

<p>Title: West of Walney Marine Conservation Zone (Specified Area) Bottom Towed Fishing Byelaw 2018 Impact Assessment</p> <p>IA No: MMO07</p> <p>Lead department or agency: Marine Management Organisation (MMO)</p> <p>Other departments or agencies: North Western Inshore Fisheries and Conservation Authority (NWIFCA), Defra, Natural England</p>	Impact Assessment (IA)			
	Date: 13/12/18			
	Stage: Final			
	Source of intervention: Domestic			
	Type of measure: Secondary Legislation			
Contact for enquiries: Leanne Stockdale, Marine Conservation Team, Marine Management Organisation, Lancaster House, Hampshire Court, Newcastle, NE4 7YH, Leanne.stockdale@marinemanagement.org.uk 0300 123 1032				
Summary: Intervention and Options			RPC Opinion: N/A	

Cost of Preferred (or more likely) Option

Total Net Present Value	Business Net Present Value	Net cost to business per year (EANDCB on 2018 prices)	In scope of OI30?	Business Impact Target Status
-£978,651	-£912,596	£95,046	Not in scope	Non-qualifying regulatory provision

What is the problem under consideration?

Bottom towed fishing has the potential to hinder the conservation objectives of the West of Walney Marine Conservation Zone (MCZ). This byelaw is proposed to ensure the site's conservation objectives are furthered by prohibiting bottom towed fishing in the part of the site inshore of 12 nautical miles (nm) thereby protecting the sea-pen and burrowing megafauna's communities, subtidal sand and subtidal mud features.

Because MMO byelaws may only be applied in England and the adjacent territorial seas (from the coast to 12 nm offshore), this byelaw will apply to the part of the site inshore of 12 nm 'the inshore section'.

Why is government intervention necessary?

Government intervention is required to redress market failure in the marine environment by implementing appropriate management measures (eg this byelaw) to conserve the designated features and ensure negative externalities are reduced or suitably mitigated. Implementing this byelaw will support continued provision of public goods in the marine environment.

What are the policy objectives and the intended effects?

- To further the conservation objectives for West of Walney MCZ;
- To minimise socio-economic impacts on the fishing industry by maintaining access where possible to fishing opportunities within the MCZ.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0. Do nothing.

Option 1. MMO byelaw to prohibit bottom towed fishing over the site with known sea-pen and burrowing megafauna communities as well as the subtidal mud in the 0 to 12 nm portion of the site ('zoned management').

Option 2. MMO byelaw to prohibit bottom towed fishing over all protected features (sea-pen and

burrowing megafauna communities, subtidal mud and subtidal sand) over the inshore section of the site.

Option 3. Management of the activity through a voluntary agreement.

All options are compared to option 0. The preferred option is **option 2** which is the only option which provides suitable protection for the marine environment and will best further the conservation objectives of the MCZ.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 2023

Does implementation go beyond minimum EU requirements?	No			
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: N/A		Non-traded: N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the Head of Marine Conservation:

Date: 31 July 2018

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV))		
			Low:	High:	Best Estimate:
2018	2018	10	-£992,062	-£965,240	-£978,651

COSTS	Total Transition (Constant Price) Years	Average Annual (excluding transition) (Constant Price)	Total Cost (Present Value)
Low	0	£112,137	£965,240
High	0	£115,253	£992,062
Best Estimate	0	£113,695	£978,651

Description and scale of key monetised costs by ‘main affected groups’

The annual cost in terms of UK landings from the management areas is estimated to be £106,021.

Net present value costs to the UK fishing industry over the ten year timeframe of this IA are £912,596.

Estimated annual compliance costs range from £6,116 to £9,232, with a best estimate of £7,674. Net present value compliance costs over the ten year timeframe of this IA is £.

Total net present value costs are estimated to be £978,651.

No transitional costs are anticipated.

Other key non-monetised costs by ‘main affected groups’

MMO will coordinate with other bodies such as Border Force in order to fully utilise their resources for surveillance and compliance. These costs cannot be monetised at present as they are requested on an *ad hoc* basis and costs can vary.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	No monetised benefits	No monetised benefits	No monetised benefits
High	No monetised benefits	No monetised benefits	No monetised benefits
Best Estimate	No monetised benefits	No monetised benefits	No monetised benefits

Description and scale of key monetised benefits by ‘main affected groups’

No monetised values are available for the benefits of the proposed byelaw.

Other key non-monetised benefits by ‘main affected groups’

The environmental benefits of the proposed management are:

- to protect the West of Walney MCZ from the impacts of bottom towed fishing;
- to support the recovery of the subtidal mud, subtidal sand and sea-pen and burrowing megafauna communities features in the inshore section (within 12 nm) of West of Walney MCZ from the impacts of bottom towed fishing;
- to protect the ecosystem services provided by the site including provisioning, regulating, and supporting benefits;

- to contribute to the overall health of the marine environment by contributing to the coherent network of well managed marine protected areas UK and North East Atlantic.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
--	--------------------------	-----

Average cost estimates for the fishing industry are based on MMO landings values, estimated within the management areas and International Council for the Exploration of the Sea (ICES) statistical rectangles 36E6 and 37E6 (figure 1). Actual landings derived directly from the proposed management areas are not known.

As alternative fishing grounds are easily accessible, estimated costs to the fishing industry are likely to be an overestimate, as vessels are likely to offset some of the lost revenue by fishing in other areas. In addition, costs are estimated as lost revenue rather than a loss in profits to the fishing industry, and therefore overstate the economic loss to the fishing sector as they do not account for the costs of fishing.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual):			Score for business impact target:
Costs: £95,046	Benefits: Not Monetised	Net: -£95,046	Not in scope

Evidence base

1. Introduction
2. Rationale for intervention
3. Policy objectives and intended effects
4. Background
5. Options and the preferred option
6. Cost and benefits
7. Conclusion summarising recommended option

1. Introduction

- 1.1. West of Walney Marine Conservation Zone (MCZ) lies in International Council for the Exploration of the Sea (ICES) statistical rectangles 36E6 and 37E6 (figure 1). The site is located in the Irish Sea, 8 km west of Walney Island off the Cumbrian Coast. The site covers an area of 388 km² of mainly inshore waters, and is co-located with wind farm developments within the southern and north eastern areas of the site.
- 1.2. The site contains two broad-scale habitats (subtidal mud and subtidal sand) and a habitat of conservation importance (sea-pen and burrowing megafauna communities) as features. Subtidal mud is the most extensive feature, and is part of the wider Irish Sea mud belt. The subtidal mud is an important habitat for a range of animals including worms, molluscs, sea urchins, crustaceans. Other larger animals, such as mud shrimps and fish, live within this habitat and burrow into the mud. This creates networks of burrows which shelter smaller creatures like worms and brittlestars. The mud may also provide a habitat for sea-pens, which are tall, erect and luminous animals which live in groups. The sand on the seabed is also an important habitat as flatfish and sand eels camouflage themselves on the surface of it, and it supports burrowing megafauna communities, such as the Norway lobster (*Nephrops norvegicus*). Subtidal sand is also a feature of the site but occurs over a smaller area in the north eastern part of the site. The subtidal sands within the MCZ support high densities of burrowing brittle stars, along with flatfish.
- 1.3. This site enhances the UK marine protected area (MPA) network for subtidal sand and mud as well as sea-pen and burrowing megafauna communities as these features are not sufficiently protected in the region by the pre-existing network of marine protected areas. Protection of this site will also ensure the ecosystem services provided by the area are protected.
- 1.4. Bottom towed fishing means fishing using gear which is pushed or pulled through the sea and contacts the seabed. This includes use of demersal otter and beam trawls, shellfish dredges and demersal seines.
- 1.5. West of Walney MCZ straddles the 6 and 12 nautical mile (nm) maritime boundaries. Inshore of 6 nm, the North Western Inshore Fisheries and Conservation Authority (NWIFCA) is the lead regulator for fishing in marine protected areas. MMO is the lead regulator in the area between the 6 nm and 12 nm area and has the power to introduce byelaws for MCZs in England and the adjacent territorial seas (from the coast to 12 nm offshore).
- 1.6. To ensure a consistent approach to management of fishing within the West of Walney MCZ, the MMO and NWIFCA have agreed that MMO will introduce any necessary management for bottom towed fishing in the part of this site inshore of 12 nm 'the inshore section'. NWIFCA has agreed to support the MMO with information on fishing activity.
- 1.7. Management of fishing in the part of the site offshore of 12 nm is subject to a different regulatory regime where it must be developed jointly by all European Union member states

with a direct management interest as set out in article 11 of the Common Fisheries Policy (CFP) Regulation¹. Management measures for the part of the site offshore of 12 nm will therefore be developed as part of a separate process.

1.8. This Impact Assessment (IA) has been prepared to outline the costs and benefits of the proposed MMO byelaw to prohibit bottom towed fishing in the inshore section of West of Walney MCZ. The IA also indicates why the option being recommended is the preferred option for management. A draft of this IA has been subject to public consultation.

2. Rationale for intervention

2.1. MMO has the duty to exercise its functions in a way which best furthers the conservation objectives (CO) of MCZs². MMO also has the power to make byelaws to further the CO of MCZs³.

2.2. The MMO has undertaken an assessment of the impact of fishing in the West of Walney MCZ. This assessment determined that bottom towed fishing may be hindering the CO of the MCZ. The proposed byelaw will further the CO of the MCZ by prohibiting bottom towed fishing in the part of the site when MMO byelaws can apply.

2.3. Bottom towed fishing has the potential to cause negative outcomes in the marine environment as a result of 'market failures'. These failures can be described as:

- **Public goods and services:** A number of goods and services provided by the marine environment such as biological diversity are 'public goods' (no-one can be excluded from benefiting from them, but use of the goods does not diminish the goods being available to others). The characteristics of public goods, being available to all but belonging to no-one, mean that individuals do not necessarily have an incentive to voluntarily ensure the continued existence of these goods which can lead to under-protection/provision.
- **Negative externalities:** Negative externalities occur when the cost of damage to the marine environment is not fully borne by the users causing the damage. In many cases no monetary value is attached to the goods and services provided by the marine environment and this can lead to more damage occurring than would occur if the users had to pay the price of damage. Even for those marine harvestable goods that are traded (such as wild fish), market prices often do not reflect the full economic cost of the exploitation or of any damage caused to the environment by that exploitation.

2.3 This byelaw aims to redress these sources of market failure in the marine environment through conservation of designated features of the MCZ, which will ensure negative externalities are reduced or suitably mitigated.

3. Policy objectives and intended effects

3.1. The Marine and Coastal Access Act 2009 (MaCAA) established MMO to lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry.

¹ Regulation (EU) No 1380/2013

² Section 125 of the Marine and Coastal Access Act 2009. Where it is not possible to further the conservation objectives, the MMO has the duty to least hinder them.

³ Section 129 of the Marine and Coastal Access Act 2009.

3.2. The principle policy objective of the proposed byelaw is to further the CO of the West of Walney MCZ. This will be achieved by prohibiting bottom towed fishing in the inshore section of the site.

3.3. The social and economic impacts of management intervention will be minimised where possible.

4. Background

4.1. The main fishing activities within West of Walney MCZ from UK vessels is trawling for nephrops and other demersal species.

4.2. Vessels from the Republic of Ireland also target demersal fish using otter trawls, beam trawls and demersal seines, in the part of the site offshore of 6 nm (figures 2a - 2e).

4.3. The site's CO apply to the MCZ and the individual species and/or habitat for which the site has been designated (the 'designated features' listed below). The CO of the MCZ is that the protected habitats:

1. are maintained in favourable condition if they are already in favourable condition, or
2. be brought into favourable condition if they are not already in favourable condition.

4.4. For each protected feature, favourable condition means that, within the MCZ:

1. its extent is stable or increasing, and
2. its structure and functions, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that its condition remains healthy and does not deteriorate.

4.5. Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery. For each species of marine fauna, favourable condition means that the population within a zone is supported in numbers which enable it to thrive, by maintaining:

1. the quality and quantity of its habitat, and
2. the number, age and sex ratio of its population

4.6. Any temporary reduction of numbers of a species is to be disregarded if the population is sufficiently thriving and resilient to enable its recovery.

4.7. Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a protected feature is in favourable condition.

4.8. Natural England (NE) have also provided a general management approach for each feature of a designated MCZ. For each of the features of West of Walney MCZ, the general management approach for all three features has been set at 'recover'⁴.

4.9. NE have advised MMO that bottom towed fishing is likely to be hindering the ability of all of the site's features to recover to favourable condition.

⁴ West of Walney MCZ: Factsheet. Available online at:

www.gov.uk/government/uploads/system/uploads/attachment_data/file/492471/mcz-west-walney-factsheet.pdf

Figure 1. Location of West of Walney MCZ within ICES rectangles 36E6 and 37E6

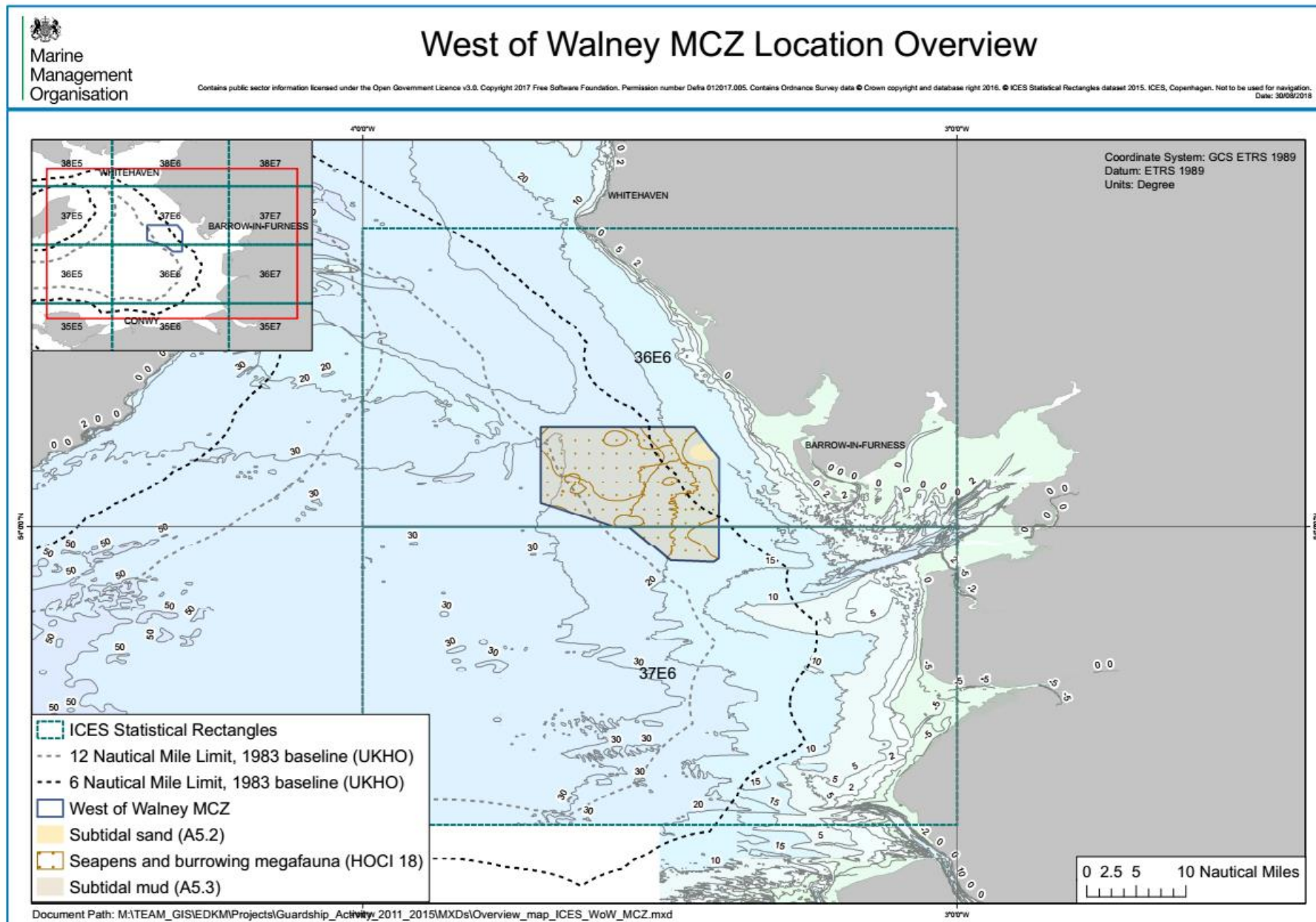


Figure 2a. Fishing activity, based on Vessel Monitoring System (VMS) information of UK and Irish vessels within ICES rectangles 36E6 and 37E6 in 2011

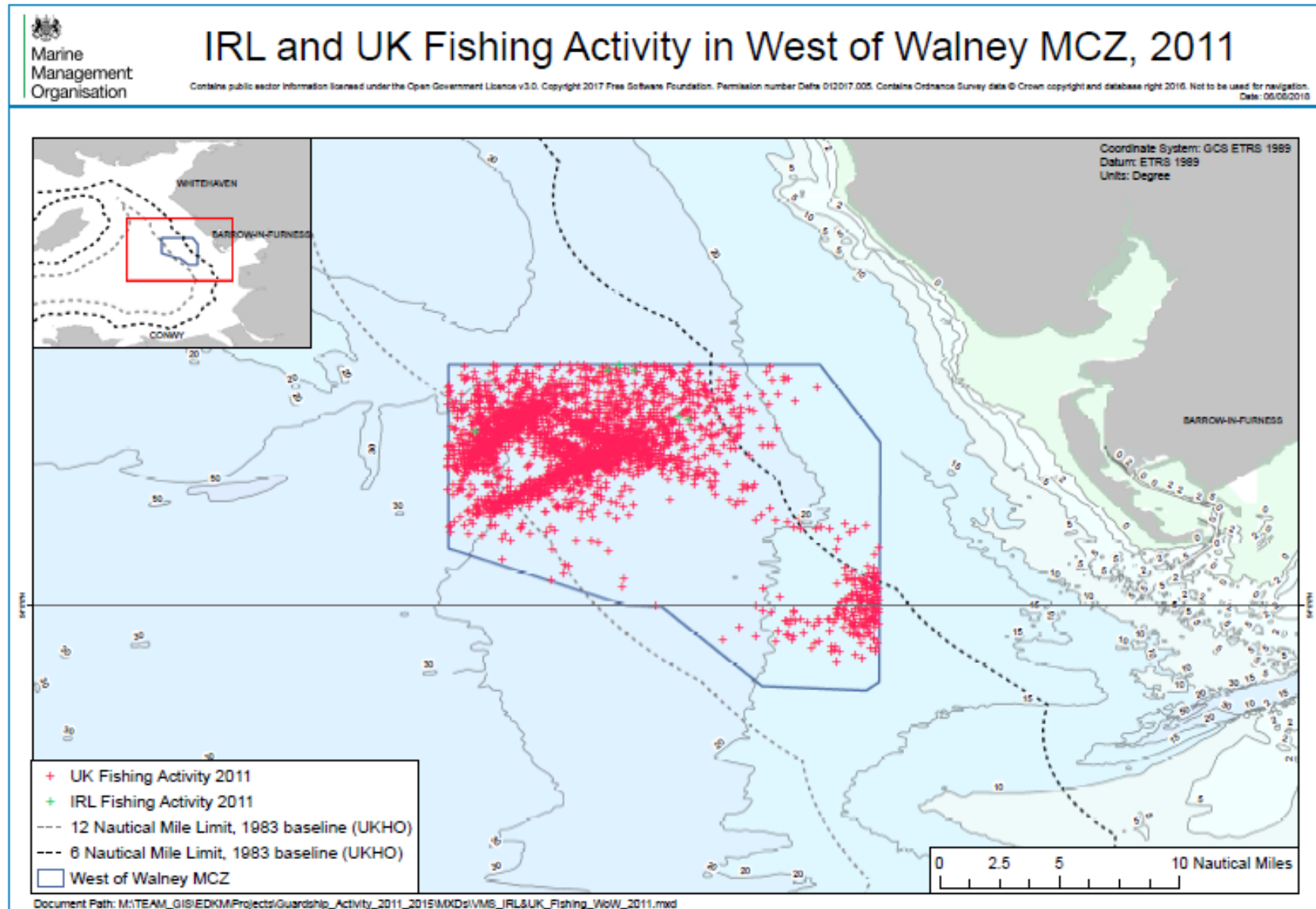


Figure 2b. Fishing activity, based on VMS information of UK and Irish vessels within ICES rectangles 36E6 and 37E6 in 2012

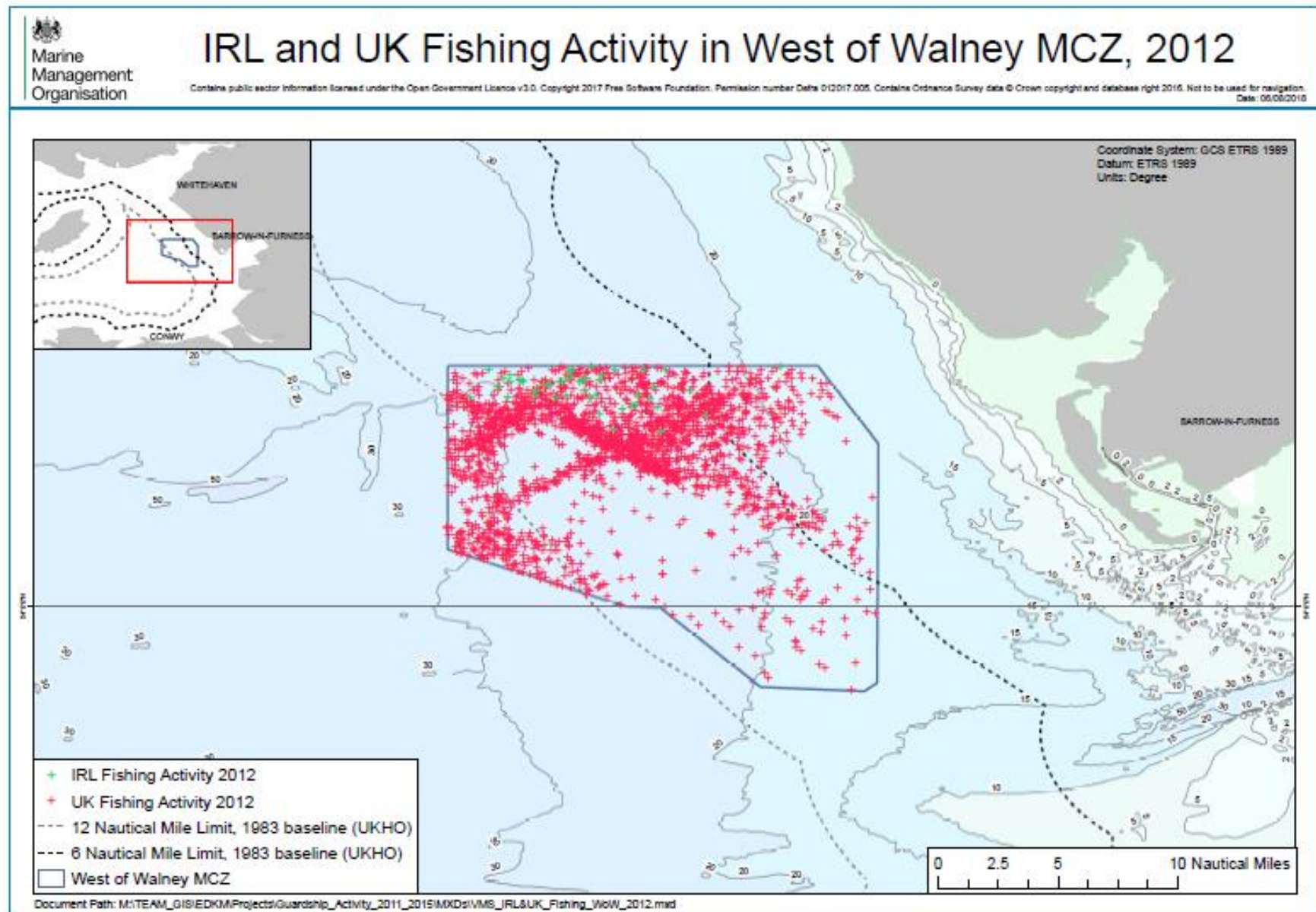


Figure 2c. Fishing activity, based on VMS information of UK and Irish vessels within ICES rectangles 36E6 and 37E6 in 2013

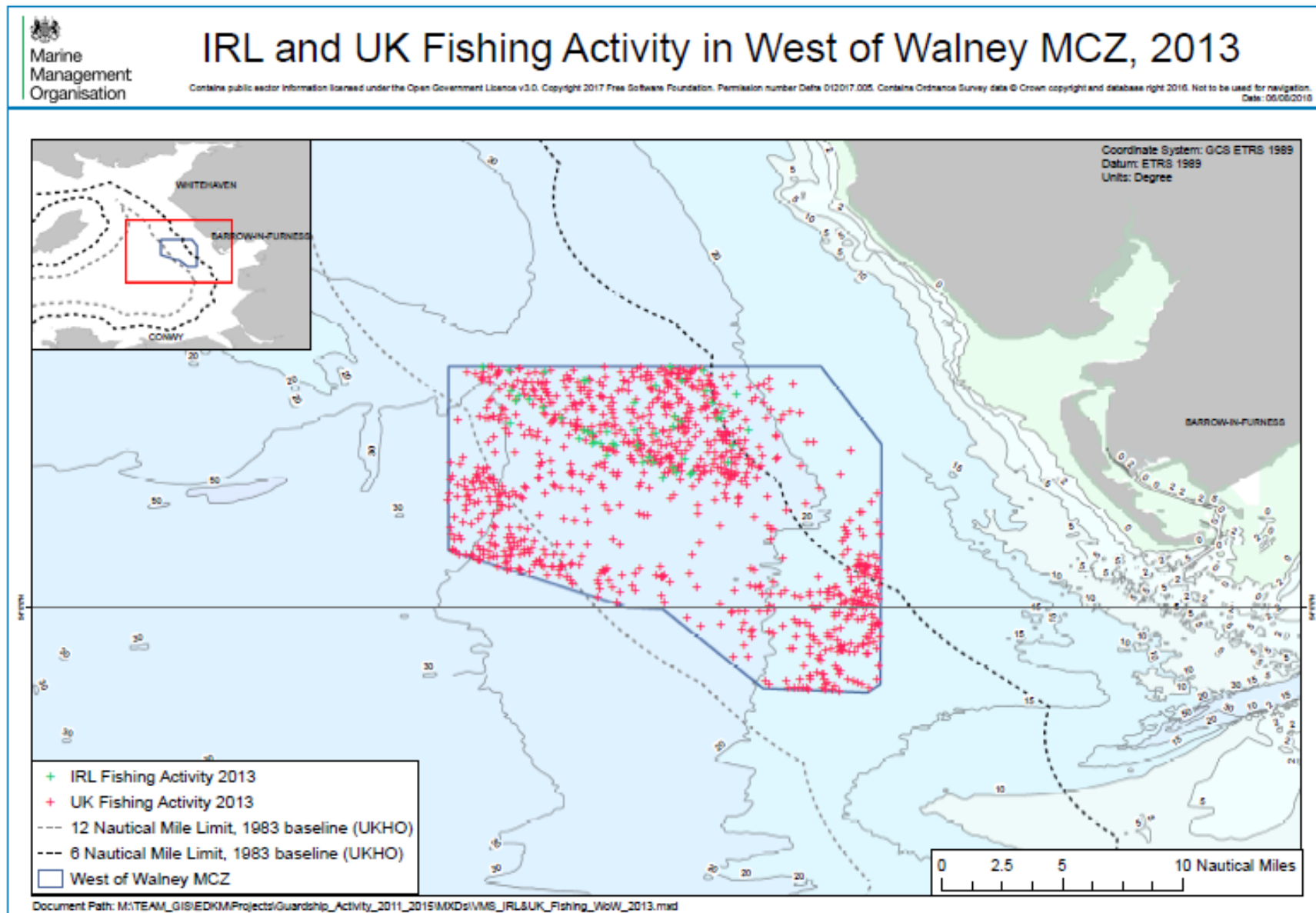


Figure 2d. Fishing activity, based on VMS information of UK and Irish vessels within ICES rectangles 36E6 and 37E6 in 2014

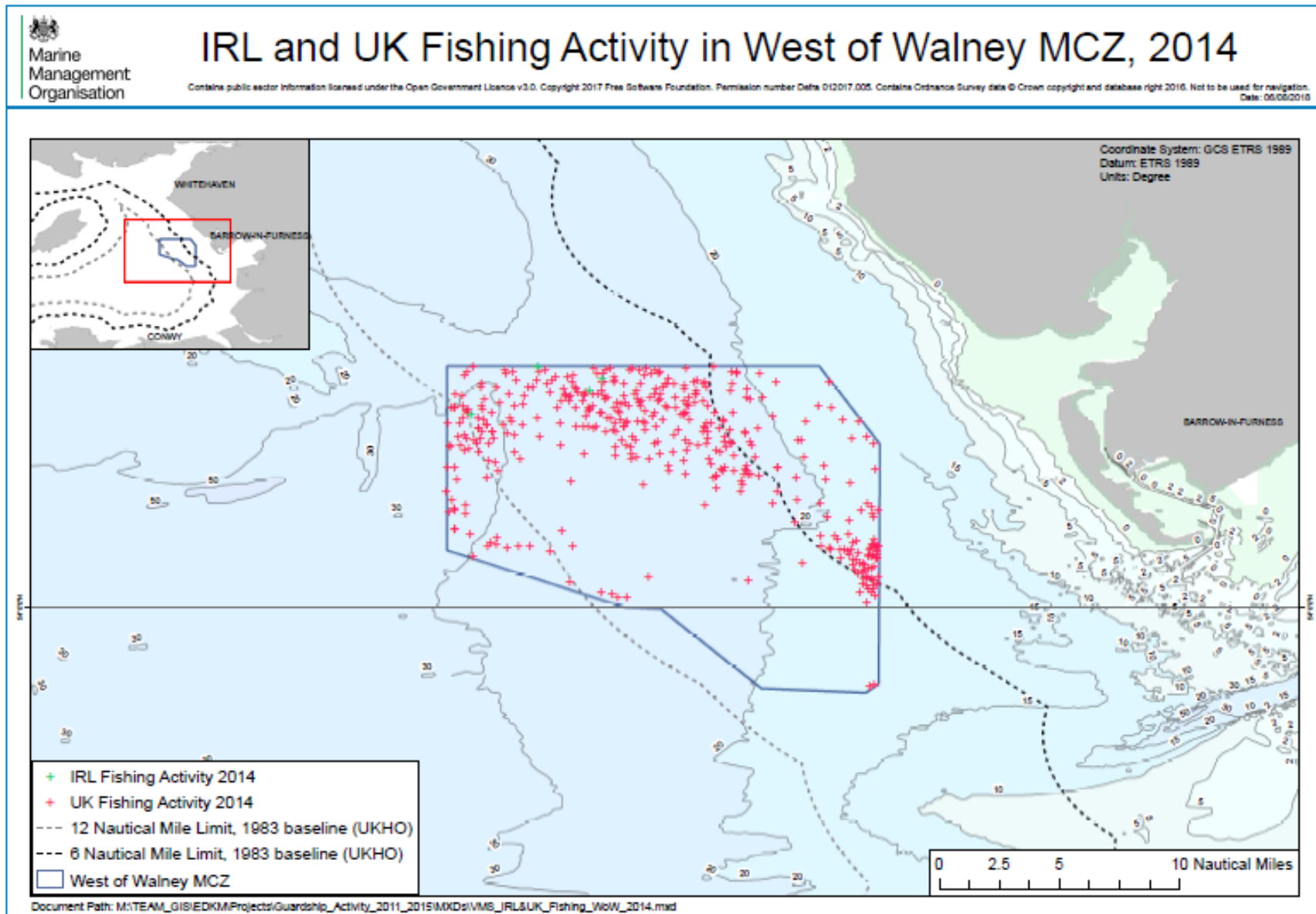
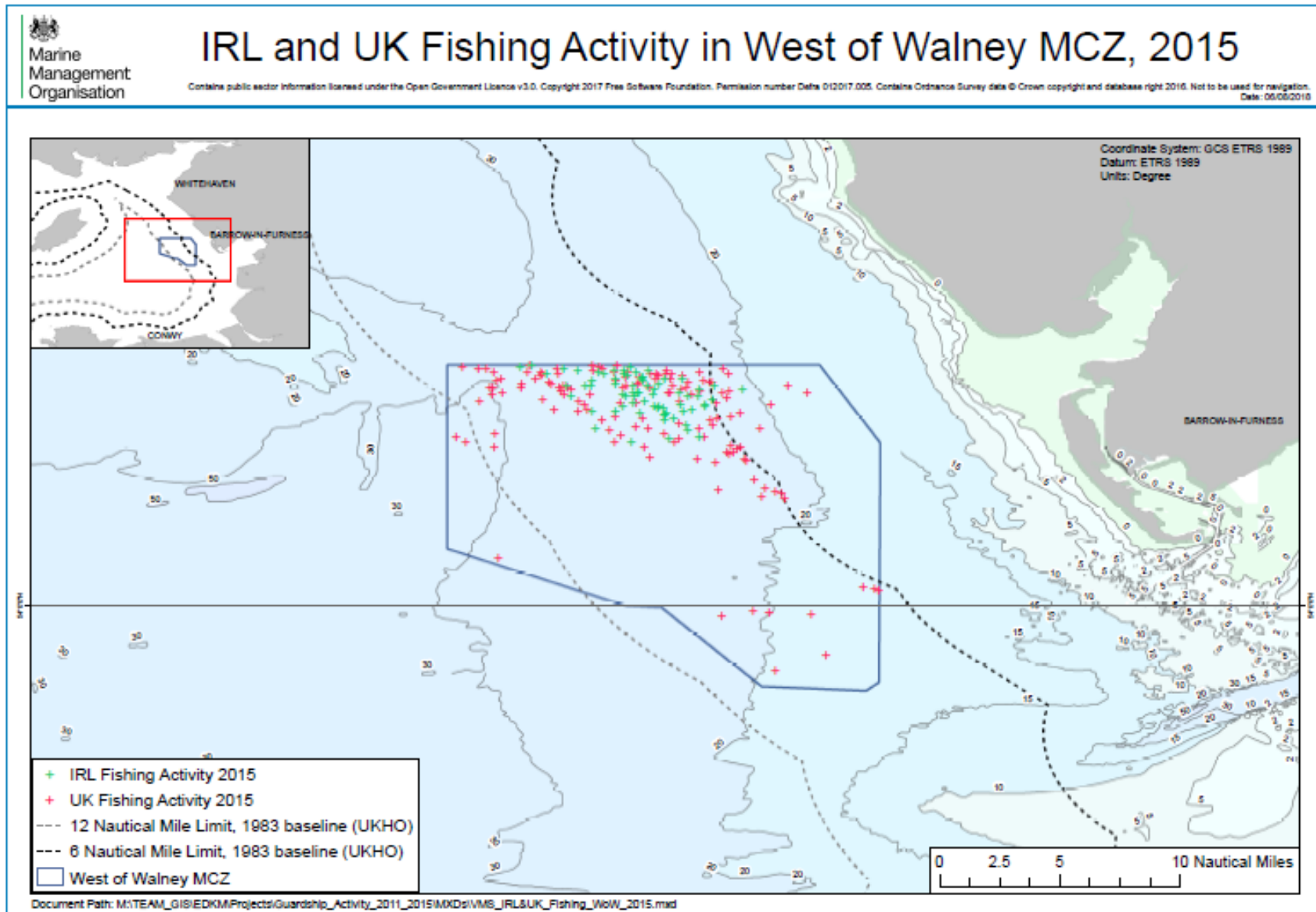


Figure 2e. Fishing activity, based on VMS information of UK and Irish vessels within ICES rectangles 36E6 and 37E6 in 2015



5. Options and the preferred option

5.1. Option 0. Do nothing

Doing nothing would not reduce the impact from bottom towed fishing on the features of the site.

5.2. Option 1. MMO byelaw to prohibit bottom towed fishing over the site with known sea-pen and burrowing megafauna communities as well as the subtidal mud in the 0 to 12 nm portion of the site ('zoned management')

This option would remove the impact of bottom towed fishing on those features of the site, therefore furthering the site's CO. This option would allow bottom towed gear to be used over the subtidal sand. However, this would hinder the CO for this feature as it is sensitive to the pressures exerted by bottom towed fishing.

5.3. Option 2. MMO byelaw to prohibit bottom towed fishing over all protected features (sea-pen and burrowing megafauna communities, subtidal mud and subtidal sand) over the inshore section of the site

Prohibiting the use of bottom towed gear throughout the whole of the inshore section of the site would allow MMO to ascertain that no significant risk to the site's conservation objectives was occurring from fishing activities. This is the only option which provides suitable protection for the marine environment and will best further the CO of the MCZ.

5.4. Option 3. Management of the activity through a voluntary agreement

The principles of Better Regulation require that statutory regulation is introduced only as a last resort. However, the government's expectation is that management measures for commercial fishing in MCZs should be implemented through statutory regulation to ensure adequate protection is achieved⁵.

5.5. The recommended option is Option 2: MMO byelaw to prohibit bottom towed fishing over all protected features (sea-pen and burrowing megafauna communities, subtidal mud and subtidal sand) over the inshore section of the site.

5.6. This option is recommended because:

- Prohibiting bottom towed gear over the whole inshore section of the site will allow MMO to ascertain commercial fishing activities are posing a significant risk to the achievement of the CO of the site.
- MMO is the most appropriate authority to implement fisheries management measures inshore of 12 nm.
- MMO byelaws are designed to manage activities in the marine environment for the protection of MPAs and the services the protected features provide to human well-being, offering the appropriate levels of flexibility and control.
- NWIFCA have agreed that MMO are best placed to manage fisheries in the site and will be involved in discussion relating to management and will enforce the MMO byelaw within the North Western Inshore Fisheries and Conservation District.

⁵ Revised approach to the management of commercial fisheries in European marine sites - overarching policy and delivery

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/345970/REVISED_APPROACH_Policy_and_Delivery.pdf

5.7. The boundaries of the proposed management areas were determined taking into account the best available existing evidence of the extent and sensitivity of the feature, as well as the need for a 'buffer zone' between the features and the byelaw boundary. Ease of enforcement and the need to have clear demarcation to promote compliance was also taken into account when considering the shape of the prohibited area.

6. Consultation

Informal Consultation

6.1. Informal consultation was held between 6 December 2017 and 12 January 2018 and posed the following questions:

- Do you have information about the location, condition or sensitivity of the designated features?
- Do you have information about the level or nature of fishing activity in the inshore (0-12 nm) section of the site?
- How will each of the proposed management options affect you? (Please provide evidence of this impact if possible)
- What other effects will each of the proposed management options have?

6.2. The MMO received seven responses to the consultation, five in support of the full site closure and two against the proposed management in the West of Walney MCZ. The issues raised have been fully explored in the West of Walney Marine Conservation Zone (Specified Area) Bottom Towed Fishing Gear Byelaw 2018 Decision Document and Appendix 1.

Formal Consultation

6.3. Formal consultation was held between 8 May and 13 July 2018 and posed the following questions:

- Do you have information about the location, condition or sensitivity of the designated features?
- Do you have information about the level or nature of fishing activity in the inshore (0-12 nm) section of the site?
- How the proposed management options affect you? (Please provide evidence of this impact if possible)
- What other effects would the proposed management option have?

6.4. The MMO received thirteen responses to the consultation, eight in support of the management proposed in the West of Walney MCZ, two objections and three providing information.

6.5. Both objections highlight issues with the byelaw, the MPA assessment and the IA which fall into eight broad categories:

- Financial calculations in the IA;
- Adherence to policy;
- Use of fishing activity data;
- Conclusions drawn in the assessment;
- Proposed management and consistency with other sites;
- Use of best available evidence;
- Application of the precautionary principle; and

- Legislative adherence.

6.6. The issues raised have been fully explored in the West of Walney Marine Conservation Zone (Specified Area) Bottom Towed Fishing Gear Byelaw 2018 Decision document.

7. Analysis of costs and benefits

Costs

7.1. Prohibition of the use of bottom towed fishing gear in the proposed management areas may result in the following costs:

- direct costs to the fishing industry from reduced access to fishing grounds;
- indirect costs to the fishing industry associated with displacement to other fishing grounds;
- environmental impacts related to possible increased damage to habitats on other areas due to displacement;
- social impacts related to the closure of the West of Walney MCZ and the associated nephrops fishery impacts;
- costs to the MMO for the administration and compliance of management.

7.2. Costs to the fishing industry, including administrative and compliance costs to the MMO can be monetised and these estimated values have been collated and presented as part of this IA (tables 1a to 6).

7.3. Environmental costs due to possible increased damage of habitats due to displacement of fishing activity from the proposed management area to other areas are difficult to value and are therefore described here as non-monetised costs.

Costs to the UK fishing industry

7.4. This IA considers the economic impact to UK businesses and individuals. Economic impacts to non-UK businesses and individuals, including fishing vessels registered outside of the UK, are not in scope for the headline cost figures. However, information on costs to fishing vessels registered outside of the UK is discussed separately in box 1 and table 4.

7.5. To estimate the economic impacts of the proposed management, fishing patterns of vessels using bottom towed gear within and around the proposed management areas from 2011 to 2015 were analysed. Fisheries landings are reported at ICES statistical rectangle level. The proposed management areas fall within ICES rectangles 36E6 and 37E6.

7.6. Landings reported by UK vessels using bottom towed gears in ICES rectangles 36E6 and 37E6 are displayed in table 1a and 1b (respectively) based on the size of the vessels and the type of fishing gear used. The bottom towed gear category includes beam trawls, otter trawls, nephrops trawls, dredges, Scottish seines and Danish seines. The non-bottom towed gear category includes pots, nets, midwater trawls and all other fishing gears.

7.7. To estimate the value of landings derived from the proposed management areas, different methods were applied depending on whether vessels carried a vessel monitoring system (VMS).

Table 1a. Total UK landings from ICES 36E6, the quantity (Qty) is in metric tonnes as landings data is in metric

	Non bottom towed gear		Bottom towed gear		All gears	
	Qty (t)	Value (£)	Qty (t)	Value (£)	Qty (t)	Value (£)
Under 12m vessels						
2011	6.00	30,379.00	45.76	170,436.88	51.76	200,815.88
2012	32.38	76,260.00	10.97	57,388.00	43.35	133,648.00
2013	26.01	91,097.00	28.47	97,729.00	54.48	188,826.00
2014	30.02	95,679.01	43.86	78,321.78	73.88	174,000.79
2015	15.13	50,829.65	70.49	67,637.25	85.61	118,466.90
12 - 15m vessels						
2011	0.00	0.00	54.66	29,613.90	54.66	29,613.90
2012	0.00	0.00	696.18	265,233.17	696.18	265,233.17
2013	0.00	0.00	286.14	155,740.05	286.14	155,740.05
2014	265.53	210,236.29	294.29	191,155.26	559.82	401,391.55
2015	317.76	268,963.12	181.11	113,678.50	498.88	382,641.62
15m+						
2011	29.91	19,498.46	1,884.87	750,417.81	1,914.78	769,916.27
2012	295.01	201,050.36	2,701.60	1,304,131.47	2,996.61	1,505,181.83
2013	56.34	44,643.21	2,057.94	1,103,693.82	2,114.27	1,148,337.03
2014	408.09	360,366.27	1,967.69	1,027,889.79	2,375.78	1,388,256.06
2015	400.45	341,792.30	3,389.62	2,052,519.59	3,790.06	2,394,311.89
Total						
2011	35.91	49,877.46	1,985.29	950,468.59	2021.20	1,000,346.05
2012	327.39	277,310.36	3,408.75	1,626,752.64	3736.14	1,904,063.00
2013	82.35	135,740.21	2,372.55	1,357,162.87	2454.90	1,492,903.08
2014	703.64	666,281.57	2,305.84	1,297,366.83	3009.48	1,963,648.40
2015	733.34	661,585.07	3,641.21	2,233,835.34	4374.55	2,895,420.41

Table 1b. Total UK landings from ICES 37E6, the quantity (Qty) is in metric tonnes as landings data is in metric

	Non bottom towed gear		Bottom towed gear		All gears	
	Qty (t)	Value (£)	Qty (t)	Value (£)	Qty (t)	Value (£)
Under 12m vessels						
2011	11.04	42,731.12	124.58	295,872.81	5,332.07	952,326.90
2012	7.99	45,368.32	169.83	276,270.42	177.82	321,638.74
2013	6.96	48,769.26	136.44	251,630.87	143.39	300,400.13
2014	61.51	181,503.44	112.15	228,224.12	173.67	409,727.56
2015	151.85	305,707.64	121.01	132,027.23	272.86	437,734.87
12 - 15m vessels						
2011	0.00	0.00	90.73	199,407.05	90.73	199,407.05
2012	0.00	0.00	155.73	253,459.36	155.73	253,459.36
2013	0.00	0.00	107.43	194,989.10	107.43	194,989.10
2014	0.00	0.00	88.05	175,560.36	90.73	199,407.05
2015	16.77	15,089.58	72.83	112,840.03	89.60	127,929.61
15m+ vessels						
2011	0.00	0.00	5,332.07	952,326.90	5,332.07	952,326.90
2012	33.94	24,028.53	7,442.36	906,626.15	7,476.30	930,654.68
2013	0.00	0.00	1,859.04	804,759.43	1,859.04	804,759.43
2014	1.04	820.21	899.04	1,146,438.35	900.08	1,147,258.56

2015	4.18	3,554.70	435.55	676,659.72	439.73	680,214.42
Total						
2011	11.04	42,731.12	5,547.39	1,447,606.76	107,54.87	2,104,060.85
2012	41.93	69,396.85	7,767.91	1,436,355.93	7,809.84	1,505,752.78
2013	6.96	48,769.26	2,102.90	1,251,379.40	2,109.86	1,300,148.66
2014	62.55	182,323.65	1,099.23	1,550,222.83	1,164.47	1,756,393.17
2015	172.80	324,351.92	629.39	921,526.98	802.19	1,245,878.90

- 7.8. For all the years analysed, commercial fishing vessels of 15 metres length or over were required to have on-board a VMS which reported their position via satellite at least once every two hours. From 2013 to 2015 there was also a phased introduction of VMS to vessels between 12 and 15 metres length. The 12 to 15 metre vessels active in this area started using VMS at the start of 2014. Vessels under 12 metres did not carry VMS in any of the years analysed. Figures 2a to 2e show the locations of VMS reports from UK and Irish vessels in relation to the proposed management area from 2011 to 2015.
- 7.9. For VMS vessels (all vessels >15 m and vessels 12 - 15 m from 2014 onwards) the proportions of VMS pings within the site compared to the total from the parent ICES rectangles were used to estimate the landings derived from the MCZ. For vessels not equipped with VMS, the proportional areas of the MCZ within its parent ICES rectangles were used to estimate the values of landings derived from the MCZ (table 2).
- 7.10. Tables 3 and 4 show the estimated landings from bottom towed gears originating from within the management areas from UK and Irish vessels.
- 7.11. Landings reported for both ICES rectangles and the estimates for landings within the management area increased over the years analysed, with particularly large increases in 2013 and 2015.
- 7.12. To estimate the total of cost over ten years, the annual average value estimated to have originated from the management area (£111,405) was used as the best estimate of the annual cost to the fishing industry of introducing the proposed byelaw.
- 7.13. A discounting rate of 3.5% was applied to calculate the present value and 2017 was used as the price base year. The net present value cost over 10 years to the UK fishing industry of the proposed measures is estimated to be £912,596.
- 7.14. As the inshore part of the MCZ will be closed to bottom towed gear, some displacement is likely to occur both within and outside the MCZ. Displacement is dependent on the intensity and distribution of fishing activities within the site before the closure and on external factors (such as fish distribution, TAC/quota, fuel prices, other spatial claims). Fishing effort from within the proposed management area is most likely to be displaced to adjacent nephrops ground, which occurs throughout the northern part of the Irish Sea⁶. Within this area, year-on-year fishing trends are highly variable, meaning that any more precise predictions of where displacement effects will occur are associated with a high degree of uncertainty. As part of the MMOs risk-based enforcement, regular monitoring of fishing activity is collated on a Monitoring Control and Surveillance System (MCSS). MCSS does not analyse fishing trends and activity, but stores information, which can be accessed at any time. The MMO monitoring of activity in

⁶ For more information on Nephrops grounds in this area, see the 2015 Seafish and AFBI report: "Alternative Marine Conservation Zones in Irish Sea mud habitat: potential for fisheries displacement and an assessment of habitat condition and potential management scenarios"

http://www.seafish.org/media/publications/Seafish_2015_Alternative_MCZs_in_Irish_Seafinal.pdf

each site could assist in any future considerations relating to displacement and could be used to indicate any changes in fishing trends and activity.

7.15. There are potential social implications associated with the closure of the West of Walney MCZ, these have the potential to include the suppliers, fuel costs and time costs associated with sourcing new suppliers, travelling to and utilising alternative fishing grounds. However, as this information cannot be quantified it has not been explored further.

Compliance costs

7.16. MMO compliance action is intelligence-led and risk-based in accordance with the National Intelligence Model. Where intelligence suggests non-compliance or a risk of non-compliance with the proposed byelaw, compliance resources will be deployed accordingly. This may include a Navy Fisheries Patrol Vessel presence or joint operations with other agencies (for example the IFCA, Border Force or the Environment Agency). The MMO would coordinate any joint operations. The principles by which the MMO will regulate marine protected area are set out by the Legislative and Regulatory Reform Act 2006 and the Regulators' Compliance Code and aim to ensure that the MMO is proportionate, accountable, consistent, transparent and targeted in any compliance action it takes.

7.17. Table 5 highlights the estimated costs arising from compliance activities for the proposed management.

7.18. The Royal Navy vessel costs are based on the running cost of a Fisheries Squadron Offshore Patrol Vessel based on 320 operational days per year and 2.5 hours allocated for each MPA inspection. These costs reflect the cost to the government as a whole, but do not necessarily indicate which portion of the cost is borne by MMO or the Royal Navy.

7.19. A discounting rate of 3.5% was applied to calculate the present value and 2018 was used as the price base year. The net present value cost over 10 years to the MMO of the proposed measures is estimated to be £66,055 (tables 5 and 6).

Total monetised costs

7.20. Total monetised costs over 10 years (costs to UK businesses and compliance costs) are estimated to be £978,651 (table 6).

Table 2: Size of proposed management options

	Total size	ICES rectangle 37E6	ICES rectangle 36E6
Total size	-	3627.56km ²	3670.99km ²
Management Option	353.33 km ²	49.29 km ²	304.04 km ²

Table 3: Estimated UK values of bottom towed gear landings from the option 2 management area. All values are rounded to the nearest pound sterling (£)

Vessel size	0-12 m		12-15 m		15 m +		Total	
	36E6	37E6	36E6	37E6	36E6	37E6	36E6	37E6
Year								
2011	14,116	4,020	2,453	2,709	62,151	12,940	78,720	19,670
2012	4,753	3,754	21,967	3,444	108,011	12,319	134,731	19,517
2013	8,094	3,419	0	1,092	52,383	128,603	60,477	133,114
2014	6,487	3,101	0	0	0	41,434	6,487	44,535
2015	5,602	1,794	0	984	20	24,455	5,622	27,233

Annual average	7,810	3,218	4,884	1,646	44,513	43,950	-	-
-----------------------	-------	-------	-------	-------	--------	--------	---	---

Table 4: Values of bottom towed gear landings from relevant ICES rectangles and estimates from within the option 2 management area from Irish vessels. All values are rounded to the nearest pound sterling (£)

	2011	2012	2013	2014	2015	Annual average
36E6 landings	11,356	20,939	6,337	55,107	97,918	38,331
Landings within management area	941	1,734	525	4,564	8,110	3,175
37E6 landings	111,488	189,196	154,599	133,993	407,574	199,370
Landings within management area	1,515	2,571	2,101	1,821	5,538	2,709
ICES rectangle total	122,845	210,136	160,937	189,099	505,491	237,701
Management area total	2,455	4,305	2,626	6,385	13,648	5,884

Table 5: Annual costs of compliance for recommended option

Activity	Cost per unit	Estimated units/year	Low cost scenario	High cost scenario	Best estimate (mid-point)
Royal Navy surface surveillance	£2,116 per inspection	1-2	£2,116	£4,232	£3,174
Joint compliance patrols with IFCA	£800-1,000 per day	5	£4,000	£5,000	£4,500
Total	-	-	£6,116	£9,232	£7,674

Table 6: Best estimate present values (3.5% discount rate) all numbers are in pounds sterling (£)

	Year										Total
	1	2	3	4	5	6	7	8	9	10	
Compliance costs (£)	7,674	7,414	7,164	6,922	6,687	6,461	6,243	6,032	5,828	5,631	66,055
UK fishing industry costs (£)	106,021	102,436	98,972	95,625	92,391	89,267	86,248	83,332	80,514	77,791	912,596
Total cost (£)	113,695	109,850	106,136	102,547	99,078	95,728	92,491	89,364	86,342	83,422	978,651

Benefits

7.21. Prohibition of the use of bottom towed fishing gear over the whole inshore section of the site will contribute to the protection of all features at the site. This in turn will protect the ecosystem services provided by the features at the site. The subtidal sand, subtidal mud, and the burrowing megafauna communities contribute towards:

- gas and climate regulation (the balance and maintenance of the chemical composition of the atmosphere and oceans ie carbon cycling);

- bioremediation of waste (the removal and metabolism of pollutants through storage and burial); nutrient cycling (the storage, cycling and maintenance of nutrients);
- species diversification through bioturbation which in turn enables macrofaunal species to inhabit otherwise inhabitable sediments; and,
- secondary food production (processes linked with the fishing industry ie food provision for commercially viable species such as haddock and cod)⁷.

Additionally, the sea-pens provide a biologically mediated habitat (habitat and substrata for other species to live on and within).

Box 1. Fishing vessels from Ireland

Although the focus of this IA is the impacts on the UK businesses and public bodies, vessels from Ireland also have access to fish in the proposed management areas.

Estimates of the value of bottom towed gear fisheries landings derived from within the proposed management areas were determined by using the locations of VMS reports, and the time associated to each report, from the relevant state's vessels registered as using bottom towed gear in the EU fleet register⁸.

Irish vessels registered as using bottom towed gears (dredges, otter trawls, beam trawls and demersal seines) landed a total catch with a value of £191,657 from the whole of ICES rectangle 36E6 and £996,850 from the whole of ICES rectangle 37E6 from 2011 to 2015.

An annual average of £5,884 was estimated as being derived from within the proposed management areas by Irish vessels.

Using the worst case scenario that 100% of these landings are lost, and applying a discounting rate of 3.5%, the net present value cost over the 10 year life of the IA to Irish fishing vessels is estimated to be £50,645.

Uncertainty and data assumptions

7.22. Cost estimates are based on estimates of UK landings values derived from within the management area. Landings information are reported at ICES rectangle level and it is therefore not possible to ascertain what proportion of the total landings value was actually derived directly from the proposed management area. The reported activity data (quantity and value of landings along with details of gear involved) was taken from MMO Ifish database.

7.23. For vessels not operating VMS an area based estimate of the reported landings from within ICES rectangles 36E6 and 37E6 were applied to the management area. This approach assumes homogenous distribution of landings from within the ICES rectangle. The estimates should be used with caution as it is very likely that there are patterns of activity within the ICES rectangle which mean some areas actually represent the origin for more or less landings than the estimate indicates.

⁷ Fletcher, S., Saunders, J., Herbert, R., Roberts, C. & Dawson, K. (2012). Description of the ecosystem services provided by broad-scale habitats and features of conservation importance that are likely to be protected by Marine Protected Areas in the Marine Conservation Zone Project area. Natural England Commissioned Reports, Number 088.

⁸ <http://ec.europa.eu/fisheries/fleet/index.cfm>

- 7.24. Only VMS reports from vessels travelling from zero to six knots were analysed, because these are the speeds at which fishing usually occurs. This introduces uncertainty because most vessels report their speed (via VMS) only once every two hours. It may also include vessels steaming at under six knots, particularly if working against a tide or current.
- 7.25. Displacement is difficult to quantify, and impossible to predict where exactly activities will be displaced to.
- 7.26. Estimated costs to the fishing industry are likely to be an overestimate, as vessels are likely to offset some of the lost revenue by fishing in other areas. It is also possible that the increased environmental status within the management areas could coincide with relatively more abundant fishing grounds, and therefore the analysis may have underestimated the value of reduced fishing ground.

8. Review

- 8.1. The MMO assessment of fishing activities within West of Walney MCZ will be reviewed after two years or sooner if significant new information becomes available. New information which would trigger a review could include new seabed survey data or updated advice from Natural England.
- 8.2. If a review of the MMO assessment results in a change to the conclusion in terms of the level of restriction of fishing required, MMO will amend the management measures accordingly. Any change to the byelaw will only be made be subject to public consultation and will require confirmation by the Secretary of State before coming into force.

9. Conclusion

- 9.1. Recommended option: Option 2. MMO byelaw to prohibit bottom towed fishing over all protected features (sea-pen and burrowing megafauna communities, subtidal mud and subtidal sand) over the inshore section of the site.
- 9.2. This option is recommended because:
- MMO byelaws are designed to manage activities in the marine environment for the protection of MPAs, and the services the protected features provide to human well-being, offering the appropriate levels of flexibility and control.
 - The MMO assessment of fishing activities within West of Walney MCZ concluded that mitigation of bottom towed fishing activities is required to ascertain that fishing activities are not hindering the CO of the site.
 - MMO is the most appropriate authority to take forward fisheries management measures inshore of 12 nm.
 - The proposed management areas were determined taking into account the best available existing evidence of the extent of sensitive features. Ease of enforcement and the need to have clear demarcation to promote compliance was also taken into account when considering the shape of the management areas.

Annex A: Policy and Planning

One in Three Out (OI3O)

OI3O is not applicable for MMO byelaws implemented for MPA management.

Small firms impact test and competition assessment

No firms are exempt from this byelaw. It applies to all firms who use the area. This measure does not have a disproportionate impact on small firms. It also has no impact on competition as it applies equally to all businesses that utilise the area.

Which marine plan area is the MPA and management measure in?

The proposed byelaw will include management areas in the North West inshore and offshore plan areas.

Have you assessed whether the decision on this MPA management measure is in accordance with the Marine Policy Statement and any relevant marine plan?

Yes

If so, please give details of the assessments completed:

In the North West inshore or offshore plan areas no marine plans are currently in place, for the management of these areas consideration has been given to the Marine Policy Statement. The decision on this MPA management measure is in accordance with the Marine Policy Statement, in particular:

- 3.1.8 Marine plan authorities and decision-makers should take account of the regime for MPAs and comply with obligations imposed in respect of them. This includes the obligation to ensure that the exercise of certain functions contribute to, or at least do not hinder, the achievement of the objectives of a MCZ.
- 3.8.3 Decision makers must therefore have regard to the provisions of the CFP in developing any plans or proposals affecting fisheries. The CFP is currently being reviewed with the aim of introducing a reformed vision by 1 January 2013. The view of the UK Administrations is that the overall aim of the reformed CFP should be to attain ecological sustainability whilst optimising the wealth generation of marine fish resources and their long term prospects.

Appendix 1: Informal consultation comments and MMO response

Comment	MMO response
The conversations should start with EU stakeholders and Member States about offshore management as soon as possible.	The management of the offshore section of the site will be progressed on behalf of the UK by MMO, Defra and the Joint Nature Conservation Committee (JNCC) through article 20 of the CFP Regulation ⁹⁹ , this site will be considered with the tranche 2 MCZs in the Southern North Sea.
The most destructive fishing methods used ie heavy beam trawling is restricted to outside the 12 mile limit so being part of the international fishery would not be included anyway.	The MMO assessment of the impacts of fishing in West of Walney MCZ, and Natural England advice, indicate that all bottom towed gear is capable of posing a significant risk to the CO of the site. MMO byelaws can apply only to areas in England and the adjacent territorial seas. The fishing activity in the offshore section of the site will be progressed through article 20 of the CFP Regulation.
The area is primarily a Nephrops fishery. The trawls used tow off the fishing line with a light foot rope suspended below. They have some of the least impact on the sea bed of all trawl types.	Nephrops trawls interact with the seabed, and therefore have impact in terms of abrasion and penetration. One of the features of the site, sea-pen and burrowing megafauna communities, includes Nephrops and other burrowing organisms as part of that feature. The current Nephrops fishery actively removes a species which is a component of the feature and therefore MMO currently believe that management is required to fulfil our duty to best further the site's CO.
Given the strong tidal regime in the area windfarms are practically no fishing zones, according to local fishermen the entire marine environment has changed within the windfarm. There is growing evidence to support this so surely even consenting to further windfarm development is a breach of the precautionary principle.	VMS data indicate that there is fishing within the boundaries of the windfarms that are within the boundary of the site. It is noted that intensities are lower in these areas, however fishing does occur. The windfarm within the West of Walney boundary were consented through the Planning Act 2008. The regulator for this is the Planning Inspectorate, who would therefore be responsible for the application of the precautionary principle when assigning the application. Consenting under the Planning Act 2008 does not mitigate the MMO's obligations under the MaCAA to best further the CO of MCZs, which is the driver behind this consultation.
At the Irish Seas Conservation Zones consultations, the limit of the windfarm was suggested as the limit of the MCZ and would permit trawling as has occurred for Nephrops for decades. Extension of the MCZ beyond the windfarm does not serve a conservation purpose but will cause social and economic issues to the local fishing communities.	The boundary of the MCZ was defined prior to designation by ministers in January 2016. The boundary was developed by the Irish Sea Conservation Zones Regional Stakeholder Group (RSG) and submitted to NE, JNCC and the Science Advisory Panel in September 2011. The RSG identified this MPA to protect subtidal mud, subtidal sand and sea-pen and burrowing megafauna communities; with the aim to recover these features to a favourable condition.
Is a conservation target needed? Does a feature merit legislative protection and at what point such protection is	The UK Government has committed to establishing a coherent network of well managed marine protected areas (MPAs) in English and other UK waters. MPAs help ensure that marine habitats and species are guarded from the increasing pressures

⁹⁹ Regulation (EU) No 1380/2013

<p>detrimental to local and national interests, especially when large areas of identical features are already protected in adjacent areas.</p>	<p>of human activity. In particular, MCZs are designed to protect characteristic species and habitats as well as those which are rare and threatened. When deciding on designation of MCZs, ministers take into account estimated socio-economic impacts if the designation is formally adopted. After designation of the site, regulators such as the MMO have a legal duty to further the sites' CO. Our assessment indicates that to do this management across all of the inshore portion of the site is required.</p>
<p>Recent habitat mapping outputs from JNCC and Magic suggest that potential sites containing sub-tidal mud are more extensive than the available evidence suggested during original planning process. This could allow for sites that would pose significantly less contention to the fishing industry.</p>	<p>Financial impacts to fishing fleets were considered by ministers ahead of designation of the second tranche of MCZs. The information released¹⁰ as part of designation outlined estimated costs falling on UK commercial fisheries, plus a limited but unquantified impact on non-UK fishing activity. After designation of the site, the MMO's primary consideration is now best furthering the sites' CO.</p>
<p>Leaving the sand area open does not present a significant mitigation to a blanket prohibition (option 1) that would have maximum impact on the mobile fishing fleet. Presenting only a limited zoned proposal offers no serious attempt to accommodate the existing fisheries at the site.</p>	<p>Management zones have been developed using data on location of feature and comparing that against feature sensitivity to pressures exerted by each gear type; whilst considering the recover general management approach for all features. All features are sensitive to pressures exerted by the current fishing fleet. As such proposals follow the feature boundaries as this is the most appropriate approach given the characteristics of the site. Data sets that identify the range of biological communities are the basis for formulating the management proposals. Ministers take account of socio-economic impacts of MCZs at the designation stage, however, now designation has occurred, CO are the primary concern.</p>
<p>Management options have been presented for formal consultation without a fuller consideration of potential measures informed by substantive risk analysis.</p>	<p>Between December 6th 2017 and January 12th 2018 MMO conducted an informal consultation seeking views on draft proposals for potential management of commercial fishing in the part of West of Walney MCZ. After considering all responses received, a two month formal consultation period will be launched, as required by MaCAA and Article 11 of the CFP Regulation¹¹. During this time MMO would welcome further correspondence. If management is introduced the MMO will only do so after completing an IA on the management measures.</p>
<p>The information provided only shows areas of interpreted conservation features and does not provide any survey records identifying sensitive features. There is data which identifies the range of</p>	<p>To underpin all MMO decisions the MMO use the best evidence available to us. The baseline for making regulatory decision here are data provided by Natural England and JNCC; this is the main dataset behind our management options.</p>

¹⁰ Designation of the second tranche of Marine Conservation Zones in waters for which the Secretary of State has responsibility (English inshore, English and Northern Irish offshore)

¹¹ Regulation (EU) No 1380/2013

<p>biological communities across the site, these do not appear to have been used to inform the management options.</p>	
<p>Central Fladen MPA had a more adaptive management plan than that proposed for West of Walney.</p>	<p>Management decisions are on a site by site basis. As this is a different site, with different features a direct adoption of the approach taken in Central Fladen would not be appropriate. The Central Fladen site is also subject to different processes as it is beyond the 12 nm boundary and so subject to Article 20 of the CFP which requires a joint recommendation to be agreed between relevant member states.</p>
<p>SNCB Advice on Operations questions the presence of <i>Funiculina quadrangularis</i>, the sensitivity of the site, and the risk from trawling.</p>	<p>Whilst the sea-pen <i>F. quadrangularis</i> can be part of sea-pen and burrowing megafauna communities habitat of conservation importance (HOCl), it is not stated that <i>F. quadrangularis</i> occurs within the site. The sensitivity of the sea-pen and burrowing megafauna communities to bottom towed gear is not based solely upon the presence of this species, or on sea-pens, but on the components common to all biotopes that can be part of the HOCl. The sensitivity is not just driven by <i>F. quadrangularis</i>, but also by other components of the feature.</p>
<p>Conservation advice packages identify what to account for when advancing management proposals for WoW.</p>	<p>MMO has written a draft assessment outlining the impacts which pressures from fishing gears exert on the features of the site, this includes possible management scenarios. When formal consultation is launched, on management within the site, this will be part of the consultation documents.</p>