

Annex H9 Approach for assessing costs of management measure implementation, enforcement and surveillance

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H9.1 This annex outlines the method used to estimate the public costs of implementing and enforcing¹ management measures (e.g. byelaws, voluntary agreements) in each recommended Marine Conservation Zone (rMCZ). It also summarises how management measures were identified for each rMCZ. The method is presented under the following sections: (1) baseline description; (2) cost assumptions; (3) management scenarios; and (4) limitations.

H9.2 Management measures have been identified for fishing and recreational activity only. This is because it is assumed that all other sector activities will be managed under the existing marine licensing framework.

H9.3 Indicative management measures were identified for each rMCZ by Inshore Fisheries & Conservation Authorities (IFCAs), Marine Management Organisation (MMO) and Department for Environment, Food and Rural Affairs (Defra) for each regional MCZ project. This exercise sought to be comprehensive and to ensure that the most likely management measures were identified for each site. However, it is anticipated that a more thorough assessment will be undertaken for each site before MCZ management is implemented and so the management measures identified by the IA may differ to this.

H9.4 Identification of management scenarios for each rMCZ (i.e. what activities, it is assumed, will be restricted – not the measure used to restrict them) was based on a vulnerability assessment which was completed for each rMCZ as well as advice provided by Natural England and the Joint Nature Conservation Committee (JNCC) (JNCC and Natural England, 2011a; 2011b). More information about how management scenarios for each sector and rMCZ were identified is provided at Annex H1.

H9.5 The management measures identified in the IA are suggestions that have been made for the purposes of the IA only. They do not pre-judge what the future site-specific management may be. Following Marine Conservation Zone (MCZ) designation, the management of activities in each rMCZ will be decided upon on a site-by-site basis and may differ from the IA assumptions. However, the IA has sought to identify the most likely site-specific management measures and to realistically estimate the additional public cost to manage each rMCZ. This has been based on knowledge of each site and discussions with stakeholders.

1 Baseline description

H9.6 The IA has made assumptions about where additional management is likely to be needed. This was based on discussions with local stakeholders and knowledge of any protection already given to MCZ features by existing management at each site. The IA therefore sought to avoid including costs for management where adequate protection is already given to MCZ features by existing management. A summary of known existing fisheries management at each site is provided at Annex E.

¹ 'Enforcement' refers to the legal use of force to manage activities in MCZs where statutory management measures are in place to protect the MCZ features. The term 'surveillance' is used to refer to the monitoring of activities in MCZs where voluntary agreements are in place to manage activities in order to protect MCZ features. Surveillance is not accompanied by a legal use of force as voluntary agreement is not a legal instrument.

2 Cost assumptions

H9.7 Cost estimates are provided for management measures, where it is assumed that additional management is needed in each rMCZ for recreational and fishing activity. Costs have not been estimated for sites where it is anticipated that no additional management of recreation and/or fishing activity is needed. Depending on the distance of the rMCZ from the coastline, the responsibility to implement and enforce the management of these activities falls to one of three types of public authority: the MMO, IFCA and the Defra. This is summarised in Table 1.

Table 1: Public authorities and their jurisdiction for fisheries and recreation management in rMCZs

Distance category offshore	Type of activity restricted	Implementation authority (and source of data on costs used in the IA)	Enforcement authority (and source of costs for the IA)	Types of MCZ management instruments suggested by MMO and IFCA	Additional information
rMCZs within 6nm	Fisheries and angling	IFCAs (IFCAs and MMO)	IFCAs (IFCAs and MMO)	Voluntary agreement, code of conduct, education programme, prohibition order or IFCA byelaw	MMO may also carry out ad-hoc coastal surveillance of voluntary agreements but not IFCA byelaws. Costs of this were not available for the IA.
	Recreation	MMO (MMO)	IFCAs (MMO)	Voluntary agreement, MMO byelaw	MMO may also carry out ad-hoc coastal enforcement of regulatory measures and surveillance of voluntary agreements. Costs of this were not available for the IA.
rMCZs between 6 and 12nm (where there are historic fishing rights for non-UK countries)	Fisheries	Defra (Defra)	MMO (MMO)	Measure through Common Fisheries Policy (CFP)	Enforcement undertaken by Royal Navy and/or IFCA vessels
	Recreation (including angling)	MMO (MMO)	MMO (MMO)	Voluntary agreement, MMO byelaw	Enforcement and surveillance undertaken by Royal Navy and/or IFCA vessels
rMCZs outside 6nm	Fisheries	Defra (Defra)	MMO (MMO)	Measure through CFP	Enforcement undertaken by Royal Navy and/or IFCA vessels
	Recreation (including angling)	Not possible for the public sector to implement	Not possible for the public sector to enforce	Voluntary agreement	Voluntary agreement only. It is assumed that there are no public sector implementation and enforcement costs

Source: MMO (pers. comm., 2011)

H9.8 For the purposes of the IA, it is assumed that one management measure is implemented per rMCZ by each authority with jurisdiction for activities in the site. Table 1 lists the types of recreational and fishing activities that each authority is responsible for depending on the distance of the activity offshore. For example, it is assumed that one byelaw is implemented in an rMCZ by

an IFCA for fisheries and angling, and that the MMO implements one other byelaw in the same rMCZ for other recreational activities if required. It is assumed that this is the case irrespective of the number of recreational or fisheries activities requiring management in each rMCZ. In reality, one byelaw may be implemented for more than one MCZ which would result in a cost that is lower than that estimated here.

H9.9 The suggested types of management measures listed in Table 1 are assumed to be applicable to rMCZs for the purposes of the IA only. There are also other types of management measures available; however, discussions with MMO and IFCA have identified that those listed in Table 1 are the most likely and therefore the most suitable to assume for the purposes of the IA.

H9.10 For the purposes of the IA, regulatory measures refer to IFCA or MMO byelaws and UK prohibition orders, as well as measures taken through the CFP. Non-regulatory measures refer to voluntary agreements, codes of conduct and education programmes. The costs to implement voluntary agreements are considered in the IA because although not statutory, it is a requirement of the Marine and Coastal Access Act 2009 (section 125 (2)) that each public authority (in this case IFCA and MMO) exercise their functions in a manner that best furthers the conservation objectives stated for the MCZ. This may be done by means of a voluntary agreement or a statutory instrument such as a byelaw.

H9.11 In reality there may be cost savings from introducing more than one measure at a time. However, this is not costed here due to the uncertainty regarding what measures, where and how many may be needed following the designation of MCZs. Also, it has not been possible to quantify the cost of buoys in the IA, which may be needed to mark the limits of an area to which a byelaw requires (Trinity House, pers. comm. 2011).

H9.12 MMO and IFCA have noted that the feasibility of any non-regulatory management measures (e.g. a code of conduct) will depend on factors such as the level of stakeholder support, the type of stakeholders and the willingness of local groups to participate in the management of an rMCZ. It should be noted that costs borne to private or other public stakeholders to implement or enforce non-regulatory management measures such as a voluntary agreement, are not included in the IA. This could comprise time and expense to attend management meetings or to monitor activity in an rMCZ.

H9.13 A detailed breakdown of anticipated management costs (implementation, enforcement and/or surveillance only) is provided in Annex N7, broken down for each relevant public authority and for each rMCZ. The cost estimates provided by Defra, MMO and IFCA represent the costs that are anticipated to be incurred to these organisations only, and do not represent costs to other public or private stakeholders (for example, costs to private stakeholders to attend management meetings for voluntary agreements).

H9.14 Costs to provide signs adjacent to coastal rMCZs, to explain the rMCZ management and area to which it is applied, are also quantified in the IA. However, such costs are only included for rMCZs, and for recreational activities, for which Natural England (pers. comm., 2011) has indicated that signs are likely to be needed (see paragraph H9.33 for more detail).

2.1 IFCA cost assumptions

H9.15 Ten IFCA areas overlap with the regional MCZ project areas. For the purpose of the IA, it is assumed that no additional mitigation is required for commercial fishing or recreational angling for rMCZs (NG 8, NG 10 and NG 11) within the North East IFCA area of jurisdiction. To inform the IA, eight IFCA's have provided costs for management measures in rMCZs in their jurisdiction. For the remaining IFCA, an average of cost estimates provided by the other IFCA's has been used. Three of the IFCA's that provided costs have provided site-specific cost estimates. More detail is provided below and at Annex N7.

Implementation costs for regulatory measures

H9.16 Six IFCA's have provided cost estimates for the implementation of fisheries and recreational angling regulatory management measures in 52 rMCZs within 6nm. The level of detail provided varies. This is summarised in Tables 2 to 5 below for four of these IFCA's. The other two IFCA's have provided site-specific costs which are provided at Annex N7 and are not repeated here.

H9.17 The estimated one-off cost for an IFCA to implement a byelaw ranges from £6,000 to £100,000. This includes site-specific cost estimates provided by Kent & Essex IFCA and Sussex IFCA to implement byelaws in 17 rMCZs (these vary from £6,000 to £25,000 for each byelaw). A breakdown of the costs provided by Kent & Essex IFCA and Sussex IFCA for each site is not available (Kent & Essex IFCA & Sussex IFCA, pers. comm., 2011).

Table 2: North Western IFCA implementation cost assumptions for a byelaw

Actions required to implement a byelaw, and unit cost assumptions	One-off cost per action (£)
Planning, 20 hours at £70 per hour	1,400
Writing, 15 hours at 70 per hour	1,050
Take to committee, 10 hours at £70 per hour	700
Consultation, 10 hours at £70 per hour Dealing with objections, 10 hours at £70 per hour	1,400
Approval and sign-off, 3 hours at £70 per hour	210
Advertisement	2,000
Total implementation cost	6,760
Rounded up to allow for contingency	10,000

Source: North Western IFCA, pers. comm., 2011

Table 3: Cornwall IFCA implementation cost assumptions for a byelaw

Actions required to implement a byelaw, and unit cost assumptions	One-off cost per action (£)
Advertisement (<i>Fishing News</i> and three local newspapers)	3,500
Officer time (between 100 and 400 hours at £39 to £46 per hour)	Maximum of 18,400
Other administration costs	1,515
Committee/working groups to debate byelaws (based on six individuals plus one secretariat meeting three times)	Not costed
Total implementation cost	23,415

Source: Cornwall IFCA, pers. comm., 2011

Table 4: Devon & Severn IFCA implementation cost assumptions for a byelaw

Actions required to implement a byelaw, and unit cost assumptions	One-off cost per action (£)
Lower-end cost where good data are already available regarding activity in the rMCZ	3,000
Higher-end cost for complex rMCZs where few data are available and a large number of fishers are likely to be affected	100,000

Source: Devon & Severn IFCA., pers. comm., 2011

Table 5: Northumberland IFCA implementation cost assumptions for a byelaw

Actions required to implement a byelaw, and unit cost assumptions	One-off cost per action (£)
Includes signage, publicising the restriction, preparation time and possible legal costs for advice on implementation	Maximum of 10,000

Source: Northumberland IFCA, pers. comm., 2011

H9.18 The IA does not suggest use of regulatory management measures in the Isles of Scilly; therefore this IFCA did not provide any cost estimates for regulatory measures. Information was not sought from North Eastern IFCA because no additional management is required for commercial fishing or recreational angling for rMCZs (Net Gain rMCZs 8, 10 and 11) within the North Eastern IFCA's jurisdiction. For the remaining two IFCA's, which were unable to provide implementation cost assumptions for byelaws in their jurisdictions, an estimated average IFCA byelaw implementation cost was used instead. Based on the various cost estimates provided by six IFCA's to implement a total of 52 byelaws (described above, further details provided in Annex N7), the estimated average cost to implement an IFCA byelaw is £42,494.

Implementation costs for non-regulatory measures

H9.19 Three IFCA's provided cost estimates for the implementation of fisheries and recreational angling non-regulatory management measures in rMCZs within 6nm. For the purposes of the IA, non-regulatory measures are assumed to comprise voluntary agreements, education programmes and codes of conduct. The estimated cost per non-regulatory measure ranges from £3,000 to £27,000 (estimates were provided for 25 non-regulatory measures across 25 rMCZs) (details provided in Annex N7). This includes site-specific cost estimates provided by Kent & Essex IFCA and Sussex IFCA to implement non-regulatory measures in 24 rMCZs. These vary from £6,000 to £27,000 for each non-regulatory measure. A breakdown of the costs provided by Kent & Essex IFCA and Sussex IFCA for each site is not available (Kent & Essex IFCA and Sussex IFCA, pers. comm., 2011). Northern IFCA was the other IFCA that provided an estimate. No additional management is required for commercial fishing or recreational angling for rMCZs (Net Gain 8, 10 and 11) within North Eastern IFCA's jurisdiction.

H9.20 For the remaining six IFCA's, which did not provide implementation costs for non-regulatory management measures in their jurisdiction, MMO implementations costs were used instead (MMO, pers. comm. 2011). This is a cost of £2287 per non-regulatory measure (voluntary agreement cost estimate for low-risk rMCZs within 12nm) and applies to 32 non-regulatory measures across 32 rMCZs. A breakdown of these costs is provided in Table 8.

H9.21 The estimated costs for implementation of non-regulatory measures that are employed in the IA include only the costs to IFCA's and the MMO. It is likely that costs will also be borne by

private or other public stakeholders (such as time to attend management meetings), which are not included in the IA. The figures used in the IA are therefore likely to be under-estimates of the total cost.

Enforcement costs for regulatory measures

H9.22 Four IFCAs in the regional MCZ project areas provided cost estimates for the enforcement of fisheries and recreational angling regulatory management measures in rMCZs within 6nm. The estimated enforcement cost per regulatory measure ranges from £3,724 to £205,500 (estimates for 52 regulatory measures across 52 rMCZs). This includes site-specific cost estimates provided by Eastern IFCA, Kent & Essex IFCA and Sussex IFCA to enforce regulatory measures in 27 rMCZs. These costs cover the same cost range. A breakdown of the costs for each site provided by Eastern IFCA, Kent & Essex IFCA and Sussex IFCA is not available (Kent & Essex IFCA and Sussex IFCA, pers. comm., 2011). The level of detail provided varies considerably. This is summarised in Tables 6 and 7 below (details provided in Annex N7).

Table 6: Northumberland IFCA enforcement cost assumptions for a byelaw

Actions required to enforce a byelaw, and unit cost assumptions	Cost estimate
Surveillance costs based on 2 additional patrols per month by 2 officers for 2 hours	£5,000
Maximum prosecution costs based on 2 prosecutions at a cost of £1,000 per prosecution (includes solicitors' fees and time spent in court) minus revenue of £100 per successful prosecution (paid to HM Treasury)	£1,800

Source: Northumberland IFCA, pers. comm., 2011

Table 7: Eastern IFCA enforcement cost assumptions for a byelaw

Actions required to enforce a byelaw, and unit cost assumptions	Cost estimate
Based on patrol boat rate per day: £5,500 Rigid inflatable boat (RIB) rate per day: £50 Shore-based officer rate per day: £128 For other organisations, surveillance costs per day: £125 Cost of pursuing prosecution: £1,000 per prosecution Value of fines paid: average £100 per successful prosecution (paid to HM Treasury)	Varies per rMCZ from £3,724 to £205,500

Source: Eastern IFCA, pers. comm., 2011

H9.23 For the remaining five IFCAs, which did not provide enforcement costs for byelaws in their jurisdiction, MMO enforcement costs were used instead (MMO, pers. comm. 2011). This is a cost of £28,575 per regulatory measure (for rMCZs located 6 to 2nm offshore with low levels of activity and low risk of non-compliance) and applies to 35 regulatory measures across 35 rMCZs. A breakdown of these costs is provided in Table 10. No additional management is required for commercial fishing or recreational angling for rMCZs (Net Gain 8, 10 and 11) within North Eastern IFCA's jurisdiction.

Surveillance costs for non-regulatory measures

H9.24 Four IFCAs in the regional MCZ project areas provided cost estimates for the surveillance of fisheries and recreational angling non-regulatory management measures in rMCZs within 6nm. The estimated surveillance cost per non-regulatory measure ranges from £5,000 to £54,000 (comprising 26 regulatory measures across 26 rMCZs) (details provided in Annex N7). The

estimated surveillance costs for non-regulatory measures are the costs to IFCAs and the MMO only. It is likely that costs will also be borne by private or other public stakeholders (such as time spent monitoring a site), which are not included in the IA. The figures used in the IA are therefore likely to be under-estimates of the total cost.

H9.25 The Isles of Scilly IFCA anticipates the additional surveillance cost for a voluntary agreement for fisheries management to be approximately £19,000/yr. Additional surveillance will be undertaken by the Isles of Scilly patrol vessel in at least ten months of each year. This will be available in the remaining two months of the year if required. The costs are for fuel only as the skipper is employed as a fisheries officer already. It is assumed for the purposes of the IA that there would be no opportunity cost of the additional time spent by the skipper on surveillance of management for MCZs. Additional fuel costs are expected to be £9,000/yr and additional maintenance and eventual replacement of the patrol vessel a further £10,000/yr (anticipated capital cost spread across 20 years of the IA) (Isles of Scilly IFCA, pers. comm., 2011).

H9.26 Northumberland IFCA anticipates the additional surveillance cost for a voluntary agreement for fisheries management to be approximately £5,000/yr. This cost is based on 2 additional patrols manned by 2 officers for an additional 2 hours each month. No further breakdown is available (Northumberland IFCA, pers. comm., 2011).

H9.27 Kent & Essex IFCA and Sussex IFCA have provided site-specific surveillance cost estimates for a voluntary agreement for fisheries management will and anticipate this to range from £8,800 to £54,000 per rMCZ. A breakdown of the costs provided by Kent & Essex IFCA and Sussex IFCA for each site is not available (Kent & Essex IFCA & Sussex IFCA, pers. comm., 2011). No additional management is required for commercial fishing or recreational angling for rMCZs (Net Gain 8, 10 and 11) within North Eastern IFCA's jurisdiction.

H9.28 For the remaining five IFCAs, which did not provide surveillance costs for non-regulatory fisheries and recreational angling management measures in their jurisdiction, MMO surveillance costs were used instead (MMO, pers. comm. 2011). This is a cost of £17,200 per regulatory measure (for rMCZs located 6 to 2nm offshore with low levels of activity and low risk of non-compliance) and applies to 38 regulatory measures across 38 rMCZs. A breakdown of these costs is provided in Table 10.

H9.29 It should be noted that Kent & Essex IFCA and Sussex IFCA also wished to include a cost in the IA for implementation and surveillance of codes of conduct in rMCZs where it is assumed that no additional management is required. This is because they wish to assume that rMCZ features with conservation objectives of 'maintain at favourable condition' will require management to ensure that their condition does not become unfavourable. Such management could comprise additional monitoring. However, these costs are not included in the IA as it has sought to apply consistent management assumptions across the ten different IFCA jurisdictions in the MCZ project area. In reality, each IFCA is likely to adopt locally specific approaches to managing rMCZs in its area. This could incur additional costs in some instances.

2.2 MMO cost assumptions

H9.30 MMO has provided cost estimates for the following for the purposes of the IA:

- implementation of recreation management measures between 0 and 12nm (regulatory and non-regulatory), excluding recreational angling
- enforcement and surveillance of recreation management measures between 0 and 12nm (regulatory and non-regulatory), excluding recreational angling
- enforcement of fisheries management outside 6nm (regulatory).

Table 8: MMO implementation cost assumptions for recreational management measures within 12nm

Type of management measure and level of risk of the rMCZ	Actions required to implement the management measure, and unit cost assumptions	One-off cost per rMCZ for one management measure
Voluntary agreement covering low-risk site, e.g. 5 recreational anglers within a small MCZ Reference Area	Staff time (Executive Officer (EO) x 11 days) = £1,462 Staff travel/accommodation based on overnight stay of £75 and train travel of £150 each (1 officer per meeting) based on 3 meetings = £675 Meeting costs (3 meetings of 5 stakeholders at £50 per meeting) based on average room hire and refreshment provision (estimates supplied by MMO stakeholder team) = £150	£2,287
MMO byelaw covering low-risk site, e.g. 5 recreational anglers within a small MCZ Reference Area	Staff time (EO x 28 days) = £3,723 Meeting costs (3 meetings of 5 stakeholders at £50 per meeting) based on average room hire and refreshment provision (estimates supplied by MMO stakeholder team) = £150 Staff travel/accommodation based on overnight stay of £75 and train travel of £150 each (1 officer per meeting) based on 3 meetings = £675 Public notices (4 x £500 each) = £2,000 Total legal advice and drafting (Grade 7 x 1 day) = £253	£6,801
Voluntary agreement covering high-risk site, e.g. Studland Bay, where there are a number of stakeholder interests involved and the site management is complex	Staff time (Higher Executive Officer (HEO) x 16 days) = £2,511 Staff travel/accommodation based on overnight stay of £75 and train travel of £150 each (2 officers per meeting) = £2,250 Meeting costs (5 meetings of 20 stakeholders at £2,000 per meeting) based on average room hire and refreshment provision (estimates supplied by MMO stakeholder team) = £10,000	£14,761
MMO byelaw covering high-risk site, e.g. Studland Bay, where there are a number of stakeholder interests involved and the site management is complex	Staff time (HEO x 44 days) = £6,900 Meeting costs (5 meetings of 20 stakeholders at £2,000 per meeting) based on average room hire and refreshment provision (estimates supplied by MMO stakeholder team) = £10,000 Staff travel/accommodation based on overnight stay of £75 and train travel of £150 each (2 officers per meeting) = £2,250 Public notices (8 x £500 each) = £4,000 Total legal advice and drafting (Grade 7 x 2 days) = £506	£23,656

Source: MMO, pers. comm., 2011

H9.31 The cost estimates that are anticipated to be incurred by the MMO (pers. comm., 2011) are shown in Tables 8, 9 and 10. MMO has stated that it has provided very rough estimates as it has no experience of implementing recreational management measures within MCZs. The estimates are hypothetical only and are based on the current operation costs of MMO activities. It is not yet known how much enforcement and surveillance it will be possible to carry out as part of existing MMO operational tasks. Therefore, the estimates provided could vary widely in practice.

H9.32 MMO has also provided annual administration costs which it expects to incur over and above the costs for each separate suggested management measure. These would be for staff training and general administration. The additional cost for staff training is estimated to be £4,480 per rMCZ per year. The additional cost for staff administration of the sites is estimated to be £21,940 per site per year. This cost covers 50 days of staff time to process Freedom of Information requests (including ministerial correspondence, official letters and queries); 12 hours of staff time to monitor performance; 250 hours of staff time to provide advice and guidance; and staff time to process 30 permit applications (MMO, pers. comm., 2011).

Table 9: MMO enforcement and surveillance cost assumptions for recreational management measures within 12nm

Type of management measure	Actions required and unit cost assumptions	Cost per site per year for one management measure
Voluntary agreement	Surveillance of management measure: Assistance sought from local stakeholders to help monitor effectiveness. Depending on complexity of site, Marine Officer time per year could vary from 2 to 10 days at £157.98 per day including travel and subsistence (T & S)	£315.96 to £1,579.80
MMO byelaw	Enforcement of management measure: Depending on complexity of site: <ul style="list-style-type: none"> • Marine Officer time per year could vary from 4 to 20 days at £157.98 per day including T & S; • prosecutions per year could vary from 1 to 2 at £10,375 per prosecution; • if outside 6nm (and so not enforced by IFCA vessels), it is assumed that 4 days of Royal Navy vessels are required at £9,100 per day or 4 days of IFCA vessels at £1,000 per day 	£11,954.80 to £47,406.92

Source: MMO, pers. comm., 2011

Table 10: MMO enforcement and surveillance cost assumptions for fisheries management measures outside 6nm

Type of management measure	Actions required and unit cost assumptions	Enforcement cost per site per year for one regulatory management measure	Surveillance cost per site per year for one non-regulatory management measure
Low-risk inshore site, i.e. a site lying between 6 and 12nm with low levels of activity and low risk of non-compliance			
Royal Navy surface surveillance per site	£ 9,100 per day based on 1 day per year per site	£9,100	£9,100
Joint enforcement patrols with local IFCA per site	Between £800 and £1,000 per day based on 5 days per year per site	£5,000	£4,000
Aerial surveillance per site	£ 2,050 per hour for plane based on 2 hours per year per site	£4,100	£4,100
Investigations/prosecutions per site	£10,375 per case based on 1 prosecution per year per site	£10,375	Not relevant
	TOTAL	£28,575	£17,200
High-risk inshore site, i.e. a site lying within 12nm with high levels of activity/high risk of non-compliance; or low-risk offshore site, i.e. a site lying outside 12nm with low levels of activity/low risk of non-compliance			
Royal Navy surface surveillance per site	£ 9,100 per day based on 2 days per year per site	£18,200	£18,200
Joint enforcement patrols with local SFC/IFCA per site	Between £800 and £1,000 per day based on 5 days per year per site	£5,000	£4,000
Aerial surveillance per site	£ 2,050 per hour for plane based on 4 hours per year per site	£8,200	£8,200
Investigations/prosecutions per site	£10,375 per case based on 2 prosecutions per year per site	£20,750	Not relevant
	TOTAL	£52,150	£30,400
High-risk offshore site, i.e. a site lying outside 12nm with high levels of activity/high risk of non-compliance			
Royal Navy surface surveillance per site	£ 9,100 per day based on 3 days per year per site	£27,300	£27,300
Joint enforcement patrols with local SFC/IFCA per site	Between £800 and £1,000 per day based on 5 days per year per site	£5,000	£4,000
Aerial surveillance per site	£ 2,050 per hour for plane based on 8 hours per year per site	£16,400	£16,400
Investigations/prosecutions per site	£10,375 per case based on 3 prosecutions per year per site	£31,125	Not relevant
	TOTAL	£79,825	£47,700

Source: MMO, pers. comm., 2011

2.3 Signage costs

H9.33 The IA also includes the cost to install and maintain signs in coastal or estuarine pMCZs to explain the rMCZ management and area to which it is applied. However, such costs are only included for recreational activities in rMCZs, for which Natural England (pers. comm., 2011) has indicated that signs are likely to be needed. It is not provided for all coastal and estuarine pMCZs.

H9.34 The costs provided here are in addition to the MMO's implementation and enforcement/surveillance costs to manage recreational activities in the site (assumed for purposes of the IA). It is assumed here that the local authority or private land owner (as indicated in Annex N7) will incur the cost to install and maintain signs on their land. Costs have been provided by Kent Wildlife Trust, Natural England and Thanet Coast Project (pers. comm., 2011).

H9.35 The costs are site-specific, depending on what management of recreational activities already takes place in the site, and the management scenario proposed for the purpose of the IA. The costs may have been omitted for some sites, resulting in underestimation of the costs of signs for the suite of MCZs. Further detail is provided at Annex N7 and is not repeated here.

2.4 Defra cost assumptions

H9.36 Defra has provided cost estimates for the implementation of fisheries management measures through the Common Fisheries Policy (CFP). The IA assumes that this is required for all rMCZs beyond 6nm that have management scenarios of additional fisheries management. This is because additional fisheries management would need to be provided through the CFP for all rMCZs between 6nm and 12nm because they are all in areas where non-UK vessels have historic fishing rights. Also additional fisheries management would need to be provided through the CFP for all rMCZs beyond 12nm (Defra, 2011, pers. comm.). The total cost of implementing fisheries management measures through the CFP is estimated to be £24,000 (rounded up to the nearest thousand) (Defra, 2011, pers. comm.). This is a one-off cost and is irrespective of the number of rMCZs requiring such measures.

H9.37 Defra has supplied the following breakdown of the estimate (Defra, 2011, pers. comm.):

- Full-day discussions will be required in each of the four regional MCZ project areas to clarify any outstanding issues about the proposed management measures. It is assumed that 4 days each of a Grade 7 and HEO will be needed for this at an estimated cost of £1,958 (based on 4 x 7.2 hours x (£26 per hour + £42 per hour)). It is assumed that management measures will already have been subject to consultation and an IA for the management measures will have been prepared for each site.
- Provision of drafting advice to lawyers will be required. It is assumed that 1 day of a Grade 7 lawyer will be required at an estimated cost of £302 (based on 1 x 7.2 hours x £42 per hour). It is assumed that 10 days of a Grade 7 lawyer will be required to draft the statutory instrument at an estimated cost of £3,024 (based on 10 x 7.2 hours x £42 per hour) and any necessary follow-up by a policy and lawyer Grade 7 at an estimated cost of £3,024 (based on 5 x 7.2 hours x £84 per hour).
- Cover for scrutiny of measures in Parliament will be required as well as the possibility of a formal debate before approval at an estimated cost of £3,960 (based on 5 days of policy and

lawyer Grade 7 and Higher Executive Officer's (HEO) time at (£84 per hour + £26 per hour) x 7.2 hours x 5).

- Drafting of policy guidance (to enforcement bodies) for each rMCZ will be required at an estimated cost of £6,048 (based on 10 days of Grade 7 policy and lawyers' time at £84 per hour x 7.2 hours x 10).
- All existing information justifying each management measure will need to be collated into a single document together with a covering letter to be sent to the European Commission through UK Permanent Representation (UKREP) of the EU. This is an estimated cost of £1,534. This assumes that the work is done at HEO level (based on 56 rMCZs x 1 hour for each site, plus 2 hours for covering letter and 1 hour for turnaround in UKREP x £26 per hour).
- The suite of management measures will need to be presented to the European Commission and other Member States at a working group/management committee equivalent, dealing with any queries or clarification and ensuring ultimate approval (through Commission Regulation). This is an estimated cost of £1,872 (based on 3 days in Brussels at £26 per hour, plus the equivalent of 10 days dealing with related queries at £26 per hour).

H9.38 It is assumed for the purposes of the IA that separate management measure(s) will be implemented for each rMCZ outside 6nm. This does not affect Defra's cost assumptions as this is based on the number of sites and not the number of management measures.

3 Management scenarios

H9.39 The estimated additional costs to the public sector have been provided for both regulatory and non-regulatory management measures, where it is appropriate for each rMCZ. This has been determined through site-specific discussions with IFCA's and MMO.

H9.40 The costs employed in the IA do not include costs borne to private or other public stakeholders to implement or enforce non-regulatory management measures such as a voluntary agreement. This could comprise time and expense to attend management meetings or to monitor activity in an rMCZ. They therefore under-estimate the costs of implementation and enforcement/surveillance of management measures.

H9.41 The costs of suggested management measures are represented by two scenarios in the IA. Scenario 1 is the low cost option and represents the cost of implementing non-regulatory measures in sites where it is realistic to do so. This compares with Scenario 2, which represents the costs of implementing regulatory measures in sites where it is realistic to do so. For rMCZs where only a non-regulatory or regulatory measure is realistic, the realistic measure is employed in both the higher and the lower costs irrespective of whether it is a regulatory or non-regulatory measure.

H9.42 Both scenarios assume that only regulatory measures will be implemented in rMCZs outside 12nm for recreation (including recreational angling) and commercial fisheries outside 6nm. This is because the IA assumes that it is impractical to implement non-regulatory measures such as voluntary agreements outside these limits.

H9.43 The IA has sought to include costs for suggested management measures that are deemed to be the most appropriate for each rMCZ and each management scenario only based on

information provided by Defra, MMO and IFCA (pers. comms., 2011). The costs have been aggregated as shown in Table 1.

H9.44 Only the cost of enforcement/surveillance of rMCZ management measures is included in the headline figures in the IA Summary. This is because Defra (pers. comm., 2012) has advised that costs to implement rMCZ management measures (including MMO and IFCA costs to implement byelaws and to help set up voluntary agreements, landowner costs to install signs and bins where required, and Defra costs to get agreement for management outside of 12nm through the Common Fisheries Policy) are the normal responsibilities of the relevant regulators and fall under usual policy development costs.

4 Limitations

H9.45 There are a number of limitations associated with the approach adopted in the IA that derive from the assumptions made for the purposes of the IA. These include the following:

- In the absence of information about what management measures may actually be implemented over the next 20 years, the IA assumptions may wrongly represent the actual number of management measures in MCZs that may be needed post-designation and also in the future.
- In the absence of information about what management measures may actually be implemented over the next 20 years, the IA impact assumptions may wrongly represent the type of management measures in MCZs that come forward.
- The estimated additional costs anticipated over the next 20 years are indicative only. They will differ from the actual costs depending on what management measures are put in place when, where, how and to what extent.
- There may be cost savings of one authority introducing one management measure that covers multiple rMCZs which it is not possible to estimate in the IA.
- It is assumed for the purposes of the IA that all of the management measures will be implemented in 2013 and that enforcement levels will be constant throughout the 20 years of the IA period of analysis. In reality, this may vary. For rMCZs where verification surveys of the site ecology are required, the costs for management over the 20-year period are likely to be overestimated.
- The IA assumes that non-regulatory measures will be 100% effective. In reality, a proportion of non-regulatory measures will not be successful and regulatory measures may vary in effectiveness. Costs of additional measures, where they may be needed, are not included in the IA.
- The IA does not include the cost of education programmes (e.g. interpretation boards or education materials) that may accompany the designation of MCZs. Many IFCA see this as an essential requirement to ensure the successful management of MCZs.

References

JNCC and Natural England. 2011a. *General Advice on Assessing Potential Impacts of and Mitigation for Human Activities on MCZ Features, Using Existing Regulation and Legislation.* Peterborough: Natural England.

JNCC and Natural England. 2011b. *Draft: Increases in costs for assessing environmental impacts of future plans and projects arising as a result of Marine Conservation Zones (MCZs).* 28.11.11. Peterborough: Natural England.