

SC/68B/RP/31

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E - Cetacean diseases of concern,  
morbillivirus and brucella and their  
interaction with other immune suppressive  
stressors

IWC



INTERNATIONAL  
WHALING COMMISSION

## PROJECT PROPOSAL REQUEST

### 1. PROPOSAL TITLE

Please provide the title of the project or the name of the workshop/meeting.

Cetacean diseases of concern morbillivirus and brucella and their interaction with other immune suppressive stressors

### 2. BRIEF OVERVIEW OF THE PROPOSAL AND ITS EXPECTED OUTCOME

Give a very brief overview (max 150 words) on your proposal and its expected outcomes. Use bullet point to list outcomes. Be succinct and clear as this may be used to summarise your project for the report.

This activity will be a focussed session at SC 69a in which participants and SC members will

1. Review the current state of knowledge on the individual and population level impact of two key infectious diseases on cetaceans; morbillivirus, brucella, including the importance of co-infections.

2. Identify gaps in our knowledge on their pathological effects, transmission routes, and epidemiological consequences

3. Determine the potential interactions with other stressors, particularly with contaminants and biotoxins where concomitant exposure is relatively common. Since these stressors also act on the immune system it is important to understand exactly how that may affect their susceptibility to infection

### 3. RELEVANT IWC SCIENTIFIC COMMITTEE GROUPS OR SUB-GROUPS

List all the IWC Scientific Committee groups or sub-groups that the outcomes of this work would be relevant to and provide a brief (1-2 lines) explanation of how it would contribute more widely to their ongoing programmes of work. Where possible, do not simply list only the sub-committee within which or for which the project proposal was generated.

Cetacean diseases of concern are a standing topic for E and it was clear from the discussions in 2019 that morbillivirus continues to impact cetacean

populations. Although our understanding over the last 20 years has improved with respect to morbillivirus pathogenesis and epidemiology of morbillivirus infection in cetaceans much of this specialized knowledge has not yet been disseminated to the wider cetacean community.

Similarly, research on Brucella and its effects in cetaceans (i.e. severe chronic disease, abortions, male infertility, neurobrucellosis, cardiopathies, bone and skin lesions, strandings, and death) has significantly advanced and it is timely to collate that information and discuss completed and on-going research. Bringing together members of the SC and invited experts allows for the review of completed and on-going research on these important cetacean diseases that will be helpful in defining future research priorities and progress our understanding of the potential impacts of these diseases and their interactions with other stressors (climate change, contaminants and biotoxins) on populations of cetaceans.

**4. TYPE OF PROJECT (PLEASE TICK)**

Research project	
Modelling	
Workshop/meeting	X focused session
Database creation/maintenance	
Compilation work/editing (e.g. on whalewatching regulations, SOCER, etc.)	
Other (please specify below)	

**5. BRIEF DESCRIPTION OF THE PROPOSAL AND ITS CONNECTION WITH SCIENTIFIC COMMITTEE RECOMMENDATIONS (DO NOT EXCEED 1500 WORDS)**

<p><b>(A) BACKGROUND, RATIONALE, AND RELEVANCE TO THE PRIORITIES IDENTIFIED BY THE IWC SCIENTIFIC COMMITTEE:</b></p>
<p>Provide a clear explanation of the background and rationale for the proposal and its relevance to Scientific Committee identified priorities. Clearly identify the most relevant and recent Scientific Committee recommendations.</p>

SC has identified Morbillivirus, Brucella, as major diseases of concern for cetaceans. Our proposed focussed session will bring together members of SC with IPs who have expertise in this area to exchange knowledge, ideas, priorities for research and progress our understanding of the potential impacts of these diseases and their interactions with other stressors (focussing on another priority topic of cumulative effects) on populations of cetaceans

**(B) SPECIFIC OBJECTIVES OR TOR AND DELIVERABLES/OUTCOMES:**

*Provide the specific objectives and the expected deliverables. In the case of workshops and meetings, include the Terms of Reference (ToR) and expected outcomes.*

The objective of the focussed session are

1. Review the current state of knowledge on the individual and population level impact of two key infectious diseases on cetaceans; morbillivirus, brucella, toxoplasmosis and herpesvirus including the importance of co-infections.
2. Identify gaps in our knowledge on their pathological effects, transmission routes, and epidemiological consequences
3. Determine the potential interactions with other stressors, particularly with contaminants and biotoxins where concomitant exposure is relatively common. Since these stressors also act on the immune system it is important to understand exactly how that may affect their susceptibility to infection

The deliverable will be a report to SC with a view to publishing the findings as a review paper in a peer reviewed publication.

**(C) METHODOLOGICAL APPROACH/WORK PLAN/ADMINISTRATIVE DETAILS**

*Specify the methods to be applied (novel methods require more explanation than standard ones) and the broad workplan – the detailed timetable appears under Item 5 below.*

*In the case of workshops and meetings, include the broad work plan including any pre-requisites for the workshop/meeting to take place (apart from funding, e.g. completed analyses, papers etc.) and administrative details (e.g. location, dates, number of participants).*

This would be a focussed session at SC 69a (2021) and would require the attendance of a minimum of at least 2 IPs (see below).

**(D) SUGGESTIONS FOR OUTREACH**

The conclusions from the session could be disseminated through various social media outlets and Twitter feeds and a summary of the major points will be highlighted on the IWC websites and other appropriate sites. The finds would also be distributed through to the strandings networks, wildlife disease communities (through societies such as IAAAM), marine mammal scientists (through SMM and ECS) and on MarMam. Fact sheets could be provided showing the geographical distribution of outbreaks and the known impacts on individuals and populations and well as highlighting the data gaps and research needs.

**6. TIMETABLE FOR ACTIVITIES AND OUTPUTS**

Specify the timetable for project activities and expected out puts separately. For projects with multiple distinct elements please indicate interim goals and timeframes. Add as many rows as you need to the tables below. If publications are an expected output please note whether you will submit the manuscript to the IWC's Journal of Cetacean Research and Management.

Activity to be undertaken	Key person(s)	Start(mm/yy)	Finish (mm/yy)
Focussed session – organisation and participation	Sandro Mazzariol and Raphaela Stimmelmayer (pathology and health)	Intersessionally (05/20)	SC 69a
organisation and participation	Teri Rowles/Frances Gulland	Intersessionally (05/19)	SC 69a
participation	IP – morbilli specialist		SC 69a
participation	IP – Brucella specialist		SC 69a

Expected outputs	Completion date (mm/yy)
Report of SC	SC 69a
Publication of findings in peer reviewed journal	12/2021
Outreach to strandings network, vets, marine mammal community	12/2021

## 7. RESEARCHERS' (OR STEERING GROUP) NAME(S) AND AFFILIATION

Please, also specify if the project team has any direct connection (e.g. same research group or institute, collaborator on common project) with people involved or likely to be involved in taking the funding decision (e.g. IWC SC heads of delegations, SC convenors, etc.). Add as many rows as you need to the table below.

Name	Affiliation	Connection with decision

## 8. TOTAL BUDGET

Breakdown into: (1) salaries/wages (include name/position of each individual and breakdown of time and duties i; (2) travel/subsistence expenses (breakdown by person and justification) unless for IPs for workshops where a total estimate based on an average for the total number of IPs is acceptable; (3) services (e.g. aircraft/vessel time, consultancy fees, ARGOS fees, etc.); (4) reusable capital equipment (e.g. reusable equipment such as a hydrophone, cameras, etc. Note that this equipment will have to be registered at the IWC Secretariat and will remain property of the IWC at the end of the project), (5) expendable capital equipment (e.g. consumables, tags, stationery), (6) shipping costs, (7) insurance costs, (8) in kind co-funding (specify whether other funding is available for personnel/name, equipment, venues, etc.). Note that "Overheads" are not admissible. Add as many rows as you need to the table below.

Type	Detailed description	Cost in GB pounds
(1) Salaries (by person)		
(2) Travel/subsistence (by person or est. total for IPs)	Funds for 3 IPs has already been secured in the two-year budget. Due to Covid19 these funds as well as unspent funds from the cumulative effects workshop, organised by E as a pre-meeting in 2019, was underspent by £3,817. This would allow us to bring in 5 IPs for as experts on morbillivirus and brucella.	????????
(3) Services (by item)		
(4) Reusable equipment		
(5) Consumables		
(6) Shipping (by Item)		
(7) Insurance (by item)		
(8) Co-funding		
(9) Other		
<b>Total</b>		

## 9. DATA ARCHIVING/SHARING

Please state your plans for data archiving and sharing. Note that data collected primarily under IWC grants are considered publicly available after an agreed period of time for publication of papers, usually about two years. The work of the IWC depends on the voluntary contribution of data to the various databases and catalogues IWC supports. Please consult the Secretariat ([secretariat@iwc.int](mailto:secretariat@iwc.int)).

## 10. PERMITS (PLEASE TICK)

Do you have the necessary permits to carry out the field work and have animal welfare considerations been appropriately considered?	
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Do you have the appropriate permits (e.g. CITES) for the import/export of any samples?	
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*If 'Yes' please provide further details and enclose copies where appropriate:*



## Appendix 2 – DRAFT SCORING SHEET

If a project presents multiple primary objectives which are achieved using sub-projects, a sheet should be used to evaluate each single equally applicable depending on the nature of the project (e.g. field work versus workshops).

IWC SCIENTIFIC COMMITTEE PROPOSALS FOR FUNDING - REVIEW CRITERIA - TEST				
TITLE OF THE PROJECT/sub-projects:				
PRINCIPAL INVESTIGATOR:				
Key criteria		Explanation of scoring	Score	Support
Relevance to Scientific Committee priorities				
1	How well aligned are the scientific outcomes of the project/activity with the current SC priority areas?	1 - Not aligned/poorly aligned (e.g. too vague or generic reference to general SC priorities) 2 - Reasonably aligned (e.g. some aspects may be vague or links are not clear) 3 - Well aligned (e.g. outcomes clearly deliver in the most part on priority areas, may also address longer term or potential future issues). 4 - Closely aligned (e.g. of interest for multiple sub-groups or delivers on specific SC high priority topics/recommendations in the immediate or short term).		
2	To what extent will the outcomes of the project/activity contribute to improvements in the conservation and management of cetaceans?	1 - Not at all 2 - Poorly 3 - Reasonably or over the longer term 4 - Well or over the medium term 5 - Excellently or to almost immediate effect		
<b>Note:</b> if in each of the two above key criteria under this section the project does not score singularly at least 2 points, do not proceed in funding a sub-group would only be developed if in their estimation scores were of 4 or above.				
Approach and methodology				
3	What degree of scientific merit/value is there in carrying out the work?	1 - Not demonstrated or of low scientific value 2 - Useful/basic scientific value 3 - Very good scientific value 4 - Excellent/innovative scientific value		
4	Is the proposed methodology scientifically sound and feasible in terms of field and analytical methods?	1 - Feasibility unrealistic & poor methodology or not properly addressed 2 - Feasibility & methodology acceptable but would benefit from some substantial amendments 3 - Feasibility & methodology good, some small changes beneficial 4 - Feasibility & methodology excellent or a highly promising innovative approach to an important question facing the Committee		
5	What is the likelihood of success based on the proposed overall approach and methodology?	1 - No chance of success 2 - Low chance of success/better approaches available 3 - Medium chance of success/some changes to the approach necessary 4 - High chance of success/little or no changes to the approach necessary		
5a	Are objectives of the research likely to be achieved within the proposed time-frame?	1 - No or unlikely 2 - Partially or potentially ambitious 3 - Yes with some minor suggestions 4 - Yes		
5b	Are any proposed intermediary targets timely and achievable?	1 - No or unlikely 2 - Partially 3 - Probably 4 - Yes		
5c	Is the proposed time-frame/work necessary (e.g. can the project produce results in a shorter time period)?	1 - No or unlikely 2 - Partially 3 - Probably 4 - Yes		

5d	Is the sample size adequate to achieve the stated objectives?	1 – Not demonstrated/not properly addressed 2 – No or unlikely (too low/too high) 3 – Probably (additional analysis needed) 4 – Yes		
6	Is the project likely to affect adversely the population(s) involved?	1 - Not properly addressed/ unknown 2 - Yes severely 3 - Possibly at a low level 4 - No		
6a	IF YES, are analyses provided on simulations of the effects using different time-frames for the project if applicable?	1 – No 2 – Partially 3 - Yes		
<b>Note:</b> if in each of the above key criteria under this section the project does not score singularly at least 2 points, do not proceed in further sub-group would only be developed if in their estimation scores were of 3 or above.				
<b>Project team and Project management</b>				
7	To what extent does the team have the relevant expertise, experience, and balance?	1 – Poor or not demonstrated 2 – Sufficient 3 - Very good 4 - Excellent		
8	Contingency plan: To what extent have potential problems/risks been considered and appropriate mitigation proposed?	1 – Poor or not demonstrated 2 – Sufficient but could be improved 3 - Fully or requiring only minor suggestions or not applicable		
<b>Value for Money</b>				
10	Does the project represent good value for money?	1 – No or significant amendments would be needed 2 – Yes but with some minor amendments 3 – Yes		
11	Have sufficient links been made to the wider research community/other organisations/capacity building.	1 – No 2 – Some but significant amendments needed 3 – Yes but with some minor additions 4 – Yes or not applicable		