

Agenda Item 4.3

Review of New Information on Threats to
Small Cetaceans

Negative Effects of Vessels and Other
Forms of Disturbance

Document Inf.4.3.b

**IWC Ship Strikes Working Group
Seventh Progress Report to the
Conservation Committee**

Action Requested

- Take note

Submitted by

IWC



**NOTE:
DELEGATES ARE KINDLY REMINDED
TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**

65th Meeting of the International Whaling Commission

SHIP STRIKES WORKING GROUP

SEVENTH PROGRESS REPORT TO THE CONSERVATION COMMITTEE



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1. BACKGROUND TO THE SEVENTH PROGRESS REPORT

The Ship Strikes Working Group (SSWG) was established at IWC/57 in 2005 by the Conservation Committee to examine the issue of ship strikes with cetaceans. The group is currently comprised of Argentina, Australia, Belgium, Brazil, Denmark/Greenland, France, Italy, Republic of Korea, Luxemburg, New Zealand, Portugal, South Africa, Spain, UK, the USA, UNEP/CMS, ASCOBANS and ACCOBAMS (see Appendix 1 for an updated list). Belgium is chairing the Working Group. The SSWG submitted its First Progress Report to the Conservation Committee at IWC/58 in St. Kitts and Nevis. A work plan was subsequently developed.

Through IWC/60 until IWC/63, the Conservation Committee reviewed progress with the work as provided in the according Progress Reports (IWC/60/CC3; IWC/61/CC11; IWC/62/CC10 and IWC/63/CC13). From the report of the joint IWC-ACCOBAMS workshop on ship strike mitigation in Beaulieu-sur-Mer (France), a Table of actions resulting from the workshop's recommendations was subsequently submitted to the CC as document IWC/63/CC16. Recommendations for further work proposed by the SSWG included:

- 1) The Conservation Committee should request contracting governments to use the agreed ship strike template and submit ship strikes data to the IWC Secretariat on a regular basis;
- 2) The Conservation Committee should request contracting governments to communicate ship strikes data and information to relevant maritime sector bodies, including port authorities, shipping federations, coast guards and other relevant bodies;

Due to the tragic loss of Alexandre de Lichtervelde, Chair of the SSWG and newly elected Vice Chair of the CC in 2011, who has always been key to the work related to the issue of ship strikes, the SSWG was not able to continue its regular work after IWC63. No Progress Reports were therefore submitted in the years 2012 and 2013. This document therefore:

1. Reports on progress with past recommendations; both from the latest SSWG Progress Reports and from the 2010 joint IWC-ACCOBAMS workshop as well as the recent IWC-SPAW workshop on ship strikes held in Panama (Section 2)
2. Provides updated and new information on ship strikes on cetaceans collected since IWC/63 (Section 3).

2. PROGRESS MADE WITH RECOMMENDATIONS

2.1 Co-operation with IMO

For the co-operation with IMO, two issues are of common interest: ship strikes and underwater noise. These are both dealt with in IMO's Marine Environment Protection Committee (MEPC).

For MEPC 63 in March 2012, the IWC submitted the report of the Conservation Committee and Commission discussions on the 2010 IWC/ACCOBAMS workshop on ship strikes mitigation. At MEPC 63, there was also a work program item "Noise from commercial shipping and its adverse impacts on marine life". The IMO Ship Design and Equipment (DE) Sub-Committee were tasked with developing technical guidelines to address the issue of underwater noise from commercial shipping and its adverse impacts on marine life. A draft of this guidance was presented to the MEPC for consideration and finalisation at its 66th session in April 2014. These guidelines were approved and have been provided in MEPC Circular MEPC.1/Circ833. At this session of MEPC the future work required on this issue was also discussed. The DE Sub-Committee had identified some proposed areas of work that could be further explored, however the Committee decided not to explore these further at this session of the meet, but given the importance of this issue invited Member Governments that wished to pursue these matters further to submit proposals to future sessions of the Committee for consideration. The Committee also agreed that with the finalisation of the Guidelines, the current issue on the MEPC agenda, 'Noise from commercial shipping and its adverse impacts on marine life' would be removed from the Committee's future agendas. Member Governments that wish to pursue this issue in this forum will be required to propose a new work output for the Committee in order to consider this work.

The IWC has already brought the issue of ships colliding with whales to the attention of the IMO, and guidance information had subsequently been provided and adopted (MEPC.1/Circ.674, 2009). In addition, the IWC had conducted a session at the IMO explaining the IWC ship strike database.

Hence, the IWC already has an agreement of co-operation with the IMO dating from 2009. On this basis, the recent joint IWC-SPAW workshop on ship strikes held in Panama recommended that the IWC maintains and develops a close relationship with the IMO. To establish a presence at and to build a long-term working

relationship, the IWC Secretariat (or its representative) should routinely attend relevant sessions of the IMO's Marine Environment Protection Committee (MEPC) and other appropriate IMO committee/subcommittees.

Moreover, simple instructions on the importance and use of the IWC ship strike database that could be distributed to shipping interests, would be helpful to raise awareness and reporting. Therefore the Workshop recommended that the IWC develop simple and specific instructions for mariners about what to do if ship strike is observed, and that this be brought to the MEPC at the IMO (see also section 2.4).

2.2 Global database on ship strikes

The IWC has continued work to develop a global database of collision incidents to support further analyses of factors affecting risk, identification of areas where ship strikes may be of particular conservation concern, and development of the most effective mitigation measures. The data base went online in 2009 and until 2011 has been technically enhanced, e.g. by establishing standardised codes for sea areas and vessel types and the development of tools for identifying duplicate data entries of the same incident within the database. Using these tools, duplicate records were grouped into cases, which resulted in a summary table of 539 cases based on data received up until October 2010. The table has been made publicly available at <http://iwc.int/ship-strikes>. This summary was updated in 2012, now containing 1076 cases. Summary data come mainly from reviews of historical sources, including past national progress reports to IWC. Therefore, the interpretation as to whether these incidents were indeed definite ships strikes relies on the provider of the data or authors of review papers. The IWC Scientific Committee has established a ship strike Data Review Group (DRG) in 2012, and this group has started to review the most recent submissions.

Despite some publicity efforts, until 2012 the utility and existence of the database was still not sufficiently widely recognised to encourage mariners and others to report data. This suggested the need for a more pro-active approach in which entries for the database are actively solicited. The Scientific Committee recommended in 2010 that consideration be given to the appointment of a dedicated co-ordinator for the database, noting that this is the practice for other similar successful databases of this scale. At SC 64 in 2012, the budget to establish a data coordinator was approved, and two SC members (Simone Panigada and Fabian Ritter) were appointed. They started working in December 2012 and have engaged in a variety of activities since then (see section 3.5 below), which led to an increasing numbers of incidents/cases entered in the data base, several outreach efforts to the shipping industry as well as the production of a display banner which regularly is presented at international fora (see also section 2.5).

As of August 2014, the database holds a total number of about 1200 reports with an increasing number of cases are being reviewed by the DRG. It has to be stressed that the data base means include ship strike cases for all whale and dolphin species, including large whales as well as small cetaceans.

2.3 Multidisciplinary expert workshops on ship strike mitigation 2010 & 2014

The joint IWC-ACCOBAMS ship strikes mitigation workshop with a focus on the Mediterranean Sea and the Canary Islands took place from 21 to 24 September 2010 in Beaulieu-sur-Mer (France) with 45 registered participants and abroad stakeholder representation. A two-year work plan for collaboration between the IWC and ACCOBAMS proposed and included four elements:

- a) Development of a protocol for investigating and documenting ship strikes injuries and mortalities;
- b) supplying scientific support to the ACCOBAMS Mediterranean basin-wide cetacean survey that should ideally be organized in the summer of 2012,
- c) improved reporting to the IWC global ship strikes database and
- d) development of appropriate modeling techniques to identify high priority areas.

A summary of recommendations and actions stemming from the workshop together with their prioritization was produced for the meeting in 2011 as document IWC63-16 (available at <http://iwc.int/iwc63docs>).

The joint IWC-SPAW workshop on ship strikes with a focus on the wider Caribbean was held in Panama 18-21 June 2014. The Workshop identified the following priority actions for IWC:

Collaboration: The Workshop recommended that IWC expand its current cooperative work regional organisations, NGOs and IGOs (e.g. CPPS, SPAW and other UNEP Regional Seas programmes) on the ship strikes issue. The Workshop also recommended that the IWC works with both Parties and non-Parties of IWC on the issue of ship strikes, as well as assisting with training programmes on marine conservation that may help to increase awareness, improve the quality of population and marine spatial analyses for the species, promote regional networking and advance the goals of the IWC on this issue. In addition to IMO, the Workshop strongly recommended that the IWC increases its engagement with the maritime sector (e.g. shipping associations, and

other maritime user groups and associations such as the World Ocean Council, which has offered to assist in engaging the diverse ocean business community on the issue of ship strikes).

IWC Ship Strikes Database: Populating the database is a high priority. The Workshop strongly recommended that (1) IWC member countries place greater emphasis on publicising the database and the need to report ship strike data directly into it within their countries as well as maritime users in general; (2) IWC member countries also submit relevant information to the Scientific Committee including through national Progress Reports; (3) the IWC continues to fund the ship strikes database co-ordinators and that the co-ordinators continue to publicise the database and (4) the IWC increases its efforts to publicise the database to other intergovernmental and regional organisations, as well as all parts of the maritime sector.

IWC Scientific Committee: The Workshop agreed that the IWC Scientific Committee should continue to provide advice and collaborate with other organisations and research groups on matter related to ship strikes and encourages the submission of relevant work to the Committee. The Workshop highlighted two areas where Scientific Expertise could prove extremely valuable: (1) the Scientific Committee should establish an expert group to build upon existing modelling approaches with a view to developing a broad simulation framework that could be used to examine the likely effectiveness of various mitigation strategies. (2) the work undertaken on one of the best long-term datasets in the world for habitat modelling in the Eastern Tropical Pacific. It noted the potential of using this dataset to explore certain generic questions including the relationship between reliable predictions and, for example, length of datasets and/or geographical extent of datasets. Similarly, it recommends exploration of the relationship between use of presence/absence data and presence-only data.

2.4 Development of national and regional legislation, rules and action plans to reduce the impact of ship strikes, with priority for high-risk areas

Two parallel courses of action need to be followed: adoption of legislation by the relevant countries and at all other relevant levels (e.g. EU wide, international) and guidance through international organizations like the IMO.

With respect to the IMO the recent joint IWC-SPAW workshop on ship strikes held in Panama considered the possibility of the IMO adding a provision to its process for establishing new routing measures that would require applications to consider the effect on local cetacean populations. This would allow opportunity to consider reduction in speed, and also ensure that any new routing measures took account of cetacean distributions. The Workshop further considered a communication to the IMO to describe the effectiveness of speed reduction measures in reducing the severity of ship strike events. It agreed that both these ideas were valuable and requested the IWC Secretariat to consult with IMO on the appropriate processes to follow.

More particularly, the Workshop recommended the submission of a ‘Substantive Document’ to MEPC 68 in May 2015. The document should provide the report of the Panama Workshop including a summary of its relevant outcomes as well as results of recent scientific studies regarding the issue of ship strikes of large whales; descriptions of the measures used to reduce the occurrence of fatal strikes and their relative effectiveness; and any other relevant information. The report should be accompanied by a request to the IMO Secretariat to allow the IWC to make a presentation about the goals, mission, and function of the IWC and ship strikes contemporaneous with the introduction of the document in Plenary.

Summaries on the development of national and regional legislation are given in section 3.1 below.

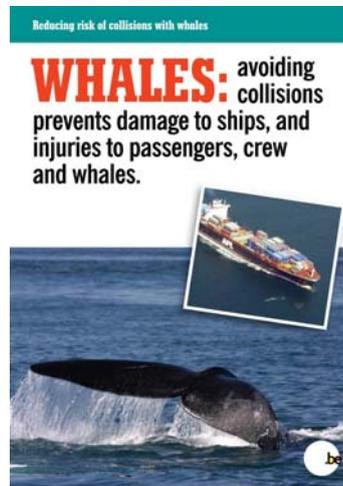
2.5 Awareness raising

The IWC website underwent profound refreshment, both in design and contents. The section on ship strikes thus now has a new layout and contains the most updated information on the issue in general, as well as access to the ship strike data base and a number of links to additional resources (<http://iwc.int/ship-strikes>). Moreover, increased efforts to publicize information about IWC’s activities have been undertaken, e.g. by contacting journalist, magazines, etc. The news page of the website has also been used to publicise the issue. Greater use of images on the website has also enabled us to convey both the danger and the aftermath of ship strike. Through media monitoring, IWC has responded to inaccurate reporting of the issue, and taken the opportunity to explain to media the efforts underway to build a comprehensive understanding and to flag up the importance of the database. IWC has also engaged, offering interviews and background information, to several journalists. Increased proactive communications activity is envisaged and the report and recommendations of the ship strike workshop should provide material for a first ship strikes press release.

A new and updated edition of the “Belgian” leaflet on ship strikes has been produced. With the logistic and financial support of the International Fund for Animal Welfare (IFAW), 2500 copies were printed. The new leaflet, as the previous one, is available in six languages: English, French, Spanish, Russian, Chinese and

Arabian. The leaflet has been distributed on different occasions, e.g. at international conferences and symposia, and is generally presented together with the IWC banner display. This banner display (see figure below), summarizing the issue as well as IWC activities, has been presented at several ECS conferences, ASCOBANS and ACCOBAMS meetings in 2013 and 2014, and the SMM conference held in NZ in 2013.

The leaflet (see image below) is ready for download at: <http://iwc.int/index.php?cID=3199&cType=document>.



Awareness raising on the database is also part of the ship strike data coordinators (see section 3.5).

2.6 Sailing and whale strikes

Sailing is another sector where strikes occur. It is recognised that collisions between sailing vessels and whales pose a serious threat to whales, sailors and their yachts. A programme had been developed by the Environmental Investigation Agency (EIA) in partnership with the Global Ocean Race to increase awareness of this threat and seek mitigation measures to reduce it. It aimed to increase observation by sailors and promotes the importance of and a press release was issued during the launch of the GOR 2011-2012.

An IWC guidance document for sailors and regatta organizers was developed by members of the SC and the ship strike data coordinators to provide information on the ship strike issue to sailors and regatta/offshore race organisers as well as to highlight mitigation options. The document was presented to SC65b in 2014 (document SC65b HIM04). The recent joint SPAW-IWC ship strike workshop in Panama noted the importance of this topic from the perspective of human as well as animal safety. It encouraged increased efforts from the IWC ship strike co-ordinators and others to inform and collaborate with all maritime users and especially the organisers of sailing races and competitions.

Furthermore, the ship strike data coordinators established contacts with different stakeholders within the sailing community, which will be used to raise awareness about the IWC guidance document. In June 2014, they ship started a collaboration with the Volvo Ocean Race 2015, taking on an advisory role to work on raising awareness and produce specific guidance for the race organizers as well as competitors to reduce the risk of ship strikes.

3. UPDATED AND NEW INFORMATION RECEIVED ON SHIP STRIKES SINCE IWC/63

3.1 Member nations with binding and non-binding action in territorial or EEZ waters

Argentina

In Patagonia, Argentina, the Coast Guard (Prefectura Naval Argentina) defines the navigation limits in Golfo Nuevo on an annual basis, establishing intangible areas where navigation is prohibited, and sustainable use areas where whale watching occurs. Nevertheless, there is a large area near Puerto Madryn city where navigation constraints do not exist. There is only a navigation route used by ships as an enter route to Puerto Madryn port. According to information from the *Laboratory of Ecophysiology Applied to Wildlife Management and Conservation at the Centro Nacional Patagónico* (CENPAT-CONICET), this area with water depths from 80-120 m is now intensely used by whales, which increases the collision risk with vessels when whales emerge to breathe. Therefore, southern right whales are now being tagged with suction cup devices in order to register their dive patterns in the route of access to the port. Surveys to determine whale distribution patterns in the area are

being performed in case a management plan on ship traffic to reduce collision risk is needed.

Australia

The Australian Government has commenced the development of a National strategy aimed at preventing vessel interactions with cetaceans and other marine mega-fauna. The strategy will focus on data acquisition and analysis, mitigation measures, industry engagement, public awareness and education, and improved protocols for reporting vessel-cetacean incidents. The *Australian Marine Mammal Centre* (AMMC) has developed a national ship strike database and associated web-based questionnaire, based very closely on the IWC data collection questionnaire. This will ensure that the data collected in Australia is compatible with the IWC ship strike database. Attempts to submit data from Australian waters directly to the IWC will be redirected back to the AMMC-based portal to ensure all reporting will have national verification. Australia's ship strike data collection tool is complete and ready to go live on a test server. It will be 'officially' launched soon and promoted through a public awareness and education strategy. The ship strike data tool is currently listed as 'coming soon' on the AMMC data portal web site <http://data.marinemammals.gov.au/>

Belgium

Belgium is a contracting party to the International Maritime Organisation (IMO) and to ASCOBANS (CMS), with additional work relating to ship strikes undertaken in these fora, in addition to the work in the IWC. For the scientific work on stranded cetaceans an intervention network has been established, coordinated by the *Royal Belgian Institute of Natural Sciences* (RBINS). All stranded or by-caught cetaceans are – if feasible – investigated, amongst others in order to establish their cause of death. In the frame of the intervention network, a booklet has been issued, targeted to competent authorities, with information about the steps to be taken in cases of sightings, strandings and bycatch. In the case of sightings of large cetaceans in the marine area under Belgian jurisdiction, especially close to navigation routes, the competent authority *Maritime Rescue and Coordination Centre* (MRCC) can decide ad hoc to issue a "Notice to Mariners" requesting people at sea to keep a watch for the animal(s) in order to avoid ship strikes.

Chile

Over the past five years, there have been two reports of ship-strikes between tourist cruise vessels and large whales that caused the death of the whales. Both occurred in the inlet passages of southern Chile where an important feeding area for large whales, particularly blue whales, is known to occur. To minimize risk of collision, since 2013 the Chilean Navy sends out security messages through the maritime radio station of Puerto Montt to all vessels that navigate the area on a daily basis. Messages are given twice a day and also at the moment of departure during the whales' feeding season (January to June).

Italy

The effort carried out by Italy in cooperation with ACCOBAMS and the IWC to investigate and suggest mitigation measures for the risk of collision in the Mediterranean is continuing. One of the aims of this initiative is to improve and increase the dataset for the Mediterranean basin and raise public and institutional awareness. A dedicated website (<http://www.tethys.org/tethys/tethys-research/projects/traffic-and-collisions/>) was created and presents latest updated information about ship strikes, helps disseminate public awareness materials to inform ship crews and the general public and includes reporting forms. The final goal is to collaborate with ACCOBAMS to raise awareness at the Mediterranean level and increase reporting to the IWC database. The available information on strikes in the Mediterranean Sea is sparse. Reliable estimates of fatality rates and associated information are essential to assess impacts at the population level and design effective mitigation measures.

In 2006, the Italian Ministry of the Environment funded the creation of a *Large Cetaceans Necropsy Task Force* in order to perform detailed post mortem examinations on collided large whales. After a mass stranding of seven male sperm whales along the Southern Italy coastline, the group was upgraded to an *Emergency Task Force for Cetaceans Strandings*, able to coordinate large whales, live cetaceans and typical and atypical mass strandings. The task force, which is funded again by the Ministry of the Environment, will work in accordance with the National Veterinary Services and is well equipped to conduct detailed necropsies in any field conditions in order to assess effects of human activities including ship strikes. With particular reference to this important threat for large whales in the Mediterranean, the use of specific forensic techniques have been studied and adopted.

New Zealand

A working group was convened in 2012 in response to the ship-strike risk to Bryde's whales in the Hauraki Gulf and has met twice a year to consider mitigation measures. This group comprises representatives from local and regional government, shipping industry, the ports authority, NGOs, scientists and indigenous people. In 2013, the shipping industry in the Gulf adopted the 'Hauraki Gulf Transit Protocol for Commercial Shipping' to mitigate ship-strike risk to Bryde's whales

(http://www.poal.co.nz/news_media/publications/POAL_HG_Protocol.pdf). This includes voyage planning to allow a voluntary 10 knot speed limit, keeping watch and reporting whale sightings within the main area of ship-strike risk for Bryde's whales. There are currently no dedicated shipping lanes in the Gulf and given the broad distribution of whales throughout the region, they are unlikely to reduce the mortality risk to the whales. As an outreach and education tool for mariners, ships transiting through the Gulf in January - February 2013 and 2014 have received report cards produced by SBNMS-NOAA. The Department of Conservation will continue to support necropsies on whales where ship-strike is suspected and ensures the reporting of ship-strike mortality to the IWC database.

Spain

As part of the activities of the Life project "INDEMARES" (LIFE07NAT/E/00732) the main objective of which is the protection and sustainable use of biodiversity in the Spanish seas through the implementation of the Natura 2000 network, an international workshop on "Maritime Transport and Biodiversity Conservation, Developing a Plan to Reduce the Risk of Whale-Ship Strikes" took place from the 25 to 26 October 2012 in Santa Cruz de Tenerife (Spain) convened by ALNITAK. Twenty-six participants including maritime business sector representatives, institutions and NGOs met and identified the need to develop an International Mariner Outreach & Training-for-Action Program to help mitigate ship strike injuries and mortalities at the same time as improving industry safety and cost-effectiveness. A summary of the recommendations arising from the workshop together with a more detailed account of the discussion was produced for the 2013 IWC SC meeting as document SC/65a/Forinfo44 (available at <http://iwc.int/sc65adocs>).

Stranding networks operating in Spain routinely determine the cause of death when the decomposition state of the carcasses allows it. In southern Spain (Andalucía coast), the stranding network of the Consejería de Medio Ambiente y Ordenación del Territorio de la Junta de Andalucía, operating since 2008, has registered several individuals which showed lesions (severe trauma) compatible with ship strikes.

With reference to the Canary Islands, the regional government presented a report with the revised time series of the records on cetaceans' interactions with ships to the Conservation Committee in 2009 (document IWC/61/CC16). As the information had not been updated since 2008, except for the data provided as part of the National Reports, and due to the revision of the categories adopted by the SSWG in 2013, all cases from 1985 to 2014 have been re-evaluated using the new categories (certain, probable, possible, and rejected). This new information is considered the official record of cases of cetacean interaction with vessels resulting in collision for the Canary Islands.

The Canary Islands government, through the Directorate General of the Environment, coordinates the stranding network in the islands since 2000. Some older records are also available. The stranding network involves two NGOs, *Canarias Conservación* (collecting and analyzing data in the western islands) and the *Sociedad para el Estudio de los Cetáceos en el Archipiélago Canario* (SECAC, collecting and analyzing data in the eastern islands) as well as the University of Las Palmas de Gran Canaria (Faculty of Veterinary-Animal Health Institute, ULPGC-IUSA) where necropsies to determine the cause of death are carried out. This work is supported by the local municipalities that are also assisting the removals of carcasses. The ULPGC-IUSA has developed histopathological microscopic criteria to determine the ante-mortem nature of injuries to help determine if the cause of death was a collision. In February 2014, the Cetacean Research Group (GIC) at the University of La Laguna (ULL, Tenerife), set up a Working Group for the Prevention of Cetacean Ship Strikes. This working group includes representatives from GIC-ULL, the Canary Islands Government, maritime authorities (Harbour Master, Director of Safety at Sea), the NGO *Canarias Conservación* and the most prevalent companies of inter-island ferries operating in the archipelago (Armas, Trasmediterranea and Fred Olsen). The objective of this working group, which is also supported by the Spanish Ministry of Environment, is to promote the application of mitigation measures. A science-based positive dialogue among all participants has started to assess which mitigation measures used elsewhere might be effective and practical in the Canary Islands. A second meeting in June 2014 dealt with advances in several mitigation measures. Further meetings are planned for September and December 2014. More information is available in the web of the project: www.canariasconlamar.wordpress.com/colisiones. Moreover, the University of La Laguna has performed an assessment of the sustainability of ship-strikes for sperm whales in the Canary Islands. The results have been submitted to Biological Conservation (Fais *et al.* 2014, in review)

UK

The UK is a Contracting Government to the International Maritime Organisation (IMO) and the Convention on Migratory Species Agreements ASCOBANS and ACCOBAMS. Work relating to ship strikes in the UK is undertaken in cooperation with the IMO, ACCOBAMS and ASCOBANS in addition to the IWC. The UK has established a coordination process with NGOs, scientists and other relevant bodies to improve cooperation and reporting to the IWC on matters relating to ship strikes. UK scientists have actively contributed to the draft IWC guidance for organisers of off-shore recreational boating events.

The collaborative UK Cetacean Strandings Investigation Programme (CSIP www.ukstrandings.org) has been contracted by UK Government since 1990 to record information on all cetaceans found stranded around the UK coast. It also carries out necropsies on a proportion of strandings to provide information on causes of mortality and develop our understanding of the threats they face in UK waters. In addition, information on dead cetaceans found floating at sea is also reported to the CSIP. During the course of this programme, the CSIP has recorded cases of ship strike in numerous species of both large and small cetaceans.

The Bay of Biscay is an area of high density maritime traffic combined with high densities of large whales, particularly in summer. A workshop held in April 2012, funded by World Animal Protection, focused on the Bay of Biscay with key stakeholders participating. The objective was to build collaboration between scientists, industry, policy makers and NGOs to find ways to reduce the risk of ship strikes on large cetaceans. The workshop focused on pragmatic and realistic solutions that industry could adopt. Progress since the workshop includes the production of an information pack, http://www.orcaweb.org.uk/uploads/Our_Work/ORCA_STRIKE-TOOLKIT-ONLINE.pdf, which has been distributed to shipping companies. Work is continuing to help build relationships with shipping companies frequently transiting the Bay of Biscay. In addition, the UK Chamber of Shipping has set up a ship strike working group but only two companies so far have expressed an interest in participating.

UK scientists have contributed to an analysis of sperm whale distribution in relation to shipping in the Hellenic Trench, Greece. Ship strikes are a recognised problem for the Mediterranean sperm whale population which is classified as endangered by IUCN. The Hellenic Trench was identified as potentially high risk during the IWC/ACCOBAMS workshop in 2010. UK scientists are continuing to work with the Secretariat to establish relevant contacts. Scientists from the UK (University St Andrews/Aberdeen) also collaborated with researchers in Sri Lanka studying the distribution patterns of blue whales off southern Sri Lanka. Funding for the work came from the Biosphere Foundation, Raja and the Whales, and International Fund for Animal Welfare.

US

IMO-endorsed amendments to the Traffic Separation Scheme (TSS) servicing San Francisco, CA became effective June 1, 2013. The changes are designed to enhance navigational safety and reduce the likelihood of ship strikes of humpback and fin whales and other large whale species. The modifications included narrowing and extending three branches of the existing TSS. Modifications to the TSS in the Santa Barbara Channel and the approach to the ports of Los Angeles and Long Beach, CA also became effective on June 1, 2013. They were established to reduce the overlap of ships and known blue, fin and humpback whale concentrations. In addition, the U.S. National Oceanic and Atmospheric Administration (NOAA) and the U.S. Coast Guard provide notices and whale advisory zone “chartlets” to mariners when large whales occur in the Channel Islands and San Francisco Bay areas.

Automatic Identification System (AIS) data are being used to monitor vessel operations as they relate to various large whale conservation measures along the entire US Atlantic Ocean coast and in a number of locations along the Pacific Ocean coast. These data were used in a 2013 paper assessing relative risk of strikes, and identified alternative shipping routes to minimize risk strikes, of blue, fin, and humpback whales in California waters. A 2013 publication assessed the effectiveness of vessel speed restrictions to reduce strikes of North Atlantic right whales and concluded that restrictions have reduced the probability of fatal strikes by 80-90.

3.2 Information received from non-IWC member countries:

Sri Lanka

In Sri Lanka, researchers document ship strike cases since a number of years. The main institute that has legal and regulatory power to protect, conducting and coordinate research on whales is the Department of Wildlife Conservation, a state body whose research unit and head office is based in the Western Province of Sri Lanka. There is another state body dealing with the issue, the National Aquatic Resources Research and Development Agency (NARA). Moreover, the Sri Lanka Navy helps monitoring and detecting incidents. With the combined effort, 14 cases have been documented between 2010 and 2012. Apart from these state bodies there are few NGOs involving and doing research on whales and other marine resources.

Canada

Since the Bay of Fundy shipping lanes were amended in 2003 and the *Roseway Basin Area to be Avoided* (ATBA) was designated in 2008 (both sanctioned by the International Maritime Organization and implemented by the Government of Canada), non governmental entities Dalhousie University and the Canadian Whale Institute have carried out two programs to encourage compliance by the shipping industry with the above mitigation measures designed to reduce the risk of vessel strikes of right whales in Canadian waters. The *Vessel Avoidance and Conservation Area Experiment* (VACATE) was initiated by Dalhousie University to monitor vessels using the Automatic Identification System (AIS). In 2009, the vessel data collected through VACATE

was used by the Canadian Whale Institute for the *Marine Stewardship Recognition Program* (MSRP) to attempt to improve compliance with the Roseway Basin ATBA. The MSRP program was designed to communicate by letter with shipping managers to recognize and commend operators who complied with the ATBA and to encourage compliance among those vessel-operators who failed to comply. Outreach materials showing the two Canadian measures, identifying features of right whales and a reporting number for whales in distress, are distributed to the shipping industry through shipping agents, and harbour pilots.

A Mariner's Guide to Whales in the Northwest Atlantic was produced (2010-2014) by non profit organisation Marine Mammal Observation Network, in partnership with Shipping Federation of Canada and Dalhousie University. This document, addressed to mariners, summarizes the issue of ship strikes and presents the importance of reporting collisions, as for mariners than for the stewardship of whale population. Regional maps of the Northwest Atlantic showing areas where greater vigilance is required in order to prevent collisions have been produced by superimposing cetacean distribution on shipping density. The Guide also presents information on the cetacean species that frequent the Northwest Atlantic, as well as identification tools.

In Québec, the *Groupe de Travail sur le Transport Maritime et la Protection des Mammifères Marins* (G2T3M) was set up in 2011, with a view to identifying measures to reduce the risk of collisions with marine mammals. Specific voluntary measures in this respect are now under development.

3.3 Intergovernmental organisations, NGOs and Programmes

Convention on the Conservation of Migratory Species of Wild Animals (CMS)

The 10th Meeting of the Conference of the Parties (November 2011) adopted [UNEP/CMS/Resolution 10.15 Global Programme of Work on Cetaceans](#), which outlines tasks for the CMS Scientific Council, its Aquatic Mammals Working Group and the Secretariat. Ship strikes are recognized as a global problem and are highlighted as of high priority to address specifically in the North West Atlantic Ocean (Atlantic North America and the Caribbean), and a medium priority in the Mediterranean and Black Seas, the South West Atlantic Ocean (Atlantic Latin America), and the Central and North West Pacific Ocean (East and South East Asia). The Resolution also requests the Secretariat and Scientific Council to maintain and seek to enhance cooperation and collaboration with the IWC and its Scientific and Conservation Committees.

ACCOBAMS

The fifth Meeting of the Contracting Parties (Tangier, Morocco, November 2013) adopted Resolution 5.10 on ship strikes on large whales in the Mediterranean. The Contracting Parties welcomed, as regards the problem of ships strikes, all forms of collaborative work which involves, besides the ACCOBAMS Parties and Secretariat, other interested entities, such as the IMO, the IWC, the European Commission and CMS, ASCOBANS, the Pelagos Sanctuary, and suggested a list of actions ranging from specific research projects to international collaborations and public awareness activities. Details of the issues covered by the resolution may be found in the 5th MoP Report available at:

http://accobams.org/index.php?option=com_content&view=article&id=1174%3Amop5-final-report-and-resolutions&catid=34&Itemid=65.

The Terms of Reference for the ACCOBAMS working group on ship strikes have also been discussed at the ACCOBAMS Scientific Committee meeting held in Monaco in April 2014. The list of participants has been updated, with new names added. The need to increase the collection of data on ship strikes at the global scale has been reiterated and the link between ACCOBAMS and the IWC was underlined.

ASCOBANS

The Work Plan ([Resolution 7.2](#)) of the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas continues to have ship strike-related action points, instructing the ASCOBANS Advisory Committee and its relevant working groups to review the extent of negative effects of sound, vessels and other forms of disturbance on small cetaceans and review relevant technological developments and best practices, working where possible with initiatives of other organizations (Activities 3 and 12). Given that data on small cetacean strikes are scarce, the Advisory Committee is not maintaining a specific work stream on ship strikes. Information on known ship strikes is requested in the Annual National Reports, which are being made available on the [ASCOBANS website](#). The Working Groups dealing with the [Atlantic Extension Area](#) and [Large Cetaceans](#) are the ones considering this threat.

Pelagos Sanctuary (Mediterranean Sea)

A LIFE project has been funded to Università degli Studi di Genova, LIFE13 NAT/IT/001061. The title of the project is: LIFE WHALESAFE - Whale Protection from Strikes through Active Detection Cetaceans and Alarm Issued to Ships and Ferries in the Pelagos Sanctuary. The expected duration is from October 2014 to December 2017: http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=5006. The project will develop an interference avoidance system aimed at detecting and tracking sperm whales;

identifying threats to them; and preventing collisions and other risks by issuing warning messages in real time to ships in the area. A protocol for reducing disturbance and impact risks will be drafted in cooperation with the local coast guard and agreed by all stakeholders involved. After receiving the warning message, ships will be invited to apply this protocol and the coast guard will supervise its application. The system is innovative because it prevents ship impacts with the whales by monitoring and tracking the animals underwater by acoustic means. This aspect is vital, considering sperm whales spend three quarters of their time underwater.

Expected results include

- Implementation of an active conservation tool, suitable for replication in other areas of the Mediterranean Sea;
- Reduction of ship collision risks and stress for sperm whales in the area caused by noise pollution from marine traffic;
- Definition of specific regulations and strategies to prevent ship collisions;
- An increase in public awareness concerning the threats affecting cetaceans in the Pelagos Sanctuary;
- Implementation of a database of cetacean sightings that can be easily consulted and used for management, conservation and public dissemination purposes.

Additionally, since 2011 several studies and actions were carried out in the framework of the Pelagos Sanctuary: □ process encourages commercial ship-owners and ports to report all known ship strikes. This approach aims to build confidence between the shipping industry and environmental managers and, so, to avoid the loss of information concerning ship strikes. All listed data are transmitted to the IWC ship strike database. Moreover, support is provided to the REPCET system. Some scientific studies have been conducted in the framework of the national research programs, including a) monitoring-ferry: seasonal monitoring of cetaceans population and validation of the interest of REPCET in terms of monitoring (GIS3M, 2012), and b) study of movements of large whales in the Pelagos Sanctuary to specify the dynamic parameters of risk areas in REPCET (GIS3M, 2012).

Finally, the project to propose the Pelagos Sanctuary as a PSSA (Particular Sensitive Sea Area) to the IMO is under negotiation between the three Parties to the Agreement.

NGOs

Whale and Dolphin Conservation (WDC) has completed a vessel strike scar based review of humpback whales in the Gulf of Maine (US, manuscript in prep.). The data confirm that vessel strikes are highly underreported for the region and none of the injuries analysed in this study were reported to NOAA. In at least one case in this study, an injury continued to heal and visibly change over four years even though full epidermal coverage with smooth scar tissue was noted within 15 months of the injury. From the findings in this study it is recommended that an injury is only considered healed when the appearance of the wound site has remained unchanged over a two year period. WDC also recommends the reconsideration of "non-lethal" terminology to injuries that initially appear minor, and suggests that long term monitoring of injured animals is necessary to determine if an injury is appropriately deemed "non-lethal". In at least one case, a humpback whale succumbed to an apparent infection from a vessel strike injury that was documented as healed and would have been classified as moderate in severity when the injury was first detected. Studies have shown that necropsies are necessary to accurately determine blunt force trauma, but this case in particular provides an example of a mortality resulting from an injury that appeared to be superficial, or healed. In an attempt to increase awareness of this threat, WDC launched the yearlong campaign *Act Right Now* (see <http://actrightnow.whales.org>) to increase public support for the extension of the Final Rule To Implement Speed Restrictions to Reduce the Threat of Ship Collisions With North Atlantic Right Whales in the US. More than half of all comments received by NOAA during the public comment period were generated through the campaign. WDC has also increased its outreach efforts to commercial and recreational whale watchers through its *Whale SENSE* (www.whalesense.org) and *See A Spout* (<http://seeaspout.wordpress.com/>) programs.

A workshop organized by **WWF** and **SECAC** and entitled "Workshop of expertise in conservation and needs of the sperm whale in the Canary Islands" took place from the 17 to 18 April 2012 in Tenerife (Spain) to investigate sperm whale biology, to determine the behavior of cetaceans in the presence of high-speed vessels, the effect of the mortality associated with collisions on the populations and the identification of areas with higher risk of collisions and to raise social awareness. **WWF** has also joined efforts with the Swedish Government, UNESCO-IOC and Volvo to collaborate around the world's premier round-the-world racing event Volvo Ocean Race to help propel key messages around "healthy oceans for healthy people," including raising awareness regarding the issue of ship strikes with cetacean. To that end some guidelines are being provided by WWF to the race organizers with the help of IWC Ship Strike Coordinators. Thanks to the IWC coordinators the general race route is being analyzed to provide competitors with a map of important cetacean habitats where additional precautions should be taken. Reporting ship strikes to the IWC database will also be promoted and a form provided to that end.

In recent years **Canarias Conservación**, in collaboration with the Government of the Canary Islands, SECAC and the Faculty of Veterinary Medicine of the University of Las Palmas de Gran Canaria continuous tracking system of all cases of stranding in the island of Tenerife, La Gomera, La Palma and El Hierro. Between 2009 and 2014, there have been 101 cases of stranding of cetaceans and 19 (18,8%) showed clear signs of having suffered a collision. Six species were affected with the sperm whale (12 cases = 63.1%) being most frequently hit. As a measure to mitigate collisions an observation and monitoring campaign in the area of intense maritime traffic between Tenerife and Gran Canaria was launched to determine possible areas of concentration of sperm whales as well as its seasonality.

German based NGO **MEER** conducted a study on the underwater noise produced by different types of ferries in the Canary Islands. By correlating recorded noise levels with the hearing capabilities of cetaceans, it was possible to calculate specific potential reaction times for cetaceans facing the direct approach of the ships (Scheer & Ritter, in prep.). Furthermore, MEER has updated its dedicated website section on ship strikes. Extensive information on the issue, with a special focus on the Canary Islands, is given in two languages: English, and German (see <http://www.m-e-e-r.de/473.0.html?&L=2>). A Spanish version is in preparation.

UK based NGO **ORCA** trains wildlife officers and survey teams that transit the inner Bay of Biscay on board ferries for six months every year, monitoring sightings of large whales. A re-activated European Cetacean Monitoring Coalition (consisting of eight European NGOs) is now working towards providing a better understanding of cetacean abundance in the Inner Bay of Biscay. Liaison with shipping companies whose vessels frequent the outer shipping lanes of the Bay is being developed by ORCA with the objective of placing trained surveyor teams on vessels to help increase knowledge of the density of large whale populations in the area.

For the last three years, **Souffleurs d'Ecume** has been working on the spread of the REPCET system. Twelve ships and three land stations are now equipped with the system in the Pelagos Sanctuary. The objective is to have 30 ships equipped by the end of 2015. A meeting was organized with the Pelagos Sanctuary, ACCOBAMS and the Maritime Affairs of Monaco to present REPCET to French, Italian and Monegasque shipping companies during the Monaco Yacht Show in September 2013. Collaboration is ongoing with international organizations such as ACCOBAMS to consider extending REPCET to the entire Agreement area, as well as with NGOs in Spain and the UK to apply REPCET in the Strait of Gibraltar and the Bay of Biscay respectively. The annual training course for professional and student ship crews has been carried out for the past three years at the French National Superior School of Shipping of Marseille. Additional information is available at: http://souffleursdecume.com/english/formation_collisions_EN.html. The report compiling existing measures to reduce ship strikes worldwide was updated in 2013.

The **Mediterranean Fixed Line Transects (Med-FLT)** network, established in 2007, carries out systematic monitoring of cetaceans, and their relationship with maritime traffic, with a research protocol that uses ferries/large vessels as platform of observations. Several transborder transects, along the main shipping routes, are repeatedly monitored in the Western Mediterranean Sea Region connecting Italy, France, Spain and Tunisia. Dedicated expert observers collect data on cetacean presence, their distance and angle from the vessel, behavior in relationship to the vessel (escaping, indifferent, approaching), as well as collisions and near miss events. The number of vessels during sightings is compared to average number of vessels in absence of sightings along the route. Until 2013, more than 220.000 nm have been surveyed, and one strike (with a juvenile sperm whale) as well as several near misses have been documented. Fondazione CIMA, the University of Pisa, EcoOcean, Accademia del Leviatano, Ketos, Capo Carbonara MPA, Atutax are the main partners of the network which is coordinated by ISPRA (the Italian Institute for Environmental Research and Protection). The network received financing, through public call, from Pelagos France and ACCOBAMS. The aim of the network is to estimate numbers of collisions events and near misses weighted for km travelled with a dedicated observer on board, allowing extrapolating numbers of collisions occurring in the Western Mediterranean Sea Region.

Swiss based **OceanCare** have joined forces with the Pelagos Cetacean Research Institute in Greece and specialized technology research groups from three European countries (University of Basel, CINTAL, FORTH Research Center in Greece) with in a cross-disciplinary effort - Striving for a technology assisted solution involving underwater acoustics, applied mathematics and computer networking, an automated system that listens for sperm whales across busy shipping lanes is developed and tested, providing timely information that can lead to avoidance of ship-strikes. This system is currently under development and is supposed to generate also data, which can be useful for learning more about these animals and the impacts of human activities on their habitat, so as to generate of a more effective conservation approach.

3.4 Shipping and other industries

Collisions between **cruise ships** and cetaceans have been reported for a number of species, with large whales being the most commonly reported hit. Many of these collisions have caused serious or fatal injury to the whale. Only a very small proportion of collisions are likely to result in the whale becoming stuck, but these are the ones that get noticed. The ship strike data coordinators established a number of contacts with the cruise ship industry and felt that producing a **guidance document** would be welcome, not the least because whales struck by cruise ships receive considerable media attention, thus having a potential negative impact on the cruise company. The guidance document was developed, which was presented to the Scientific Committee in May 2014 (document SC65b-HIM05), to provide information on the issue for cruise line operators as well as to highlight mitigation options. The document sets out some general information on the issue and highlights that in the absence of sufficient information on effective technological solutions, current options for reducing risk are limited to avoiding action by the vessel, reducing cruising speeds, and routing vessels away from areas with large numbers of whales. The document follows a similar format to the guidance for off-shore recreational boating events with information on seven main subject areas; (1) collating baseline data before voyage planning, to identify potential cetacean hot spots; (2) route planning to avoid such areas and to comply with speed restrictions; (3) informing captains, crew and staff about species most likely to be encountered, providing briefing materials on what to do and look for in the event of a collision; (4) operational measures including reducing speed, avoidance manoeuvres, and advice on what to do if a collision has occurred; (5) operational guidelines during whale watching activities; (6) technological solutions and (7) reporting, with an emphasis on making use of the IWC global database. The IWC Scientific Committee recommended that similar guidance be developed for other classes of vessels where there may be specific issues to that type of vessel not covered by the general IMO guidelines on reducing ship strikes. At the IWC-SPAW ship strike workshop in Panama, the document was discussed and it was agreed that more detailed input from cruise operators and other stakeholders should be integrated. A revised version of the doc will be prepared.

The NGO **World Ocean Council** organized a Sustainable Ocean Summit in Dublin on 15-17 June 2010, which included a session titled Ocean Industries and Marine Mammal Interactions (with input from the SSWG chair). The report is available at <http://www.oceancouncil.org/site/pdfs/SOS%202010%20Report-FINAL.pdf>. WOC continues to grow as a multi-industry alliance on ocean sustainability issues. Contact has been made by the IWC ship strike data coordinators in 2013 and 2014 so as to discuss synergies between both organisations. A representative from WOC took part in the Panama workshop and hence a closer link to IWC has been established. WOC also continues to organize different events where the ship strike issue is dealt with.

3.5 Ship strike data coordinators

The primary objective of the data coordinators is to progress the conservation and management work of the International Whaling Commission with respect to ship strikes. In particular, it focused on three work areas:

1. Data gathering to populate the global IWC ship strikes database: This includes searching scientific papers, email discussion groups, press and internet reports, etc. for collision cases and following up on them by either entering the available data directly or encouraging authors to do so.
2. Outreach and communication: The ship strike data coordinators were in touch with a variety of institutes, agencies, shipping companies, journalists, etc. to inform them about the existence and the use of the IWC ship strike database as well as disseminating more information on the issue, including mitigation measures.
3. Database management: The ship strike database was updated and is being constantly checked for bugs. User problem were dealt with and an on-going dialogue with the Secretariat (i.e. IT specialist Brendan Miller) was established. Currently, the database undergoes profound refreshment, both in terms of layout, technicalities and practicability. The new system which was developed in close contact with the ship strike data coordinators, will probably be launched by the end of 2014.

A steering group is supervising the work of the coordinators. Other activities by the coordinators are mentioned throughout this document in various sections. A complete overview can be found in the Progress Reports on IWC Ship Strike Data Coordination (documents SC/65a/HIM04 and SC/65b/HIM09).

3.6 Other work conducted by the Secretariat

Since October 2011, David Mattila has been seconded to the Secretariat to cover the issue whale entanglement as well as ship strikes. In February 2012, he represented the IWC at an international workshop to develop "Criteria and Case Definitions for Human Originated Cause of Death, Proximate or Contributing Cause of Death for: Vessel, Fishing and Gunshot Trauma in Stranded Cetaceans and Pinnipeds" in Woods Hole, MA. The report from this workshop was later used to help the IWC SC (Jeju, 2012) to finalize their criteria for determining ship strikes. In October 2012, he participated in the Workshop on Maritime Transport and Biodiversity Conservation (see page XX). During his manifold trainings on disentanglements of whales all around the globe, he also

conducts outreach on ship strikes. Moreover, there were two "human impact" trainings in cooperation with UNEP-CEP-SPAW, including the arrangement for two of the world experts on the forensic detection of human caused mortality (Drs. Moore and Gulland) to conduct the first trainings on detecting human caused mortality for veterinarians in the Wider Caribbean. The training welcomed participants from Costa Rica, Colombia, Costa Rica, Dominican Republic, Mexico, Panama, Puerto Rico, St. Lucia, Venezuela and the French and Dutch Caribbean. Mattila was also central to preparing the IWC-UNEP-SPAW workshop on ship strikes in Panama 2012.

4. VOLUNTARY FINANCIAL CONTRIBUTIONS

Any new voluntary financial contributions or allocation of past ones will be discussed during the meeting of the Conservation Committee.

Donor	Amount GBP	Date Received	Funding Use
Govt Netherlands	20,264	20/12/2013	UNEP-SPAW Ship Strikes/Disentanglement Wider Caribbean Workshop Panama 18-20 June 2014
Govt USA	12,769	28/07/2014	75312GFVNS UNEP-SPAW Ship Strikes/Disentanglement Wider Caribbean Workshop Panama 18-20 June 2014
SPAW-RAC	5,797	02/07/2014	75312GFVNS UNEP-SPAW Ship Strikes/Disentanglement Wider Caribbean Workshop Panama 18-20 June 2014
TOTAL	38,830		

5. RECENTLY PUBLISHED PAPERS ON SHIP STRIKES

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Appendix 1

Membership of the Ship Strikes Working Group as per August 2014

<u>Argentina</u> Miguel Iñiguez	<u>France</u> Vincent Ridoux	<u>Portugal</u> Marina Sequeira	<u>CMS/ASCOBANS</u> Heidrun Frisch
<u>Australia</u> Christine Schweizer	<u>Italy</u> Caterina Fortuna Simone Panigada	<u>South Africa</u> Herman Oosthuizen	<u>ACCOBAMS</u> Simone Panigada
<u>Belgium</u> Fredéric Chémay (Chair) Fabian Ritter	<u>Korea</u> An Rock	<u>Spain</u> Begoña Santos Ana Tejedor Juan José Areces	<u>IWC</u> Greg Donovan
<u>Brazil</u> Fabia Luna Milton Marcondes	<u>Luxemburg</u> Pierre Gallego	<u>UK</u> Jennifer Lonsdale Jamie Rendell Emma Rundall	
<u>Denmark/Greenland</u> Nette Leverman Gitte Hundahl	<u>New Zealand</u> Rochelle Constantine Louise Chilvers	<u>USA</u> Greg Silber	