel distance by vessel size (<12m) and fuel cost.						
Rationale for Temporal scale of activity	Taking into account the closed season, and weekend and holiday closures, the fishery is open for 220 days per year.						
Rationale for Intensity of activity	Stakeholders considered that detection of the activity would be obvious but localised – given the localised distribution of the fishery.						

Rationale for choosing most vulnerable sub-component	No evidence of any change in recruitment or age/size structure (% undersize), no differences in fishing pressure by sex, no impact on distribution because fishery restricted in its zone of operation. Therefore population size is the most vulnerable subcomponent.
Rationale for Consequence score	Stakeholders considered that the score should be 1. The logic behind this was that despite fishing in recent years, the population has apparently been growing (due, it is presumed to the management measures put in place). On this basis, the fishery is currently having no impact on the population size. Conversely, the team considered the point that the depletion in the population size, from which the population is now apparently recovering, was due to past fishing pressure. On this basis, the team considered that the fishery at its previous level must have had an impact of 3 (full exploitation rate but long-term recruitment dynamics not, apparently, affected). The team therefore considered that 2 would be a more precautionary score for the impact of the current fishery.

3. PSA tables.

1. Productivity

Productivity considers and scores seven attributes of the life history of the species (*Buccinum undatum*) and uses these scores to generate an aggregate score (the arithmetic mean of the seven scores). The scoring table for productivity is provided by MSC and is given in Table 1 below.

Table 1. Scoring table for productivity in the PSA

	Low productivity / high risk – score 3	Medium productivity / medium risk – score 2	High productivity / low risk – score 1
Average age at maturity	> 15 years	5-15 years	< 5 years
Average maximum age	> 25 years	10-25 years	< 10 years
Fecundity	< 100 eggs / year	100-20,000 eggs / year	> 20,000 eggs / year
Average maximum size	> 300 cm	100-300 cm	< 100 cm
Average size at maturity	> 200 cm	40-200 cm	< 40 cm
Reproductive strategy	live bearer	demersal egg layer	broadcast spawner
Trophic level	> 3.25	2.75-3.25	< 2.75

The scores for *B. undatum* for productivity are given in Table 2. As far as possible, we have used values that pertain to Granville Bay specifically, since some of the species' life history attributes are geographically variable.

Table 2. Values for each attribute for whelk, with corresponding scores, references and overall productivity score.

	Value	Score	Refs
Average age at maturity	Estimated 3-4 years from aging (opercula) and size cohorts	1	Heude-Berthelin et al., 2011
Average maximum age	Estimated 10-25 years	2	
Fecundity	large females lay 30-40 capsules of 100-1000 eggs, several times per season; but smaller females lay fewer eggs; most eggs act as nurse eggs and only ~1% develop and hatch	3	Smith and Thatie, 2013[15], Nasution et al., 2010[16]
Average maximum size	~10-15cm shell length	1	
Average size at maturity	~52mm shell length	1	
Reproductive strategy	demersal egg layer	2	
Trophic level	predator of bivalves / scavenger → ~3	2	
Overall score	**Arithmetic mean of scores**	**1.71**	

[15] Smith, K.E. and Thatje, S., 2013. Nurse egg consumption and intracapsular development in the common whelk *Buccinum undatum* (Linnaeus 1758). Helgoland Marine Research 67, 109-120.

[16] Nasution, S., Roberts, D., Farnsworth, K., Parker, G.A. and Elwood, R.W., 2010. Maternal effects on offspring size and packaging constraints in the whelk. Journal of Zoology 281, 112-117.

2. Susceptibility

Susceptibility scores four attributes of the fishery in relation to the species and population in question (*Buccinum undatum*), and generates an aggregate score by calculating the geometric mean of these scores. The scoring table for these four attributes is provided by MSC (Table 3).

Table 3. Scoring table for susceptibility in the PSA (from the FAM and more recent guidance for selectivity).

	Low susceptibility / low risk – score 1	Medium susceptibility / medium risk – score 2	High susceptibility / high risk – score 3
Areal overlap	Overlap < 10%	Overlap 10-30%	Overlap >30%
Vertical overlap	Low overlap with fishing gear (strong depth refuge from fishing)	Medium overlap with fishing gear (small depth refuge from fishing)	High overlap with fishing gear (little or no depth refuge from fishing)
Selectivity	1. Cannot physically enter the trap (e.g. too big for openings, sessile species, wrong shape, etc). 2. Can enter and easily escape from the trap, and no incentive to enter the trap (does not eat bait, trap is not attractive as habitat, etc.)	1. Can enter and easily escape from the trap, but is attracted to the trap (e.g. does eat the bait, or trap is attractive as habitat) 2. Can enter, but cannot easily escape from the trap, and no incentive to enter the trap (does not eat bait, trap is not attractive as habitat, etc.) 3. Species occasionally found in the trap.	1. Can enter, but cannot easily escape from the trap, and is attracted to either the bait, or the habitat provided by the trap. 2. Species regularly found in the trap
Post-capture mortality	Evidence of post-release survival	Released alive	Retained or discarded dead

The scores for susceptibility, with the overall score, are given in Table 4.

Table 4. Scores for susceptibility and overall score (linear re-scaling).

	Value	Score	Refs
Areal overlap	Whelks occur down to 200m and are therefore likely to be present throughout the Western Channel area, as well as more widely around the UK and northern French coasts, where there is food and habitat available (noting that whelks are not very picky about either) – although according to fishermen they are more abundant in shallower areas closer to the coasts, at least in this area. The definition of a 'stock' for whelks is tricky (see discussion in Section 3.3.1.2). Genetically speaking it appears that there is little spatial genetic differentiation over an area wider than the Western Channel area (in fact, over most of the NW European shelf) but this is thought likely to imply high levels of local exchange within a continuous population, rather than direct long-distance genetic connectivity. There is no planktonic larval dispersal, but there may be dispersal by egg cases and some by adults – overall rates of dispersal are not known. The team concluded that, based on the analysis set out in Section 3.3.1,, the Western Channel was an appropriate area to consider. As noted above, whelks are present down to ~200m but fished down to ~40m. In order not to confound areal and vertical overlap, the team here evaluates the overlap of the fishable area (i.e. down to 40m), and below considers the question of depth refuges from fishing. Along the coast of the Western Channel, whelks are not fished in many	2	

	areas. In the UK the main fishery on the south coast is around Sussex in the Eastern Channel, and the other large fisheries are in the Bristol Channel and south-west and north Wales (Figure 1 below) – all of which are outside the area under consideration here. In the Western Channel, the whelk remains largely unexploited around the southern UK. Likewise in France, the other whelk fisheries (all much smaller than the Granville Bay fisheries) are in the Eastern Channel and the Bay of Biscay. Hence whelks are largely unexploited on both sides of the Western Channel, apart from the Granville Bay fishery, which represents 3/4 of all whelk landings from the Western Channel area. Overall, based on the limited extent of fishing, the team evaluated the areal overlap of coastal whelk habitat and whelk fisheries at 10-30%.		
Vertical overlap	The fishery operates down to ~40m, which represents more or less the depth at the seaward limit of the Granville Bay area. Other whelk fisheries are likewise coastal. Fishermen report that whelks are less abundant below this depth. Nevertheless they reportedly occur down to 200m. Assuming that 50% of the biomass occurs in the top 40m, the overlap with the fishery by depth would be 50%, i.e. medium.	2	
Selectivity	A species regularly found in the trap	3	
Post-capture mortality	Retained species	3	
Overall score	**Calculated by linear re-scaling**	**1.88**	

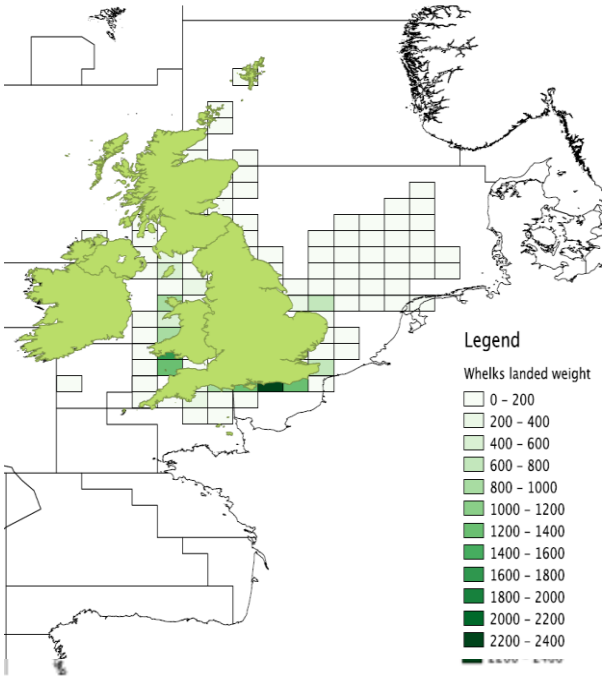

Figure 1. UK landings of whelk by the ICES rectangle where they were fished (Source: UK Marine Management Organisation data, 2012).

3. Overall PSA score

The overall PSA score is calculated as the root mean square of the productivity and the susceptibility scores (i.e. $\sqrt{(1.71^2 + 1.88^2)} = 2.54$. The MSC score is computed by a formula derived from a linear regression model: $-11.956(PSA)^2 + 32.28(PSA) + 78.259$. This works out at **83.0**. This is the score that is given for PI 1.1.1, rounded to the nearest whole number.

Appendix 2.2 Principle 2 SICA table.

SICA Scoring Template for PI 2.2.1 Bycatch Species

Performance Indicator	Risk-causing activities from fishery under assessment	Spatial scale of activity	Temporal scale of activity	Intensity of activities	Relevant subcomponents	Consequence score	MSC Score
PRINCIPLE TWO: Bycatch Species Outcome	• Fishing	5	4	1	**Population size**	1	100
Species:					**Reproductive capacity**		
					Age/size/sex structure		
					Geographic range		
Rationale for selecting worst plausible case scenario	Nasse or netted dog whelk (*Nassarius reticulatus*) is by far the most dominant bycatch species representing over 50% of catches other than whelks. All stakeholders agreed that this species was the most vulnerable bycatch species in this fishery.						
Rationale for Spatial scale of activity	Based on the distribution of the species (which occurs up to depths of 15m (MarLIN)) and the spatial extent of the fishery (up to depths of 40m), the spatial overlap was estimated as 50%.						
Rationale for Temporal scale of activity	Most of the overlap between *N. reticulatus* and the whelk fishery is likely to occur during spring. Later in the season, whelks become more difficult to fish in shallow waters and boats venture out to deeper water where there is no overlap. On this basis stakeholders estimated a total of 100 days overlap.						
Rationale for Intensity of activity	Any bycatch, including *N. reticulatus*, is rapidly discarded and stakeholders agreed that discard survival rates were likely to be high. On top of this the 'nasses' feed on the bait while in the whelk pots. Their main competitor in the ecosystem is the whelk (also necrophagous) and their removal by the fishery might therefore be a benefit to *N. reticulatus*. Overall, stakeholders agreed that there was a remote likelihood of detection of the fishing activity on the *N. reticulatus* population.						
Rationale for choosing most	Population size was chosen as the most vulnerable sub-component as relatively little is known on the other sub-components and population size is relatively easy to observe (through fishermen's observations as well as data collection by the SMEL						

vulnerable sub-component	during at-sea observer campaigns which take place every 2 years).
Rationale for Consequence score	Based on the fact that the overall impact on the *N. reticulatus* population might actually be positive, stakeholders agreed that any changes to population size/growth were likely to be insignificant in comparison with existing background variability.

Appendix 3. Peer Review Reports

Peer Review 1

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**Conformity Assessment Body Response**
Justification: The assessment report is clear and comprehensive in gathering together and presenting information on the nature of the fishery, management and monitoring frameworks and procedures, context of national and international law, interactions with non-target species, ecosystems and habitats, and the biology of the target species. Assessment of the fishery against the Performance Indicators for the MSC Principles demonstrates full and appropriate use of this information, and the final conclusion is sound. I have one caveat relating to whelk productivity (see below), but this does not affect the overall conclusion of the assessment.		*In relation to productivity, see response to detailed comments below*

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**No (1)** **Yes (2-4)**	**Conformity Assessment Body Response**
Justification: Condition 1 relates to the definition of a well-defined harvest control rule (HCR) under PI 1.2.2. The condition and milestones are appropriately written to meet the need for a specific management target, required to achieve the SG80 outcome over three years, but is not sufficient for the HCR to take account of uncertainties relating to productivity of the target species, specifically the possibility of local depletion given limited mobility at the adult stage and lack of a larval dispersal stage in whelks. Condition 1 should address this uncertainty, which could at least partly be achieved by reference to analysis of monitoring data required in Condition 2, specifying that spatial patterns of CPUE should be examined. This could usefully be added to Condition 2, which is otherwise appropriate for achieving the SG80 outcome for collection of relevant information to support the harvest strategy (PI 1.2.3).		*The team reviewed conditions 1 and 2 further to this comment. The issue has been included in the wording of both conditions. Under Condition 1, an additional milestone has been added to keep targets under review further to the analysis carried out under Condition 2 – on the basis that it will require a longer data series than presently exists to draw any conclusions on a finer spatial scale.* *The team reviewed the client action plan for both conditions, and concluded that since it covers a longer timeframe than the milestones, and foresees an ongoing process of data analysis and adaptive management, it*

Condition 3 is written appropriately to achieve the SG80 outcome on fishery-specific objectives (PI 3.2.1), setting milestones to accomplish this in stages over three years, from agreeing a management target in year 1, agreeing objectives in year 2 and integrating these into management measures in year 3. Condition 4 provides a straightforward route for preparing and adopting a research plan, and is appropriately written to achieve the SG80 outcome for PI 3.2.4 over two years.	*was sufficient to meet the revised conditions without any amendment.*

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Yes**	**Conformity Assessment Body Response**
Justification: The Client Action Plan shows detailed actions at a quarterly or semi-annual basis over five years. Although quite general, the activities within the plan are sufficient to accommodate all the requirements under Conditions 1 to 4, with follow-up activities continuing beyond the 2-3 year timescale specified in the milestones.		*The team reviewed the action plan and agreed that it covers the revised conditions.*

General Comments on the Assessment Report (optional)

The report is comprehensive and well-balanced, and I believe that the assessment does full justice to the Granville Bay whelk fishery. I have one caveat relating to whelk productivity, which is relevant principally to the condition for defining an effective harvest control rule (see 'any other comments', below). Under Principle 3, the assessment makes an excellent job of making the fine distinctions between the different levels at which objectives have and have not been set; I believe that the assessment team is correct in locating the need for objectives at the fishery-specific level, and that the specified condition is appropriate for this need.

Performance Indicator Review

Please complete the table below for each Performance Indicator which are listed in the Conformity Assessment Body's Public Certification Draft Report.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.1.1	Yes	Yes	NA	In the absence of a formal stock assessment, this PI was scored using the RBF. I am happy that the score should be at least 80 for this PI (see below).	
1.1.2	NA	NA	NA	Default score of 80 given use of RBF for PI 1.1.1	
1.1.3	NA	NA	NA	Stock rebuilding not relevant given score ≥80 for PI 1.1.1.	
1.2.1	Yes	Yes	NA	This PI is scored as 95 on the basis that there has been management to reduce fishing effort, responsive to stock status as measured by a number of indicators in relation to de facto reference points, and that together this represents an effective harvest strategy. SG100 is not met on the basis that this harvest strategy is strictly empirical and has not been fully evaluated. I agree with this rationale, noting that it separates issues relating specifically to the harvest strategy from those considered in relation to the harvest control rules in the next PI (1.2.2).	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.2.2	Yes	No	No	The fishery management response to indicators of stock status is taken as evidence of generally understood harvest rules (HCR), but SG80 is not attained given that these are not well-defined. I agree with this assessment. I also agree that there is evidence that this approach is being effective, given that target CPUE has been achieved for Basse-Normandie. I am not convinced, however, that the HCR takes account of the main uncertainties. The policy of continuing reductions in fishing effort is precautionary at the largest spatial scale, but does not address the issue of local depletion which potentially is significant given the limited movement range of adults and the lack of a larval dispersal stage. The rationale for Guidepost b does identify the risk of local depletion as an uncertainty, and I would consider this to be a 'main' uncertainty. Although a reduction in the score to reflect this issue would not change the outcome, given that SG80 is already not met, the conditions for meeting SG80 should take account of uncertainty relating to local depletion, e.g. by linking Condition 1 with Condition 2 requirements on analysis of	The team noted that stakeholders (fishermen) do not report any evidence of local depletion, in that they do not report having to fish further away from port as time goes on – on the contrary, they report being able to fish closer to home as stock status improves. Nevertheless, the team agrees that it is a potential risk. As the reviewer notes, this does not affect the scoring of 1.2.2. Conditions 1 and 2 have been adapted as described above to take account of this issue. The action plan was reviewed and considered to be sufficient to meet the revised conditions.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				CPUE data, explicitly requiring analysis of monitoring data to examine spatially-specific trends. The Client Action Plan looks effective in relation to Condition 1 as it stands, and is probably sufficiently general to accommodate any modification of the condition in relation to the risk of local depletion.	
1.2.3	Yes	Yes	Yes	I agree with the team's assessment that data on CPUE, reproductive characteristics (but note my caveat in relation to PI 1.2.2) and from the permitting system together consititute sufficient information to support the current empirical harvest strategy. The sucessful application of monitoring data in fishery management is also evidence that these data are collected with sufficient frequency. I also agree that uncertainties about the level of accuracy in the data mean that the information falls short of the full requirements for SG80. The condition for meeting these requirements is a data review coupled with statistical analysis accounting for uncertainties. This seems entirely appropriate and could encompass analysis of spatial patterns in CPUE to assess the risk of	As already noted, Condition 2 has been amended to note the issue of spatial variability in depletion patterns.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				local depletion. The time series may be too short to attempt a full standardisation of CPUE at this time, but the outcome of any analysis could be informative about how this could be achieved in the future and whether data are collected at sufficient resolution to support inferences about spatial patterns. The Client Action Plan, being very general, looks sufficient to address Condition 2.	
1.2.4	NA	NA	NA	Default score of 80 given use of RBF for PI 1.1.1	
2.1.1	Yes	Yes	NA	Selection of small-spotted catshark as the only main retained species is appropriate, given that it is the dominant bait species, other main bait species are crustaceans rejected from other markets owing to mortality or poor quality, and no other species are deliberately retained by the whelk fishery. The statement that catshark constitute one third of the bait volume and that the remaining two thirds tend to be crustaceans excludes pouting/bib from	A note has been added about green crab in Section 3.4.1 – it is rarely used as bait in this fishery.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				further consideration. Presumably green crab make up a very minor component of the volume of crustacean bait. Given that these green crabs appear not to be market rejects, and therefore use as bait contributes to their fishing mortality, it would be useful to add a comment about their presumably negligible contribution to bait volume in the whelk fishery. The ICES assessment of small-spotted catshark (WGEF, 2014) provides clear evidence that the species is highly likely to be within biologically based limits. I also agree with the team that, given the data-limited nature of this assessment, there is not sufficient certainty to meet the requirements of SG100.	
2.1.2	Yes	Yes	NA	ICES consider that their approach to data-limited stocks is sufficiently precautionary for small-spotted catshark at this time. I agree with the team's assessment that this constitutes a partial strategy for maintaining this species within biologically based limits, thus meeting the requirements of SG80, and that the absence of such a strategy for all	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				bait species means that SG100 is not met.	
2.1.3	Yes	Yes	NA	Calculations by the team of the quantity of small-spotted catshark used as bait (22% of French landings of all Scyliorhinidae) are approximate, but are corroborated by figures given by whelk fishermen. Set in the context of the ICES assessment for this species, it is clear that sufficient information is available to support a partial management strategy and to detect any changes in risk level. SG80 requirements on the availability of information, on sufficiency of information and on the adequacy to detect increases in risk are thus clearly met for small-spotted catshark. As for PI 2.1.2, the fact that these statements are not true for all bait species means that SG100 is not met for any of the three Guideposts for PI 2.1.3.	
2.2.1	Yes	Yes	NA	This PI was scored using the RBF. The outcome of the SICA clearly supports a score of 100 for this PI (see below).	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.2.2	Yes	Yes	NA	I agree that the catch sorting methods and the design of pots provide a strategy for managing and minimizing bycatch, and that data collected by the SMEL and fishermen's self-sampling provide an objective basis for confidence that the strategy will work, that it has been implemented successfully and evidence that it is in fact working. Arguably, it could be said that this also constitutes testing of the strategy, thus meeting SG100 for Guidepost c, but I am nevertheless content with the conservative approach taken by the team for this Guidepost.	The score was left as it was
2.2.3	Yes	Yes	NA	It is clear that the fishermen's self-sampling programme and the biennial SMEL programme provide qualitative and quantitative formation on the amount of netted dog whelk bycatch in the fishery (Guidepost a). I also agree with the team's assessment that the management actions to reduce the retention of undersized whelks in the catch provides evidence that a partial strategy is in place which would be effective in detecting and responding to trends in bycatch abundance (Guideposts c and d). The conclusion that SG100 is not met is	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				appropriate, given that the sampling programmes cannot provide the same standard of information for all bycatch species.	
2.3.1	Yes	Yes	NA	The team collated comprehensive information on protected areas and their qualifying species and habitats within Granville Bay, noting species of conservation concern including birds, fish and marine mammals. On the basis of an evaluation of potential interactions of pot fisheries with qualifying species and habitats (Le Fur, 2010), it seems clear that the effects of the fishery on ETP species are known with a high degree of certainty to be within limits relevant to the EC Birds and Habitats Directive (Guidepost a), and that there is a high degree of confidence that neither direct nor indirect impacts will occur as a result of the fishery (Guideposts b and c). These conclusions were backed up by a SICA workshop. Entanglement of cetaceans with ropes would be a potential issue, but on the basis that no interactions are reported and the team's assessment that the tautness of the ropes between pots reduces any risk of	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				entanglement to low levels, I am satisfied that SG100 is met for this PI.	
2.3.2	Yes	Yes	NA	I agree with the team's conclusion that the requirement for appropriate assessment for projects taking place within sites designated under the EC Birds and Habitats Directives, taken together with the AAMP assessment that interactions with pot fisheries are unlikely, constitutes a comprehensive strategy for managing impacts on ETP species (Guidepost a). This is backed up by the SICA workshop and biennial SMEL observer trips, providing a high degree of confidence that no interactions with ETP species occur (Guidepost b). I am satisfied that all requirements under SG100 are thus met.	
2.3.3	Yes	Yes	NA	As noted above, information from the SICA workshop, biennial SMEL observer trips and the AAMP assessment provide a high degree of certainty that there are no impacts on ETP species, meeting the requirements for SG100 for all Guideposts for this PI.	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.4.1	Yes	Yes	NA	As noted under PI 2.3.1, the team collated comprehensive information on designated sites and their qualifying features, including habitats, within Granville Bay. This shows that sensitive habitats are in inshore areas, largely outside the whelk fishery which operates in deeper waters. Further, the AAMP assessment, backed up by earlier research findings on the general impacts of pot fisheries (Eno et al., 2001), is that physical impacts on benthic features encountered by the gear are likely to be low. The team also reviewed the potential for ghost fishing by lost gear to occur, concluding that degradation of bait, pots on the seabed filling up with sand and easy detachment of the plastic top from the concrete base of the pots means that lost gear exerts very little fishing power. I am satisfied that the requirements of SG80 are met with regards to the likelihood of effects on habitat structure and function, and that the lack of direct evidence about these effects means that SG100 is not met.	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.4.2	Yes	Yes	NA	The team took the view that a partial strategy to ensure that fishing does not pose a risk of harm to habitat types is provided by the framework of the EC Habitats Directive, thus meeting SG80 for Guidepost a, and that SG80 is also met for Guideposts b and c given that published studies on benthic interactions of pot fisheries provide an objective basis for confidence that any impacts are low (thus the partial strategy is effective) together with evidence that this is so. They also assessed that SG100 is not met under any of these Guideposts (plus Guidepost d) because the strategy is only partial and has not been tested. I agree with these conclusions.	
2.4.3	Yes	Yes	NA	Maps (presumably predictive) of the distribution in Granville Bay of marine habitats classified under EUNIS and of sensitive biotopes (*Zostera* beds, maerl beds, *Lanice* banks and *Sabellaria* reefs) are provided in the report, sourced from AAMP, clearly demonstrating that the requirements of SG100 are met under Guidepost a for this PI. The team also considered that monitoring of marine biotopes under the EC	The team is not certain of the details of habitat monitoring in the area (who, when and where) – it is complicated to find this information because there are multiple jurisdictions; however, several monitoring activities are taking place as coordinated by the AAMP and implemented for example by IFREMER (Département

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				Habitats Directive provides measurement of changes in habitat distributions over time, allowing detection if any increases in risk, thus fulfilling SG100 for Guidepost c. Given the minimal spatial overlap with sensitive habitats under any likely scenario of change, I believe this score is justified on pragmatic grounds, although it would be good to see some presentation of evidence that ongoing monitoring of the distribution of habitats is in fact occurring. The team considered that knowledge of the overlap of the fishery with sensitive habitats and published information on the habitat interactions of pot fisheries are sufficient for SG80 to be met under Guidepost b, but the lack of information specific to the fishery and on gear loss precludes meeting SG100. I concur with this assessment.	DYNamiques de l'Environnement Côtier).
2.5.1	Yes	Yes	NA	Without detailed ecological modelling, and better understanding of the role of whelks in marine ecosystem structure and function, it is difficult to judge the likely effects of fishery removals at a systemic level. Even if whelks	Point taken. We found that even where detailed ecological modelling is available, whelks are not usually (ever?!) included explicitly.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				were purely necrophagous, it would not necessarily follow that their removal would not impact upon the ecosystem. As noted in the report, whelks are predators as well as scavengers, and are themselves likely to be predated upon by other species (little information is available on this). I do accept, however, the team's judgement that the current healthy state of the stock means that it is highly unlikely that the fishery at its current levels would impact seriously upon ecosystem structure and function, thus meeting the requirements of SG80. The conclusion that further research into the ecological role of whelks in Granville Bay would be needed to meet SG100 is also appropriate.	
2.5.2	Yes	Yes	NA	I agree with the team's assessment that management of the whelk fishery relevant to Principle 1, together with activities under the Marine Strategy Framework Directive, constitutes a partial strategy to ensure that the fishery does not post a risk to ecosystem structure and function (Guidepost a), taking into account available information through the biennial SMEL observer trips (Guidepost	

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				b), and that the success of management in maintaining a healthy whelk stock is some evidence that the partial strategy is likely to work and is being implemented successfully (Guideposts c and d). This justifies SG80 for all Guideposts; I also agree that SG100 is not met because the partial strategy does not constitute an actual plan in relation to ecosystem structure and function and there is no direct evidence at an ecosystem level.	
2.5.3	Yes	Yes	NA	I agree that information collected in relation to EC directives, as well as by the biennial SMEL observer programme, is sufficient to broadly understand the key elements of the ecosystem, that fishery impacts on whelk and bycatch are investigated by the SMEL and that impacts on other ecosystem components can be inferred from published information on other fisheries. This means that SG80 is met for Guideposts a and b, but the lack of fishery-specific investigation of some potential ecological interactions means that SG100 is not met for Guidepost b. Guidepost c is more problematic, given that the main ecological functions of whelk (target), netted dog whelk (bycatch) and	In relation to Guidepost c, it is true that there remain things to find out about the ecology of all the main P1 and P2 species in this assessment – a problem of working with humble invertebrates. Nevertheless, it is known, more or less, what they eat and what eats them, and since none of them play other ecological roles such as burrowing or building structures ('ecosystem engineering'), then the team considered that the main ecological roles could be inferred from this trophic information, to the extent required to evaluate this relatively low-impact fishery.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				small-spotted catshark (retained) cannot all said to be known (SG80). However, given that the impacts of the fishery on target, bycatch, retained and ETP species are known, thus meeting SG100, and that these impacts are low, it does seem appropriate to score 100 for this Guidepost. Guideposts d and e ask for sufficient information on impacts on target, bycatch, retained and ETP species to be available and for sufficient data to be collected on an ongoing basis to detect changes in risk and to support the development of strategies to manage ecosystem impacts. I agree with the team's view that these requirements are met by knowledge of these impacts (see above) together with data collected in relation to EC directives and by the SMEL, meeting SG80 for Guidepost d and SG100 for Guidepost e.	
3.1.1	Yes	Yes	NA	Effective national legal systems for delivering management outcomes consistent with MSC Principles 1 and 2 are provided though central and devolved admininstrations and Comités des Pêches, and the Granville Bay	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				Treaty provides binding procedures for cooperation, thus the requirements of Guidepost a are met at SG100. Guidepost b refers to transparent mechanisms for resolution of disputes, and this requirement is clearly met at the SG100 level by the legal and non-legal mechanisms identified by the assessment team. Recognition of legal and customary rights consistent with Principles 1 and 2 under French and Jersey policy and throut the Bay of Granville Treaty clearly meets the requirements of Guidepost d at SG100.	
3.1.2	Yes	Yes	NA	The information in the report supports the team's conclusion that functions, roles and responsibilties are well understood within the French and Jersey systems and through the Bay of Granville Treaty, but not in all aspects (notably data management), thus meeting requirements of Guidepost a at SG80 but not SG100. Guidepost b refers to consultation processes and use of information from these processes; I agree with the team's view that the management processes for all parties in the Granville Bay treaty are fully inclusive, meeting the SG100 for this Guidepost, and	

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				also SG100 for Guidepost c which relates to engagement of stakeholders.	
3.1.3	Yes	Yes	NA	The team took the view that the Granville Bay Treaty sets out explicit objectives to guide decision-making consistent with MSC Principle 1, meeting SG100 in this respect, and that decision-making consistent with Principle 2 is set out in national level objectives, meeting SG80 in this respect. This view is consistent with the rationale set out in relation to PIs for Principles 1 and 2.	
3.1.4	Yes	Yes	NA	The Guidepost for this PI relates to incentives consistent with Principles 1 and 2. I agree that positive incentives are provided within the management system through security of tenure in the fishery and through inclusive co-management arrangements, and evidence shows that there is an effective procedure to avoid perverse incentives arising in projects supported through the EMFF. All requirements of SG80 are thus met. I also agree that the lack of regular review of management policy in this respect means that SG100 is not met.	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
3.2.1	Yes	Yes	Yes	It is clear that the whelk fishery lacks a set of explicitly defined short and long-term objectives, thus SG80 for this PI is not met. The condition for meeting SG80 or greater is that explicit objectives need to be defined at the level of the Bass-Normandie fishery or Granville Bay, consistent with keeping the stock at a high level of productivity. This is appropriate, and consistent with both Principle 1 and Principle 2 outcomes, and the milestones appear clear and achievable over a three year time span. The Client Action Plan is not strongly aligned with the milestones, but appears effectively to address all required aspects of the condition over the required time scale, with follow-up activities in years 4 and 5 to review the objectives and make presentations to the Commission Bulot and JAC.	The Client Action Plan has been written to address all the conditions in the most efficient way. The conditions are obviously interlinked – defining objectives for the fishery is the condition here, and is effectively also the first requirement for dealing with Condition1 on PI 1.2.2 – the issue there being that management measures are in place without much sense of an objective or end point (target reference point). Hence the wording of the Client Action Plan may not align with the wording of individual conditions – nevertheless, the team were happy that overall, the Client Action Plan is consistent with the conditions and milestones, and is auditable.
3.2.2	Yes	Yes	NA	Decision-making processes are clearly established in the CRPM-BN management system and in the JMC within the Granville Bay Treaty process, thus meeting SG80 of Guidepost a. Guidepost b requires that	

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				these processes respond to all issues that arise. The team point to the effective and timely management response to decreasing catches as evidence that this occurs, meeting SG100. It is clear from the description of decision-making processes that a precautionary approach is embodied with the management systems, meeting all requirements of Guidepost c. There is also clear evidence that the requirements of both Guideposts d (availability of information on fishery performance) and e (compliance with judicial decisions) are all met in full, and an overall score of 100 for this PI is justified.	
3.2.3	Yes	Yes	NA	The report notes that monitoring, control and surveillance (MCS) comes under a number of different agencies, and that these are demonstrably effective in both Jersey and French systems, meeting SG80 for Guidepost a. Arguably, this evidence could support SG100 being met, but I am content with the view taken by the team that shortcomings in the data management system could hinder a timely response, presumably failing the criterion of comprehensiveness in the MCS system. Full	

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				coverage of all fishermen under this system meets SG100 for Guidepost b. I am also content with the view taken by the team that, even though the pot limit per vessel is not enforceable, practical limits on the numbers of pots that can be hauled mean that there is effective compliance on this measure alongside other elements of the management system, such that SG80 is met for Guidepost c. Guidepost d asks that there is no evidence of systematic non-compliance; comprehensive consultation by the team yielded no such evidence.	
3.2.4	Yes	Yes	Yes	The report gives details of the research being undertaken by the SMEL and by Jersey to support manaagement of the whelk fishery, and this was considered to be conducted and disseminated to interested parties in a timely fashion, thus meeting part of the requirements of Guidepost a at SG80 and all of the requirements of Guidepost b at SG80. I agree with the team's assessment that a strategic approach is lacking, thus SG80 of Guidepost a is not met in full. Condition 4 specifies that a formal research plan should be drafted in year 1 and adopted after	We agree – actually, overall, the team felt that this fishery has an excellent record of conducting research on what is a rather poorly-known species, from the population dynamics point of view. Nevertheless, MSC requires a 'plan' and hopefully it will be a useful exercise.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				consultation with stakeholders in year 2. The condition is appropriate, and should be easily achievable, largely by making clear the flow of information between research activities and objectives relating to MSC Principles 1 and 2. The Client Action Plan is closely aligned with the milestones of Condition 4 and should be effective in meeting the necessary requirements.	
3.2.5	Yes	Yes	NA	This PI relates to evaluation of the management system against performance objectives. The report shows that the Commission Bulot and the JAC both review the management system, meeting the requirements of SG80 of Guidepost a. I agree with the view taken by the team that SG100 of this Guidepost, requiring evaluation of all parts of the management system, is not met because the impact on overall management of differences between the French and Jersey systems is not reviewed. I also agree with the team's assessment that participation in Commission Bulot and JAC review of management amounts to occasional external review, meeting the requirements of Guidepost b at	

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				SG80, but not at SG100 which requires regular external review.	

Any Other Comments

Comments	Conformity Assessment Body Response
My one caveat on the assessment relates to whelk productivity. At several points in the report it is highlighted that limited mobility of adults coupled with lack of a larval dispersal stage means that whelk are vulnerable to both growth and recruitment overfishing, but this conclusion does not appear fully to be taken on board in the scoring of Performance Indicators under Principle 1. The criteria in the productivity table used as part of the RBF for PI 1.1.1 do not lend themselves particularly well to incorporating the specific life-history characteristics of whelk, such that the overall score may overestimate the productivity of whelks, which is perhaps better described as closer to medium than high productivity. I have suggested a more conservative approach to scoring, which reduces the overall score for the PSA from 88 to 80. Given that the overall outcome is unchanged (i.e. SG80 is met), this suggested change is perhaps only of academic interest. However, of greater importance, I believe, is for the harvest control rules to take full account of uncertainties relating to whelk life-history characteristics (PI 1.2.2). As noted in the report, limited mobility and dispersal is relevant to the fishery because it creates a risk of local depletion. This raises two important issues: firstly, in order fully to account for risks to stock productivity, a better understanding is needed of how productivity at a local scale (with risks of local depletion) relates to productivity at a stock scale; secondly, if we need to interpret CPUE data in terms of overall stock trends, it is essential to take account of where catches are taken, otherwise there is a risk of declines being	PSA for 1.1.1 The other reviewer made the same point, and the score for fecundity has been changed as suggested by both. 1.2.2 and 1.2.3 The conditions have been adapted to require that data analysis and the HCR take account of spatial variability in exploitation patterns and hence (possibly) depletion. Note, however, that we cannot be too explicit in setting out exactly how data should be analysed – this is up to the client to establish. Nevertheless, the team is satisfied that the expertise exists within CRPM, SMEL and if necessary Ifremer to undertake the required analyses and incorporate the results into management. Data on fishing locations exist from the reference fleet.

masked by shifts of fishing effort from depleted locations to areas of higher stock density – the problem of 'hyperstability'. These two issues are relevant to management because (a) the harvest control rule needs to be responsive to an index of stock abundance that is unbiased with respect to spatial targeting behaviour in the fishery, and (b) some response to local depletion may be required if this has more than local consequences. The appropriate approach to (b) is unclear without detailed spatial management, and points to the need for further research into the population-level consequences of local depletion. An appropriate approach to (a) would be to require consideration of spatial pattern in analysing trends in CPUE, linking Conditions 1 and 2. This might also allow assessment of whether in practice local depletion occurs. Any such analyses would, of course, depend on monitoring data being qualified by accurate recording of fishing locations.	

For reports using the Risk-Based Framework:

Performance Indicator	**Does the report clearly explain how the process used to determine risk using the RBF led to the stated outcome? Yes/No**	**Are the RBF risk scores well-referenced? Yes/No**	**Justification:** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	**Conformity Assessment Body Response:**
1.1.1	Yes	No	The RBF and the rationale for using it are clearly explained, and the conclusions are sound. Heude-Berthelin et al. (2011) provide most, but not all of the information used in the PSA tables – as a very minor point, it would be useful to add references for fecundity and trophic level. I was concerned that the productivity table might be over-optimistic. For example, a more conservative score for fecundity might be 2 (medium productivity) rather than 1 (high productivity), since only the larger females will produce in excess of 20,000 eggs. Similarly, literal interpretation of maximum size and	In relation to fecundity, the other peer reviewer made the same point, and in fact a more appropriate score might be 3 (low productivity). This has been changed, reducing the score for 1.1.1 from 88 to 83. In relation to the other criteria, there were originally designed for fish, but have been widely used in MSC for other invertebrate species. Conversely, it is not clear to us what other aspects of whelk biology (other than the reproductive system) lead to significantly lower productivity than for other invertebrates

			size at maturity might be misleading for a mollusc species, and arguably these criteria should be scored for medium rather than high productivity. However, age at maturity is convincingly scored for high productivity, and even if all other attributes are scored for medium productivity, when combined with the susceptibility scores the overall PSA score is 80, thus the outcome of the RBF is unchanged. The scores in the susceptibility table are all well justified. I am also happy with the rationale set out in the SICA table, and with the precautionary approach taken by the team in setting the consequence score to 2.	– they are not particularly long lived nor late maturing, relative to, say, crustaceans. In the absence of specific tables for invertebrates, the team felt that we were obliged to use the criteria as specified by MSC. References have been added – see other peer review
2.1.1	NA			
2.2.1	Yes	Yes	Selection of netted dog whelk to take forward into the RBF for discard species is well justified in the text of the report. The outcome of the SICA is unequivocal and well justified in the table, thus the score of 100 for PI 2.2.1 is sound and it is appropriate not to undertake a PSA analysis.	
2.4.1	NA			
2.5.1	NA			

Peer Review 2

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes/No** **YES**	**Conformity Assessment Body Response**
Justification: This is the first whelk fishery to be assessed for the MSC certification and, as with many shellfisheries, it is not always easy to apply the standard. In this fishery there is also a rather complicated management system, with a whole string of organisations involved and part of the fishery under a shared jurisdiction with the State of Jersey. Despite the difficulties, I think the team have done a good job clarifying the issues: the report is generally well written, the information is comprehensive and the scores are well justified, though I will express below a few queries and differences of opinions about some of the scoring.		*Indeed, the management arrangements in this area are complicated!*

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**Yes/No** **YES**	**Conformity Assessment Body Response**
Justification: All four conditions are justified and necessary, and the first two are appropriately written to achieve the SG80 outcome in the required timeframe. I feel that Condition 3 & 4 could be expressed more explicitly to give better guidance to what is required		*We are always divided between trying to make conditions helpful to the client (i.e. explicit) and the MSC requirement that they should not be prescriptive – their ideal is that we simply quote back the wording of the relevant SG80 guideposts. We try to find a middle way where both parties are more or less (un)happy.*

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Yes/No** **Yes**	**Conformity Assessment Body Response**
Justification: The client action plan for Conditions 1,2 & 3 provide a suitable framework that should allow the conditions to be closed. That for Condition 4 is very brief and makes no mention of who will fund any research and if they have the approval of the funder.		*Point taken. However, the requirement is not to fund research here; only to develop a plan to direct research priorities. We agree that this is a little strange, and note that in the next version of the MSC standard, this PI has been removed.* *It is perhaps more relevant to note that the scientific stakeholders in the fishery (SMEL, CRPM, Caen University) have an excellent track record in research of very direct relevance to the fishery, the results of which are quoted extensively in the report.*

General Comments on the Assessment Report (optional)

The introductory sections are well written, well illustrated and comprehensive, as are the justifications in the scoring tables. I think the team has done well to clarify the complex management structure of this fishery.

Two editorial comments:

Page 4 line 3 says that Dr Sophie des Clers was in charge of Principal 2 but Page 6 says P3 – which is presumably correct.

P18 line 8 Spelling – close not closed

Thanks! Corrected

Performance Indicator Review

Please complete the table below for each Performance Indicator which are listed in the Conformity Assessment Body's Public Certification Draft Report.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.1.1	NA	NA	NA	RBF score	
1.1.2	Yes	Yes	NA	RBF default score	
1.1.3	NA	NA	NA		
1.2.1	Yes	Maybe	NA	I can follow the teams argument regarding the scoring of SI a but am not convinced that the harvest strategy can be said to be 'designed' – it seems more likely to be 'elements working together'.	The team felt that the harvest strategy deserved credit for the way it has been subject to continual review and adjustment – arguably, this is a better path to an effective 'design' than starting from scratch with some theoretical template in mind.
1.2.2	Yes	Yes	Yes	I agree that the harvest control rule needs to be better defined. This is important because the current differences in trends between the Jersey and Basse-Normandie CPUE makes the state of the fishery unclear, and whelk stocks are vulnerable to local depletion and	Note that this condition has been slightly adjusted (strengthened) further to comments from Peer Reviewer 1. This does not affect these comments.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				take a long time to recover. The condition will encourage management to be more clear sighted.	
1.2.3	Yes	Yes	Yes	I agree with the scoring and the rationale. The condition could perhaps be worded more clearly to emphasise that both the quantity and the quality of the data needs to be improved in order to provide data amenable for statistical analysis	The team felt that the effort going in to data collection is appropriate (significant) for a fishery of this size – there are few other whelk fisheries in Europe getting such scientific attention. What is invisaged is more than integrating statistical analysis into the system will hopefully allow data collection effort to be adjusted if necessary, to obtain the best results and biggest benefit from the effort put in. The wording of the condition has been adjusted to reflect this a little better (but since we have to keep conditions general, we have not entered into much detail). (It has also been adjusted to reflect concerns raised by the other peer reviewer.)

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.2.4	NA	NA	NA	RBF default score	
2.1.1	Yes	Yes	NA	The score is appropriate. It is not clear to me how much of the dogfish retained in this fishery is used as bait and how much comes from elsewhere.	No dogfish are caught in the pots – all the dogfish used as bait is bought in from other fisheries. A note has been added in Section 3.4.1 to make this completely clear.
2.1.2	Yes	Yes	NA	The score is appropriate and well justified	
2.1.3	Yes	Yes	NA	The score is appropriate and well justified.	
2.2.1	NA	NA	NA	RBF used	
2.2.2	Yes	Yes	NA	I agree with the score and the justification. As a pot fishery there is, in any case, only a limited number of bycatch species that enter the traps	Exactly

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.2.3	Yes	Yes	NA	I agree with the score and the justification. The information collected is sufficient to detect trends but not to determine impacts with a high degree of certainty. However, if analysis of the SMEL data over a number of years shows little variation over time then this may be sufficient to support SG100 scores.	Indeed – the team concluded, however, that there is not yet enough of a time series.
2.3.1	Yes	Yes	NA	I agree the scores. This pot fishery has little potential to impact ETP species	
2.3.2	Yes	Yes	NA	The score is appropriate	
2.3.3	Yes	Yes	NA	The score is appropriate	
2.4.1	Yes	Yes	NA	The score is appropriate. How long would it take for a lost pot to open?	There does not seem to be quantitative data on this point
2.4.2	Yes	Yes	NA	SI a. Apart from the SACs what happens in the rest of the area?	Peer Reviewer 1 made the same point. To be honest, we have not delved in detail into the various

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				I agree with the score and the justification	means by which habitats are surveyed in Granville Bay, except to the extent needed to respond to the scoring guideposts. It is complicated by the multiple jurisidictions in the area.
2.4.3	Yes	Yes	NA	I agree with the score and the justification	
2.5.1	Yes	Yes	NA	I agree with the score and the justification	
2.5.2	Yes	Yes	NA	I agree with the score and the justification	
2.5.3	Yes	Yes	NA	Good justification	
3.1.1	Yes	Yes	NA	A complex legal framework but apparently comprehensive.	Indeed so
3.1.2	Yes	Yes	NA	SI a	We did not talk to any stakeholders

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				With so many organisations involved there is substantial scope for confusion/disagreement over roles. The data collection system is a shambles. Could the system not be simplified? SI c The fishery management system may facilitate the effective engagement of interested parties but does it encourage them?	who would disagree with you. Conversely, the various organisations have developed over many years the capacity to adjust to the (usually ill-thought-out) re-organisations handed down from Paris which have resulted in the present system, and to find a way to make it work. In this regard, it may be rather similar to how the UK manages the National Health Service. In relation to c) the team discussed this extensively. In relation to fisheries and scientific stakeholders, it is clear that they are encouraged, both in Normandy, in Jersey and in the JAC/JMC. The question arose as to whether this was the case for NGOs – the problem being that the question is hypothetical because no NGOs have ever expressed an interest in the fishery directly. Nevertheless, there is active conservation in the area (e.g. for cetaceans and birds) and there

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
					appear to be friendly personal relationships on both sides (Normandy and Jersey). On that basis, the team concluded that should NGOs express an interest, they would be encouraged.
3.1.3	Yes	Yes	NA	I agree with the score and the justification	
3.1.4	Yes	Yes	NA	I agree with the score and the justification	
3.2.1	Yes	Yes	Yes	I agree that the setting of management objectives is an important requirement for this fishery	
3.2.2	Yes	Yes	NA	I agree with the score and the justification	
3.2.3	Yes	Yes	NA	How does the pot limit per vessel relate to the daily catch quota per vessel? i.e how many pots does a boat really need to land its daily catch quota, five days a week? And what is the management argument for maintaining the pot limit if they are not going	The answer to this (like most questions in fisheries) is that it depends. Catch rates are variable by season; specifically, there is a dip in catch rates in the summer because whelks in this area are at the

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				to enforce it	southern end of their range, and it is believed burrow to escape high water temperatures. Most fishermen stop working in July and August for this reason, but either side of this period will need to pull more pots for the same catch than they will in winter. Other than that, the reason to have more pots is more that it makes the fishing easier – if you take your quota and have only lifted half your pots, you can lift the other half the following day and if they have been fishing for two days they will contain more whelks. This is possible, unlike a finfish fishery, because whelks survive in good condition in pots for several days (essentially until the bait runs out). So in other words, fishermen can take their quota with a variable number of pots – but more pots = less work.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
					In relation to the pot limit, we also put this question. There was a feeling (among the fishermen we talked to as well as the scientists and managers) that it does constrain the number of pots to some extent, even if it is not enforced, by sending a message that it is not appropriate for fishermen to have too many pots – or at least, conversely, if it were repealed, it would send a message that it is fine to go all out and put as many pots as you like, which no-one thinks is desirable.
3.2.4	Yes	Yes	Maybe	A appropriate research plan will raise the fishery's performance to the SG80 level. However, a reseach plan requires cooperation between the people commisioning the research and those carrying it out – and it has cost implications regarding how it will be funded. From the wording of the condition none of this is explicit.	True enough, but the requirement is not to find research funding (although the fishery has a good track record of this) but just to make a plan in order to set out priorities. In addition, there is not quite such a distinction between those commissioning the research and those carrying it out as there is in most fisheries, because the main

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
					management body for the fishery (CRPM) has its own research capacity, and the other key research body (SMEL) is intimately involved in the management of the fishery as well.
3.2.5	Yes	Yes	NA	I agree with the score and the justification	

For reports using the Risk-Based Framework:

Performance Indicator	Does the report clearly explain how the process used to determine risk using the RBF led to the stated outcome? Yes/No	Are the RBF risk scores well-referenced? Yes/No	Justification: Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response:
1.1.1	Yes	No	Very few references are given. PSA Productivity Table The fecundity score is incorrect. Although each capsule may contain 100-1,000 eggs (or more), most of these are nurse eggs used as food by the	Re fecundity – the other peer reviewer made the same point. This score has been changed from high productivity (1) to low (3), with the score for 1.1.1 reduced from 88 to 83.

			developing larvae. Only some 1% of the eggs develop into larvae so the fecundity estimate is grossly overestimated. I agree with the other scores See: Smith, K.E. and Thatje, S., 2013. Nurse egg consumption and intracapsular development in the common whelk Buccinum undatum (Linnaeus 1758). Helgoland Marine Research 67, 109-120. Nasution, S., Roberts, D., Farnsworth, K., Parker, G.A. and Elwood, R.W., 2010. Maternal effects on offspring size and packaging constraints in the whelk. Journal of Zoology 281, 112-117. PSA Susceptibility Table I question your interpretation of 'vertical overlap'. As interpreted here it is essentially another estimate of areal overlap. My interpretation (which may not be correct) is that the gear is on the seabed and so are the whelks so that the vertical overlap is 100%. Quotes from Certification Requirements v1.3 **'Vertical Overlap** The position of the stock/species within the water column relative to the fishing gear '. 'The susceptibility of a species is determined by attributes such as the degree of overlap between the distribution of the fishery and the distribution of the species; **and whether the species occurs at the same depth in the water column as the fishing gear.'**	The references have been added. The reviewer makes an excellent point here, which has highlighted some sloppy drafting in our PSA rationales. The team conceptualised areal vs vertical overlap as corresponding to i) % of area refuge from fishing within the fishable area; and ii) % of depth refuge from fishing (i.e. areas which are outside the fishable area because too deep). These are more or less independent, but we agree that it was not explained very clearly, and a comment relating to vertical overlap had crept into the rational for areal overlap, which has been removed. The definition of vertical overlap given left is clearly set out with pelagic gear in mind, and the team considers that in relation to demersal gear is not completely clear. The interpretation could be as the reviewer suggests, but it could also be interpreted differently: if the demersal gear is deployed down to ~40m and the

				species occurs down to 200m, then there is a 20% overlap (if the species is evenly distributed through this range, which whelks are not). If this were the case for a pelagic species, then vertical overlap would be interpreted as such, and it is reasonable to argue that the fact that the bottom intervenes is not part of the definition and therefore irrelevant. This corresponds to our definition as used to score the PSA. Obviously, in order to be independent of areal overlap, it means that the areal overlap has to be scored for the fishable area only (i.e. <40m) – otherwise the area from 40-200m is scored twice as both an area refuge and a depth refuge, as the reviewer correctly notes. Conversely, if vertical overlap is scored as suggested by the reviewer, then the area from 40-200m, is credited as an areal rather than a depth overlap. It is not clear whether these two interpretations will result in the same scoring in every case, but in this case, they appear to (scores of 2 and 2 vs 1 and 3). The scoring has therefore not been changed, since i) we were comfortable with our interpretation of MSC's instructions; ii) we are happy that areal and vertical overlap have been scored independently, and ii) it makes no difference.
2.1.1	Yes	Yes	I agree with the values chosen for the SICA table	
2.2.1	NA	NA		

2.4.1	NA	NA		
2.5.1	NA	NA		

Appendix 4. Stakeholder submissions

One written stakeholder comment was received prior to publication of the PCDR. The comment was submitted by Greg Morel of the Jersey States Department, as shown below:

Department of the Environment

Fisheries and Marine Resources

Howard Davis Farm, Route de la Trinite

Trinity, Jersey,JE3 5JP

Tel: +44 (0)1534 441600

Fax: +44 (0)1534 441601

Ms C Sieben
MacAlister Elliott & Partners Ltd

08 July 2014

Basse-Normandie Granville Bay Whelks

Dear Chrissie,

Thank you for the opportunity to comment on the assessment of the above fishery. Unfortunately due to existing commitments it is not possible for us to attend the stakeholder meeting in Granville on the 8th and 9th July 2014.

As managers of the marine resources within Jersey's Territorial Waters, we are committed to ensuring the sustainability of exploited stocks in our and jointly managed seas.

The whelk fishery covers Jersey and French Waters in the Bay of Granville and we welcome any development to secure the long term sustainability of this stock, working in partnership with French fishers, scientists and managers.

There are, however, some issues which we feel require resolution:

It will be necessary to establish the nature of the relationships between those applying for the certification, those that fish the joint stock and those that are responsible for the management of the area but are not applying for MSC certification.

The central ethos of the Granville Bay Treaty in setting out the management of fishing in the area is to try, wherever possible through discussion in the Joint Advisory Committee (JAC), to harmonise management measures to facilitate and ensure the sustainable nature of common fisheries, both in ecological and socio-economic terms. Whilst we fully accept the right for all parties to manage fisheries in their own waters and ongoing marketing and promotion, it is important that any measures for stocks in jointly managed waters is done through the mechanisms set out in the Granville Bay Treaty.

To monitor this important fishery, the States of Jersey has completed an assessment of the whelk stock in the Jersey Territorial Sea on an annual basis since 1996. Research is conducted in both Jersey exclusive waters and those jointly fished by Jersey and French whelk fishermen. All data from the programme has been presented to various meetings of the JAC and we would be happy to share it with those assessing this application. Part of this data set has been published, with more recent data in preparation. The references are below:-

Morel, G. M., Bossy, S. F., 2004, Assessment of the whelk (*Buccinum undatum L.*) population around the Island of Jersey, Channel Isles. Fisheries Research. 68: (1-3) 283-291 DOI: 10.1016/j.fishres.2003.11.010

Shrives, J. P., Pickup, S.E., Morel, G.M. 2014, Whelk (*Buccimun undatum* L) stocks around the Island of Jersey, Channel Islands: Reassessment and Implications for sustainable management. In prep.

We wish to reiterate that we fully support our colleagues in Normandy in their aspiration to obtain MSC status for the whelk fishery, but feel that it is important these issues are clarified prior to the completion of the assessment process.

We welcome the opportunity to input into the process and look forward to future discussions with you concerning the sustainability of this stock.

Please do not hesitate to get in contact should you wish to discuss this further.

Yours sincerely

Greg Morel

Marine and Coastal Manager – Fisheries and Marine Resources

A telephone conference was subsequently held between the MEP team leader and Greg Morel and Jonathan Shrives on the 16th July 2014. The points discussed during this meeting have been presented in detail in Section 4.4.2.

1. The report shall include: a. All written submissions made by stakeholders during consultation opportunities listed in CR 27.15.3.1 b. All written and a detailed summary of verbal submissions received during site visits regarding issues of concern material to the outcome of the assessment *(Reference CR 27.15.3.2)* c. Explicit responses from the team to stakeholder submissions included in line with above requirements *(Reference CR 27.15.3.3)*

(REQUIRED FOR FR AND PCR)

2. The report shall include all written submissions made by stakeholders about the public comment draft report in full, together with the explicit responses of the team to points raised in comments on the public comment draft report that identify:

a. Specifically what (if any) changes to scoring, rationales, or conditions have been made.
b. A substantiated justification for not making changes where stakeholders suggest changes but the team makes no change.

(Reference: CR 27.15.4)

Appendix 5. Surveillance Frequency

(REQUIRED FOR THE PCR ONLY)

1. The report shall include a rationale for determining the surveillance score.

2. The report shall include a completed fishery surveillance plan table using the results from assessments described in CR 27.22.1

Table A4: Fishery Surveillance Plan

Score from CR Table C3	Surveillance Category	Year 1	Year 2	Year 3	Year 4
[e.g. 2 or more]	[e.g. Normal Surveillance]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit & re-certification site visit]

Appendix 6. Client Agreement

(REQUIRED FOR PCR)

The report shall include confirmation from the CAB that the Client has accepted the PCR. This may be a statement from the CAB, or a signature or statement from the client.

(Reference: CR: 27.19.2)

Appendix 6.1 Objections Process

(REQUIRED FOR THE PCR IN ASSESSMENTS WHERE AN OBJECTION WAS RAISED AND ACCEPTED BY AN INDEPENDENT ADJUDICATOR)

The report shall include all written decisions arising from an objection.

(Reference: CR 27.19.1)

Appendix 7. Client Action Plan

PECHERIE DE BULOT
-PLAN D'ACTION-
Réponses aux 4 conditions relevées / Evaluation MSC

Nous remercions l'équipe des experts de nous avoir fait parvenir les résultats de l'évaluation de la Pêcherie de Bulot de la Baie de Granville selon les critères MSC. Nous avons bien pris en compte les conditions énoncés pour lesquelles n'avons pas d'opposition majeure. Nous nous engageons à respecter le Plan d'Action suivant, en réponse aux 4 conditions relevées par l'équipe d'évaluation.

Condition 1 : IP 122- Mesures de contrôles/ Pêche (Harvest control rules and tools) / Définition Point de référence

Le score est de 75

Le rapport d'évaluation indique:

Although the general objective of management is relatively clear (continue to reduce effort), there is not a well-defined management target, whether expressed in terms of CPUE, landings, effort or a combination (i.e. reduce effort up to what point?).

Condition:

The harvest control rule needs to be better defined, specifically in terms of the management target, which does not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. This target could be set at the level of the Basse-Normandie fishery or at the Granville Bay level, as long as there is confidence that the management actions in place could act to maintain the stock at or around the target level. The target should also consider spatial variability in stock status, if the analysis under Condition 2 suggests that this might be important.

L'outil de gestion d'exploitation doit être mieux défini, surtout en fonction de l'objectif de gestion. Cet objectif ne doit pas forcement être exprimé en biomasse mais devrait viser à maintenir le stock à un niveau de haute productivité. L'objectif peut être établi pour la pêcherie a Basse-Normandie ou au niveau de la Baie de Granville – le but clé est que les actions de gestion en place permettent de maintenir le stock au-dessus de ou au niveau 'cible'. La cible devrait aussi prendre en compte la variabilité spatiale dans l'état du stock, si l'analyse sous la Condition 2 indique que cela pourrait être important.

Plan d'Action :

La définition de deux points de référence ainsi que les mesures associées est envisagée : un seuil d'alerte et un seuil de danger. Il conviendra, dans un premier temps de définir, sur la base d'un suivi scientifique des CPUE et/ou de tout autre indicateur pertinent, ces points de référence, puis d'appréhender et déterminer les mesures à mettre en place dans le cas où l'analyse des données montrerait que l'un de ces points est atteint.

Planning : le planning prévisionnel est décrit ci-dessous

Année 1	Action
	Sur la base des données existantes, référencer les indicateurs susceptibles de servir pour la définition des points de référence Analyse des données historiques existantes Based on existing data, reference the indicators that could be used for the definition of reference points Analysis of existing historical data
Année 2	
Trimestre 1	Bilan du suivi des données historiques Assessment of historical monitoring data

Trimestre 2 ou 3	Sélection des indicateurs pour fixer les points de référence Selection of indicators to set reference points
En continu	Suivi des donnés de l'année
Trimestre 4	Validation du choix des indicateurs par la Commission Bulot Présentation aux parties prenantes lors du JAC Monitoring annual data Validation of the choice of indicators by the Commission Bulot Presentation to stakeholders at JAC
Année 3	
Trimestre 1	Bilan suivi données historiques (de l'année 2) Assessment of historical monitoring data (year 2)
Trimestre 2 ou 3	Définition des points de référence (seuil d'alerte/ seuil de danger) Validation en Commission Bulot Definition of reference points (warning threshold / danger threshold) Validation Commission Bulot
En continu	Suivi des donnés de l'année Monitoring annual data
Trimestre 4	Détermination des mesures à mettre en place / points de référence et validation par Commission Bulot Présentation aux parties prenantes lors du JAC Identification of measures to implement / reference points and validation Commission Bulot Presentation to stakeholders at JAC
Année 4 et 5	
Trimestre 1	Bilan suivi données historiques (de l'année 3, et 4) Assessment of historical monitoring data (year 3 and 4)
En continu	Suivi des données de l'année Monitoring annual data
Trimestre 4	Bilan et présentation aux parties prenantes lors du JAC Mise en application éventuelle des mesures de restauration définies précédemment selon le résultat du suivi Overview and presentation to stakeholders at JAC Implementation of restoration measures previously defined according to the monitoring results

Condition 2 : IP123- Suivi du stock (Information and monitoring)- Recueil et suivi des information

- Le score est de 75

Le rapport d'évaluation indique :

The most important index used for the monitoring of stock abundance is nominal CPUE. The team were concerned about the level of accuracy in this dataset – specifically that it is not standardised, despite some year-to-year differences, e.g. in fishing areas and periods. Because the data time series is short, at present, it may not be feasible to impose too much statistical analysis on it, but there needs to be an appropriate level of analysis, consistent with what the data will bear.

Condition:

There should be a review of the data being used to monitor the fishery and stock status, with an appropriate statistical analysis carried out to try as far as possible to reduce uncertainties associated with external variability or spatial variability in stock structure and dynamics and fishing pressure. The analysis may be used to inform future data gathering, such that data is gathered following a suitable statistical methodology where possible.

Il devrait y avoir un examen des données utilisées pour surveiller l'état de la pêche et des stocks, par une analyse statistique appropriée réalisée pour essayer autant que possible de réduire les

incertitudes liées à la variabilité externe dans la structure et les dynamiques du stock et la mortalité par pêche. L'analyse peut être utilisée pour informer la collecte des données, afin que les données soient recueillies d'une façon statistique appropriée.

Plan d'Action :

Il convient de répertorier et de définir quelles informations sont les plus pertinentes pour le suivi de la pêcherie. Il conviendra, par les scientifiques du Smel et du CRPM, d'en effectuer une analyse statistique et de vérifier leur validité. L'assistance d'autres scientifiques pourrait être requise. Il faut également définir quelle est la périodicité de recueil de ces informations, leur traitement et leur présentation. Des bilans annuels permettront de présenter et de valider l'avancée des travaux et une information annuelle des parties prenantes sera réalisée.

Planning : le planning prévisionnel est décrit ci-dessous

Année 1	Action
Premier semestre	Recensement des différentes informations existantes (fiche de pêche, données criées, données SMEL, bateaux référents, Ifremer….) Fixer la périodicité de recueil des données Review of the various existing information sources (logbook, auction data, SMEL data, reference fleet, Ifremer ....) Fix the periodicity of data collection
En continu (selon périodicité définie)	Suivi et recueil des données Monitoring and data collection
Année 2	
Semestre 1	Analyse statistique des données (2009- 2014) et recherche et validation des données les plus pertinentes pour un meilleur suivi de la pêcherie Tentative de définir un indice standardisé sur la base des données pleinement validées Statistical analysis of data (2009- 2014) and research and validation of the most relevant data for better monitoring of the fishery Attempt to define a standardized index on the basis of fully validated data
En continu (selon périodicité définie)	Suivi et recueil des données Monitoring and data collection
Semestre 2	Présentation des premiers résultats à la Commission Bulot Presentation of the first results to the Commission Bulot
Année 3	
Semestre 1	Analyse statistique des données (de l'année 2) les plus pertinentes retenues en vue de pondérer l'indice d'abondance. Statistical analysis of data (year 2) retained as most relevant to inform on index of abundance.
En continu (selon périodicité définie)	Suivi et recueil des données pertinentes, notamment les données de 2000 à 2008 (récupérées auprès de l'Ifremer) Monitoring and collection of relevant data, including data from 2000 to 2008 (obtained from Ifremer)
Trimestre 4	Bilan. Présentation et validation à la Commission Bulot, puis information des parties prenantes au JAC Overview and validation at the Commission Bulot, then presentation to stakeholders at JAC
Année 4	
Semestre 1	Analyse statistique des données (de l'année 3 et historiques) Mise en place du suivi par le biais de l'indice d'abondance standardisé après avoir affiner cet indice d'abondance. Statistical analysis of data (year 3 and historical) Implementation of monitoring through standardized abundance index after having refined this index of abundance.

En continu (selon périodicité définie)	Suivi et recueil des données Monitoring and data collection
Trimestre 4	Bilan. Présentation et validation à la Commission Bulot, puis informations des parties prenantes au JAC Overview and validation at the Commission Bulot, then presentation to stakeholders at JAC
Année 5	
Semestre 1	Analyse statistique des données (de l'année 4)- suivi de l'indice Statistical data analaysis (year 4) and monitoring of index
En continu (selon périodicité définie)	Suivi et recueil des données Monitoring and data collection
Trimestre 4	Bilan. Présentation et validation à la Commission Bulot, puis présentation aux parties prenantes lors du JAC Overview and validation at the Commission Bulot, then presentation to stakeholders at JAC

Condition 3 : IP 321- Objectifs spécifiques de la pêcherie (Fishery specific objectives)

Le score est de 60

Le rapport d'évaluation indique :

As already noted in the condition for PI 1.2.2 (Condition 1), there are no formal, explicit objectives for the target stock.

Condition:

There needs to be explicit management objectives for both Principle 1 (stock) and Principle 2 (ecosystem). They do not have to be expressed in terms of stock biomass, but should be consistent with keeping the stock at a level of high productivity. The objectives could be at the level of the Basse-Normandie fishery or at the Granville Bay level.

Il doit y avoir des objectifs explicites de gestion à la fois pour le Principe 1 (stock) et Principe 2 (écosystème). Ils ne doivent pas être exprimés en termes de biomasse du stock, mais devraient être compatibles avec le maintien du stock à un niveau de productivité élevée. Les objectifs pourraient être établis au niveau de la pêche Basse-Normandie ou au niveau de la baie de Granville.

Plan d'Action :

Des objectifs précis sur les bases définies dans l'IP 122, dans le respect du Principe 1 seront discutés, validés par la commission Bulot et présentés au JAC. De même, des objectifs spécifiques relatifs au Principe 2 seront discutés et déterminés, si besoin est.

Planning : le planning prévisionnel est décrit ci-dessous

Année 1	Action
	Recenser et lister les objectifs en termes de respect de la ressource et de l'environnement, y compris contrôles. Identify and list the objectives in terms of respect of the resource and the environment, including controls.
Année 2	
Semestre 1	Présentation des objectifs « ressource » et « environnement » à la Commission Bulot et validation Presentation of the "resource" and "environment" objectives to the Commission Bulot and validation
Trimestre 4	Présentation des objectifs aux parties prenantes lors du JAC Presentation of the objectives to stakeholders at JAC
Année 3	
Trimestre 1	Définition des points de référence (selon IP 122) et présentation à la commission Bulot pour approbation et validation Definition of reference points (according to IP 122) and

	presentation to the Commission Bulot for approval and validation
Semestre 2	Détermination et validation des mesures à envisager selon les points de référence pré définis et des objectifs en Commission Bulot Identification and validation in Commission Bulot of measures to be considered according to pre-defined reference points and objectives
En continu	Suivi des indicateurs et des objectifs – réflexion sur d'éventuels nouveaux objectifs Monitoring indicators and objectives - reflection on possible new objectives
Trimestre 4	Présentation des mesures au JAC Presentation of measures to JAC
Année 4 et 5	
En continu	Suivi des indicateurs et des objectifs- réflexion sur d'éventuels nouveaux objectifs Monitoring indicators and objectives - reflection on possible new objectives
Trimestre 4	Présentation et validation à la Commission Bulot, puis présentation au JAC Presentation and validation to the Bulot Commission and then presentation to the JAC

Condition 4 : IP 324- Plan de recherche (Research plan)

Le score est de 70

Le rapport d'évaluation indique :

Although considerable research has been carried out in the fishery, there is no formal research plan.

Condition:

A formal research plan as a framework for guiding research should be prepared and adopted

Un plan formel de recherche comme un cadre pour guider la recherche doit être préparé et adopté

Plan d'Action :

Le recensement des différentes recherches et études actuellement en cours sera rapidement effectué. Ces actions seront formalisées dans un document écrit (plan de recherche) visant au respect des Principes 1 et 2 du MSC. Les résultats de ces travaux seront diffusés annuellement lors de la Commission Bulot pour une information aux pêcheurs concernés. Si de nouvelles études sont élaborées, elles seront incorporées dans le plan de recherche au fur et à mesure de leur déclenchement. Le plan de recherche fera également l'objet d'une information annuelle lors des JAC.

Planning : le planning prévisionnel est décrit ci-dessous

Année 1	Action
1er semestre	Recensement des différentes études en cours Review of different ongoing studies
2ème semestre	Rédaction du plan de recherche Drafting of research plan
Année 2	
1 semestre	Validation du plan de recherche en Commission Bulot Validation research plan at Commission Bulot
4ème trimestre	Présentation des résultats et nouvelles études éventuelles à la Commission Bulot et au JAC

	Mise à jour éventuelle du plan de recherche Presentation of results and possible new studies to Bulot Commission and the JAC Any updating of the research plan
Année 3, 4 et 5	
4ème trimestre	Présentation des résultats et nouvelles études éventuelles en Commission Bulot et au JAC Mise à jour éventuelle du plan de recherche Presentation of results and possible new studies to Bulot Commission and the JAC Any updating of the research plan

Liste des mesures de restauration éventuelles List of potential restoration measures
Liste non exhaustive, non priorisée Non-exhaustive list, not in order of importance

- Augmentation de la taille minimale Increase minimum landing size
- Limitation nombre de casiers/ homme Limit number of whelk pots per person
- Augmentation de la durée de la fermeture biologique Increase in duration of closed season
- Zones de jachères No-take areas
- Diminution du nombre de licences Reduction in number of licenses
- …..

Appendix 8. Stakeholders

Organization	Contacts
Normandie Fraicheur Mer	Arnaud Manner Dominique Lamort
CRPM-BN	Beatrice Harmel Véronique Legrand
Seas at Risk	Bjorn Stockhausen
Comité des Pêcheurs Amateurs Granvillais	contact@cpagranville.net
CPML	cpml50pecheloisir@free.fr
CRPMEM Bretagne	crpmem-bretagne@bretagne-peches.org Jacques Doudet
Jersey Fishermen's Association	Don Thompson
DDTM	Régine Tavernier
DDTM Controle	Anne Le Vey
WWF France	Elise Petre
Greenpeace France	info.fr@greenpeace.org
Jersey States Department	Greg Morel Jonathan Shrives
Ifremer	Marie Laure Cochard
SMEL	Sebastien Pien Laurence Mace
DIRM MEMN/MTBN Affaires Maritimes	David Sellam
AMP	Olivier Abellard
Association pour une Peche a Pied Responsable	Philippe Vigoureuxmailto:app2r@orange.fr
CRP	Roland Quarante Didier Leguelinel

Appendix 9. Letter of support for Client Action Plan

Smel
Synergie Mer et Littoral
Recherche & développement

Siège Social :

Conseil Départemental de la Manche
50050 SAINT LO CEDEX
Tél : 02 33 05 96 51
Fax : 02 33 05 95 86

Centre Expérimental :
Zone Conchylicole
Parcelle n°45
50560 BLAINVILLE SUR MER
Tél : 02 33 76 57 70
Fax : 02 33 76 57 79

Saint Lô, le 5 Mai 2015

Objet : Lettre d'engagement – Ecolabel Pêcherie de Bulots

A l'attention de
Madame Jo Gascoigne

Mac Alister Elliott and Partners Ltd
56 High Street, Lymington
Hampshire SO41 9AH
United Kingdom

Madame,

La pêcherie de bulot de la Baie de Granville est encadrée depuis de nombreuses années par une réglementation élaborée par le CRPM (Comité Régional des Pêches Maritimes) de Basse Normandie.

Depuis plus de 10 ans, le SMEL s'investit dans un suivi halieutique destiné à fournir les tendances d'indicateurs indispensables à la définition du plan de gestion de cette pêcherie.

La démarche Ecolabel vise à faire valoir les bonnes pratiques de gestion de la pêche du bulot. Pour répondre à cet objectif, dans le cadre de son plan d'action 2014 – 2020 et selon celui du MSC, le SMEL s'engage à poursuivre ses investigations dans la production de données brutes (monitoring) et la fourniture d'indicateurs halieutiques (données plus élaborées) ainsi qu'à participer au plan de gestion de la pêcherie de bulot.

En vous rappelant que nos services se tiennent à votre disposition pour tout élément d'information complémentaire qui vous paraîtrait nécessaire, je vous prie d'agréer, Madame, l'expression de mes salutations les plus sincères.

Le Président du SMEL,

Bernard TREHET