

Progress on the Welfare Action Plan

Intersessional Working Group on Welfare

Workstream 1 - Embedding welfare considerations within the IWC					
Aim: To equip the Commission and its working bodies with the necessary information to ensure cetacean welfare aspects are proactively and consistently considered across all relevant areas of work.					
	Actions	Outcome	Timelines¹	Responsible parties	Progress since 2018 (IWC67)²
1.1	Examine the potential for a shared understanding of animal welfare in relation to non-hunting human induced threats.	Clarity on the broader goals of the IWC with respect to the promotion of sound animal welfare practices relating to non-hunting aspects of human activities. If possible, identification of shared welfare principles to help provide a collective understanding.	Ongoing	WKM&WI WG	No known progress
1.2	Establish working links with all relevant Working Groups and Sub-Committees on welfare related aspects.	Formalised information flow from and to those IWC groups already considering welfare aspects and the establishment of new	Ongoing	WKM&WI WG Sub-Committees Working groups on whale watching, ship	-Regular reports from Strandings Coordinator and/or Expert Panel and human Impact Reduction Technical Advisor (entanglement) to WKM since 2018 -Relevant recommendations from SC subcommittees available for review, including from HIM (ship strikes, bycatch/entanglement), E (strandings, chemical pollution) and whale watching

¹ These timelines were set in 2014 and so some have been completed- in most cases by holding a workshop and the report being endorsed at Commission

² A list of Welfare Workshops is given at the end of this table and WKM recommendations from IWC66 and 67 with progress are given in Appendix B

		linkages where necessary.		strikes, entanglement, small cetaceans etc.	-Regular communication between the Bycatch, Entanglement (human impact reduction) and Strandings coordinators -Secretariat based Data Manager oversees the Ship Strikes Database, scoping a strandings database and looking at possible inclusion of marine debris
Workstream 2 – Research, management advice and actions to address welfare issues from non-hunting anthropogenic threats					
Aim: To improve understanding of the nature and scale of non-hunting welfare threats to cetaceans and provide both management advice and practical support to mitigate these threats.					
2.1 Data gathering and advice					
Objective: To ensure fit for purpose data are collected and made available to the Commission to help improve our understanding of the implications of key threats on the welfare of cetaceans and to support the proposal of appropriate welfare related recommendations.					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
2.1.1	Agree a detailed Action Plan and update over time as appropriate. Identify and agree upon priority areas of work, where welfare issues are considered most relevant.	A focused programme of work and detailed Action Plan which will support delivery and provide a clear steer on priorities to the Commission and the Scientific Committee.	Ongoing	WKM&AWI WG	Not reviewed since IWC67- current group doing so (Sept 2022)
2.1.2	Identify and quantify (where possible) the nature and extent of threats to cetacean welfare, gaps in our understanding, and specific data needs.	A series of topic-specific welfare orientated workshops generating recommendations for the Commission to consider. Covering, for	Ongoing	WKM&AWI WG	-See Scientific and Conservation Committee reports including bycatch/entanglement/strandings/marine debris/ship strikes -Whale watching SWG and Sub-committee recently reviewed and updated the IWC Principles and Guidelines for whale watching

	Where appropriate, propose possible mitigation measures for consideration by the Commission.	example, extent and severity of threats, research needs, and potential mitigation measures.			
2.1.3	Seek to develop criteria to support standardised welfare data collection and encourage the regular submission of relevant data from the sub-groups to the WKM&AWI Working Group.	Fit for purpose, standardised data which are more easily compared and analysed across the range of welfare issues being addressed by the WKM&AWI WG.	Ongoing	WKM&AWI WG Sub-Committees Working groups on whale watching, ship strikes, entanglement, small cetaceans etc.	Reports on Strandings and entanglement direct to WKM. Bycatch, ship strikes and marine debris report to SC (E and HIM) and CC but ongoing communication between these topics Ship strike Data Manager assisting in data collection (and development of marine debris/strandings)
<p>2.2 Euthanasia Objective: To produce specific recommendations to the Commission in relation to the euthanasia of cetaceans.</p>					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
2.2.1	Review the information, and progress the recommendations, arising from the 2013 workshop on 'Euthanasia Protocols to Optimize Welfare Concerns for Stranded Cetaceans'.	Agreed suite of humane practices and protocols (including health and safety) applicable to stranded cetaceans and associated recommendations to be considered and adopted by IWC parties.	Completed 2016 (IWC 66)	WKM&AWI WG	See Recommendations and progress in Appendix A A further IWC Workshop to Support the Consideration of Non-Hunting Related Aspects of Cetacean Welfare was held May 2016

2.2.2	<p>* Organise additional topic-specific workshops to address gaps in understanding and progress key aspects relating to euthanasia (<i>Action 5, 6, & 10 - 2003 Action Plan</i>).</p> <p><i>*indicates Actions from the 2003 Welfare Action Plan See Appendix C</i></p>	<p>The bringing together of experts to: agree recommendations on euthanasia protocols for mass stranding events; the development of criteria for determining permanent insensibility, unconsciousness and death; and work towards developing reliable indices of stress (last two relevant to both whaling and non-whaling welfare considerations).</p>	Ongoing	WKM&AWI WG	<p>Action 10- 2016 (IWC66) IWC Workshop to Develop Practical Guidance for the Handling of Cetacean Stranding Events, May 2016</p>
<p>2.3 Disentanglement</p> <p>Objective: To produce specific recommendations to the Commission in relation to the welfare implications of entanglement, in particular relating to marine debris and active fishing gear.</p>					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
2.3.1	<p>Support the continued growth and development of the disentanglement network and ensure that the IWC becomes</p>	<p>A sustained increase in the number of people trained to safely disentangle cetaceans.</p> <p>A global, publicly accessible database</p>	Ongoing	<p>Disentanglement network (led by David Mattila)</p>	<p>See Technical Advisors report (Mattila) to IWC68 – many entanglement training workshops have been held over the years with 1300 trainees from 30+ countries</p> <p>Global Whale Entanglement Response Network (GWERN) established and has an expert panel</p>

	the central point for capturing and disseminating relevant information and raising standards.	on cetacean entanglements, disentanglement efforts and outcomes. Training workshops held in entanglement hotspots.			There is an IWC webpage on entanglement and links including Principles and guidelines for large whale entanglement response efforts and case studies Secretariat Data Manager scoping the possible strandings/entanglement database
2.3.2	Take steps to apply the successful model of the disentanglement network to other areas, in particular in improving and standardising responses to euthanasia and strandings events (linked with sub-workstreams (i) and (iii)).	Improved and standardised responses to issues such as strandings and euthanasia. Establishment of a global strandings and euthanasia expert network, training package and stranding database. Management advice adopted by the IWC and translated into practical content.	Completed 2016 (IWC66)	WKM&AWI WG	Secretariat collected contact information for national cetacean strandings networks in 2016/17. Secretariat is currently in the process of updating these contacts and they are available on the website Strandings training is in development and based on the disentanglement system Strandings Regional coordinators are in place to help facilitate rapid response Endorsed at IWC67, 4 th Workshop on large whale entanglement June 2018 Potential to develop a list of Euthanasia contacts, institutions as opposed to individuals
<p>2.4 Cetacean Strandings Objective: To work through existing strandings networks to produce specific recommendations to the Commission in relation to the welfare implications of responding to cetacean stranding events.</p>					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
2.4.1	Organise a mass strandings workshop to progress the development of shared	The bringing together of experts and existing strandings networks to share	Completed 2016 (IWC66)	WKM&AWI WG	See above (2.3.2) re strandings contacts Development of the Cetacean Welfare Assessment Tool to be presented at IWC68. Paper published on the tool in 2020.

	best practice and guidance in responding to such events (linked with Action 7).	experiences, agree guidance, and help raise welfare standards when dealing with mass stranding events. The IWC established as a central repository for shared guidance and best practice.			<p>Workshop on Investigations of Large Mortality Events, Mass Strandings, and International Stranding Response, California, December 2015</p> <p>IWC Workshop to Develop Practical Guidance for the Handling of Cetacean Stranding Events, May 2016</p> <p>2019 Workshop Harmonizing Global Stranding Response established the 'Global Stranding Network' GLOBAL STRANDING NETWORK as a communication tool and a venue to share training materials and protocols.</p>
<p>Workstream 3 – Management advice and actions to address welfare issues in relation to hunting</p> <p>Aim: To deliver practical improvements in welfare aspects associated with cetacean hunts, including Aboriginal Subsistence Whaling (ASW).</p>					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
3.1	* Encourage increased collection and submission of fit for purpose, standardised time to death data from member states in relation to primary and secondary killing methods in commercial and ASW hunts. (<i>Action 7 - 2003 Action Plan</i>).	Fit for purpose and consistent data from across different hunts will allow for an evidenced comparison of the effectiveness of different killing methods. Data presented with appropriate statistical analysis will allow for comprehensive	On- going	IWC Contracting Parties	<p>Reports received from UK (some years), USA, Kingdom of Denmark (Greenland), Croatia, Netherlands, NZ, Russian Federation, St Vincent and the Grenadines</p> <p>Varying levels of detail included in reports including the following action points 3.1-3.3</p> <p>Norway reports regularly but does not use IWC forms.</p>

		independent appraisal.			
3.2	* Encourage the collection and presentation of fit for purpose, standardised struck and lost rates in all commercial and ASW hunts, including information on weaponry and techniques used. <i>(Action 8 & 9 - 2003 Action Plan).</i>	Data will allow for evidenced considerations of the effectiveness of different weaponry and techniques.	On- going	IWC Contracting Parties	Information received in welfare reports but is not standardised. Secretariat is investigating how to collate the data received to facilitate its use
3.3	Encourage continued co-operation amongst Contracting Governments to review and improve weaponry and methods used for hunting whales. This may include but is not limited to: a) * Refining the design of penthrite grenades to take	The implementation of practical improvements to existing practices which will improve the welfare aspects associated with the hunting of whales, including time to death and struck and lost rates.	On-going	IWC Contracting Parties	Ongoing communication between NAMMCO and IWC. NAMMCO presenting at IWC68 on new training materials

	<p>into consideration necessary species-specific modifications of charge and depth or timing after impact at which detonation is triggered (<i>Action 1 & 9 - 2003 Action Plan</i>)</p> <p>b) Encouragement and support for the replacement of cold harpoons and other weaponry of lower efficiency with penthrite grenades in ASW hunts.</p> <p>c) * Refining the design of sighting equipment suitable for rapid action under conditions at sea, in order to improve accuracy of delivery of penthrite grenades (<i>Action 2 & 9 - 2003 Action Plan</i>).</p>				
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	<p>d) * Supporting and encouraging the development and implementation of training programmes on safe handling and effective use of weaponry including the penthrite grenade and other aspects of hunts (<i>Action 2 & 9 - 2003 Action Plan</i>).</p> <p>e) * Seeking updated information and review of constraints on shooting distance and relative orientation of vessel and whale in order to promote measures to reduce times to death (<i>Action 3 - 2003 Action Plan</i>).</p>				
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	<p>f) * Reviewing the use and effectiveness of secondary killing methods on different species including analysis of all currently used methods and promotion of most effective methods for reducing time to death of whales (<i>Action 4 - 2003 Action Plan</i>).</p> <p>g) Collection of information on the age and wear of the weaponry currently being used, and the impact of such on welfare aspects of hunts.</p> <p>h) Encouragement of the development of mechanisms to address concerns such as regular inspections of whaling gear.</p>				
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Workstream 4 - Communications and Outreach					
Aim: To engage external experts in, and promote more widely, the IWC's welfare agenda.					
	Actions	Outcome	Timelines	Responsible parties	Progress since 2018 (IWC67)
4.1	Establish and maintain appropriate and constructive links with organisations considering animal welfare, including the hunting of terrestrial animals.	Secures input of additional and valuable expertise into IWC discussions. Ensures cross-fertilisation between organisations dealing with cross-cutting issues such as the American Veterinary Medical Association (AVMA), the North Atlantic Marine Mammal Commission (NAMMCO) and the World Organisation for Animal Health and Welfare (OIE),	Ongoing	WKM&AWI WG Secretariat	-Ongoing communication with NAMMCO, CITES -Communication via the Strandings Initiative and Expert Panels to wildlife vets, -Development of Strandings training programme -GWERN ongoing internship programme -FAO: a) Assisting in developing the guidelines for marine mammal release and mitigation of bycatch b) Currently finalising IWC contract with FAO in the Common Oceans ABNJ2 Project to educate and mitigate bycatch across ocean basins with various partners
4.2	Request that contracting governments provide information on animal welfare science experts for inclusion in the IWC external contacts database.	A fully populated database of external national contacts which can be drawn upon to help progress relevant work being undertaken by the Commission.	Developed 2016 (IWC66)	WKM&AWI WG Secretariat IWC Contracting Parties	https://iwcc.int/public/downloads/ZPHt4/Copy_of_Network_list_JP.pdf Updated via circular in circa 2016. Secretariat currently checking for updates again as time allows Available via the Strandings page of the IWC website. Marine debris roster of experts established 2021

List of welfare related workshops:

Harmonizing Global Stranding Response. Report on the workshop held 7 December 2019, in conjunction with the World Marine Mammal Conference in Barcelona, Catalonia, Spain.

[Fourth](#) workshop on Large Whale Entanglement issues, Provincetown 2018.

IWC Workshop to [Develop Practical Guidance for the Handling of Cetacean Stranding Events](#), May 2016 (Kruger)

[IWC Workshop to Support the Consideration of Non-Hunting Related Aspects of Cetacean Welfare](#), May 2016 (Kruger)

[IWC, NOAA, NEAq Workshop on Global Assessment of Large Whale Entanglement and Bycatch Reduction in Fishing and Aquaculture Gear](#), May 2016

[Workshop on Investigations of Large Mortality Events, Mass Strandings, and International Stranding Response](#), California, December 2015

[Third](#) IWC Workshop on Large Whale Entanglement Issues, Provincetown April 2015 (IWC/66/WKM)

IWC [Workshop on Euthanasia Protocols to Optimize Welfare Concerns for Stranded Cetaceans](#) London, September 2013 (IWC/65/WKM&AWIRep01) endorsed at SC65b

[Second](#) Workshop on Welfare Issues Associated with the Entanglement of Large Whales, With a Focus on Entanglement Response, October 2011 (IWC/64/WKM&AWI REP1)

[First](#) IWC Workshop on the Welfare Issues Associated with the Entanglement of Large Whales, Hawaii, 2010

Appendix A Recommendations from Euthanasia Workshop 2013

Recommendation Text Euthanasia Workshop 2013 As under Action 2.2.1.	Progress
<p>The workshop recommended that the humaneness should be the first criteria for any euthanasia method, rather than concerns over aesthetics or public acceptance, although also important in the bigger picture when managing euthanasia. A humane death will often involve the very shortest time to death, but not always if pre-sedation is undertaken to provide anxiolysis and analgesia (AVMA 2013). Other criteria for the chosen method of euthanasia include availability of equipment and drugs, existing knowledge/expertise, and relevant legal/regulatory framework (including cultural, political, aboriginal, socioeconomic differences between countries).</p>	<p>In protocol/guidelines</p>
<p>The workshop recommended several chemical and physical techniques for euthanasia of large beached whales, including chemical sedation followed by potassium chloride (KCl) intra-cardiac injection for baleen whales (Harms et al 2014) and high calibre ballistics and explosives (cranial implosion technique) (Coughran et al 2012) for baleen and sperm whales.</p>	<p>In protocol established at 2016 workshop</p>
<p>The workshop strongly recommends that euthanasia of cetaceans should not be conducted by untrained personnel, as this may endanger humans and increase the suffering of the animals.</p>	<p>2011- GWERN and training programme established 2022- Stranding Initiative training program in development</p>
<p>The workshop recommended that in order to ensure the safety of response personnel, attempts at euthanasia of beached whales should not be conducted when a whale is in surf and should be conducted only when a whale has been stabilized or is above the tide line.</p>	<p>In protocol</p>
<p>All euthanasia methods should be tested on dead animals first, to develop methodological expertise and obtain correct anatomical knowledge (e.g. via necropsies on strandings).</p>	<p>?</p>
<p>The workshop recommended that for chemical methods, removal of the injection site to limit risk of disposal and potential for relay toxicity is a minimum requirement. Where barbiturates have been used, the entire carcass should be disposed of where scavengers cannot access it</p>	
<p>The workshop recommends that IWC member nations refine existing or develop new incident response protocols based on the principles and guidelines found in this report.</p>	

<p>The Workshop recommends, for each event, the collection of appropriate data, full documentation of the event and the sharing of experiences/data to refine decisions and situation handling in the future. This process should include information on both successes and failures; the latter can be extremely informative in developing improvements and preventing mistakes being repeated.</p>	<p>Contained in the report are data collection templates, To be included in the Strandings training program</p>
<p>The workshop recommends the addition of a number of 'outcome' fields to the existing IWC National Progress report database for live strandings: released/rescued; euthanized (method categories as in Table 3); no intervention.</p>	<p>Completed by Secretariat</p>
<p>The Workshop noted the value of establishing a voluntary group of experts (contact list) that can be consulted by the IWC and others to: (1) provide advice on euthanasia protocols and methods to relevant authorities; (2) provide objective information to the media if requested and (3) assist the IWC Secretariat in populating the IWC website. The Workshop recommends that this list be maintained by the IWC Secretariat.</p>	<p>IWC Strandings, Entanglement and bycatch expert panels established Strandings networks contacts on the website</p>
<p>The Workshop noted the great potential of the IWC to facilitate work on live strandings and euthanasia techniques, similar to the approach developed for disentanglement (IWC, 2013). It therefore recommends the establishment of a live stranding response component of the IWC website with a layered capacity. It also encourages IWC countries to facilitate the exchange of information, expertise, technology and training.</p>	<p>Established, new Strandings Initiative Regional Coordinators</p>
<p>With respect to data gaps, the workshop agrees that more work is needed on the environmental persistence and potential effects of some chemical methods and encourages this research and provision of information. The Workshop notes the importance of composting as a safe and environmentally positive means of disposal of cetacean carcasses and it encourages national and local authorities to facilitate this method of disposal where appropriate.</p>	
<p>The Workshop recognised the effectiveness of penthrate grenades and encourages the development of a darting-gun type delivery system that it is suitable for beached animals and may also be appropriate for entangled whales at sea. It requests that a progress report on this topic is provided to the 2014 Annual Meeting of the IWC.</p>	

<p>Related to this, the Workshop endorses a previous Workshop recommendation (IWC, 2012) concerning the need to develop methods for euthanasia of cetaceans at sea (entangled or otherwise requiring human intervention). It agrees that this may be facilitated by the holding of a future technical Workshop and requests that this be considered further at the 2014 Annual Meeting.</p>	<p>Workshops held in 2016</p>
<p>the Workshop highlighted difficulties with mass stranding events. It therefore recommends that the IWC consider holding or facilitating the holding of a future Workshop on mass stranding events, including management, social, welfare and euthanasia considerations.</p>	<p>Workshop held in 2015</p>

Appendix B Whale Killing Methods and Welfare Issues Recommendations from IWC66 and 67

	ID	Recommendation	Progress
Recommendations from IWC67 (2018)	WKM1801	The WG endorsed the continuation of this work, including the further development of the Cetacean Welfare Assessment Tool and presentation of a final version to IWC68.	To be present at IWC68 (2022)
	WKM1802	The WG recommended development of a clear process for allocating resources from the voluntary welfare fund during the intersessional period, and its submission to IWC68. It recommended that in the interim period the Intersessional Working Group would advise on allocation of funding donated for implementation of the Welfare Action Plan, and consider any funding requests from IWC working groups for support.	Paper will be presented at IWC68
	WKM1803	The WG endorsed the report of the fourth IWC Working Group meeting on Large Whale Entanglement Issues and its recommendations.	Ongoing: The workshop recommendations included- followup training for entanglement, reiterating that stopping entanglement is overall aim, Collaboration with FAO on mitigation, regular communication between Strandings and entanglement, human safety is priority.
	WKM1804	The WG expressed overall support for continuation of the work to build capacity to respond to whale entanglements.	On-going work of the Technical Advisor on training and input from Expert panel. See report
	WKM1805	The Working Group welcomed the progress of this initiative [the IWC Strandings Initiative] and thanked all involved for their efforts. It endorsed the Scientific Committee recommendations on strandings, including the proposal to extend the Strandings Coordinator role subject to available funds.	The Strandings Initiative was reviewed in 2020 and slightly restructured in 2021 based on this (see 2021 SC papers). Strandings Coordinator in place (part time) and Steering committee refreshed as recommended by SC. See Stranding Coordinator Report for full details of work including the development of a training program.
	Recommendations from IWC66 (2016)	WKM1619	The WG endorsed the recommendations from the IWC Workshop to Support the Consideration of Non-Hunting Related Aspects of Cetacean Welfare, May 2016, Kruger National Park, South Africa (see Appendix 4). The primary focus of these is to take forward work to further develop a draft cetacean welfare assessment framework.
WKM1620		The WG agreed that the Intersessional Working Group on welfare should continue its work in support of implementation of the IWC Welfare Action Plan and to progress the recommendations from the recent workshops; and	Appendix C-Ongoing, WG reported to IWC67

WKM1621	The WG agreed revised Terms of Reference for this group as follows: (1) support implementation of the IWC Welfare Action Plan and report back to the WKM&WI WG, including on any need for updating or revision; and (2) identify and agree upon important issues or themes to progress the promotion of good animal welfare and agree a timetable of regular future technical workshops on these issues, that would report back to the relevant working groups, recognising the success of previous IWC workshops on specific issues incorporating invited external experts.	WG continued and organised a number of workshops to advance the Action Plan objectives. Reported to IWC67.
WKM1622	The WG endorsed the recommendations from the third IWC Workshop on Large Whale Entanglement Issues, April 2015, Provincetown, MA, USA, (Appendix 5), including those relating to development of a Global Entanglement Database.	
WKM1623	The WG endorsed the recommendations presented in the summary report of the joint IWC, NOAA, NEAq Workshop on Global Assessment of Large Whale Entanglement and Bycatch Reduction in Fishing and Aquaculture Gear, May 2016, Portsmouth, New Hampshire, USA (Appendix 6).	
	The WG thanked David Mattila, the technical adviser to the Secretariat to assist with reducing conflicts between cetaceans and marine resource users for his progress report and recommended that this valuable work continue.	GWERN ongoing
WKM1624	The WG endorsed the recommendations from the IWC Workshop to Develop Practical Guidance for the Handling of Cetacean Stranding Events, May 2016, Kruger National Park, South Africa (Appendix 7).	
WKM1625	The WG endorsed the Scientific Committee recommendations on strandings, including the proposal to establish an Expert Panel on strandings, to convene the first meeting of this panel and to appoint a Strandings Coordinator.	Established an Expert Panel along with Strandings Coordinator- who reports to this group
WKM1626	The WG agreed to forward the discussion on funding for the first Expert Panel and Coordinator to the Finance and Administration Committee.	See WKM1802

Appendix C Welfare Action Plan 2003

IWC 2003 REVISED ACTION PLAN ON WHALE KILLING METHODS

A. Equipment and methods

- (1) Encourage continued co-operation among Contracting Governments to refine the design of penthrite grenades as far as possible.
- (2) Continue improving accuracy of delivery of penthrite grenade harpoons, including assessment of refined sighting equipment suitable for rapid action under conditions encountered at sea. Support and encourage the development and implementation of programmes to provide training in the safe handling and effective use of killing devices including the penthrite grenade and in other aspects of the hunt.
- (3) Continue to review constraints on shooting distance and relative orientation of vessel and whale and encourage reducing times to death.
- (4) Continue to review effectiveness of secondary killing methods with a view to reducing times to death in whales and encourage the application of the most effective methods.

B. Indication of insensibility and death

- (5) Develop better criteria for determining the onset of permanent insensibility in whales, using physiological and behavioural observations.

C. Assessment of cause of death in relation to observed time to death

- (6) Where possible, examine the effects of trauma, and its consequences, caused by harpoons and other devices used to capture whales, and its relationship to the reactions of the captured whale. Develop standardised guidelines for recording major indications of death.

D. Collection and provision of information on time of death

- (7) Encourage collaboration between technical and scientific experts with a view to suggesting evidence based guidelines for the collection and dissemination of information in relation to both primary and secondary killing methods in forms that allow the effectiveness of different methods to be compared. The data should be presented to the maximum extent possible with statistical analysis that allows independent appraisal and analysis.
- (8) Encourage collection and presentation of struck and lost rates and standardised estimated time to death records in all aboriginal subsistence catches of whales and undertake assessment of requirements for controls on the use of rifles to kill unsecured whales.
- (9) Encourage the incorporation of data collection and reduction of struck and lost rates in initiatives in Greenland relating to the beluga and narwhal hunts.

E. Assessment of physiological status of hunted animals

- (10) Develop suggested guidelines for, and where possible implement collection of representative biological samples from whales in extremis with an aim to determine reliable indices of stress for animals killed in whaling operations.

F. Next steps

The Workshop participants encourage the IWC to hold a further scientific and technical Workshop in 3-5 years and to call for further improvements in data collection, analysis and reporting in order to evaluate progress made in improving whale killing methods. In the meantime, information should continue to be provided to the appropriate technical Working Group.