

Delivery Schedule for Actions listed in the Conservation Plan for Cetaceans in Irish waters – May 2015

| Action No. | Action under the Conservation Plan | Lead Department | Other Bodies | Timeframe | Progress to 31 st May 2015 |
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| I. RESEARCH PROGRAMME | | | | | |
| 1 | Conduct further research, including through the Joint Cetacean Protocol, to determine the distribution, relative abundance and habitat preferences of cetaceans. Alongside survey effort, this should also include the establishment and maintenance of an integrated national cetacean database that is compatible with the Joint Cetacean Protocol. | DAHG | MI, EPA | Ongoing | <p>The development of an Irish Marine Mammal Database and its associated public Map Viewer was completed in August 2010. It is now being further populated with Irish and international cetacean datasets including sighting records, line transect surveys and photo-identification data. See the web link: http://marinemaps.biodiversityireland.ie/#/Maps</p> <p>In 2009 Cornell University produced a report for the UK Department of Energy and Climate Change concerning baleen whale distribution off western Ireland and Britain, using data gathered via the SOSUS array.</p> <p>An SFI-funded project at UCC concerning population genetics of Bottlenose Dolphins in Irish waters was completed in April 2010. A paper on its results was published in the journal Animal Conservation (2011).</p> <p>Two studies of ecotourism and habitat use by Bottlenose Dolphins in the Lower River Shannon cSAC were completed in 2010 at UCC.</p> <p>An acoustic and visual survey targeting beaked whales in the Rockall Trough was completed by an international research team in Oct 2010. Its final report was published in March 2011. Financial assistance towards the survey was given by the Irish Government.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded three regional boat-based surveys of</p> |

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| | | | | | <p>cetacean abundance, relative abundance and inshore distribution. This was completed in November 2010.</p> <p>As part of the National Cetacean Protection Strategy, DAHG-funded monitoring of the Bottlenose Dolphin population inhabiting the Lower River Shannon cSAC was completed in November 2010.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded the reporting of analysis concerning Bottlenose Dolphin distribution, movements and abundance in western Ireland. This was completed in November 2010.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded two regional boat-based surveys of cetacean abundance, relative abundance and inshore distribution in the Irish Sea in 2011. This was completed in November 2011.</p> <p>A 3-year IRCSET-funded PhD project at GMIT on large whale ecology was completed in October 2012 while a second IRCSET-funded PhD project at UCC investigating odontocete acoustics in Irish waters was completed in 2014.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded a regional boat-based survey of cetacean abundance, relative abundance and inshore distribution off the north coast of Ireland in 2012. This was completed in November 2012.</p> <p>The Beaked Whale Passive Acoustic Monitoring pilot project (BWPAM) conducted PAM of beaked whales in offshore canyonated systems in 2011 and data analysis was undertaken in 2011-2012. Final reports were received by the funding body DCENR in 2012.</p> <p>The PReCAST study (2008-2012) co-funded by DAHG & MI completed its final stages in 2012 including</p> |
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| | | | | <p>reporting to the funding bodies. A follow-up “Atlas of the Distribution and Relative Abundance of Marine Mammals in Irish Offshore Waters 2005 – 2011” was completed in early 2013.</p> <p>A land-based cetacean monitoring scheme (2010-2012) commissioned in July 2010 by DAHG completed its data collection in December 2012. DAHG conducted an evaluation of the datasets collected in 2013.</p> <p>As part of the National Cetacean Protection Strategy, DAHG designed and commissioned line-transect monitoring surveys for Harbour Porpoises inhabiting the Roaringwater Bay and Islands SAC, Co. Cork, Rockabill to Dalkey Island SAC, Co. Dublin and the Blasket Islands SAC, Co. Kerry. These surveys were undertaken in 2013 (n=2 sites) and 2014 (n=1 site) and all analysis, reporting, etc. has been completed.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded two ship-based surveys of cetacean abundance, relative abundance and offshore distribution in the Irish Atlantic and Celtic Sea in 2014. This work, which was undertaken aboard MI-led fisheries research cruises for Blue Whiting and Herring respectively, was completed in 2014.</p> <p>DAHG is also a partner with DCENR (as Contracting Authority) in a new research initiative for the Irish offshore entitled the ObSERVE programme. Commencing in the first quarter of 2015, the new programme currently consists of two three-year projects covering (1) broad scale aerial surveys for cetaceans and seabirds in the Irish Atlantic and Celtic Sea, and (2) acoustic surveys for cetaceans in the Irish Atlantic. Field survey effort will take place over two years in 2015 and 2016 with the completion of analysis and reporting by March 2018.</p> <p>Additional work currently under way includes:</p> |
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| | | | | | <ul style="list-style-type: none"> • The IWDG-led Cetacean Strandings Scheme which continues into 2015. • Various smaller scale research projects on Bottlenose Dolphin populations and movements around Ireland (e.g., Cork Harbour - UCC, Shannon Estuary – SDWF/GMIT) and between Ireland, the UK and France. • Ongoing cetacean occurrence, movement and distribution project by Dúlra Research in coastal waters of northwest Co. Mayo. • Ongoing offshore cetacean research by third level institutions, facilitated by the National Research Vessel Shiptime Programme (e.g., GMIT-led <i>Cetaceans of the Frontier</i> surveys). • A 4-year PhD study at UCC of Bottlenose Dolphin population ecology in the west of Ireland which commenced in January 2011. This study which is co-funded by DAHG and is due for completion in 2016. • A PhD study at the University of Plymouth and GMIT examining the coupling of ecological processes and the socio-economics of cetacean based ecotourism. • A PhD study at GMIT of Bottlenose Dolphin population ecology in the Lower River Shannon cSAC which commenced in 2013-2014. • A further deep ocean Passive Acoustic Monitoring project funded by Woodside Energy (Ireland) Ltd. Initial acoustic recorder deployments took place in the Atlantic offshore in 2014. Data analysis is currently being undertaken. |
| 2 | Conduct further research to identify the breeding ecology, movements and migration routes of cetaceans. | DAHG | MI, EPA | Ongoing | <p>In 2009 Cornell University produced a report for the UK Department of Energy and Climate Change concerning baleen whale distribution off western Ireland and Britain, using data gathered via the SOSUS array.</p> <p>An SFI-funded project at UCC concerning population genetics of Bottlenose Dolphins in Irish waters was completed in April 2010. A paper on its results was published (<i>Animal Conservation</i>, 2011).</p> |

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| | | | | <p>As part of the National Cetacean Protection Strategy, DAHG funded the reporting of analysis concerning Bottlenose Dolphin distribution and movements in western Ireland. This was completed in November 2010.</p> <p>A 3-year IRCSET-funded PhD project at GMTI on large whale ecology was completed in October 2012 while a second IRCSET-funded PhD project at UCC investigating odontocete acoustics in Irish waters was completed in 2014.</p> <p>The PReCAST study (2008-2012) co-funded by DAHG & MI completed its final stages in 2012 including reporting to the funding bodies. A follow-up “Atlas of the Distribution and Relative Abundance of Marine Mammals in Irish Offshore Waters 2005 – 2011” was completed in early 2013.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded a regional boat-based survey of cetacean abundance, relative abundance and inshore distribution off the north coast of Ireland in 2012. This was completed in November 2012.</p> <p>A land-based cetacean monitoring scheme (2010-2012) commissioned in July 2010 by DAHG completed its data collection in December 2012. DAHG conducted an evaluation of the datasets collected in 2013.</p> <p>As part of the National Cetacean Protection Strategy, DAHG designed and commissioned line-transect monitoring surveys for Harbour Porpoises inhabiting the Roaringwater Bay and Islands SAC, Co. Cork, Rockabill to Dalkey Island SAC, Co. Dublin and the Blasket Islands SAC, Co. Kerry. These surveys were undertaken in 2013 (n=2 sites) and 2014 (n=1 site) and all analysis, reporting, etc has been completed.</p> |
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| | | | | <p>As part of the National Cetacean Protection Strategy, DAHG funded two ship-based surveys of cetacean abundance, relative abundance and offshore distribution in the Irish Atlantic and Celtic Sea in 2014. This work, which was undertaken aboard MI-led fisheries research cruises for Blue Whiting and Herring respectively, was completed in 2014.</p> <p>DAHG is also a partner with DCENR (as Contracting Authority) in a new research initiative for the Irish offshore entitled the ObSERVE programme. Commencing in the first quarter of 2015, the new programme currently consists of two three-year projects covering (1) broad scale aerial surveys for cetaceans and seabirds in the Irish Atlantic and Celtic Sea, and (2) acoustic surveys for cetaceans in the Irish Atlantic. Field survey effort will take place over two years in 2015 and 2016 with the completion of analysis and reporting by March 2018.</p> <p>Studies currently under way include:</p> <ul style="list-style-type: none"> • Various smaller scale research projects on Bottlenose Dolphin populations and movements around Ireland (e.g., Cork Harbour - UCC, Shannon Estuary – SDWF/GMIT) and between Ireland, the UK and France. • Photo-identification studies by IWDG of Fin Whales and Humpback Whales encountered in Ireland. • Population genetics of selected cetacean species via DAHG-licensed biopsy sampling. • Ongoing cetacean occurrence, movement and distribution project by Dúlra Research in coastal waters of northwest Co. Mayo. • Ongoing offshore cetacean research by third level institutions, facilitated by the National Research Vessel Shiptime Programme (e.g., GMIT-led <i>Cetaceans of the Frontier</i> surveys). • A 4-year PhD study at UCC of Bottlenose Dolphin population ecology in the west of Ireland which commenced in January 2011. This study co-funded |
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| | | | | | <p>by DAHG is due for completion in early 2016.</p> <ul style="list-style-type: none"> • A PhD study at GMT of Bottlenose Dolphin population ecology in the Lower River Shannon cSAC which commenced in 2013-2014. |
| 3 | Devise a research programme with clear scientific objectives to effectively monitor cetaceans inside and outside designated areas. | DAHG | | 2010-2011 | <p>In accordance with the National Cetacean Protection Strategy and requirements under Articles 11 and 17 of the EC Habitats Directive this programme involves (1) targeted inshore and offshore research, (2) regular monitoring at all designated conservation sites, and (3) continued support for additional field-based and laboratory-based ecological studies that contribute to the above, to knowledge of the species and to the understanding of human impacts thereon where appropriate.</p> |
| 4 | Investigate the feasibility of establishing an integrated National Photo-identification Catalogue for Bottlenose Dolphins. | DAHG | | Ongoing | <p>IWDG has provided NBDC with a copy of its coastal catalogue (up to 2008, excluding Shannon Estuary). An informal meeting of Irish cetacean researchers and attended by DAHG took place in March 2011. It was concluded that the establishment and ongoing maintenance of an overall national catalogue for the species would be a difficult, time consuming and costly undertaking. There is a shared willingness among the research community to collaborate and share photo-ID data in order to answer specific research questions (e.g., individual animal movements, investigating community structure). Targeted collaboration/data sharing took place in 2011 and 2012, culminating in a paper published in the Journal of Cetacean Research and Management. Further collaborations and data sharing arrangements are ongoing. No further action is envisaged.</p> |
| 8 | Encourage the development of a national standard against which all appropriate Passive Acoustic Monitoring (PAM) equipment can be calibrated to allow comparisons between sites and studies. | DAHG | | Ongoing | <p>The PReCAST study (2008-2012) co-funded by DAHG, which explored issues of PAM equipment comparability, calibration and method standardisation, completed its final stages in 2012 including reporting to the funding bodies. Its final results have been considered by DAHG in relation to this action.</p> <p>An MSc. thesis undertaken at GMT in collaboration</p> |

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| | | | | <p>with the University of Pisa, which included comparative analysis of simultaneous visual and acoustic cetacean records and an examination of the efficacy of PAMGUARD monitoring software, was completed in 2011.</p> <p>An MSc. study at UCC concerning toothed cetacean detectability using various dolphin/porpoise detectors (i.e. PODs) was completed in 2011 and its results have been considered by DAHG in relation to this action.</p> <p>An IRCSET-funded PhD project at UCC investigating odontocete acoustics in Irish waters was also completed in 2014. Its results have also been considered by DAHG in relation to this action.</p> <p>The potential development of a national standard for the use of PAM equipment has been given due consideration by DAHG, including via examination of the studies mentioned above. It is concluded that, given the range and technical capacities of the many PAM hardware and software technologies currently available and in ongoing development, and their uses in a variety of field studies both nationally and internationally, the development of a national standard is not warranted or useful in a practical sense. Instead DAHG encourages that international best practice is implemented, as represented in peer-reviewed scientific literature and as appropriate to (i) the exact study objectives and (ii) the field circumstances in question (e.g., target cetacean species, water depth, deployment method & duration, etc).</p> | |
| 9 | Explore the possibility of using static hydrophone networks to provide data to monitor cetaceans. | DAHG | | Ongoing | In October 2010 DCENR commissioned a pilot passive acoustic monitoring study of beaked whales along the eastern side of the Rockall Trough (BWPAM, 2010-2012). DAHG liaised closely with DCENR in the development and progress of this pilot study. Final reports were completed in 2012 and its results have been considered by DAHG in relation to this action. |

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| | | | | <p>The ABCD project, to investigate the feasibility of an autonomous static acoustic detection system for deployment as part of the Marine Institute SMARTBAY project, was completed in November 2010. Its findings have been considered by DAHG. Technical development under SMARTBAY is ongoing. No further action by DAHG is envisaged at this time.</p> <p>The PRECAST study (2008-2012) co-funded by DAHG, which explored issues of PAM equipment comparability, calibration and method standardisation, completed its final stages in 2012 including reporting to the funding bodies. Its final results have been considered by DAHG in relation to this action.</p> <p>An MSc. study at GMIT of Bottlenose Dolphin acoustic behaviour in the Lower River Shannon cSAC, which included the use of a shore-based fixed hydrophone, was completed in December 2010. Its final results have been considered by DAHG in relation to this action.</p> <p>An MSc. study at UCC concerning toothed cetacean detectability using various dolphin/porpoise detectors (i.e. PODs) was completed in 2011 and its results have been considered by DAHG in relation to this action.</p> <p>An IRCSET-funded PhD project at UCC investigating odontocete acoustics in Irish waters was also completed in 2014. Its results will also be examined by DAHG in relation to informing this action.</p> <p>An EPA-funded project at GMIT concerning the monitoring of ocean noise led to the installation of several autonomous acoustic monitoring devices in the west of Ireland including in the Shannon Estuary where there is a resident population of Bottlenose</p> |
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| | | | | | <p>dolphins. Among the objectives of this research, the acoustic and data streaming technologies are being investigated for their capacity to act as a cetacean monitoring tool.</p> <p>A further oceanic Passive Acoustic Monitoring pilot project funded by Woodside Energy (Ireland) Ltd is nearing completion. Initial static high and low frequency acoustic recorder deployments took place in the Atlantic offshore in 2014. Data analysis is currently under way at Curtin University in Western Australia. The results from this project are also expected to inform this action, particularly for deeper offshore environments.</p> <p>DAHG is also a partner with DCENR (as Contracting Authority) in a new research initiative for the Irish offshore entitled the ObSERVE programme. One project specifically concerns intensive static and towed acoustic surveys for cetaceans in the Irish Atlantic. Work began in April 2015 and field survey effort will take place over two years in 2015 and 2016 with the completion of analysis and reporting by March 2018. This work will provide important information concerning this action and future static acoustic monitoring in the waters of Ireland's EEZ.</p> |
| 16 | Carry out research to understand the foraging behaviour of cetaceans in Irish waters especially with regard to commercial fish species. | DAHG | MI | Ongoing | <p>The PReCAST study (2008-2012) co-funded by DAHG and MI examined links between cetacean foraging and fish stocks in the Celtic Sea. The project completed its final stages in 2012 including reporting to the funding bodies.</p> <p>A 3-year IRCSET-funded PhD project at GMIT on large whale ecology, which explored spatial and temporal aspects of baleen whale feeding ecology and trophodynamics in Irish waters, was completed in October 2012.</p> <p>The seven-year Beaufort EAFM study led by the Marine Institute is exploring trophic interactions and</p> |

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| | | | | | <p>spatial overlap between marine top predators and selected fisheries in Irish waters.</p> <p>Studies of cetacean diet in Irish waters are continuing at UCC, including a PhD programme based on stomach content analysis from stranded and bycaught small cetaceans. These include samples obtained via post-mortem examinations following a bycatch incident involving short-beaked common dolphins off the northwest coast in January-February 2013. Additional studies of cetacean diet in Irish waters using stable isotopes are currently being pursued at GMIT (baleen whales) and UCC (small cetaceans).</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded two ship-based surveys of cetacean abundance, relative abundance and offshore distribution in the Irish Atlantic and Celtic Sea in 2014. This work, which was undertaken aboard MI-led fisheries research cruises for Blue Whiting and Herring respectively, was completed in 2014.</p> <p>A 4-year PhD study at UCC of Bottlenose Dolphin population ecology in the west of Ireland commenced in January 2011. This project involves the use of stable isotopes to investigate spatial and temporal aspects of the species' feeding ecology in Irish coastal waters. The study is co-funded by DAHG and is due for completion in early 2016.</p> <p>An ongoing PhD study at GMIT and the University of Paris is continuing to investigate the relationship between cetacean foraging ecology in the Celtic Sea and the distribution/ecology of pelagic prey, including commercial stocks such as herring and other important fish stocks such as sprat.</p> |
| 18 | Include cetacean surveys on fishery cruises to collect information on the possible relationships between fish and cetacean abundance. | DAHG | MI | Ongoing | The PReCAST study (2008-2012) co-funded by DAHG and MI included visual surveys for cetaceans aboard selected fishery research cruises. The project completed its final stages in 2012 including reporting |

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| | | | | | <p>to the funding bodies.</p> <p>A 3-year IRCSET-funded PhD project at GMTI on large whale ecology, which <i>inter alia</i> explored spatial and temporal aspects of baleen whale feeding ecology and trophodynamics in Irish waters, was completed in October 2012. This research drew on data gathered during fishery cruises and periods of high pelagic prey abundance off the south coast of Ireland.</p> <p>As part of the National Cetacean Protection Strategy, DAHG funded two ship-based surveys of cetacean abundance, relative abundance and offshore distribution in the Irish Atlantic and Celtic Sea in 2014. This work, which was undertaken aboard MI-led fisheries research cruises for Blue Whiting and Herring respectively, was completed in 2014.</p> <p>Cetacean surveillance aboard selected fishery cruises in Irish waters, which is shown to be effective for <i>inter alia</i> monitoring range, distribution and relative abundance, continues in 2015. However, while current projects under the DCENR-DAHG ObSERVE programme are under way (i.e., 2015-2018) these will constitute the primary resource for monitoring cetaceans in Ireland's offshore waters.</p> |
| 19 | When sufficient data are available, carry out spatial modelling using GIS to explore the relationship between cetacean distribution and abundance and commercial fisheries, to identify times or areas with increased risk of interactions. | DAHG | MI | 2011-2012 | <p>The seven-year Beaufort EAFM study led by the MI has been investigating and modelling trophic interactions and spatial overlap between marine top predators (including cetaceans) and selected fisheries in Irish waters. It is also assessing fisheries impact risks and exploring management approaches to mitigating the environmental risk to sensitive species from commercial fishing.</p> <p>The PReCAST study (2008-2012) co-funded by DAHG examined links and spatial overlap between observed cetaceans and selected fish stocks in the Celtic Sea using GIS methods. A follow-up "Atlas of the Distribution and Relative Abundance of Marine</p> |

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| | | | | | <p>Mammals in Irish Offshore Waters 2005 – 2011” was completed in 2013.</p> <p>A 3-year IRCSET-funded PhD project at GMIT on large whale ecology, which explored spatial and temporal aspects of baleen whale feeding ecology and trophodynamics in Irish waters, was completed in October 2012.</p> <p>An ongoing PhD study at GMIT and the University of Paris is continuing to investigate the relationship between cetacean foraging ecology in the Celtic Sea and the distribution/ecology of pelagic prey, including commercial stocks such as herring and other important fish stocks such as sprat.</p> |
| 22 | Monitor the concentrations of persistent organic pollutants and other toxic contaminants in cetacean species in Ireland using samples from bycatch and/or stranding programmes. | DAHG | MI, EPA | Ongoing | <p>An international paper on assessing the effect of persistent organic pollutants on reproductive activity in Common Dolphins and Harbour Porpoises was published in May 2010. It included data from Irish samples collected with the assistance of the Irish Cetacean Strandings Scheme.</p> <p>Marine Institute toxicology analyses have been conducted on various tissue samples obtained from a selection of stranded cetaceans. GMIT are continuing to liaise with MI to evaluate the methodology and results.</p> <p>A BIM-led independent observer programme to monitor cetacean bycatch in selected fisheries continued into 2014. Separate BIM-led studies of inshore/offshore gillnet and tangle net fisheries have also been investigating marine mammal bycatch. These may also provide samples for toxicology as an ancillary item.</p> <p>DAHG has continued to provide permits in 2014 to a number of experienced researchers (e.g., at UCC, IWDG, GMIT) for the biopsy sampling of cetacean tissues from free-ranging whales and dolphins. Some</p> |

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| | | | | | samples are likely to be processed for toxicological analyses. |
| 23 | Quantify the concentrations of Brominated Flame Retardants in cetacean tissues in Irish waters using samples from bycatch and/or stranding programmes. | DAHG | MI, EPA | Ongoing | <p>Marine Institute toxicology analyses have been conducted on various tissue samples obtained from a selection of stranded cetaceans. GMIT are continuing to liaise with MI to evaluate the methodology and results.</p> <p>A BIM-led independent observer programme to monitor cetacean bycatch in selected fisheries continued into 2014. Separate BIM-led studies of inshore/offshore gillnet and tangle net fisheries have also been investigating marine mammal bycatch. These may also provide samples for toxicology as an ancillary item.</p> <p>DAHG has continued to provide permits in 2014 to a number of experienced researchers (e.g., at UCC, IWDG, GMIT) for the biopsy sampling of cetacean tissues from free-ranging whales and dolphins. Some samples are likely to be processed for toxicological analyses.</p> |

II. BY-CATCH PROGRAMME

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| 11 | Ireland should request advice from ICES concerning the effective mitigation of cetacean bycatch in commercial fisheries, including where relevant the steps necessary to establish species-specific bycatch targets, that will give effect to the achievement of strict protection for cetacean species occurring in the waters within Ireland's Exclusive Fishery Zone. | DAHG | EC, ICES | 2011 | <p>A BIM-partnered study for the EC to assess regulatory policy concerning the mitigation of incidental catches of cetaceans in EU waters was completed in 2010. The final report has been reviewed and considered by DAHG.</p> <p>The issue of cetacean bycatch has continued to be progressed by ICES and OSPAR/MSFD working groups over the last number of years. ICES continues to explore and develop a draft common framework for the surveillance/monitoring of marine mammals to include <i>inter alia</i> proposed Management/Assessment Units, biodiversity indicators and targets for key species, and initiatives to deal with the management and assessment of marine mammal bycatch. These</p> |
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| | | | | | <p>issues were covered at a dedicated Habitats Directive workshop attached to the European Cetacean Society annual conference in Galway, March 2012 and also on an ongoing basis at the ICES Working Groups on Marine Mammal Ecology (WGMME) and Bycatch of Protected Species (WGBYC) in 2013 and 2014.</p> <p>In relation to bycatch ICES has proposed that a pragmatic management framework approach be adopted, rather than the EcoQO approach, and this was being developed further in 2014. WGBYC has refocused its work (i) towards the incorporation of monitoring requirements into the new Data Collection Framework (DCF) since the European Commission decided not to amend Regulation 812/2004, and (ii) to implement monitoring tasks for protected and endangered species in the future by close cooperation with ICES expert groups (e.g., WGMME). This is consistent with a move to a wider ecosystem-based approach to fisheries monitoring, including monitoring of the bycatch of cetaceans, seals, birds, sea turtles and non-target fish species, for example.</p> <p>The OSPAR/MSFD Working Group ICG-COBAM and related workshops continue to actively consider the steps and methodology necessary to implement cetacean bycatch monitoring and mitigation for commercial fisheries in the EU.</p> |
| 12 | A risk assessment of existing fisheries by all fleets in waters within Ireland's Exclusive Fishery Zone should be undertaken for the purposes of identifying those that pose the greatest risk of cetacean bycatch. | DAHG | EC, DAFM, MI, BIM | 2011-2012 | <p>A BIM-partnered study for the EC to assess regulatory policy concerning the mitigation of incidental catches of cetaceans in EU waters was completed in 2010. The final report has been reviewed and considered by DAHG.</p> <p>The Habitats Directive Article 17 reporting process completed by Ireland in 2013 also considered the risks and threats posed to all cetaceans in Irish waters on a species-by-species basis including those arising from fishing activity. This was also considered as part of the MSFD Initial Assessment undertaken by Ireland in</p> |

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| | | | | | <p>2013-2014.</p> <p>In relation to requirements under Regulation 812/2004 DAFM and BIM-led initiatives to monitor cetacean bycatch in Irish trawl and gillnet fisheries commenced in 2005 and they have continued into 2014. Since 2011 separate BIM-led studies of regional inshore/offshore gillnet, tangle net and trammel net fisheries have also been investigating marine mammal bycatch. Independent on-board observations have also been carried out annually by the MI as part of discard and stock surveys conducted under the Data Collection Framework (DCF). DAHG continues to liaise with and provide support to BIM, the Marine Institute and DAFM with regard to this and ongoing bycatch monitoring measures.</p> <p>This action is also being progressed by DAFM through its undertaking of Risk Assessments for existing sea fisheries that occur on a regional basis (e.g., in the Irish Sea/Celtic Sea). This work is being conducted in view of ongoing EC guidance where Articles 6 and 12 of the Habitats Directive are concerned. DAHG has also provided nature conservation and management input as appropriate to this wider Risk Assessment process for fisheries in Irish marine waters.</p> |
| 14 | Continue to contribute, nationally and/or internationally, to trials investigating the effectiveness of pingers and/or gear modifications as cetacean bycatch mitigation tools. | DAFM | BIM, MI, DAHG | Ongoing | Under its Marine Environment Protection Measure, BIM acquired Dolphin Dissuasive Devices (DDD) for trial-based provision to and use by Irish albacore tuna fishing operators in 2011-2012. Such devices have worked well in the recent past in reducing cetacean bycatch in the UK pair pelagic trawl fishery for bass. The trial demonstrated the ease with which such devices could be deployed and it was concluded that their use represented a potential tool for operators to reduce the likelihood of bycatch in certain circumstances where fishermen feel there is a significant risk. |

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| | | | | | Extensive research on the practicalities and spacing of gillnet and trawl-based pingers has also previously been carried out in Ireland by BIM. DAHG continues to liaise with BIM in relation to these and other projects where the use of acoustic deterrence or gear modifications are being considered and trialled. |
| III. STRANDING PROGRAMME | | | | | |
| 5 | Carry out a review of cetacean sightings/strandings data to detect any changes in distribution or stranding frequency that could be associated with changes in species distribution. | DAHG | | 2011-2012 | A review of IWDG sightings and strandings data from 2000-2009 was published in June 2010. Its findings have been considered by DAHG. A follow-up detailed statistical analysis by UCC and IWDG of Irish cetacean stranding records is ongoing. No further action is envisaged at this time. |
| 6 | Explore the possibility of agreeing a procedure with Relevant Authorities that maximises the recovery of data from stranded animals. | DAHG | LA | 2011 | DAHG has informed all Local Authorities concerning the national Cetacean Strandings Scheme and has requested co-operation wherever possible to ensure maximum data recovery. DAHG has also advised its marine-going government partners BIM, MI and SFPA concerning the scheme, in order to further maximise data recovery from stranded animals. |
| 7 | Maintain and develop a stranding scheme to provide data on species occurrence and seasonal distribution. | DAHG | | Ongoing | A DAHG-funded Cetacean Strandings Scheme commenced in December 2010. This three-year scientific project maintained the spatial and temporal coverage of Ireland's coastline and a regional network of voluntary observers built up over time by IWDG under preceding <i>ISCOPE</i> projects. It also sought to further develop best recording practice and to improve the quality of data collected under the scheme. Its work was completed by IWDG in early 2014 and a similar scheme has since continued, led by IWDG with co-funding from DAHG. An ancillary report to the Strandings Scheme, regarding an unusual stranding incident (as a result of bycatch) recorded in January-February 2013 via DAHG personnel and the Cetacean Strandings |

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| | | | | | Scheme with the assistance of the Institute of Zoology London, was completed and published by DAHG in April 2013. |
| IV. POST MORTEM PROGRAMME | | | | | |
| 15 | Initiate a cetacean post-mortem programme to determine the diet of cetaceans in Ireland, including determining size and biomass of prey species in order to explore potential competition between cetaceans and commercial fisheries. | DAHG | MI | 2011-2012 | <p>DAHG is pursuing a strategy of targeted scientific post-mortem examination of stranded cetaceans on a case by case basis, instead of undertaking a costly large scale programme of investigation irrespective of the circumstances of stranding and the condition of cetacean carcasses.</p> <p>In early 2013 a bycatch incident off the northwest coast involving short-beaked common dolphins was identified via DAHG personnel and the Cetacean Strandings Scheme with the assistance of the Institute of Zoology, London. A report on the findings of post-mortem examinations conducted on a sample of animals was published by DAHG in April 2013. Liaison between DAHG and DAFM has continued in relation to the incident and ongoing management matters arising.</p> <p>Studies of cetacean diet in Irish waters continue at UCC, including a PhD programme based on stomach content analysis from stranded and bycaught small cetaceans. These include samples obtained via post-mortem examinations following the bycatch incident off the northwest coast in January-February 2013. Additional studies of cetacean diet in Irish waters using stable isotopes have been or are currently being pursued at GMIT (baleen whales) and UCC (small cetaceans).</p> <p>The BIM-led independent observer programme to monitor cetacean bycatch in selected Irish fisheries continued through 2013 and 2014. Separate BIM-led studies of static net fisheries have also been investigating marine mammal bycatch. Provision is</p> |

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| | | | | | made in such projects for dietary and/or tissue sampling of bycaught cetaceans where possible. DAHG continues to liaise with and provide support to BIM/MI/DAFM in relation to ongoing studies of commercial fisheries and their operational impacts on cetacean species. |
| 17 | Use a cetacean post-mortem programme to provide tissue samples to the Irish Cetacean Tissue Bank for use in population genetics studies. | DAHG | MI, NHM | 2011-2012 | <p>NHM continues to store tissue samples in the Irish Cetacean Tissue Bank that have been acquired via active research and natural mortalities, including samples provided via the DAHG-funded Cetacean Strandings Scheme (2010-2013) and IWDG Strandings Scheme (up to 2009, 2014 to present). Storage capacity includes skin samples for genetics studies.</p> <p>The BIM-led independent observer programme to monitor cetacean bycatch in selected Irish fisheries continued through 2013 and 2014. Separate BIM-led studies of static net fisheries have also been investigating marine mammal bycatch. Provision is made in such projects for dietary and/or tissue sampling of bycaught cetaceans where possible. DAHG continues to liaise with and provide support to BIM/DAFM in this regard.</p> |
| 33 | Ensure that acoustic trauma and other tissue injury are considered as a possible cause of death, particularly for deep-diving species, in post-mortem examinations. | DAHG | | 2011-2012 | <p>DAHG is pursuing a strategy of targeted scientific post-mortem examination of stranded cetaceans on a case by case basis, instead of undertaking a costly large scale programme of investigation irrespective of the circumstances of stranding and the condition of cetacean carcasses.</p> <p>In early 2013 a bycatch incident off the northwest coast involving short-beaked common dolphins was identified via DAHG personnel and the Cetacean Strandings Scheme with the assistance of the Institute of Zoology, London. A report on the findings of post-mortem examinations conducted on a sample of animals was published by DAHG in April 2013. Liaison between DAHG and DAFM has continued in relation to the incident and ongoing management matters arising.</p> |

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| | | | | | DAHG continues to support the ongoing Cetacean Strandings Scheme for Ireland which is currently led by the IWDG (pre-2010 and 2014). As part of the continued surveillance of cetacean species in Irish waters, ongoing strandings data are monitored by IWDG and DAHG. As much scientific and evidentiary information as possible is sought from stranded animals so that potential causes of death might be considered, including the possibility of acoustic trauma and other tissue injury. The post-mortem condition of stranded carcasses is vital to the ability to reliably interpret or determine cause of death. |
| V. REGULATORY PROGRAMME | | | | | |
| 10 | Work with the European Commission to ensure that conservation actions to change fishing practices are implemented through Common Fisheries Policy regulations. | DAHG | DAFM, EC, MS, IND | Ongoing | <p>Ireland has participated in an EC expert working group contributing to the development of a co-ordinated, common Member State approach to the assessment of fisheries activity with respect to <i>Natura 2000</i> sites, which published methodological guidance thereon in November 2012. The action is also being advanced via progress under Action 21, which relates to site-specific appropriate assessments.</p> <p>This action is also being progressed by DAFM through its undertaking of Risk Assessments for existing sea fisheries that occur on a regional basis (e.g., in the Irish Sea/Celtic Sea). This work is being conducted in view of ongoing EC guidance where Articles 6 and 12 of the Habitats Directive are concerned. DAHG has also provided nature conservation and management input as appropriate to this wider Risk Assessment process for fisheries in Irish marine waters.</p> <p>The Department attends and will continue to engage with the European Commission Marine Expert Group where this matter is continually being reviewed in terms of revised implementation arrangements under</p> |

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| | | | | | the new Common Fisheries Policy regime. |
| 13 | Any fisheries and/or fleet segments that are identified as presenting a significant risk of cetacean bycatch and are not currently covered by Regulation 812/2004 should be brought to the attention of the European Commission. | DAHG | DAFM, EC, MS | Ongoing | <p>In relation to requirements under Regulation 812/2004 DAFM and BIM-led initiatives to monitor cetacean bycatch in Irish trawl and gillnet fisheries commenced in 2005 and they have continued into 2014. Since 2011 separate BIM-led studies of regional inshore/offshore gillnet, tangle net and trammel net fisheries have also been investigating marine mammal bycatch. DAHG continues to liaise with and provide support to BIM, the Marine Institute and DAFM with regard to this and ongoing bycatch monitoring measures.</p> <p>In early 2013 a bycatch incident off the northwest coast involving short-beaked common dolphins was identified via DAHG personnel and the Cetacean Strandings Scheme with the assistance of the Institute of Zoology, London. A report on the findings of post-mortem examinations conducted on a sample of animals was published by DAHG in April 2013. Liaison between DAHG and DAFM has continued in relation to the incident and ongoing management matters arising.</p> <p>The Habitats Directive Article 17 reporting process completed by Ireland in 2013 also considered the risks and threats posed to all cetaceans in Irish waters on a species-by-species basis including those arising from fishing activity. This was also considered as part of the MSFD Initial Assessment undertaken by Ireland in 2013-2014.</p> <p>Independent on-board observations have also been carried out annually by the MI as part of discard and stock surveys conducted under the Data Collection Framework (DCF). DAHG continues to liaise with and provide support to BIM, the Marine Institute and DAFM with regard to this and ongoing bycatch monitoring measures.</p> <p>This action is also being progressed under Action 21</p> |

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| | | | | | and by DAFM through its undertaking of Risk Assessments for existing sea fisheries that occur on a regional basis (e.g., in the Irish Sea/Celtic Sea). This work is being conducted in view of ongoing EC guidance where Articles 6 and 12 of the Habitats Directive are concerned. DAHG has also provided nature conservation and management input as appropriate to this wider Risk Assessment process for fisheries in Irish marine waters. |
| 20 | Ensure that risk assessments are conducted on the impacts for cetaceans of any new fishing gears and/or fisheries in advance of licensing. | MS, EC | | Ongoing | <p>Ireland has participated in an EC expert working group contributing to the development of a co-ordinated, common Member State approach to the assessment of fisheries activity with respect to <i>Natura 2000</i> sites, which published methodological guidance thereon in November 2012.</p> <p>This action is being progressed by DAFM through its undertaking of Risk Assessments for existing sea fisheries that occur on a regional basis (e.g., in the Irish Sea/Celtic Sea). This work is being conducted in view of ongoing EC guidance where Articles 6 and 12 of the Habitats Directive are concerned. DAHG has also provided nature conservation and management input as appropriate to this wider Risk Assessment process for fisheries in Irish marine waters.</p> <p>This action is also being advanced via progress under Action 21, which relates to site-specific appropriate assessments.</p> |
| 21 | Ensure that an appropriate assessment is conducted on all commercial fishing in cetacean SACs. | DAFM | | 2010-2011 | <p>A roadmap leading to the appropriate assessment of commercial fishing operations in all <i>Natura 2000</i> sites has been agreed with the European Commission. In this regard Ireland also participated in an EC expert working group contributing to the development of a co-ordinated, common Member State approach to the assessment of fisheries activity with respect to <i>Natura 2000</i> sites, which published methodological guidance thereon in November 2012.</p> <p>The first full assessment was produced in autumn</p> |

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| | | | | | 2011. The preparation and publication of successive finalised assessments will be undertaken by DAFM. |
| 24 | Seek to improve marine water quality to standards set in EC Directives and international conventions by reducing the discharge of substances which are toxic, infectious, persistent or liable to bio-accumulate. | DAHG | EPA | Ongoing | <p>Water quality issues concerning cetacean conservation and ecology are considered via the statutory consultation, referral and planning processes as appropriate on a case by case basis.</p> <p>Waste water discharge was also considered as part of the MSFD Initial Assessment undertaken by Ireland in 2013-2014.</p> <p>DAHG also participates in the Water Policy Advisory Group and the National Implementation Group to support implementation of the Water Framework Directive.</p> |
| 25 | Continue the pilot programme to investigate the principal sources of litter that wash up on our shores and implement local and national actions to prevent this litter entering the marine environment. | DAHG | DECLG, DAFM, DTTS | 2011-2012 | <p>A programme of ongoing investigation and monitoring of marine litter is now fully established in Ireland. This includes work being undertaken through implementation of relevant actions under the 2014 OSPAR Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic (2015-2018) and additional measures outlined below. Marine litter was also considered as part of Ireland's MSFD Initial Assessment undertaken in 2013-2014 and officials from DECLG and other relevant Departments continue to engage actively nationally and regionally on the subject.</p> <p>Ireland is continuing to fund a regional beach monitoring programme to investigate the principal sources of litter that wash up on its shores. This programme utilises the OSPAR-recommended method of marine litter survey and it is undertaken annually, funded by DECLG. In 2014 DECLG also issued an invitation for Tenders to conduct a comprehensive Marine Litter Survey in 2015 in accordance with OSPAR Guidelines.</p> <p>In 2014 BIM hosted a workshop to assist the fishing industry to explore innovative ways to tackle marine litter at sea and on the shorelines of Ireland. A number</p> |

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| | | | | | <p>of successful <i>Fishing for Litter</i> schemes in operation in Europe were discussed at the workshop. These involve not only direct removal of litter from the sea but also raise awareness in fishing communities and the industry. Stakeholders attending the recent workshop in Ireland investigated industry-based solutions to assist in the prevention, removal and disposal of derelict fishing gear and associated waste.</p> <p>Ireland is also funding a project in 2015 to assess the feasibility of recycling fishing gear and marine litter collected/caught in regional fishery operations, and is devising and supporting new measures for monitoring marine litter via certain fisheries surveys (e.g., MI groundfish surveys) and shore- or species-level assessments (e.g., via fish/seabird ingestion of litter and micro-plastics).</p> <p>A new public initiative is also being trialled by DECLG in 2015 at 20 Blue Flag beaches around the Irish coast. This project seeks to improve public engagement with and awareness of the problems associated with litter entering the marine environment.</p> <p>In addition to the above continuing measures, An Taisce operates the national <i>Clean Coasts Ireland</i> programme on a national basis which focuses on engaging and empowering local communities in the conservation and protection of Ireland's coastal environment.</p> |
| 26 | Ensure that risk assessments are conducted on the potential impacts on cetaceans of sewage discharges in advance of licensing. | DAHG | LA, ABP | Ongoing | Cetacean-related issues are considered via the statutory consultation, referral and planning processes as appropriate on a case by case basis. |
| 27 | Standard guidelines should be developed to ensure that cetacean considerations are fully incorporated into oil spill contingency plans. | DAHG | DAFM, DTTS, DCENR | 2010-2011 | Draft contingency plans are reviewed and commented on by DAHG upon request, giving due consideration to <i>inter alia</i> cetaceans. |
| 28 | Standard guidelines should be developed and applied in all areas for minimising the input of increased noise levels into the marine environment in consultation with key stakeholders. | DAHG | DTTS, DCENR, DAFM, LA, ABP | 2010 | Finalised " <i>Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters</i> " was published by DAHG in 2014. |

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| 29 | Ensure that risk assessments are conducted in relation to the potential impact on cetaceans from any proposed intensification of shipping activity. | DAHG | DTTS, DCENR, LA, ABP | 2011-2012 | Such assessments are sought via the statutory consultation, referral and planning processes as appropriate, on a case by case basis (e.g., in relation to specific planning proposals for harbour expansions, maritime events, marine leisure events, etc). |
| 30 | Raise awareness of the presence of cetaceans, including important habitats and migration routes in Ireland, within the marine shipping community. | DAHG | DTTS | 2011-2012 | Shipping in Irish waters is broadly considered to be a low risk activity where cetaceans are concerned, due in part to the comparatively low traffic volumes in a European and Atlantic context and to the well-established vessel routes in use. DAHG will continue to monitor trends in this industry in relation to known habitats/routes of importance to cetaceans, and if the need arises will take further communications, advisory, management or regulatory action as appropriate where any significant shipping-mediated risk is identified. In addition to the existing knowledge base on cetacean occurrence, movements and distribution, both current projects under the DCENR-DAHG ObSERVE programme will help to inform DAHG in this regard. |
| 31 | All relevant Regulatory Authorities should be advised about the Code of Practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters and should ensure that its implementation is a standard condition on all relevant licences. | DAHG | DCENR, LA, ABP | 2010-2011 | This has been in place for consents under the Gas and Foreshore Acts. The DAHG <i>"Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters"</i> (2014), which underwent an extensive public consultation process, now supersedes the former Code of Practice (2007). |
| 32 | Develop rigorous guidelines for use of acoustic surveys in identified critical habitats for cetaceans in consultation with key stakeholders. | DAHG | | 2010-2011 | Finalised <i>"Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters"</i> was published by DAHG in 2014. |
| 34 | Discuss with the European Commission appropriate procedures to mitigate the possible impacts of naval sonar on cetaceans. | DAHG | | 2010-2011 | DAHG intends to explore this matter further in consultation with the European Commission. |
| 35 | Ensure that a strategic assessment is conducted of the impact of renewable energy devices on cetaceans at an early stage of their development. | DAHG | DCENR | 2010-2011 | A Strategic Environmental Assessment (SEA) of offshore renewable energy development in Ireland was completed in 2011 and an associated strategic development plan (OREDP) was finalised and published in 2014. DAHG was represented on the OREDP Steering Group convened by DCENR, and several meetings took place and detailed inputs were |

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| | | | | | provided to ensure that <i>Natura</i> requirements would be addressed comprehensively by the SEA. The plan is now in its initial stages of implementation. DAHG is again a participant on the associated Steering Group (ORESG). |
| 36 | Establish guidelines on survey requirements for the development of marine renewable energy facilities (wind, wave and tidal). | DAHG | DCENR | 2010-2011 | This matter has been the subject of detailed consideration <i>inter alia</i> by the ICES Working Group on Marine Mammal Ecology (WGMME), most recently in 2014, and also under the OREDP and its associated SEA. Ireland's current position is that survey requirements will be determined by the nature and/or location of proposed development and should be treated on a case-by-case basis. This position is reflected in the DAHG "Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters" (2014) (Action 28). |
| 37 | Explore the possibility of developing a system with merchant vessel operators and other large vessel operators (Irish Naval Service) for reporting cetacean ship strikes in Ireland. | DAHG | INS, DTTS | 2010-2011 | Given the international nature of this risk this action will be further progressed within the Marine Strategy Framework Directive (MSFD) implementation process and associated regional co-ordination mechanisms. DAHG is represented on a national MSFD implementation working group convened by DECLG. |
| 38 | Work with marine wildlife tour operators to agree best practice standards for their operations, including promotion of Marine Notice 15 of 2005. | DAHG | IND | 2010-2011 | Marine tourism operators that focus on cetaceans in Irish waters are currently few in number and those involved are broadly implementing best practice in relation to the species, population(s) and circumstances in each case. This includes their voluntary adherence to the species protection-oriented provisions laid out in Marine Notice 15 of 2005. DAHG will continue to monitor trends in this developing industry and if the need arises will take further advisory, management or regulatory action as appropriate where any significant tourism-mediated risk is identified. |
| 39 | Investigate the feasibility of a permit system that is based on risk assessments for whale watching operations and/or marine tourism operators who focus on cetaceans. | DAHG | IND | 2010-2011 | Marine tourism operators that focus on cetaceans in Irish waters are currently few in number and those involved are broadly implementing best practice in relation to the species, population(s) and circumstances in each case. This includes their |

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| | | | | | <p>voluntary adherence to the species protection-oriented provisions laid out in Marine Notice 15 of 2005.</p> <p>DAHG will continue to monitor trends in this developing industry and if the need arises will take further advisory, management or regulatory action as appropriate where any significant tourism-mediated risk is identified.</p> |
| 40 | Ensure that effective pressure monitoring indices for the whale watching and/or relevant marine tourism sectors are developed and implemented. | DAHG | IND | 2010-2011 | <p>Marine tourism operators that focus on cetaceans in Irish waters are currently few in number and those involved are broadly implementing best practice in relation to the species, population(s) and circumstances in each case. This includes their voluntary adherence to the species protection-oriented provisions laid out in Marine Notice 15 of 2005.</p> <p>A recent MSc. study of habitat use by Bottlenose Dolphins and ecotourism in the Lower River Shannon cSAC has been considered by DAHG. The research found that care continues to be taken by boat operators to minimise disturbance to dolphins and the established Code of Conduct continues to be implemented.</p> <p>DAHG will continue to monitor trends in this developing industry and if the need arises will take further advisory, management or regulatory action as appropriate where any significant tourism-mediated risk is identified.</p> |
| 41 | Encourage the use of engines meeting high international standards for noise emissions in whale watching vessels. | DAHG | | 2010-2011 | <p>Marine tourism operators that focus on cetaceans in Irish waters are currently few in number and those involved are broadly implementing best practice in relation to the species, population(s) and circumstances in each case. This includes their voluntary adherence to the species protection-oriented provisions laid out in Marine Notice 15 of 2005.</p> <p>DAHG will continue to monitor trends in this developing industry and if the need arises will take further advisory, management or regulatory action as</p> |

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| | | | | | appropriate where any significant tourism-mediated risk is identified. This will include any significant risks identified as arising due to vessel noise. |
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Acronym legend:

- ABP – An Bord Pleanála
- BIM – An Bord Iascaigh Mhara
- DAFM – Department of Agriculture, Food and the Marine
- DAHG – Department of Arts, Heritage and the Gaeltacht
- DCENR – Department of Communications, Energy and Natural Resources
- DECLG – Department of Environment, Community and Local Government
- DTTS – Department of Transport, Tourism and Sport
- EAFM – Ecosystem Approach to Fisheries Management
- EC – European Commission
- EPA – Environmental Protection Agency
- GMIT – Galway-Mayo Institute of Technology
- ICES – International Council for the Exploration of the Sea
- IND – Industry
- INS – Irish Naval Service
- IWDG – Irish Whale and Dolphin Group
- LA – Relevant Local Authorities
- MI – Marine Institute
- MS – Relevant Member States
- MSFD – Marine Strategy Framework Directive
- NBDC – National Biodiversity Data Centre
- NHM – The Natural History Museum, National Museum of Ireland
- SDWF – Shannon Dolphin and Wildlife Foundation
- SFPA – Sea-Fisheries Protection Authority
- UCC – University College Cork