Department of Agriculture Food and the Marine

National Seafood Centre, Clonakilty, Co. Cork, Ireland

The Marine Institute, Fisheries Ecosystems Advisory Services,

Rinville, Oranmore, Galway, Ireland

An Bord Iascaigh Mhara (Irish Sea Fisheries Board),

Crofton Road, Dun Laoghaire, Co Dublin, Ireland

EU Council Regulation 199/2008

Concerning the establishment of a community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy

Annual Report 2014

IRELAND

29th May 2015

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I. General framework

The Marine Institute has been delegated responsibility by its parent government department, Department of Agriculture Food and Marine (DAFM) to organise and co-ordinate Irelands obligations under the DCF and the MI has therefore compiled this document as the Annual Report on 2013 sampling activity for Ireland. This programme addresses the following; Article 7 of Council Regulation 199/2008, Article 5 of Commission Regulation 665/2008 and the Annex of Commission Decision 2010/93/EU. The general framework presented adheres to the most recent guidelines, (version March 2013) as agreed and circulated by the European Commission.

Table I.A.1 provides an updated list of Ireland's bi – lateral agreements with UK – Scotland, Denmark, and France. The current French bi – lateral is with the French National Correspondent to sign but is, in effect an extension of previous bi – laterals and as such the sampling covered within it is currently taking place in both countries. Ireland also has agreements with the Danish and the Dutch on Regional Coordination for the Cost sharing of the International Ecosystem Survey in Nordic Waters, and the Blue Whiting joint research surveys. This agreement was coordinated through the RCM NS&EA in 2014.

No Major methodological changes have been made during 2014. However the ranking and selection of métiers in Irelands National Programme 2011 – 2013, which was rolled over into 2014 – 2015 was felt to be outdated and as a result Ireland updated its ranking system and the naming of its métiers in 2014, to more accurately reflect activity in the fisheries and associated sampling. These updated métiers and the associated changes are detailed in Module III.C.

II. National data collection organisation

II.A National correspondent and participating institutes

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Participating Institutes

The Irish National Programme was conducted in close co-operation between three organisations in Ireland;

Department of Department of Agriculture, Food and Marine (DAFM)

DAFM is the main governmental department with responsibility for sea fisheries policy, and management. In carrying out its mandate the Department undertakes a variety of functions including:

- Policy advice and development on all areas of Departmental responsibility.
- Representation in international especially EU and national negotiations.
- Development and implementation of national and EU schemes in support of Agriculture, Food, Fisheries, Forestry and Rural Environment.
- Monitoring and controlling aspects of Food Safety.
- Control and audit of public expenditure under its control.
- Regulation of the agriculture, fisheries, and food industries through national and EU legislation.
- Monitoring and controlling animal and plant health and animal welfare.
- Monitoring and direction of State Bodies engaged in the following areas - research training and advice - market development and promotion- industry regulation and development- commercial activities.
- Direct provision of support services to Agriculture, Fisheries, Food and Forestry.

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National Seafood Centre,
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The Marine Institute (MI)

The MI is a state marine research organisation charged by DAFM with the collection of scientific data on the fisheries sector.   The MI is the State agency responsible for marine research, technology development and innovation in Ireland. It provides scientific and technical advice to Government to help inform policy and to support the sustainable development of Ireland's marine resource.

The aim of the MI is to safeguard Ireland's unique marine heritage through research and environmental monitoring. The research, strategic funding programmes, and national marine research platforms support the development of Ireland's maritime economy.

The Marine Institute was set up under the Marine Institute Act 1991:

"To undertake, to coordinate, to promote and to assist in marine research and development and to provide such services related to research and development, that in the opinion of the Institute, will promote economic development and create employment and protect the marine environment." and the Marine Institutes vision is for

 "A thriving maritime economy in harmony with the ecosystem and supported by the delivery of excellence in our services."

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An Board Iascaigh Mhara (BIM – The Irish Sea Fisheries Board)

BIM, was established under the Sea Fisheries Act 1952,and is the Irish State agency responsible for developing the Irish seafood industry.

BIM's mission is to grow a thriving Irish seafood industry; expand the raw material base, add value and develop efficient supply chains that together deliver on the Government's Food Harvest 2020 targets for seafood and create sustainable jobs. The Agency helps to develop the Irish seafood industry by providing:

- technical expertise
- business support
- funding
- training
- and by promoting responsible environmental practices

BIM Strategy

BIM Strategy 2013-2017 (pdf 1,482Kb) is an action plan to deliver 1200 jobs and €1 billion seafood sales by building scale and enhancing competitiveness in the Irish seafood sector.

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A **National Data Collection Framework portal website** for the dissemination of information on DCF related activities by Ireland has been established in accordance with Commission Regulation (EC) 665/2008 Article 8(2): and can be accessed at the following web link:

www.dcmap-ireland.ie

National Co – Ordination

A National Co – Ordination meeting was held in The Marine Institute, Galway on the 14th of July 2014 to ensure all participating institutes were clear on their roles and responsibilities regarding the DCF programme. The Commission was also invited to participate.

Main Outcomes.

- STECF EWG Comments on the 2013 Annual Report Submission were discussed and actioned.
- All inputs to 2014 reports: cost statement/annual report and the clarifications required for the NP: 2014 roll – over programme were discussed, coordinated and agreed. And as a consequence all supporting information requested was submitted on time.
- The EU Commission decisions on fines and data deficiencies in relation to Ireland were also discussed, and a response was agreed.
- Progress reports on tasks for the present year were discussed and corrective actions agreed if not on track.
- Updates were provided on the Regional database, and progress towards the new DC-MAP 2014 – 2020.
- A strategy was discussed and agreed on how to integrate with the new Electronic Recording and Reporting System (ERS) to ensure relevant access to the logbook data.
- The EMFF and Ireland's Seafood Operational Programme were also discussed.
- The progress of Data Calls was discussed and plans were put in place to facilitate the data call for processing Industry data, which was anticipated at the end of October/November 2014.
- As Frank O Brien, FEAS Section Manager and DCF National Correspondent retired in August, Paul Connolly, FEAS Director assumed the role of DCF National Correspondent in the interim. A new internal DCF Coordination group was also established to ensure the continued prioritisation of the DCF programme within Ireland.

II.B Regional and International coordination

II.B.1 Attendance of international meetings

Attendance at International meetings in 2014 is described in Table II.B.1. During 2014 Ireland participated fully at the relevant ICES planning groups, study groups, working groups, regional co-ordination meetings and workshops which are directly related to data collection requirements under Commission Regulation (EC) 199/2008.

II.B.2 Follow-up of regional and international recommendations

All relevant recommendations addressed directly to Ireland, to the Member States in general, or to the National Correspondents are outlined in Table II.B.2 along with Ireland's responsive actions in 2014. The majority of the recommendations from the RCM NA, were addressed to the SC-RDB, RCM chairs or to ICES. No new recommendations were proposed by STECF-PLEN-14-01, STECF-PLEN-14-02 or by STECF-PLEN-14-02. The relevant survey planning group recommendations are also listed in Table II.B.2. Of the five PGECON recommendations in 2013 to be actioned in 2014, four were addressed to DGMARE and one was addressed to PGECON and DGMARE jointly. In 2014 the International Bottom Trawl Survey Working Group (IBTSWG) made no recommendations directed at Member States, apart from a specific recommendation to Portugal. The remaining recommendations were addressed to the ICES Data Centre and WGNNSK, and so no IBTSWG recommendations appear in Table II.B.2 for 2014. Only one of the recommendations made by the Working Group on *Nephrops* Surveys (WGNEPS) was relevant to Member States involved in *nephrops* surveys, and is highlighted in Table II.B.2.

Ireland participates at the RCM-NA and does not participate at any other RCM, as the vast majority of our fisheries are in the North Atlantic. Ireland has never attended the RCM NS & EA, as Irish fishing activity in the North Sea in recent years has been limited to pelagic fisheries and some crab potting in the central North Sea, accounting for

between 5 – 8% of Irish landings, and accounting for <1% of the total fishing effort in this area.   It is clear that under these circumstances Ireland can have no meaningful contribution to make at the RCM NS & EA, and we would ask that our non-attendance at this meeting is considered reasonable.

III. Module of the evaluation of the fishing sector

III.A General Description of the fishing sector

The Irish fishing fleet consists of a little over 1,400 vessels and is divided into 5 segments; polyvalent, pelagic trawl, specific bivalve, aquaculture and beam trawl. Inshore vessels (<10m) are also sampled under the DCF and are included in the polyvalent, specific bivalve and aquaculture segments. There are about 6,000 people working in the fishing fleet associated activities. The majority of Irish fishing, data collection and sampling activity is concentrated in the ICES Sub-areas around Ireland VI and VII where Irish vessels are engaged in demersal, pelagic, industrial, and tuna-like fisheries (Table III A 1). The pelagic fishery targeting mackerel and horse mackerel also operates in the II, IIIa, IV. Some pelagic landings in those fisheries are landed in the UK–Scotland, France, Denmark and Norway where scientists in those countries sample them. In recent years Ireland has one vessel fishing small pelagics off Mauritania which are landed into Spain. In the RCM long distance fisheries held in Vigo it was decided that sampling levels by Spain and the Netherlands cover this metier adequately. Ireland no longer has a deep water or eel fishery.

Two new metiers for sampling have emerged in area VIIa as a response to the Cod Management Plan (EC regulation 1342/2008). In 2010, three Irish vessels were exempted from effort restrictions associated with 1342/2008. These vessels use a selective grid to maintain cod catches below 1.5%, in accordance with article 11.3 of 1342/2008. The number of vessels using grids initially increased to eleven but this has subsequently decreased again as vessels have tended to take up alternative species selective gears including large (300mm) square mesh panels and the SELTRA trawl. Those vessels opting to use grids can automatically avail of exemption from effort restrictions but are required (EU Regulation 237/2010) to be subject to an increased sampling programme. In addition, UK vessels operating in the same fishery have been granted exemption for effort limitations due to the use of large square mesh panels, SELTRA trawls. Irish vessels are also being encouraged to use this gear and will automatically avail of effort exemptions. Vessels using the SELTRA trawl and Swedish grids are now considered as a

separate metier for sampling purposes as their catch composition is different to other otter trawl vessels targeting *Nephrops* as well as to satisfy reporting requirements under article 11.3. Since March 2012, it is mandatory for all OTB_CRU vessels operating in the Irish Sea to use species selective gears (Swedish grid, separator panel, large square mesh panel or SELTRA gear). Both the separator panel and large square mesh panels allow for effort by-back through maintaining cod catches below 5% (article 13 EU Regulation 1342/2008) Given the shift towards more selective gears and the two articles associated with the cod recovery plan, it is necessary to treat the vessels using grids or SELTRA trawls as one discrete metier while those using separator panels or the large square mesh panels as another. As a result the numbers of metiers targeting prawns is now two, however they are now divided into grid, SELTRA and other separator methods and this has been reflected in our sampling strategy.

III.B Economic variables

Baltic Sea (ICES areas III b-d), North Sea (ICES areas IIIa, IV and VIId) and Eastern Arctic (ICES areas I and II), and North Atlantic (ICES areas V-XIV and NAFO areas)

III.B.1 Achievements: Results and deviation from NP proposal

See tables III.B.1, III.B.2 and III.B.3 for information collected during the sampling year. The data sources for the implementation of the NP are:
- Fleet register information from the Community Fishing Fleet Register;
- Fleet register information from the Department of Agriculture, Food and the Marine (DAFM);
- Log sheet information from the Sea Fisheries Protection Authority (SFPA) of DAFM;
- Voluntary questionnaire information, returned from vessel owners targeted for the annual economic survey;
- Mandatory questionnaire information, returned from vessel owners when applying for government grant aid;
- End of year accountant's reports, from certified accountants, containing income and earnings and balance sheet details;

The structure of the fishing fleet, for 2013 (Table III.B.1), represents all active vessels over 10m in length and all vessels on the Community fishing fleet register under 10m fleet as it is not possible to accurately estimate the inactivity in this segment. Inactive vessels are presented for the over 10m fleets. The frame population consisted of all active vessels from which a planned sample was targeted.

The following data sources have been used to segment the fleet:
- EU Fleet Register on the 1st January of the reference year;
- EU log-book gear effort activity records for vessels active in the reference year (>10 metres LOA);
- Recorded fishing activity from previous economic surveys.

To support the annual postal survey of the national fleet, the MS actively engaged with Producer Organisations to provide administrative support to their members to complete the data request for 2013. In addition, the MS continued to operate a system of data collection, whereby all vessel owners were required to submit DCF data with all applications for EU and National grant aid. These actions contributed significantly to the successful achievement of the data collection strategy by the MS and improved the returns rates when compared with previous years.

As in previous years, the timing of the 2013 survey was scheduled to coincide with the final date for submission of tax returns for the previous financial year. This was intended to encourage the active participation of fishermen and their accountant's in providing the relevant data at a single and convenient time of the year.

The MS launched an internationally recognised, third party accredited; "Responsibly Sourced" standard for wild seafood in 2010. This programme is now fully accredited to ISO17065 and to date 85 vessels and 5 onshore facilities have achieved certification. A requirement in the achievement of this standard is the provision of economic data, by certified vessels, in compliance with the DCF regulation. The number of certified vessels shows a slight increase to that of previous years and is anticipated to increase in accordance with market demand. An associated increase in DCF survey returns is expected as the numbers of vessels holding certification rise.

Estimation of capital value and capital costs

In accordance with Appendix VI of Commission Decision (2008/199/EC), the Perpetual Inventory Method (PIM) was applied to estimate capital value and costs for each of the fleet segments in Table III.B.1. The following input parameters (required by the STECF model) were estimated;

- Selected capacity unit,
- Price per capacity unit,
- Share in total investment ,
- Government bonds,
- Market rate for loans.

Capacity indicators and capital value was estimate for those vessels that responded to the annual survey. This was a deviation from the NP. In future, capacity indicators and capital value will be estimated for all vessels on the register, regardless of their activity. The following sources will be used to estimate the input parameters to the PIM model:

- Questions on fixed assets, investments, and depreciation from the annual economic survey,
- EU fleet register,
- EU log-book data,
- Sentinel vessel programme.

Specifically, the following methods, are used to determine capital value:

- Book value (depreciated value of capital at acquisition prices) is the reference value used in the estimation of the Price per Capacity unit;
- Calculation of gross historical value (observed depreciated historical value + cumulated depreciation costs);

Depreciation rates are indicated on the balance sheet provided by each vessel. For vessels with no survey returns, the depreciation schedules permitted by national tax laws were used to estimate depreciation.

The following service lives are used for macro-economic analysis:

- Hull – 25 years;
- Engine – 10 years;

- Electronics – 5 years;
- Other equipment – 7 years.

Agreed values for share of each asset on the total value of capital were taken from No FISH/2005/03, Evaluation of the Capital Value, Investment and Captial Cost in the Fisheries Sector.

Results

The national programme tables indicate higher planned sample numbers than those in III.B.1 in this report. This was due to the inclusion of all registered vessels in the frame population of the National Programme table II.B.1. This overestimated the planned sample rate. Correcting the frame population to account for inactive vessels has lessened the frame population and increased the achieved sample returns rates.

Due to the timing of the survey the MS is still collecting data for 2013. This is a yearly event. In 2014 the data collection (2013 data) had an average overall sample rate of 66% of the planned sample or 9% of the estimated active fleet for the under 10m and 56% of the planned sample or 22% of the total active fleet for >10m at the time of the DCF data call. Continued data collection throughout 2014 and into 2015 meant that this rate had increased to 86% of the planned sample or 12% of the estimated active fleet for the under 10m fleet and 61% of the planned sample or 24% of the total active >10m fleet. All efforts are made to upload the most up-to-date estimates.

Deviation from NP proposal

Where possible and not withstanding any programmatic change, the annual report tables aim to reflect the National Programme's tables for the reference year, in this case 2013. The fleet segmentations presented in Table III.B.1 deviate slightly from those presented in the National Programme and have been updated to match the fleet segment clustering used for the 2015 DCF economic data submission to the Joint Research Council (JRC) for years 2008-2013. Clustering was carried out following the methodologies required by the DCF and STECF recommendations. Clustering has taken place where the segments are not important or to protect confidentiality. As clustering is kept temporally consistent,

some clusters, in certain years, can have zero vessels for some segments. This reflects changes in gear effort and thus the gear classification.

The operation of the economic aspect of the data collection framework has been much improved relative to previous years with MS sampling targets increasing for some segments. The MS has also increase its target sampling size in some instances in an attempt to tackle data poor segments. There was an effort to collect more data from the under 10m fleet and this was realised.

Lacking a mandatory European legislative instrument to direct compliance with DCF data requests, the MS continues to be forced to rely on the goodwill of the seafood industry to provide data on a voluntary basis. This situation is far from ideal and as a result, survey response rates are highly variable and unpredictable. Without incentive, this unstable situation is likely to persist.

III.B.2 Data quality: Results and deviation from NP proposal

See tables III.B.3 with the values of the accuracy indicators.

Deviation from NP

Due to the voluntary nature of the national survey, it was not possible to guarantee that the sampling levels of the national programme were achieved. The actions of the MS in the encouragement of the industry to provide DCF returns resulted in the over-achievement of sampling targets in a number of segments and an under-achievement of targets in other segments. The total number of returns for vessels from the voluntary survey exceeded the sampling target total and this is regarded as a positive achievement by the MS and a first indication of recognition from the industry.

Coefficient of Variation is reported for the observed sample. Due to historically low response rates to the survey, all active vessels greater than 10m (LOA) were targeted in the 2013 survey.

Estimation of Employment

In accordance with Appendix VI, a harmonised FTE was estimated for each of the fleet segments in Table III.B.1. For vessels >10 meters in length (LOA), operational data from

log-book submissions was used in the estimation of fishing time on a trip-by-trip basis. In addition, several questions on the annual economic survey forms that deal specifically with hours worked, both at sea and in land-based activities associated with fishing, were used to provide additional detail. For segments that lacked data industry averages were applied from similar, data rich segments.

III.B.3 Follow-up of Regional and international recommendations

PGECON: 2013, presented five recommendations to the 10th Liaison Meeting. Four of these recommendations were addressed to DGMARE and the fifth was addressed jointly to DGMARE and to PGECON itself; therefore no recommendations were addressed to Member States or to Ireland specifically for action in 2014.

III.B.4 Actions to avoid deviations

The Member State is fully aware of its obligations under the DCF in relation to population coverage and the reporting of precision. As the MS has no current option but to operate a voluntary survey, success is dependent on industry cooperation to achieve the required level of sampling detailed in the National Programme. Mindful of the limitations of a voluntary survey, the following actions have been taken by the MS, to increase the response rates to present and future surveys and to improve the management of the DCF:

• The MS will retain conditions relating to EU or National grant-aid which make it mandatory for the provision of economic data under the DCF. This action was included in the 2013 Annual Report and the MS has delivered on this action and has significantly increased survey return rates, especially for the under 10m fleet.

• The MS expects to improve the data provision rate in compliance with the DCF, through the requirements of the national ISO65 standard for wild seafood. This action was included in the 2013 Annual Report. This standard will be put in place this year and survey response rates are expected to increase once this is in operation.

• The MS has improved the survey return rate and decreased the time lag between the end of the reference year and the provision of data. The MS is planning to tighten this

gap further by conducting the annual economic survey earlier in 2015 so that more data will be available by the time of the DCF data call in early 2016.

III.C Metier-related variables

North Atlantic (ICES areas V-XIV and NAFO areas)

III.C.1 Achievements: Results and deviation from NP proposal

For details of identified métiers, merges and planned and achieved sampling trips per sampling frame, métier and numbers aged and measured please see Tables IIIC1, III.C.3, III.C.4 and III.C.6

The use of sampling frames evolved from the recommendations of the ICES WKPRECISE workshop (September 2009) and developed by the ICES WKMERGE workshop (January 2010). The use of sampling frames was introduced into the DCF in 2010 for sampling taking place from 2011 onwards and so Ireland is reporting its planned and achieved sampling including sampling frames.

In 2014 the reference period used to rank and select métiers for sampling was updated from 2008 – 2009 and now refers to the reference years 2012 – 2013. The previous ranking which appears in the National Programme; NP 2011 – 2013, which was subsequently rolled over into 2014 – 2015 is now considered to be outdated

III.C.2 Data quality: Results and deviation from NP proposal

Changes to Métiers

The following changes have been made to the métiers stated within the 2014 national program due to the implementation of gear technology regulations:

o Vessels operating within the Irish Sea Nephrops fishery are now required to install a separator panel, therefore the métier OTB_CRU_70-99_0_0 has been replaced by OTB_CRU_70-99_1_0. Métier OTB_CRU_70-99_2_0 with the use of a separator grid is still permitted.

- Vessels using bottom otter trawl gears within the west of Scotland (VIa) are now required to use a 120mm square mesh panel within the codend. Therefore in fishing ground VI this results in the splitting of métier OTB_100-119_0_0 into OTB_100-119_0_0 for those trips occurring in VIb and OTB_100-119_1_120 for those occurring in VIa.

- From August 1st 2012 within VIIf and VIIg bottom otter trawls using 70-99mm mesh cod ends were required to fit a 110mm square mesh panel this therefore splits the métier OTB_70-99_0_0 into OTB_70-99_0_0 and OTB_70-99_1_110. Within larger mesh cod ends 100-119mm meshes, a 120mm square mesh panel was required, splitting métier OTB_100-119_0_0 into OTB_100-119_0_0 and OTB_100-119_1_120.

Metier LVL6	Replacement Métier LVL6	Space strata	Time strata	Comments
OTB_CRU_70-99_0_0	OTB_CRU_70-99_1_0	VIIa	Yearly	Inclusion of separator panel
	OTB_CRU_70-99_2_0	VIIa	Yearly	Inclusion of separator grid
OTB_DEF_70-99_0_0	OTB_DEF_70-99_0_0	VIIfgh	Yearly	Prior to 1/8/2012 in VIIf and VIIg, else VIIh
	OTB_DEF_70-99_1_110	VIIfgh	Yearly	Post 1/8/2012 in VIIf and VIIg
OTB_DEF_100-119_0_0	OTB_DEF_100-119_0_0	VIIfgh	Yearly	Prior to 1/8/2012 in VIIf and VIIg, else VIIh
	OTB_DEF_100-119_1_120	VIIfgh	Yearly	Post 1/8/2012 in VIIf and VIIg
OTB_DEF_100-119_0_0	OTB_DEF_100-119_0_0	VI	Yearly	Fishing activity in VIb
	OTB_DEF_100-119_1_120	VI	Yearly	Fishing activity in VIa

Table III.C.1 provides details of the updated ranking and métier selection using the reference years 2011 – 2013.

Table III.C.4 outlines Ireland's planned sampling strategy by sampling frame in 2014. And Table III.C.3 further breaks this down to present the achieved sampling trips by metier within each of the sampling frames. In general, the majority of the planned sampling targets were achieved or surpassed.

Additional sampling over the DCF targets was funded at national expense.

Table III.C.4: Planned sampling by Sampling Frame

E1 Towed demersal Gears: Sampling targets achieved

E2 Towed Pelagic Gears: 1 of 4 concurrent at sea trips achieved and 2 of the planned concurrent at the market trips were achieved. Landings within this sampling frame have been steadily declining since 2008.

E3 Static Gears: Sampling targets achieved

NW1 Towed Demersal Gears: Sampling targets achieved

NW2 Towed Pelagic Gears: Sampling targets achieved

NW3 Static Gears: Sampling targets achieved

S1 Towed Demersal Gears: Sampling targets achieved

S2 Towed Pelagic Gears: Sampling targets achieved

S3 Static Gears: All of the 12 planned concurrent at the market sampling targets were reached and 5 of the 6 planned concurrent at sea sampling events were achieved.

W1 Towed Demersal Gears: A total of 60 trips at sea and on shore were planned for this sampling frame in 2014 and a total of 63 trips were achieved – a 78% achievement rate. In 2014 there was a shift from concurrent at sea to concurrent on shore sampling. This redistribution of effort does not in any way adversely affect the quality of the data.

W2 Towed Pelagic Gears: 47 concurrent at the market sampling trips were achieved out of the planned 60 trips, and none of the planned 8 concurrent at sea trips were achieved. A decision was taken not to complete any concurrent at sea trips within this sampling frame due to budget constraints and to focus resources on those métiers known to have high discarding rates.

W3 Static Gears: Within this sampling frame 3 concurrent at sea trips and 2 concurrent at the market, with a further 6 stock – specific sampling trips ashore were planned. 13 concurrent at

sea trips were completed with 1 concurrent sampling trip ashore. In this case there was a shift in effort away from concurrent at the market sampling to concurrent at sea sampling. This is a reflection of the increased ability of Marine Institute staff and contractors to get to sea, and does not in any way adversely affect the quality of the data.

Table III.C.3: Sampling Trips by Métier.

In 2 out of the 4 pelagic sampling frames, concurrent at sea sampling trips were under achieved. This was due to budget constraints. A consequence of this was a shortfall in sea trips for the metiers targeting small pelagic fish: PTM_SPF_32-69_0_0 in the East (E2) where only 1 out of 4 planned concurrent at sea trips were achieved and where 2 of the 3 planned concurrent at the market trips were achieved; and the West (W2), where none of the planned concurrent at sea trips were achieved and 47 concurrent at the market trips were achieved. However discarding is considered less of an issue for stock assessments within these métiers, and every effort was made to focus limited resources on those métiers where discards are known to be significant.

DRB_MOL_0_0 in VIIa, targeting scallops, mussels and cockles. Additional concurrent at sea trips completed to compensate for a shortfall in the achieved concurrent at the market trips. In total 23 trips were planned and 26 trips were achieved.

FPO_CRU_0_0_0:, in VIIbcjk and VIIfgh; targeting lobster. One concurrent at sea trip was planned for each metier and 22 concurrent at sea trips were achieved in VIIbcjk, and 9 concurrent at sea trips were achieved in VIIfgh.

FPO_CRU_0_0_0:, in VI; targeting brown crab. Achieved concurrent at sea targets were above those planned, i.e. 20 concurrent at sea trips were achieved, As a result no land based sampling was necessary.

FPO_CRU_0_0_0:, in VIIfgh; targeting lobster. 10 concurrent at sea trips were planned and 9 were achieved. An additional, unplanned concurrent at the market trip was also achieved to compensate for the deviation from the planned trips at sea.

GNS_DEF >= 220_0_0 in VIIa This métier represents the inshore Spring cod fishery in Q1. 100% of the concurrent at sea trips were achieved on this metier. One concurrent at the market

sampling was also achieved. Additional sampling was achieved in the GNS_DEF >= 220_0_0 in VIIfgh metier, as this is a trans-boundary fishery.

GNS_DEF >= 220_0_0 in VIIbcjk: 8 out of 8 at sea trips were achieved for this métier. A target of 12 stock specific sampling trips were planned, however only 3 were achieved. Landings from this métier have been steadily declining over the past four years, and landings are very fragmented. The main vessel in this métier lands into a remote location in which we have no presence at the moment, making access to samples difficult. Attempts will be made to increase stock specific sampling on this métier in the future.

OTB_CRU_70 – 99_0_0: *Nephrops* in VIIbcjk. 11 of the planned 13 concurrent at sea sampling trips were completed in 2014. 0 of the 2 concurrent trips were completed.   However additional stock specific sampling was carried out to compensate for the shortfall in concurrent sampling trips at the market, with a total of 35 sampling events completed instead of the 4 planned.

OTB_DEF fisheries: often these vessels will fish across fishing grounds and an *a priori* analysis of the data means that additional sampling may have occurred in some areas.

OTB_DEF_100-119_0_0 in VIIa: 2 concurrent at sea trips were achieved of the 4 trips planned on the métier. 5 concurrent at the market sampling trips were completed out of the 6 planned. Landings from this metier have steadily declined over the years from 2,353t in 2008 to 830t in 2014.

OTB_DEF_70-99_0_0 in VIIbcjk targeting whitefish: A total of 14 concurrent at sea sampling trips were achiever out of a total of 8 planned. No concurrent at the market trips were achieved even though 4 were planned. However a total of 37 stock specific trips were completed to balance this shortfall.

PTM_LPF_100-119_0_0 VIIbcjk: Tuna: 2 concurrent at sea sampling trips were achieved of the 1 trip planned on this tuna métier, and 9 concurrent at the market trips were achieved of the 2 planned.

PTM_LPF_100-119_0_0 VIIIabde: Tuna: No concurrent at sea sampling trip was achieved, even though 1 was planned. No concurrent trip was possible ashore as only 7t of tuna were

landed from area VIII in 2014. Notable changes in the fishery over the past four years, includes a geographic shift in effort from the Bay of Biscay to an area southwest of Ireland, and an associated shift in sampling effort. 849 albacore tuna were sampled in VIIbcjk

PTM_SPF_32-69_0_0 VIIIabde: Targeting Mackerel: There was no effort in this fisher by Irish vessels in 2014. As a result no sampling could be achieved.

PTM_SPF_32-69_0_0 IV, VIId: None of the 4 planned concurrent at the market trips were achieved. The total landing from this fishery totalled approximately 31.78t in 2013. Almost 50% or 13.68t of these landings were landed into UK and Norwegian ports.

SSC_DEF_70-99_0_0 VIIa : 0 of the planned 3 concurrent at sea trips was completed on this métier, and no concurrent or stock specific sampling could be carried out ashore, as only one vessel operates in this métier and does so sporadically in the Irish sea making sampling very difficult. All efforts will be made to secure sampling trips from this vessel in the future.

SSC_DEF_70-99_0_0 VIIbcjk, 2 of the 3 planned concurrent at sea trips were achieved, with additional concurrent at the market sampling achieved to compensate for the shortfall at sea. 4 stock specific trips were also achieved.

TBB_DEF_70-99_0_0 VIIa: 1 of the planned 6 concurrent at sea sampling trips and 0 of the planned 6 concurrent at the market sampling trips were achieved. This is a difficult métier to sample as it comprises of only a few vessels. Over 50% of this fleet was decommissioned in 2009. In 2014, only 8 vessels reported landings from VIIa with 1 vessel accounting for the majority of the landings (79%). A concurrent at sea sampling event was achieved on this vessel. The next most important vessel with 7% of the landings is not co-operative with sampling programmes. The other vessels in the fishery, fish sporadically in VIIa making sampling difficult to plan. In addition landings from the vessels in this métier are often split with a portion of the landings being sold and shipped outside Ireland.

TBB_DEF_70-99_0_0 VIIbcjk: No sampling was possible on the beam trawl métier in VIIbcjk, as no landings were reported from this metier in 2014.

TBB_DEF>=70_99_0_0 VIIfgh: 6 of the 7 at sea trips were completed. All concurrent targets were reached and additional stock specific sampling trips were also carried out to supplement the at sea sampling.

Table IIIC6: Achieved length sampling of catches, landings and discards by metier and species

Any sampling in excess of the DCF minimum required levels is the result of several reasons. These are the additional length measurements resulting from the implementation of the concurrent market sampling programme, and also the additional sampling carried out by the at sea observers whilst on discard trips. As has been stated in past reports the main cost associated with the observer at sea programme is getting the observer on board, once on board any sampling in excess of the planned targets is effectively cost neutral.

Clupea harengus in VI: Landings of herring in ICES Area VI have steadily declined over the past few years. The targets in the National Programme are based on the average landings from 2008 and 2009, when the average landings from those two years in VI was 8,471 tonnes, as compared with an average of 3,069 tonnes in 2013/2014. It is clear that the targets previously set in the NP are now unrealistic, this will be reviewed in future National Programmes. Approx. 3,619 herring were sampled from Area VI.

Clupea harengus in VIIbcjk: Irish vessels have usually concentrated there fishing effort on herring in ICES Area VIIb. As with herring in VI, the landings have steadily decreased over the years from an average landing in 2008/2009 of 837 tonnes to average landings of 200 tonnes in 2013/2014. In 2014 landings from VIIb were only 69.9t. The majority of herring landings now come into ICES Area VIIg, accounting for approx 14,576t in 2014, and as a result in this change, 6,280 individual herring were sampled here instead of from VIIbcjk as originally planned in the NP.

Clupea harengus in VIIa. This is an opportunistic fishery, and many of the vessels fish on the line between VIIa and VIIg, resulting in the majority of the landings being reported in VIIg, where 6,280 individual fish were sampled.

Gadus morhua VIIa. 1331 of the planned 2700 individuals were sampled. In response to the Cod Management Plan (EC regulation 1342/2008), the use of species selective gears to minimise the

capture of cod by-catches has become mandatory for all Irish vessels targeting *Nephrops* in the Irish sea since March 2012. The use of the grids and separator panels has resulted in a significant decrease in other fish species landings from this fleet operating in area VIIa, and has resulted in lower sampling levels then planned in proportion to this decline in landings across the board in VIIa.

Gadus morhua VIIbcjk: Landings of cod by the Irish fishing fleet, come mainly from areas VIIb and VIIj. In 2014 landings from VIIb were only 36t which was landed across 17 different ports. Landings from VIIj were also low at 101t, landed across 22 ports. It's clear from this information that tracking and sampling these landings is very difficult, as they are so small and dispersed. However in spite of this 1,381 individual cod were sampled, and all efforts will be made to build on this sampling in the future.

Homarus gammarus VI, landings for lobster are extremely low, at just 19t in 2014 in area VI. And as a result only 17 individuals were measured.

Lepidorhombus whiffiagonis VIIa*:* In response the Cod Management Plan (EC regulation 1342/2008), the use of species selective gears to minimise the capture of cod by-catches has become mandatory for all Irish vessels targeting *Nephrops* in the Irish sea since March 2012. The use of the grids and separator panels has resulted in a significant decrease in megrim landings from this fleet operating in area VIIa, down to 12.6t in 2014. This decrease in landings has resulted in lower sampling levels than originally planned.

Merlangius merlangus VIIbcjk 6,948 individuals were sampled out of 8,450 planned. This represents approximately an 82% achievement rate. The achieved sample numbers are actually very large and these numbers are more than adequate to support a stock assessment.

Merluccius merluccius, Pollachius virens, Raja clavata, and *Solea solea, Pleuronectes platessa* in VIIa: In response the Cod Management Plan (EC regulation 1342/2008), the use of species selective gears to minimise the capture of cod by-catches has become mandatory for all Irish vessels targeting *Nephrops* in the Irish sea since March 2012. The use of the grids and separator panels has resulted in a significant decrease in other fish species landings from this fleet operating in area VIIa, for example only 7t of *Merluccius merluccius* , and only 5t of *Pollachius virens*

were landed in 2014. This decrease in landings has resulted in lower sampling levels than across the board in VIIa.

Pleuronectes platessa in VIIfgh*: 5,221 individuals were sampled out of a planned 6,650, this was a very good achievement considering the landings of Plaice have decreased further in VIIfgh in 2014 to approximately 46t.

Pleuronectes platessa in VIIbcjk*: 3,127 individuals were sampled out of a planned 3,650, this number provides ample data to support the stock assessment, and represents an 86% achievement rate.

Pollachius virens VIIfgh: unfortunately saithe proved difficult to find in the markets and as a result were under sampled. However a more concerted effort to ensure these targets are reached will be made in 2015.

Raja brachyuran, Raja clavata, and Raja montagui, Raja naevus All Areas: Just 844t of rays were landed by Irish fishing vessels across all areas in 2014. As rays are landed as a mixed species it can be difficult to targets individual species to reach targets. Overall 5390 measurements on rays were achieved from a planned number of 950. The overall sampling reflects what was landed on any given sampling event.

Scomber scombrus VIIbcjk: Mackerel targets for area VIIbcjk were 5,800 individuals, and 5,719 individuals were sampled. This represents approximately a 98% achievement rate. The achieved sample numbers are actually very large and these numbers are more than adequate to support a stock assessment.

Solea solea in VIIa had landings of 41t in 2014, and these landings have been steadily decreasing due to the implementation of the Cod Management Plan (EC regulation 1342/2008). The use of species selective gears to minimise the capture of cod by-catches has become mandatory for all Irish vessels targeting *Nephrops* in the Irish sea since March 2012. The use of the grids and separator panels has resulted in a significant decrease in other fish species landings from this fleet operating in area VIIa, and has resulted in lower sampling levels then planned in proportion to this decline in landings across the board in VIIa.

Solea solea VIIfgh are fished by the Irish fishing fleet mostly in ICES area VIIg. landings in 2014 decreased to 27t. These small landings are very difficult to track and sample. However in spite of this 2053 individuals were sampled. All efforts are made to secure these samples and sampling targets for future work programmes may need to be reduced further in line with the low landings.

Trachurus trachurus VIIbcjk: 5,743 individuals were sampled out of a planned 7,000. The majority of the horse mackerel landings came from Area VI and as a result the targets for area VI were exceeded. Given the decline in landings over recent years the target of 7,000 individuals to be measured in VIIbcjk may need to be adjusted to a more realistic number in future NP's.

Thunnus alalunga VIIIadbe: Only 7t of tuna were landed from area VIIIe in 2014, and none of a planned 400 individuals were measured. Notable changes in the fishery over the past three years, includes a geographic shift in effort from the Bay of Biscay to an area southwest of Ireland. However Ireland instead sampled the fishing fleet operating in ICES Areas VIIj and VIIk, 849 tuna were measured from this area.

III.C.3 Follow – Up of Regional and International recommendations.

Please refer to Table II.B.2 for follow up of recommendations. Only one recommendation related to Module III.C in 2013 for action in 2014.

III.C.4 Actions to avoid deviations

Ireland was successful in recruiting new contractors to implement the at sea sampling programme in 2013. This has led to a significant increase in the achievement of targets. On-going consultation with the fishing industry to improve relations will also continue to assist in getting better observer coverage, but this is a continuing challenge. The situation was further complicated in 2014 by budgetary constraints, which have thankfully now been lifted at a National level.

A full root and branch review of sampling took place in 2010 with a view to facilitating a more efficient data collection strategy and resulting in higher quality data collection in the Marine Institute. Quarterly sampling reviews are now routine and help highlight potential under sampling and immediate actions are taken as necessary to correct this.

A more focused approach has been adopted in 2014 to ensure the most representative coverage possible of all target metiers and and their landings. New industry contacts have been fostered which have opened up new sampling locations and opportunities and we are confident this strategy will result in improved data collection in 2015.

III.C Metier-related variables

North Sea (ICES areas IIIa,IV and VIId and Eastern Arctic (ICES I and II)

III.C.1 Achievements: Results and deviation from NP proposal

For details of identified métiers, merges and planned and achieved sampling trips per sampling frame, métier and numbers aged and measured please see Tables IIIC1, III.C.3, III.C.4 and III.C.6

The use of sampling frames evolved from the recommendations of the ICES WKPRECISE workshop (September 2009) and developed by the ICES WKMERGE workshop (January 2010). The use of sampling frames was introduced into the DCF in 2010 for sampling taking place from 2011 onwards and so Ireland is reporting its planned and achieved sampling including sampling frames.

In 2014 the reference period used to rank and select métiers for sampling was updated from 2008 – 2009 and now refers to the reference years 2012 – 2013. The previous ranking which appears in the National Programme; NP 2011 – 2013, which was subsequently rolled over into 2014 – 2015 is now considered to be outdated

III.C.2 Data quality: Results and deviation from NP proposal

Table III.C.1 provides details of the updated ranking and métier selection using the reference years 2011 – 2013.

Table III.C.4 outlines Ireland's planned sampling strategy by sampling frame in 2014. And Table III.C.3 further breaks this down to present the achieved sampling trips by metier within each of the sampling frames. In general, the majority of the planned sampling targets were achieved or surpassed.

Table III.C.4: Planned sampling by Sampling Frame

NS2 Towed Pelagic Gears: 1 of the 3 planned concurrent at sea sampling trips was achieved and all 12 of the planned concurrent at the market sampling trips were achieved. The deviation from

the planned concurrent at sea sampling trips was due to budget constraints and a decision was taken to focus limited resources on those fleets where discards are known to be significant.

Table III.C.3: Sampling Trips by Métier.

PTM_SPF_32-69_0_0 I&II: 0 of the planned 1 concurrent at sea trips was achieved. This was due to budget restrictions in 2014 and a decision was taken to focus limited resources on those métiers where discarding is known to be a significant issue, with implications for stock assessment. 1 of the planned 2 concurrent at the market trips was achieved.

PTM_SPF_32-69_0_0 IV&VIId: 1 concurrent at sea trip was planned and achieved, and 4 concurrent at the market trips were planned, with 12 achieved.

Table IIIC6: Achieved length sampling of catches, landings and discards by metier and species

Clupea harengus I&II: Landings of herring from area I&II continued to decline in 2014, from an average of 8,000t in 2008 and 2009, to just 705t in 2014, As a result the planned target of 400 fish could not be reached. This target will need to be revised in future National Programmes.

Scomber scombrus IV & VIId: The target of 1,500 individuals to sample for Mackerel in IV and VIId was achieved.

III.C.3 Follow – Up of Regional and International recommendations.
Please refer to Table II.B.2 for follow up of recommendations. Only one recommendation related to Module III.C in 2013 for action in 2014.

III.C.4 Actions to avoid deviations
Landings for Clupea harengus in area I&II have been steadily declining since the original National Programme targets were set. As a result the targets in the new National Programme from 2016 will be revised accordingly.

III.D Recreational fisheries

North Atlantic (ICES areas V-XIV and NAFO areas)

III.D.1 Achievements: Results and deviation from NP proposal

Recreational fisheries in Ireland occur in freshwater and at sea.. In the marine environment shore based and sea-based angling targets a wide range of species including shark. Freshwater recreational fishing includes salmon. Salmon and Eel are targeted in freshwater and in estuarine waters.

Eel

Ireland does not have a commercial fishery for Eel. Eel is now protected in Ireland by legislation. There are the two byelaws, one prohibiting the issuing of eel fishing licences and the other prohibiting the possession and sale of Irish caught eel:

http://www.dcenr.gov.ie/Natural/Inland+Fisheries/Legislation/Bye+Laws/Bye-Laws+2009.htm

- Bye-Law No 858, 2009 prohibits the issue of eel fishing licences by the regional fisheries boards in any Fishery District.

- Bye-law No C.S. 303, 2009 prohibits fishing for eel, or possessing or selling eel caught in a Fishery District in the State until June 2012.

Recreational eel fishing is now only carried out by a minority of rod anglers on a catch and release basis. Length and age composition of eels will not be sampled as there is no legitimate catch, and as a result Ireland has a derogation to sample Eel, which is supported by the RCM North Atlantic.

RCM NA 2012 Comment: RCM NA supports the request under the assumption that the laws are respected.

Salmon

There are approximately 140 salmon rivers in Ireland. All recreational fisheries take place in freshwater. The recreational catch in 2014 was 9,852 (27 t). A further 5,400 salmon were released alive by anglers.

For the 2014 season, the scientific advice indicated that:

- ❖ There were 57 stocks which were forecast to have an identifiable surplus over the Conservation Limit and where a harvest fishery can proceed in 2014.
- ❖ In addition, there were 16 Multi-Sea Winter stocks or "spring salmon" stocks assessed separately. Of these, 11 have surplus over the MSW Conservation Limit and therefore a harvest of spring fish was possible.
- ❖ There were 86 stocks which did not have an identifiable surplus over the Conservation Limit. In this instance, there were no harvest options available which would allow a 75% chance of meeting the Conservation Limit would be met therefore no harvest fisheries could take place in these rivers.
- ❖ There were also three Multi-Sea Winter or "spring salmon" stocks failing to meet Conservation Limits.

Within the 86 stocks failing to meet Conservation Limits, there were 55 small river stocks where the most recent average rod catch has been less than 10 salmon annually. The combined rod catch from these rivers is less than 0.5% of the current estimated national rod catch. Although these are insignificant fisheries, their stocks are important as spawning populations in their own right which must be maintained for biodiversity as required under the EU Habitats Directive. The scientific advice was that no harvest fisheries should take place on these stocks until such time as additional information becomes available to assess stock status relative to their Conservation Limits

Cod

A 10 year time series of catch and effort of cod in the sea angling sector in the Irish and Celtic Seas has been compiled.

A register of sea angling charter vessels was also been maintained during 2014.

Sea Bass

The steep decline in bass stocks in Ireland in the mid-1970s led to severe restrictions on the level of bass exploitation which included the cessation of the commercial fishery in 1990 through the Bass (Conservation of Stocks) Order, 1990. Since then bass have been regarded solely as an angling species and are restrictively managed. Bass is the only marine species in Ireland to be managed for angling. Apart from the closure of the commercial fishery, legislation also prohibits the taking of bass using nets and Irish fishing boats must not have bass on board or engage in

transhipment of bass. The recreational angling fishery has also been heavily regulated - a bag limit of 2 bass per 24 hr day applies in addition to a minimum size limit of 40cm. The angling fishery is closed from 15th May to 15th June to protect spawning fish. It is also prohibited to sell or offer for sale any bass (other than bass which has been imported into the State).

The Marine Institute collaborated with Inland Fisheries Ireland (IFI) to complete a pilot survey of sea bass in Ireland in 2011. Data from the angler intercept survey, carried out during the recreational sea bass pilot survey shows high variability in the data on angling days per annum per angler, catch per annum per angler, and landings per annum per angler. Extrapolations are based on previous work in the 1980s and the use of expert opinion that 40% of sea anglers are bass anglers. Total landings are estimated at between 30-44t per annum.

Despite not knowing the stock biomass, an annual landing of 30-40 tonnes (which is possibly an inflated figure) represents a very low exploitation level, especially if we consider that the south coast stock may be a northern extension of the Celtic sea channel stock. Ireland considers that sea bass exploitation levels can be agreed to be at a minimum exploitation level below which no sampling is required in the future. On foot of this pilot study, Ireland now has a derogation to sample Sea bass, which is supported by the RCM North Atlantic.

RCM NA 2012 Comment: RCM NA supports the request given the outcomes of the study. Ireland should specify the request officially in the National Program 2013.

Sharks

Under the DCF, the term sharks covers all Chondrichthyan fishes, thus sharks, rays, dogfish and Chimaeras. Recreational fisheries for rays are small and dispersed. There is no legal or voluntary declaration of catch. Length and age composition of the recreational catch of rays will not be sampled.

Recreational fisheries for sharks, including dogfish, is on a catch and release basis. Claims for specimen fish of tope and blue shark are now taken as length only, so as to ensure that the fish can be returned alive (http://www.irish-trophy-fish.com/notices/conservation.htm). Most commercial angling operators now take part in the IFI Marine Sport Fish Tagging Programme, where live sharks, skates and rays are tagged with the appropriate tag and released (http://www.fisheriesireland.ie/Tagging/marine-sport-fish-tagging-programme.html). Records are kept by Inland Fisheries Ireland.

Length and age composition of the recreational catch of sharks are not sampled and Ireland now has a derogation for recreational shark sampling, which is supported by the RCM North Atlantic.

RCM NA 2012 Comment: Given the information provided by the tagging study as well as the assumption that recreational fishery takes place on a catch and release basis, RCM NA supports this request

III.D.2 Data quality: Results and deviation from NP proposal

Salmon

Recreational fisheries are required to obtain a state license and report their catches as soon as they are landed in a mandatory logbook. They are also required to fix a self-locking tag on the carcass of the fish and record the unique tag number into the logbook. Other data required to be recorded in the logbook are Date of capture, River/lake, Beat, County, Species (salmon or sea trout), Weight (lbs or Kgs), lure (fly, spinner, worm, prawn/shrimp, other and total days fished. The information must be returned to the fisheries authority on the 19th of October of the year for which the licence is valid. Returns of recreational logbooks is over 60% while returns for commercial logbooks is 100%. Data are centralised by the Inland Fisheries Ireland and published annually.

Specific biological sampling of the salmon fisheries (commercial and recreational) is carried out in selected rivers where artificially reared salmon are tagged and released either in scientific "ranching" programmes or to mitigate against loss of natural production by hydro-damming, or other man made problems. A National Microtagging and Tag Recovery programme was established in 1980 by the fisheries authorities Over 220,000 salmon smolts were tagged and released in 2013 for return in 2014.

Approximately 2,000 were recovered subsequently during sampling of commercial/recreational fisheries and brood stocks and measured for forklength and weighed. Random samples of wild fish were also taken for age, length and weight comparisons. The data from the National Coded Wire Tagging and Tag Recovery programme provides information on marine survival, exploitation rates, and survival to spawn for national and international stock assessments.

Salmon stock assessment is reported on the basis of numbers rather than biomass. There are only two principal sea-age classes which are represented in the fisheries in Ireland i.e 1Sea Winter and multi sea Winter (MSW) which are predominantly 2 SW fish. Recent catch information from

angling logbooks suggests an average MSW proportion of 12% for the most recent 5 years. Stock assessment is not dependent on sampling for length and age and results from these analyses are mainly for monitoring the biological characteristics of the stocks. On the reported recreational catch statistics estimated individual weights are provided by anglers in the mandatory reporting logbooks. In the sampling of salmon in the National Coded Wire Tagging and Tag Recovery Programme, approximately 2,000 adult salmon were measured and weighed.

Data quality is assessed initially by district salmon fishing inspectors of Inland Fisheries Ireland. Subsequent data quality checking and analyses may be carried out by the Standing Scientific Committee for Salmon, a multi-agency scientific advisory group established under the Fisheries Act 2010. The catch data are modified to account for non-return of logbooks, anomalous returns in logbook data and for the provision of a total estimated catch and unreported catch is included. Long term trends are examined and an assessment of stock status relative the attainment of Conservation Limits (defined as Maximum Sustainable Yield in numbers of salmon) is carried out by the SSC. Advice on catch levels and river TACs is provided on an individual river or stock basis.

Length composition of the catch originates from voluntary data provided by recreational fishermen in the logbook and from private fishery owners who monitor the number and size of fish captured in their rivers, as well as sampling carried out by staff of the Central Fisheries Board. There are no specific sampling or precision targets associated with this process.

Up to 2010, the Wild Salmon and Sea Trout Tagging Scheme was administered by the Central and the seven Regional Fisheries Boards (Eastern, Southern, South Western, Shannon, Western, North Western and Northern Regional Fisheries Boards) on behalf or their parent Department, the Department of Communications, Energy and Natural Resources (DCENR) In 2010, a new institution was created which amalgamated the Regional and Central Fisheries Boards into one organisation i.e. Inland Fisheries Ireland (IFI). Cross boarder collaboration with the Loughs Agency (an inter-government agency between Ireland and the UK) occurs in the case of the river Foyle, while inter-governmental collaboration also exists between the UK and Ireland in the case of the River Erne. Data collection at a regional level is co-ordinated by the IFI while, data analyses, stock assessment and research co-ordinated by the IFI and the Marine Institute.

Cod

Sea angling returns from vessels participating in the Central Fisheries Board voluntary logbook programme and the register of sea angling vessels from 2000-2014 provide data on

- Number of cod captured per boat per day
- Number of cod captured per angler per day
- Total number of angling days and rod days covered by the sample
- Estimates of weight of fish landed by vessel day
- Raising factors (to fleet) for the sampled vessels for Irish sea and Celtic Seas
- Estimates of the total number of cod landed by the vessel based sea angling sector
- Weight of cod landed by the vessel based sea angling sector

III.D.3 Follow-up of Regional and international recommendations

No Relevant recommendations on recreational fisheries were made in 2013 for action in 2014.

III.D.4 Actions to avoid deviations

There were no deviations; therefore no remedial actions are required.

III.E Stock-related variables

North Atlantic (ICES areas V-XIV and NAFO areas)

The vast majority of the Irish fishery takes place in the North Atlantic Region. Three widely distributed stocks also extend into the North Sea and Eastern Arctic Regions (Micromesistius poutassou I-IX, XII, XIV; Scomber scombrus II, IIIa, IV, V, VI, VII, VIII, IX and Trachurus trachurus IIa, IVa, Vb, VIa, VIIa-c, e-k, VIIIabde) . However because the vast majority of the catches of these stocks take place within the North Atlantic Region, no separate sections are presented for the North Sea and Eastern Arctic Regions as the actions outlined below cover all regions in the case of these particular stocks.

The planned stocks requiring sampling are highlighted in Table III E1 and III E 2

III.E.1 Achievements: Results and deviation from NP proposal

The achieved sample numbers are listed in table III E 3.

The field "Achieved number of individuals" was interpreted as the number of individuals for which age, weight, sex or maturity sampling was performed, not the number of individuals measured (which is generally a much larger number).

General deviations from sampling targets

In all cases where more than 150% of the target sample numbers were collected, this was done at the expense of the member state. The actual sampling numbers often deviate from the planned numbers because sampling targets are set for the number of samples (not the number of fish in these samples) and additionally, targets for biological data are generally set on a length-stratified basis; therefore the achieved sampling numbers may be quite different than the planned number. In a number of cases this has led to sample numbers that were significantly lower than planned. It should be noted that the number of individuals that were sampled is largely irrelevant for the precision estimate as this is mainly determined by the number of independent sampling events (see e.g. WGPRECISE 2009; WGMERGE 2010; WGPICS 2011, 2012, 2013; WGCATCH 2014), therefore it is not appropriate to judge a sampling programme using the sampling targets in table III E 3.

Specific derivations from sampling targets are outlined in detail in the comments field in table III_E_3. In general it proved difficult to obtain sufficient samples of *Clupea harengus* in VIIj and VIIa because of low levels of landings and difficulty in accessing these landings. Sampling for *Lopphius budegassa* illicia has stopped, which resulted in lower sample numbers for biological data. Sampling for *Pollachius virens* takes place on surveys and is subject to availability in the survey catches. Biological sampling for *Gadus morhua* and *Melanogrammus aeglefinus* was lower than expected due to a reduction in the landings in all areas. In VIIa, the landings of finfish have decreased in general as a consequence of the introduction of technical measures to reduce the bycatch of gadoids which has resulted in reduced availability of samples. For many stocks it has been difficult to obtain sufficient maturity samples in absence of a Q1 survey. However the sampling levels appear to be sufficient for monitoring changes in the proportion mature of this stock.

Sampling levels have increased, relative to planned levels, for stocks with increasing landings trends.

III.E.2 Data quality: Results and deviation from NP proposal

In general, the data quality is fit for purpose.

III.E.3 Follow-up of Regional and international recommendations

No Relevant recommendations made in 2013, to action in 2014.

III.E.4 Actions to avoid deviations

The lack of availability of samples for certain stocks was generally related to low landings of these stocks, there is little to be gained from increasing the sampling effort if the landings are minimal.

Ireland intends to follow recommendations from WKACCU (2008), WKPRECICE (2009), WKMERGE (2010), WKPICS (2011,12, and 13) and WGCATCH (2014). These recommendations might result in deviations from the planned sample numbers.

Ireland remains focused on providing high-quality data to stock assessment working groups. Therefore the sampling effort is concentrated on providing these data with the highest feasible level of accuracy and precision. Data collection of parameters that are not directly relevant will have a lower priority.

III.F Transversal variables

Baltic Sea (ICES areas III b-d), North Sea (ICES areas IIIa, IV and VIId) and Eastern Arctic (ICES areas I and II), and North Atlantic (ICES areas V-XIV and NAFO areas)

III.F.1 Capacity

III.F.1.1 Achievements: Results and deviation from NP proposal

Fleet capacity data has been updated and maintained during 2014 in the national register of sea fishing vessels, and includes vessels operating in both the Atlantic and North Sea and Eastern Arctic.

III.F.1.2 Data quality: Results and deviation from NP proposal

Data from the national register can be used to report exhaustively on

- Fleet capacity (kws, GTs), length distribution, age of vessels by fleet segment

III.F.1.3 Actions to avoid deviations

There were no deviations in 2014, therefore no action is required.

III.F.2 Effort

III.F.2.1 Achievements: Results and deviation from NP proposal

Sampling Strategy

In 2014 the sampling strategy laid down in Irelands DCF proposal targeted a specific number of vessels within each of the sub-métiers of the pot (FPO) and dredge (DRB) métiers in a self-sampling programme or sentinel vessel programme as outlined in the following table.

Metier	Targeted Fishery	Vessels
VI Crustaceans (Pots)	Brown Crab	4
	Mixed Crab	1
	Lobster	7
	Velvet Crab	2
	Whelk	3

Metier	Targeted Fishery	Vessels
VII crustaceans (Pots)	Brown Crab	4
	Lobster	5
VII f-k Demersal (Nets)	Lobster	1
	Prawn	1
VIIa Molluscs (Dredgers)	Cockles	1
	Razors/Cockles	6
	Scallop	1
	Surf Clams	1
VIIa-g Demersal (Nets)	Demersal	3
VII Crustaceans (Pots)	Brown Crab	7
	Mixed Crab	7
	Lobster	14
	Shrimp	4
	Spider Crab	2
	Whitefish	1
VIIa Molluscs (Pots)	Whelk	6
Total		81

Results

Vessel <12m LOA:

Effort of vessels under 12m LOA (Metier FPO, DRB and GNS) was sampled by the sentinel vessel programme. The Sentinel Vessel Programme was reviewed and revised in 2011 to improve the quality and quantity of data collected. A new operational logbook was issued to 81 vessels in 2014 from multiple sectors of the inshore fleet, representing 5% of the total national registered fleet. All 81 vessels subsequently participated successfully.

Effort indicators include:

- Number of nominal effort units (pot hauls, dredge hours, net length) per vessel per year
- Number of standardized effort units (pot hauls, dredge hours, net length) per vessel per year
- Number of days at sea per vessel per year

In addition effort census in a number of DRB sub-metier for vessels <12m LOA was achieved

- Gatherers records provide effort indicators in number of days fished per vessel for all vessels in the fleet fishing for bivalves at the level of individual target species
- A successful trial of an inshore VMS system was completed for dredgers and potters. This led to development of legislation requiring vessels fishing for razor clams in the south Irish Sea to report VMS. This is high resolution data allowing precise mapping of fishing effort

In addition to the SVP data a total of 85 trips at sea by sampling contractors were completed in 2014 on vessels under 12m in length. Data on fishing effort and catch composition were obtained.

Vessels 10-12m LOA

Logbook data provided a census of effort for all active vessels. The effort indicator is

- Days at sea per vessel per year
- Kw days at sea
- Vessels 10-12m in length also report number of gear units, fishing time and landings composition

The proportion of the fleet between 10-12m LOA that was active in 2013 was estimated by comparing the number of such vessels in the national register and the number in the national logbook database. This proportion was used as a raising factor for the sentinel vessel programme data for vessels 10-12m in LOA.

Vessels <10m LOA

The Sentinel Vessel Programme provides effort indicators for participating vessels

- Days at sea and kw days at sea per vessel per year disaggregated to metier and coastal area

The proportion of the fleet <10m that was active was estimated from the number of vessels selling fish, as indicated in the buyers and sellers data, compared to the number of vessels on the national register.

Deviations

Although vessels can be identified as belonging to a particular sub-metier in a given year and a given number of vessels in each sub-metier can therefore be sampled vessels may switch métier unpredictably depending on market conditions.

III.F.2.2 Data quality: Results and deviation from NP proposal

Results

A census of effort for all vessels over 10m has been obtained. Various effort indicators can be developed from these data

In the case of vessels <10m LOA detailed daily effort information has been obtained for sampled vessels and a census of effort data was obtained for some sub-metiers.

III.F.2.3 Follow-up of Regional and international recommendations

NA

III.F.2.4: Actions to avoid deviations

No deviations, other than the addition of exhaustive sampling of some DRB sub-metier, which was carried out at national expense.

III.F.3 Landings

Sampling Strategy

Landings by vessels <10m LOA métier were sampled in the same way as effort is sampled and outlined above. The landings indicators from the sampling programme are:
- Total live weight per vessel
- Total value per vessel

- Unit value per species per vessel

These indicators can be disaggregated to live weight or value per day, per kw*day or per effort unit.

III.F.3.1 Achievements: Results and deviation from NP proposal

For vessels over 10m LOA a census of landings was obtained in 2014 from the national logbook data and, in the case of vessels less than 10m LOA, from port reports. The port report and buyers and sellers data is an estimate of the landings of each vessel and also all vessels less than 10m LOA landing into each port aggregated to the fleet level at that port.

III.F.3.2 Data quality: Results and deviation from NP proposal

Results

Landings data by species and métier have been exhaustively sampled by the national logbook programme and from national port report and buyers and sellers data programmes for vessels under 10m LOA.

III.F.3.3 Follow-up of Regional and international recommendations

NA

III.F.3.4 Actions to avoid shortfalls

There were no deviations.

III.G Research surveys at sea

III.G.1 Achievements: Results and deviation from NP proposal

Seven surveys were planned and completed in 2014. Below are the details of each survey including a survey map.

Western IBTS 4th Quarter

The Western IBTS survey was very successful in 2014, achieving all of the planned 170 sampling hauls. This was due to very favourable weather conditions and the fact that no time was lost to gear damage in 2014.

Fig 1: Western IBTS Q4 Groundfish survey cruise haul positions 2014. Valid hauls are green, and invalid stations are red.

Irish Groundfish Survey 2014
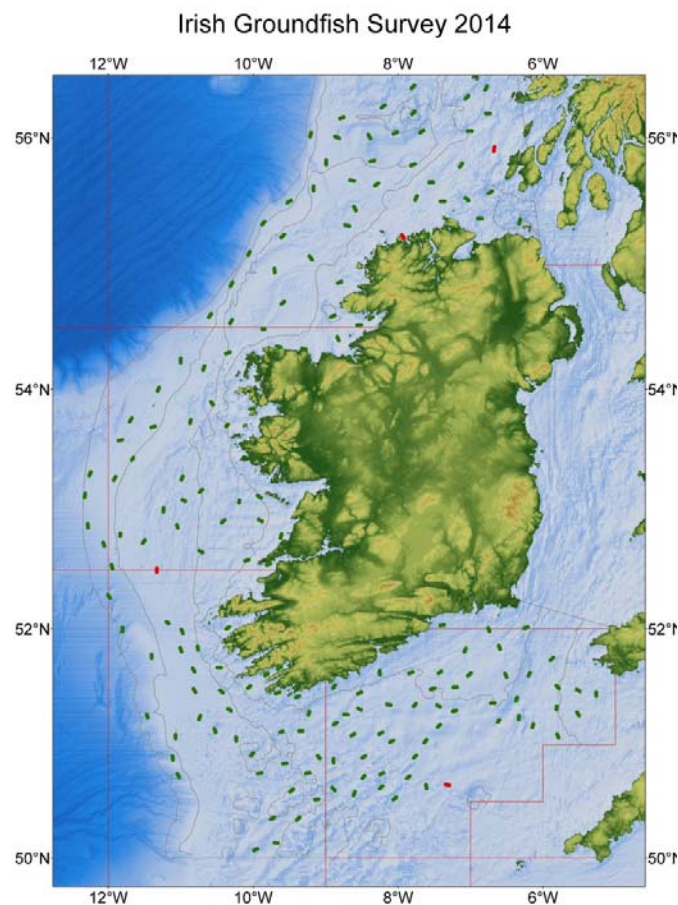
Blue whiting Survey

The Blue Whiting survey is an internationally coordinated survey, including 5 vessels, covering upwards of 85,000nmi² using over 7,500nmi of transects. In 2014 the blue whiting survey achieved planned 18 days at sea. Survey planning is coordinated through WGIPS and vessel effort is allocated during the planning phase, which occurs after the submission of the DCF NP. The amount of track in (acoustic miles) is not necessarily the best measurement of achievement. In this instance it is the coverage of the allocated area which is critical, and on this critical measure of success Ireland covered 100% of the area assigned to it, ensuring the integrity and quality of the survey results. Directed fishing trawls are conducted as and when required and are required to groundtruth the insonified echotraces. The number of trawl stations is variable from year to year and is not a consistent metric on which to base success as would be the case for pre-allocated trawl stations for bottom trawl surveys. All WGIPS allocated oceanographic stations were achieved. Seabird, marine mammal and surface litter surveys are now undertaken as part of this survey since 2014.
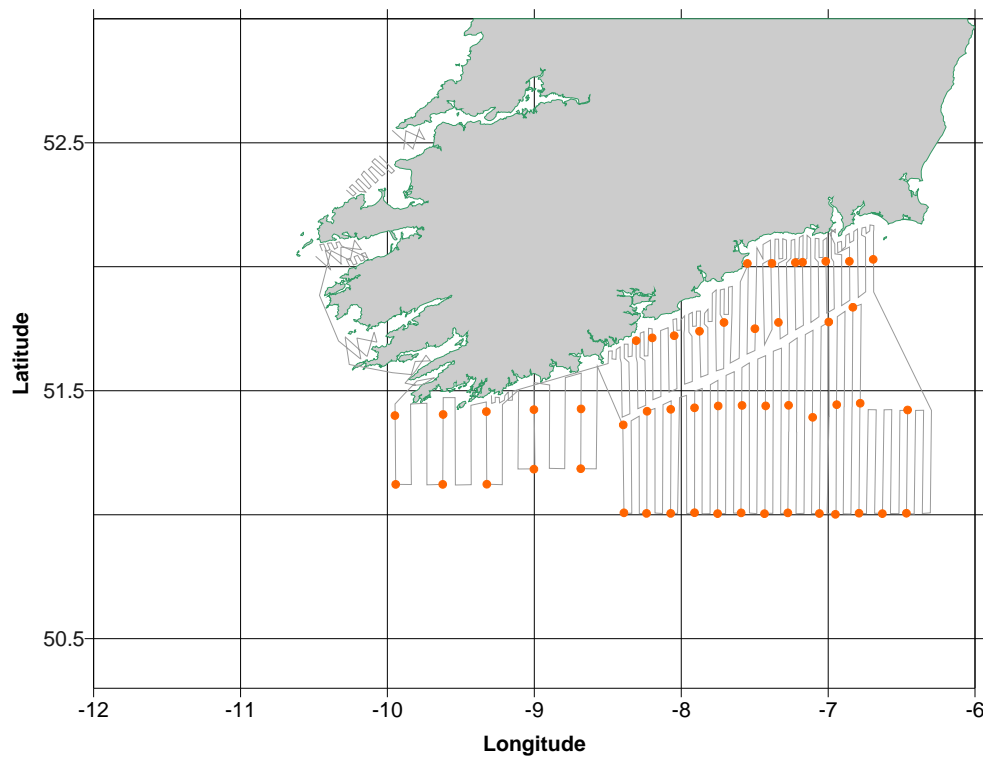
Figure 2 Blue whiting survey cruise track completed in 2014
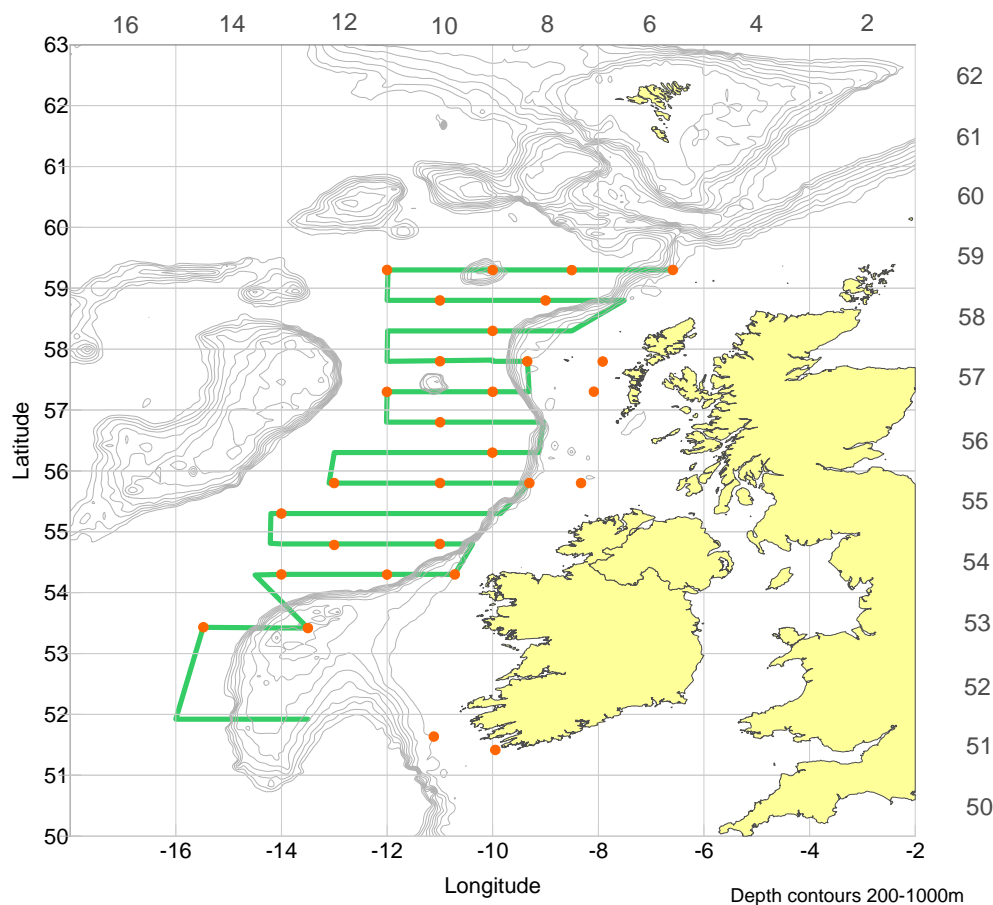
Pre Spawning herring acoustic survey

The pre – spawning herring acoustic survey targets for survey track, oceanographic and marine mammal stations were all achieved and exceeded. The 2014 the spawning herring acoustic survey track exceeded the baseline targets due to lower fishing opportunities (directed trawling) this allowed for some additional adaptive strata to be included and thus the increase in cruise track. The number of trawl stations is variable from year to year and is not a consistent metric on which to base success as would be the case for pre-allocated trawl stations for bottom trawl surveys. All WGIPS allocated oceanographic stations were achieved. Seabird, marine mammal and surface litter surveys are now routinely undertaken as part of this survey since 2013.

Figure 3 Pre-spawning herring acoustic survey cruise track & CTD positions in 2014

Spawning herring acoustic survey

The Spawning Herring Survey targets for days at sea, and oceanographic stations were all achieved at least 100%. In 2014, 92% of the total length of planned acoustic transects (Echo Nm) was achieved. This slight shortfall was due to bad weather and and a need to increase the number of fishing hauls to differentiate herring schools from unusually large blue whiting schools in core areas of interest. No marine mammal observer was available to participate on the survey in 2014, so no marine mammal observations were recorded.

Figure 4 Herring spawning acoustic survey cruise track and haul positions 2014.
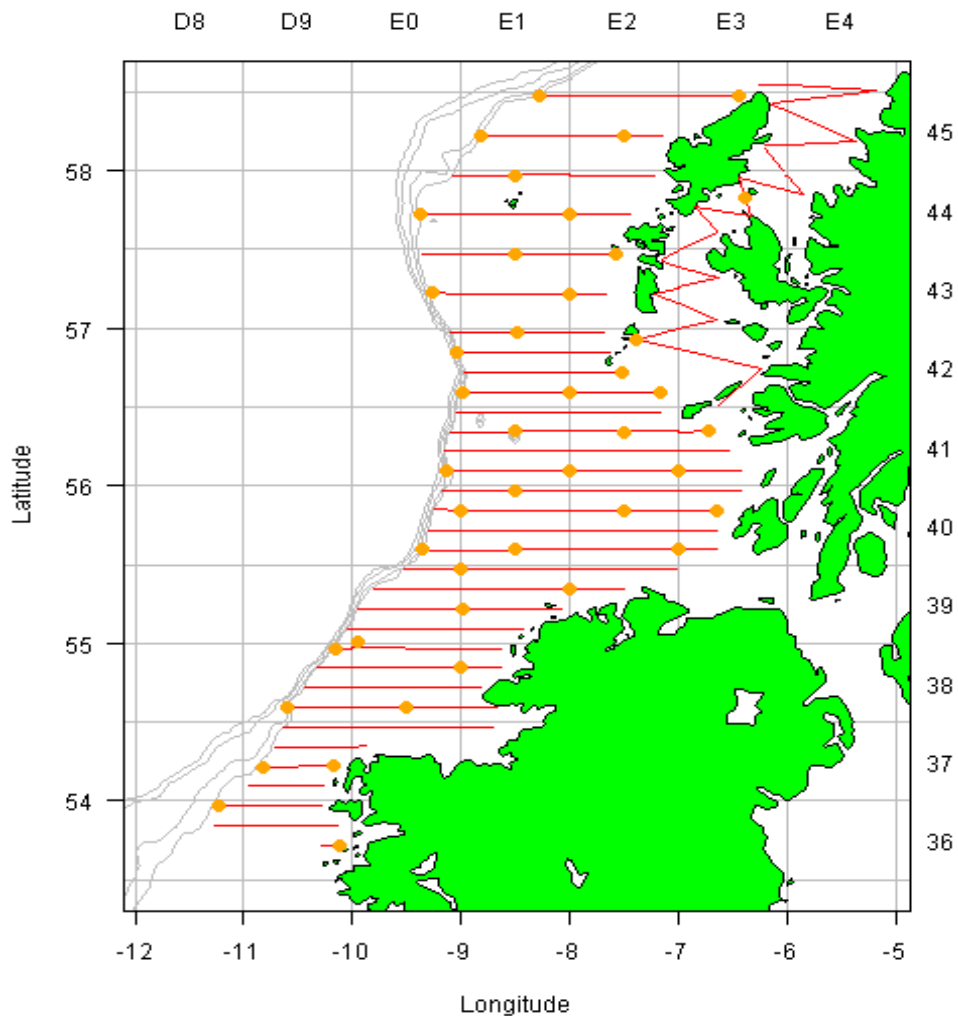
International Mackerel and Horse Mackerel Egg Survey

The International Mackerel egg survey took place in 2013 and is scheduled to take place again in 2016. WGMEGS is responsible for the international coordination of the mackerel egg surveys and at its most recent meeting has agreed the survey areas to be covered by each Member State involved. Ireland will complete two surveys in 2016, very similar to those completed in 2013. The first survey will commence in Early February, lasting three weeks and will survey the Celtic sea and the Bay of Biscay. The second survey will commence in early June, lasting three weeks, and will cover West of Ireland and West of Scotland. Below are maps from the two legs of the survey completed by Ireland in 2013. The 2013 cruise track is indicative of what will be completed by Ireland in 2016,

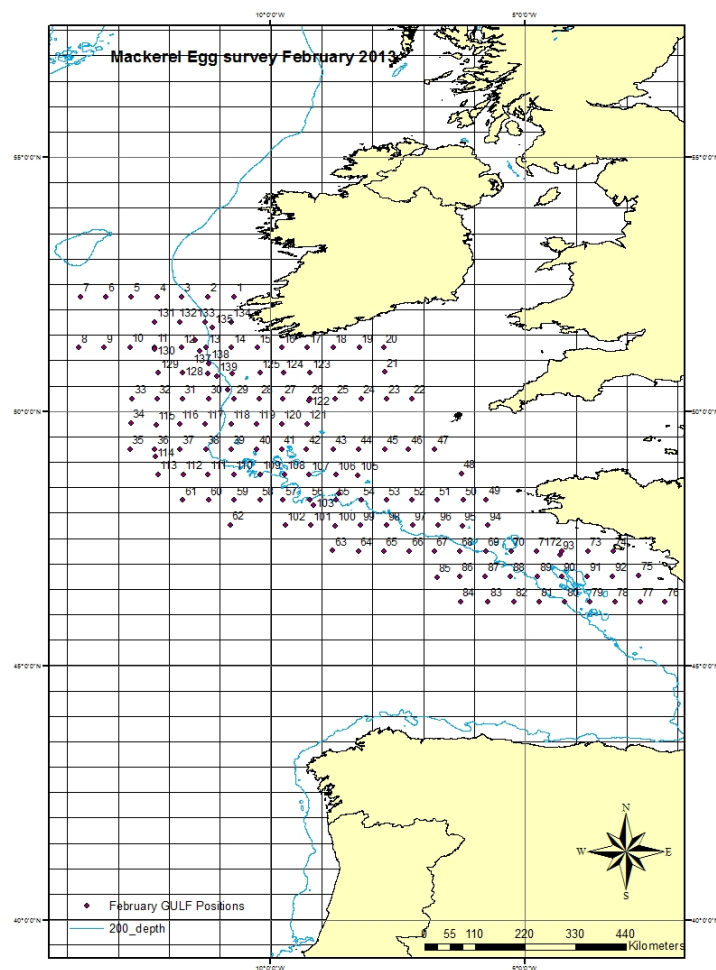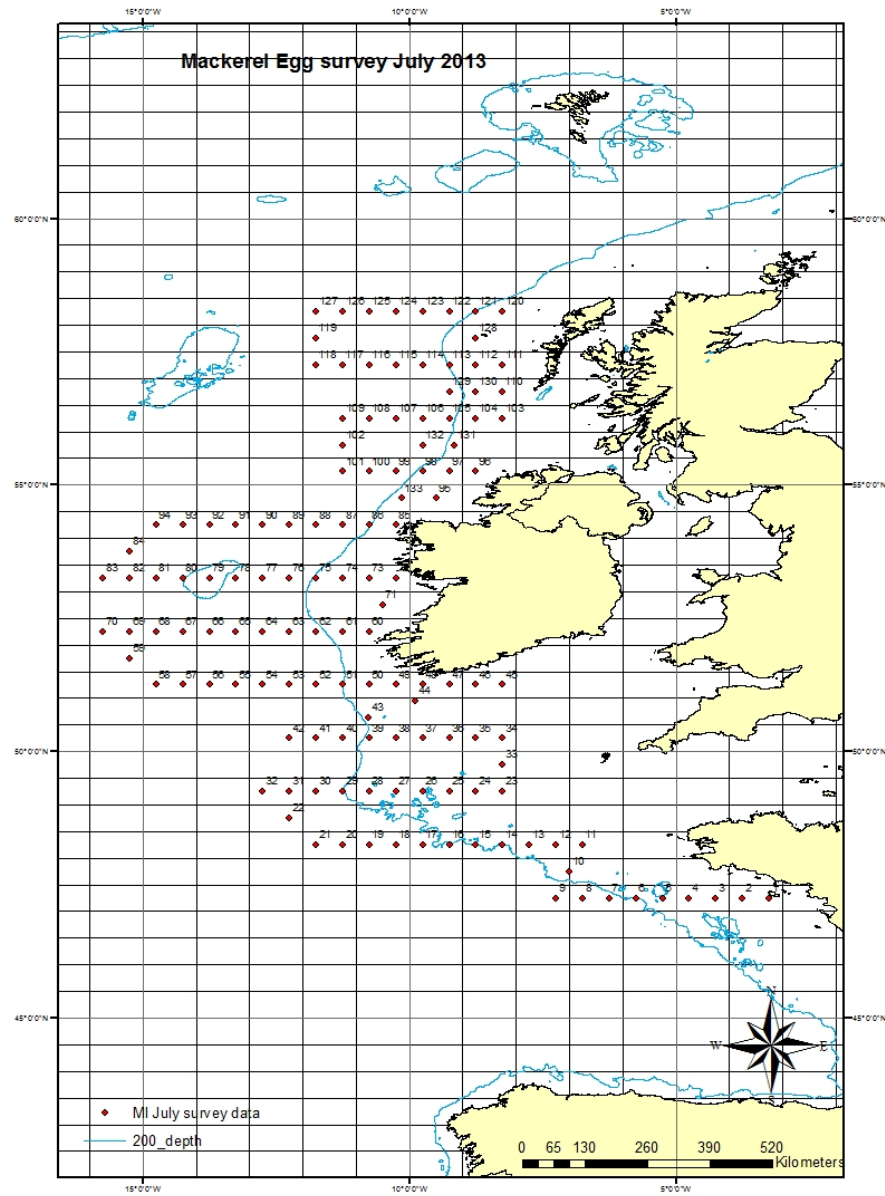**Figure 5** International Mackerel Egg survey cruise track Ireland. February 2013.

Figure 5(b) International Mackerel Egg survey cruise track Ireland. July 2013.

Nephrops UWTV Survey 1

In 2012 SGNEPS recommended that a CV (or relative standard error) of < 20% is an acceptable precision level for Nephrops UWTV surveys, from analysis of the historical survey sampling effort. This conclusion was further supported by WKNEPH (ICES, 2013). In response to this recommendation Ireland reviewed its survey effort in FU 15, 17 and 22. In line with the recommendation Ireland has reallocated survey effort to FU16, 19 and 20-21 in 2014. In the interest of clarity the surveys have been renamed as UWTV Survey 1, 2 and 3.

For *Nephrops* UWTV Survey 1, FU 17 and FU 19 were surveyed. 100% of the target numbers of stations were achieved during this trip.

Figure 6 *Nephrops* UWTV Surveys of FU 16 (Porcupine Bank), FU 17 (Aran grounds), FU19 (South and South west coast), FU22 (Smalls) and FU 20-21 (Labadie, Jones and Cockburn Banks) and haul positions in 2013. Black dots = UWTV survey 1
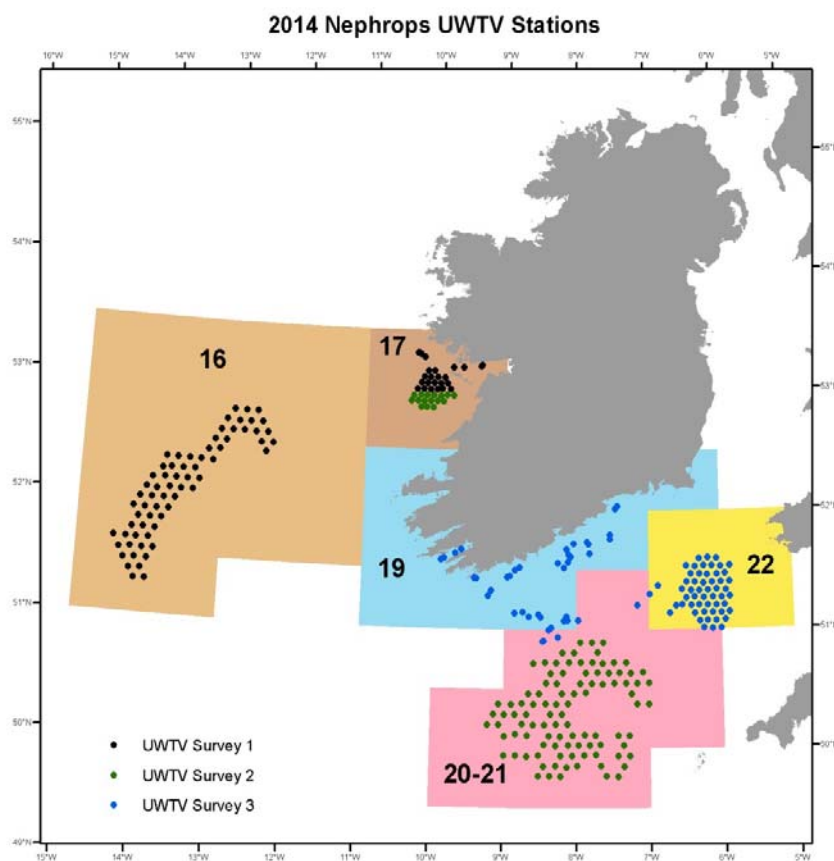
Nephrops UWTV Survey 2

The same recommendation also applied to the Aran Grounds UWTV survey, where SGNEPS (ICES 2012) and WKNEPH (ICES 2013) recommended extending the survey coverage to include FU 22 and FU16 Porcupine Bank. 100% of stations were completed during this survey trip, in 2014.

Figure 6 *Nephrops* UWTV Surveys of FU 16 (Porcupine Bank), FU 17 (Aran grounds), FU19 (South and South west coast), FU22 (Smalls) and FU 20-21 (Labadie, Jones and Cockburn Banks) and haul positions in 2013. Green dots = UWTV Survey 2
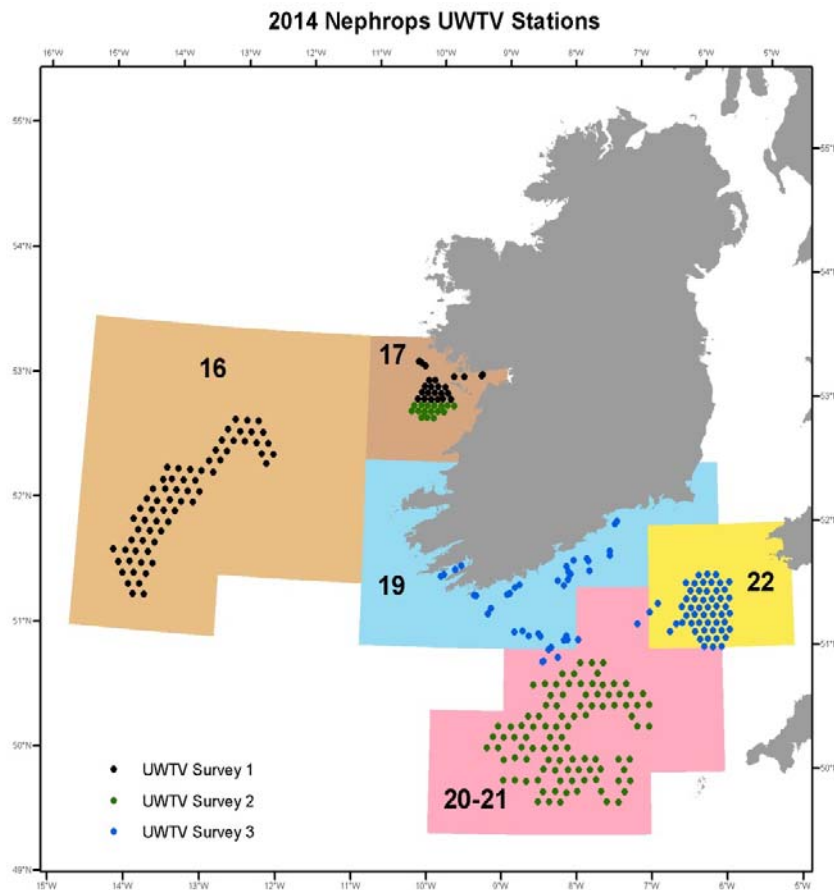
Nephrops UWTV Survey 3

The same recommendation also applied to the Aran Grounds UWTV survey, where SGNEPS (ICES 2012) and WKNEPH (ICES 2013) recommended extending the survey coverage to include FU 20-21 Labadie, Jones and Cockburn Banks. The planned target number of stations in the Irish NP (NP 2011 – 2013 – rolled over to 2014 – 2015) are now outdated. The revised NP target for FU 20-21 stations is 95 in line with WGNEPS recommendations that all UWTV surveys should aim for full spatial coverage and a target precision of less than 20% cv. This means that 100% of the planned stations were achieved for this survey in 2014. For the purpose of reporting however, the outdated target of 142 stations must still be reported as this is the target in the NP and the DCF NP has not been updated and resubmitted for 2014 and 2015.
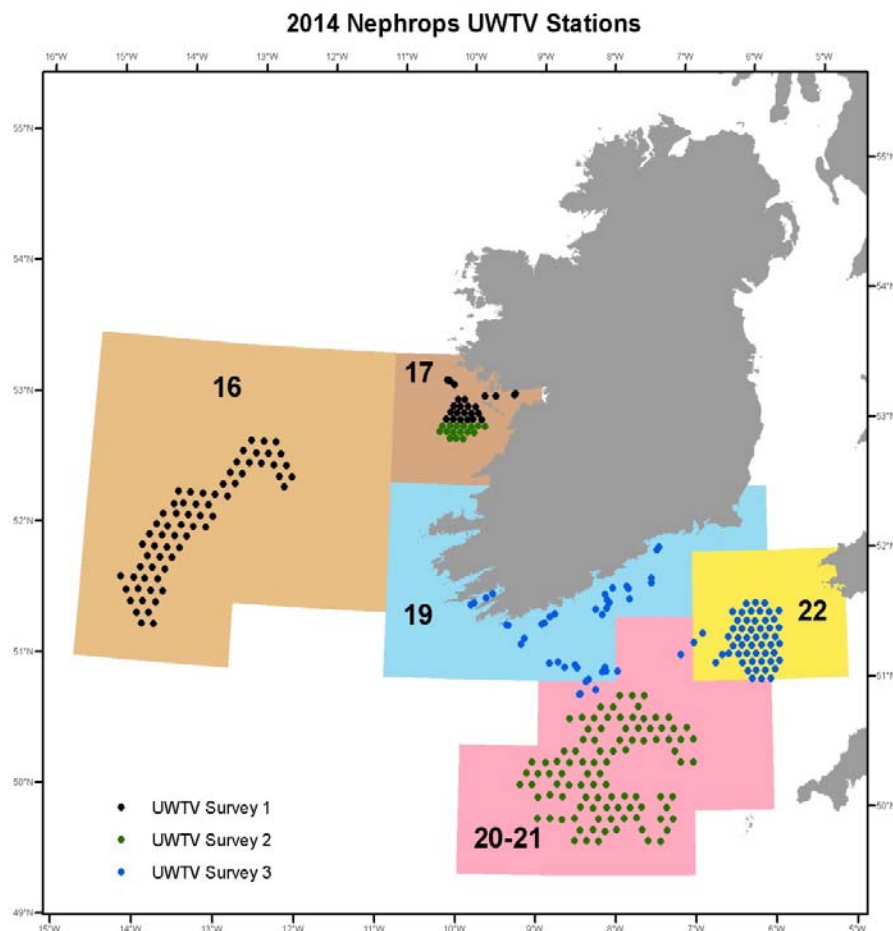
Figure 6 *Nephrops* UWTV Surveys of FU 16 (Porcupine Bank), FU 17 (Aran grounds), FU19 (South and South west coast), FU22 (Smalls) and FU 20-21 (Labadie, Jones and Cockburn Banks) and haul positions in 2014. Blue dots = UWTV Survey 3.

III.G.2 Data quality: Results and deviation from NP proposal

All data collected during the 2014 surveys were quality checked according to established criteria, and all survey data was submitted for use in the stock assessment process where appropriate. The only shortfalls in survey targets occurred on the Blue whiting, Pre Spawning Herring Acoustic surveys for Nautical miles on the acoustic track and on the UWTV survey 2 for tv tracks - These shortfalls were very minor and did not substantially affect the quality of the outputs of any of those surveys.

III.G.3 Follow-up of Regional and international recommendations

All recommendations directed at participating Member States and received through the affiliated survey planning groups and working groups: IBTSWG, WGIPS and WGNEPS are listed in Table II.B.2 and were addressed fully by Ireland where relevant. In 2014 the International Bottom Trawl Survey Working Group (IBTSWG) made no recommendations directed at Member States, apart from a specific recommendation to Portugal. The remaining recommendations were addressed to the ICES Data Centre and WGNNSK, and so no IBTSWG recommendations appear in Table II.B.2 for 2014. Only one of the recommendations made by the Working Group on *Nephrops* Surveys (WGNEPS) was relevant to Member States involved in *nephrops* surveys.

III.G.4 Actions to avoid deviations
Unfortunately it is not possible to plan for deviations due to adverse weather conditions. The survey 'targets' are based around what is considered achievable during the at sea period. However, every effort is made to maximize the output from each survey, in spite of difficult operating conditions due to bad weather and technical downtime.

IV. Module of the evaluation of the economic situation of the aquaculture and processing industry

IV.A Collection of data concerning the aquaculture

In 2013 the frame population of entities engaged in aquaculture were 280 production units or 278 business entities. The national program for 2011-2013 was followed. It should be noted that companies that are part of the non-random sample survey are contacted once every 4 to 5 years in rotation, and not every 2 to 3 years as stated at the end of paragraph 2, page 66 of the NDP 2011-2013.

It was felt that the basic statistical unit of the survey should be more clearly defined than was done in the NDP as follows:

- The basic statistical unit used in the survey is the production unit.
- The production unit is the smallest disaggregation of data possible for a business entity of any size and refers to a distinct livestock, that has undergone a distinct aquaculture practice, located within a distinct bay site(s) or land facility, generating a distinct turnover. Each production unit is represented by the data on one census survey form. As far as possible, this is the case for sample survey forms also, though financial variables cannot be disaggregated precisely below the company level for some survey respondents.

IV.A.1 Achievements: Results and deviation from NP proposal

Tables IV.A.1 and IV.A.2 have been updated for the surveyed year 2012

The return rate for the census component of the 2013 survey rose from 75.6% to an average of 82%. This was due partly to actions taken to avoid interference with the survey schedule of the DCF.

A full response was obtained for the sampling survey but not for all of the 'economic' variables. More than a 20% response was obtained for variables found within abridged accounts available online. Operational costs variables continue to be difficult to obtain for some segments with less than 10% response level for some of these.

IV.A.2 Data quality: Results and deviation from NP proposal

The table has been updated for the surveyed year 2013 in Table IV.A.3

C.V.s for all variables have been provided in Table IV.A.3 in absolute numbers. % return rate is used to date as the main indicator of accuracy. No other accuracy indicators have been described for aquaculture.

IV.A.3 Follow-up of Regional and international recommendations

PGECON: 2013, presented five recommendations to the 10th Liaison Meeting. Four of these recommendations were addressed to DGMARE and the fifth was addressed jointly to DGMARE and to PGECON itself; therefore no recommendations were addressed to Member States or to Ireland specifically for action in 2014.

IV.A.4 Actions to avoid deviations

Action has been taken to avoid future interference with the survey schedule of the DCF.

Shortfalls in operational costs data will be improved by motivation of regional staff, increase direct contact with respondents and improve perceptions of the survey with prompt feedback reporting.

IV.B Collection of data concerning the processing industry

See Tables IV.B.1 and IV.B.2, which provide a general overview of processing activities and the sampling strategy.

IV.B.1 Achievements: Results and deviation from NP proposal

In 2014, data was collected for 2012 & 2013.

The collection and collation of data from the processing sector was reliant on the use of questionnaires completed in respect of applications for the receipt of EU or National grant aid and audited accounts from the Companies Registration Office (CRO).

For this reason, the achieved sample number for the companies in the size category 11-49 and size category 50-249 was greater than the planned sample number due to a larger number of returns from these companies. For companies with less than 10 employees the achieved sample number was less than the planned sample number as there was not as much information made available.

There was a deviation from the sampling targets detailed in the NP, but the MS has a high degree of confidence that the data source used is of the highest quality. The achieved sample rate was 41 companies which were higher than the target set out in the national programme.

Also there is a difference between the numbers of companies per size category outlined in the National Programme and those in the tables provided. The figures in the tables are more accurate as these have been updated based on information returned from the seafood companies in Ireland.

The MS did not use a census method to collect turnover statistics. However a census survey was used to collect employment statistics and this information was then used for the DCF. Best estimates were used to calculate figures for employment, where no information was available based on the expertise of staff within the organisation and the information available to them.

IV.B.2 Data quality: Results and deviation from NP proposal

The MS did not contact seafood companies to calculate the estimation of unpaid labour. Instead however, the MS used another method calculating the average wage per company and applied a multiplier to calculate unpaid labour.

IV.B.3 Follow-up of Regional and international recommendations

PGECON: 2013, presented five recommendations to the 10th Liaison Meeting. Four of these recommendations were addressed to DGMARE and the fifth was addressed jointly to DGMARE and to PGECON itself; therefore no recommendations were addressed to Member States or to Ireland specifically for action in 2014.

IV.B.4 Actions to avoid deviations

The quantity and quality of data collected has increased as the MS introduces a mandatory requirement for any applicant for EU or National grant aid to complete the DCF data collection form for the processing sector and this will continue in 2015.

V. Module of evaluation of the effects of the fishing sector on the marine ecosystem

V.1 Achievements: Results and deviation from NP proposal

Indicators 1-4: Conservation status of fish species Proportion of large fish Mean maximum length of fishes Size at maturation of exploited fish species

Data for the Indicators for this module were collected by survey.

- The Western IBTS Fourth Quarter Groundfish Survey collects data for Indicators 1-4 in waters up to 200m deep from Divisions VI and VII, with the exception of VIIa and VIIf. (Years 2003-Present)

- The Spawning Herring Acoustic Survey collects data for Indicators 1-4 from VIIb, VIIj, VIIg and VIIaS in Q4 each year.

- The Pre-spawning Herring Acoustic survey collects data for Indicators 1-4 in VIa and VIIb in Q2.

- The Blue Whiting Acoustic Survey collects data for Indicators 1- 4 in VIa and VIb in March-April each year.

- Underwater TV surveys collects data for Indicators 1- 4 in VIIb (Aran survey – Q2) , VIIa (Irish Sea survey – Q3), and VIIg (Celtic Sea Survey – Q3). (Years 2002-Present).

- The International Mackerel/Horse mackerel surveys collected data in ICES areas Via, VII, VIII, IXa for indicator 1 in 2013, and will be completed again in 2016.

Indicators 5-7: Distribution of fishing activities, Aggregation of fishing activities, Areas not impacted by mobile bottom gears.

The Marine Institute was granted access to VMS data by SFPA for the purposes of the DCF. Currently, vessel position data is collected hourly or every two hours for all Irish vessels over 15 m. It has already proven possible to link daily VMS positional data with logbook information for the Irish fleet thus allowing all positional data to be classified to level 6. The distribution of fishing activities, aggregation of fishing activities and areas not impacted by mobile bottom gears can be mapped and provided as required.

Ireland continued to manage and analyse all of the relevant resulting data sets from the DCF process and made these data available to ICES STECF and other expert groups.

Indicator 8: Discarding rates of commercially exploited species

Metier based discard sampling is conducted as part of the concurrent sampling at sea programme. Details of this programme are described in Module III.C, with sampling effort by metier outlined in table III.C.3 and III.C.4. and details on data collected by species shown in section III.C.6 of the Annual Report 2014.. Trip specific discard rates by species measured in weight are raised to discard rates by quarter and metier using species landings data.

Indicator 9: Fuel efficiency of fish capture

The calculation of fuel efficiency is also described in section IIIB. Fuel efficiency of fish capture is defined in Appendix XIII of Commission Decision (2008/199/EC) as the ratio between value of landings and cost of fuel, and must be estimated by quarter and by metier. The inshore components were estimated from the following data collected on a daily basis under the sentinel vessel programme;

- Landings per species,
- Price per species,
- Fuel costs,
- Fuel prices.

These data, can be raised to the total active population of vessels <10 metres in length (LOA) and will be included in their respective national metier, by quarter.

Fuel costs received from vessels >10 meters length (LOA), targeted in the annual economic survey, are apportioned equally on an effort basis to their relevant metiers and quarters, and raised to the active population. Effort was based on a log-book analysis that apportioned each fishing trip to a particular metier (see Section III.F for more details).

V.2 Actions to avoid deviations

There were no deviations

VI. Module for management and use of the data

VI.1 Achievements: Results and Deviations from the NP Proposal.

For Data transmission by Ireland please refer to Table VI.1 All relevant and requested data was submitted in 2014.

Ireland has achieved most of what it set out in the NP for 2011-2013. The consolidation of the discard database onto SQL server 2008, the development of the pelagic discard database and the further development of the *Nemesys* system are notable achievements. In addition Ireland has developed a number of data tracking utilities which have streamlined the increasing complexity in the data collection process. For example discards and sample tracking utilities have been developed which monitor the status of samples and data sheets from the initiation of a sampling event through to completion. The DCF team are constantly improving their skills and a data analysis is now regularly executed through SQL and R. In addition the MI are now regularly using TFS (Microsoft Team Foundation Server) to manage the versioning and quality control of SQL and R code which is used generate analyses and respond to data requests.

Data from port sampling is warehoused in the STOCKMAN system, which is a client-server relational database in SQL2005 with a graphical user interface (GUI) created in VB6 and Visual Studio. This database also houses data on biological variables collected under Module IIIE. In 2013 a new Pelagic discard database was created. This database models closely the demersal discard database and reuses all of the common tables, however in addition the pelagic discard database was further developed to record by catch information on reptiles birds and mammals, as well as further descriptors useful for analyses of observed pelagic fishing activities. This database has been initially developed in MS Access 2010, with a view to migration to SQL server in the future.

Transversal information is collected via Logbooks. A view of the logbooks database is maintained on the Marine Institute's network. This view is housed in a secure SQL Server 2005 database. The logbooks database has been managed according to protocols for production of databases at the Marine Institute, these protocols ensure security, integrity, and backup of the information. In 2013 the planned work on remediating the MI views of IFIS was started. This work involves reviewing the IFIS ERD's (entity Relationship diagrams), and re-specifying the views which the MI receives on this data. Of particular interest is the sales notes data, which will

be used to provide additional information on the landings from vessels under 10m which are not required to carry logbooks. Progress on the work was impaired by the loss of human resources which had been working on the technical aspects of this review. The MI continued to strengthen the working relationship with the SFPA (sea fisheries protection agency) involved in the collection of transversal data (through the control and enforcement regulations) and the MI is now involved in knowledge transfer with this agency on analyses of these data. Spatial data on fishing vessel activity was updated through the VMS database LirGuard. In 2013 the Marine Institute, continued to strengthen working relationships with the Naval forces FMC (fisheries monitoring and control centre), to ensure timely delivery of VMS data on request, and to work with the database professionals in the FMC, to harmonize vessel tables between the various sources (VMS, Logbooks and Stockman).

Survey information is stored on individual databases. The IBTS survey database is based on SQL server 2008, which has improved the validation checks on the data and improved the quality. The database also has a Datras export facility which is automated to facilitate upload of Irish IBTS data to Datras. A generic upload facility is available to allow data collected at sea on the RV's to be uploaded to the SQL server database on the MI network. This work is part of the ongoing improvement carried out on Irelands DCF data holdings. The *Nephrops* underwater TV survey database is completed and continues to be used for storage of *nephrops* survey data. The *Nephrops* underwater TV survey database stores survey metadata, burrow count, haul and fish data, as well as links to video data, and has analyses routines developed to facilitate the production of live burrow counts for the *nephrops* UWTV index, which is used by ICES in providing advice on the *nephrops* stocks covered by the Irish surveys. Work continued in 2013 in improving the *Nemesys* data acquisition software (developed specifically for *Nephrops* by the MI).

Economic data are stored in a MS Office Access database, located on a secure server within the BIM network. In 2013, the review of the database structure and function continued and various steps were initiated on foot of this review, to improve data storage and access. In addition, the development of dynamic links with national data sources was progressed with other national agencies (i.e. MI and SFPA).

The thrust of the data management programme is to consolidate data where possible, and centralize on more robust and secure enterprise-wide databases while continuing to enhance and

further develop the suite of analysis and reporting tools available. Significant progress continues to be made to consolidate the range of databases and data management solutions for fisheries datasets. Data archiving is formalized, and the integration of survey datasets is well underway. The further development of pelagic Discard Database has been completed, and this has involved some detailed mapping of database entities.

Data exchange to the EU is still via Excel templates as supplied by the JRC. The data is pre-validated prior to submission by the import procedures (described below), but undergo additional validation and quality checks. The key shortcoming to supplying data via this route (to meet the format of STECF requests for data) remains the manual integration required between the Logbooks and Stockman databases. Integration of these two datasets will be undertaken when the MI views on the IFIS system have been revised.

Quality control and validation procedures.
Data on biological variables from port sampling are collected according to documented SOP's. These SOP's cover areas such as data quality and checking and are follow closely PGCCDBS discussions and recommendations regarding international best practice. At the database front end there are validation procedures ensuring the integrity of data entered from biological sampling events. The database itself has a dedicated DBA (data base administrator) who checks inputs at a regular interval for range, date and sum cross checks.

Views of the logbooks data required for the DCF are generated by IFIS and downloaded on demand. The access to the Logbooks data continues to be via secure FTP transfer. The transfer method is efficient.

In 2013, the on-line, electronic submission of socio-economic data using interactive PDF forms, with in-built data checks provided validation, on submission, of these data. Where paper survey forms were returned, the interactive PDF form was used as the point of data entry and checking, for all such information.

Validation of financial information was provided by qualified accountants who endorsed survey forms containing financial data. Following a review of procedures, the collection of financial data has been decoupled from the historical association with the final date for the submission of national tax returns, which had provided the fundamental basis of the data collection programme

in previous years. The current procedure requests financial data in the year following the reference year and is independent of the national taxation system.

The plan to create a secured web based work space was executed in 2013. The web based workspace is built using Microsoft sharepoint services. Initially the sharepoint extranet service is a document workspace, containing all the shared information relating to Irelands DCF programme. This service is accessible by all the DCF partners. Further development is envisaged after the completion of the logbooks upgrade, to enable dynamic views onto denormalised logbook data for Irish DCF partners without access to the Marine Institute network.

Use of the data
The IBTS groundfish survey and acoustic surveys are stored on SQL server databases, and these automatically generate output to internationally coordinated survey databases such as that in PGIPS and the IBTSWG (Datras and Fishframe).

Biological data from commercial fish sampling is transmitted to ICES for international stock assessment. These data are either raised by Ireland, or sent to the ICES stock coordinator. In most cases Ireland uses either the Fishframe or Intercatch format to transmit these data. In 2013 Ireland continued to use the tools developed by the COST project to analyse and report on the sampling data for the ICES WG's. Ireland has also been involved with plans for the establishment of a regional database, and are well prepared to be able to deliver data to this initiative when required.

Work was commenced in 2013 on the second edition of the "Atlas of commercial fisheries around Ireland", was produced and published in March 2014.

Ireland responded to all data requests from the EC in 2014, and achieved successful transmission in all cases except where the terms of the request were beyond the operational capacity of the data collection exercise.

VI.2 Actions to avoid deviations
The application of sound data management practices, alongside a continuing effort for upgrade and consolidation of databases and exploration tools, has helped to avoid many shortfalls with the Irish DCF data. However as with many EU MS access to logbooks and VMS data (which is not

managed or owned by the primary fisheries lab involved with the DCF) has the potential to adversely affect Ireland's ability to comply with the DCF. To this end the Marine Institute has gone to great efforts to build and maintain good relationships with the fishing industry, and the State authorities who have primary responsibility for logbooks and VMS data, and this has provided a framework for improved cooperation and data transfer between these agencies.

VII. Follow-up of STECF recommendations

Please refer to Table II.B.2 for the relevant recommendations made by RCM's/RCG's, The Liaison Meeting and STECF, and Ireland's response to those recommendations. All relevant recommendations to Ireland were actioned.

VIII. List of acronyms and abbreviations

Acoustic surveys Acoustic surveys use sound waves emitted from a "transducer" to estimate the density of plankton and fish shoals. The transducer is attached to a drop keel on the survey vessel, which is linked to an echo sounder in the vessel which records the shoals of fish as "marks" on a screen or paper trace. The density of these marks is used to calculate total biomass of a stock.

Age The number of years of life completed, here indicated by an Arabic numeral, followed by a plus sign if there is any possibility of ambiguity (age 5, age 5+).

BIM An Bord Iascaigh Mhara, The Irish Sea Fisheries Board, charged with responsibility for development of the fishing and aquaculture industries in Ireland. (see www.bim.ie)

By-catch Refers to discarded catch (see Discards) plus incidental catch not purposely targeted by the fishermen.

CFB Central Fisheries Board (www.cfb.ie)

CPUE /Catch Per Unit of Effort   The catch of fish, in numbers or in weight, taken by a defined unit of fishing effort. Also called catch per effort, fishing success, or availability.

DAFM Department of Agriculture Food and Marine. (see www.dafm.gov.ie)

DCENR Department of Communications Energy and Natural resources (see www.dcenr.gov.ie)

DCF / Data Collection Framework EU Council Regulations 1543/2000, 1639/2001, 199/2008 established a community framework for the collection and management of the data needed to conduct the common fisheries policy. Each member state must collect data on the biology of the fish stocks, on the fleets and their activities and on economic and social issues

Discard Discards are defined as that part of the catch returned to the sea as a result of economic, legal or other considerations.

Discard rate The percentage (or proportion) of the total catch which is discarded.

FAT Fisheries Assessment Technician – regionally-based sea-going staff employed by FEAS.

FEAS / Fisheries Ecosystems Advisory Services – One of seven service areas of the Marine Institute, FEAS's mission is to assess, research and advise on the marine fisheries resource in Irish waters

Fishing Effort The total fishing gear in use for a specified period of time. When two or more kinds of gear are used, they must be adjusted to some standard type

Groundfish Species of demersal fish dwelling on, or close to the sea floor, as targeted in the annual Western IBTS 4th quarter survey around the Irish coast.

IBTS International Bottom Trawl Survey Working group

ICES International Council for the Exploration of the Seas –Ireland shares the Total Allowable Catches TACs for many stocks we exploit with our European Union partners. Because of this international dimension many stocks need to be assessed in international fora such as ICES.

ICCAT International Commission for the Conservation of Atlantic Tuna

Marine Institute The Marine Institute is Ireland's national agency with the following general functions: "to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to marine research and development, that in the opinion of the Institute will promote economic development and create employment and protect the environment." Marine Institute Act, 1991 (see **www.marine.ie**)

Inland Fisheries Ireland (IFI) Inland Fisheries Ireland was formally established as the agency responsible for the conservation, protection, management, marketing, development and improvement of Irelands inland fisheries and sea angling resources.

IFIS Integrated Fisheries Information System .Database held by DAFF with landings, effort and first sale value of fish species

HAWG Herring Assessment Working Group

LA Laboratory Analyst.

Latt Laboratory Attendant

MS Member State.

Nemesys *Nephrops* measuring system.

NP National Programme.

WGWIDE Working group on Widely distributed stocks

RCM Regional Co-ordination Meetings.

PGCCDBS, Planning group commercial catch discards and Biological sampling

WGBIE Working Group for the Bay of Biscay and the Iberic Waters Ecoregion - Formally the Celtic seas eco region assessment working group

WGHMM Working group Hake Monk and Megrim

WGIPS ICES Working Group International Pelagic Surveys

WGNAPES ICES Working Group on North East Atlantic Pelagic Ecosystem Surveys

WGNEACS ICES Working Group on the North-east Atlantic Continental Slope Survey

Recovery Plan This is a multi-annual plan to recover seriously depleted stock. The plans generally involve agreed Harvest Control Rules, Technical Measures, Effort Controls and various control and enforcement measures.

Recruitment The amount of fish added to the exploitable stock each year due to growth and/or migration into the fishing area. For example, the number of fish that grow to become vulnerable to the fishing gear in one year would be the recruitment to the fishable population that year. This term is also used in referring to the number of fish from a year class reaching a certain age. For example, all fish reaching their second year would be age 2 recruits.

Sample A proportion or a segment of a fish stock which is removed for study, and is assumed to be representative of the whole. The greater the effort, in terms of both numbers and magnitude of the samples, the greater the confidence that the information obtained is a true reflection of the status of a stock (level of abundance in terms of numbers or weight, age composition, etc.)

SFPA Sea Fisheries Protection Agency

STECF The Scientific Technical and Economic Committee on Fisheries was established by the European Commission and comprises fisheries scientists and economists from the Member States. The role of STECF is to advise the European Commission on scientific, technical and economic issues related to the management of fisheries resources that are exploited worldwide by members of the European Union.

STO Scientific and Technical Officer

Stock A "stock" is a population of a species living in a defined geographical area with similar biological parameters (e.g. growth, size at maturity, fecundity etc.) and a shared mortality rate. A thorough understanding of the fisheries biology of any species is needed to define these biological parameters.

SSB / Spawning stock biomass The total weight of all sexually mature fish in the population. The size of SSB for a stock depends on abundance of year classes, the exploitation pattern, the rate of growth, fishing and natural mortality rates, the onset of sexual maturity and environmental conditions.

STOCKMAN A custom developed relational database which houses the Marine Institute Fisheries Ecosystem Advisory Services sampling data.

TAC / Total Allowable Catch is the total regulated catch from a stock in a given time period, usually a year.

TL Team Leader

WKDRP Workshop on Discard Raising Procedures

WGMEGS ICES Working Group on Mackerel and Horse Mackerel Egg Surveys (WGMEGS)

IX. Comments, suggestions and reflections

X. References

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XI. Annexes – Bi – Lateral Agreements

Bilateral Agreement between the Marine Institute Ireland and Marine Scotland (for the collection of length, maturity and age samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2008/949/EC.

Agreement: Vessels fishing on the Irish register, which operate and / or land into Scotland for first point of sale will be sampled as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework (199/2008). A portion of these vessels land into Scotland. The eventual additional sampling costs will be covered within the Scottish National Sampling Programme from 2014-2016

Description of sampling: The sampling will be for length maturity and age of Demersal and Pelagic landings, sampling will be carried out in accordance with the Scottish National Sampling Programmes.

Sampling Intensity: Sampling intensity will be in accordance with the guidelines set down by Commission Decision 2008/949/EC.

Data responsibility: Scotland will send this sampling data to Ireland for inclusion with the Irish assessment working group data sets. Ireland will then be responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. Scotland will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to Ireland as and when requested.

ALSO:

Agreement: Fishing vessels on the UK- Scotland register, which operate and / or land for first sale into Ireland, will be sampled by Ireland as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Irish National Sampling Programme from 2014- 2016.

Description of sampling: The sampling will be for length maturity and age of Pelagic landings. Sampling intensity will be in accordance with the guidelines set down by Commission Decision 2008/949/EC.

Sampling Intensity: Sampling intensity will be in accordance with the guidelines set down by Commission Decision 2008/949/EC.
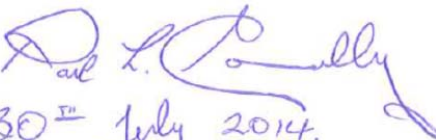
Data responsibility: The samples will be processed and age, sex, length, maturity information recorded. These data will be sent to the Scottish scientist with responsibility for submitting Scottish data to the ICES WGWIDE.

Scotland is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. Ireland will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to Scotland as and when requested.

Landings of Scottish vessels into Ireland and of Irish landings into Scotland are obviously subject to change over the period of this bi lateral agreement and will need to be monitored on an on - going basis.

Contact persons: paul.connolly@marine.ie   DCF National Correspondent

Marine Institute, Ireland

Signed:

Date :   30ᵗᴴ July 2014.

Scotland (Marine Scotland)

Signed: Margaret Bell

Date: 26ᵗʰ August 2014

Bilateral Agreement between the Marine Institute Ireland and National Institute of Aquatic Resources (DTU Aqua), Denmark for the collection of length maturity and age samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2008/949/EC.

Agreement:

Five Vessels fishing on the Danish register, which operate and / or land for first sale into Ireland, will be sampled as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Irish National Sampling Programme from 2014- 2016.

Description of sampling: The sampling will be for length maturity and age of Blue whiting landings, sampling will be carried out in accordance with the Irish National Sampling Programme.

Sampling Intensity: A maximum of 3 samples of blue whiting will be collected from Danish vessels landing into Irish ports.

Data responsibility: The samples will be processed and age, sex, length, maturity information recorded. These data will be sent to the Danish scientist with responsibility for submitting Danish data to the ICES WGWIDE.

Denmark is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. Ireland will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to Denmark as and when requested.

Contact persons: frank.obrien@marine.ie National Correspondent

Marine Institute, Ireland

Signed:

Date : 24/9/2013.

Danish Institute for Fisheries Research

Signed:

Date: 1/10 -13

Marine Institute
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Bilateral Agreement between the Marine Institute Ireland and France (Ministère de l'écologie, du développent durable et de l'énergie) for the collection of length, maturity and age samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision ~~2008/949/EC~~. 2010/93/UE

Agreement:

1. Fifty four vessels fishing on the French register, which operate and / or land into Ireland and transported for first point of sale to France, will be sampled as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the French National Sampling Programme from 2014-16

2. In addition, four pelagic vessels fishing on the Irish register which operate and / or land for first sale into France, on an opportunistic basis, will be sampled as part of the 2014-2016 National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Irish National Sampling Programme from 2014-16.

Description of sampling:

1. The sampling will be for length maturity and age of Hake, Monkfish and Megrim landings, sampling will be carried out in accordance with the French National Sampling Programme.

Sampling Intensity: In accordance with the rules laid down by the regulation.

2. The sampling will be for length maturity and age of mackerel, horse mackerel and herring landings, sampling will be carried out in accordance with the Irish National Sampling Programme.

Ten samples of herring, mackerel, horse mackerel and/or albacore tuna will be sampled annually by a contractor based in Douarnenez, France. This contractor will collect and primary-process the samples and send the data to the Irish Marine Institute where they will be aged. The data will be submitted by the relevant Irish scientist to WGWIDE, HAWG and/or ICCAT.

Sampling Intensity: Ten samples will be processed and age, sex, length, maturity information recorded. These data will be sent to the French scientist with responsibility for submitting French data to the ICES WGWIDE.

Data responsibility:

1. France is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. France will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to Ireland as and when requested.

2. Ireland is responsible for submitting the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework. Ireland will provide the required data for the species that are requested by the relevant ICES Expert Groups, and the data for the additional species to France as and when requested.

Contact persons:

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Marine Institute, Ireland

Signed:

Date : 25/9/14

Ministère de l'écologie, du développent durable et de l'énergie

Signed: Moué. Benédicte PEYRAT.

Date: 28/5/15 .

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La Cheffe de la Mission des Affaires Scientifiques
Marie-Bénédicte PEYRAT