



WMMC'19
World Marine Mammal Conference
Barcelona 2019

WORKSHOPS // DECEMBER 7-8, 2019
MAIN CONFERENCE // DECEMBER 9-12, 2019

Centre de Convencions Internacional de Barcelona
Barcelona, Catalonia, Spain



**Together for
Science and
Conservation**

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OUR HOLA! TO ALL THE ATTENDEES

We are very happy to welcome you to the World Marine Mammal Conference and to Barcelona.

This adventure began in 2015 when the Society for Marine Mammalogy and the European Cetacean Society decided to join forces to host a World Conference. Barcelona was chosen by membership vote that year as the venue for the conference, to be co-organized by SUBMON and the University of Barcelona.

Today, we are delighted to welcome a community of 2500 people from 95 countries involved in marine mammal science and conservation, who will share in an intense and rewarding week at the WMMC'19. There will be three global plenary sessions, 627 talks and 1077 posters that will present cutting-edge and thought-provoking research that will help lay the foundation for our work into the future.

We are hosting this Conference in Barcelona, the capital of Catalonia, a territory located to the northwest of the Spanish State that borders the Mediterranean Sea to the east. Catalonia has always been host to the Avant-garde movement in Europe - Picasso, Miró, Dali, Gaudi are just some of the examples of the constant desire for renovation and creation, a true quality that is also present in today's Catalan artists, architects, and designers. Catalan society and culture have been forged from the exchange of ideas, traditions and people and are the fruit of a long history of migrations and commercial transactions with other cultures and nations, thanks to its strategic location in the Mediterranean coast.

Catalonia, with its nearly 600 km of coast marked by the alternation of continental shelf and submarine canyons, is also home for many cetacean species, including the striped, common and bottlenose dolphins, pilot whales and Risso's dolphins, Cuvier's beaked whales, sperm whales and a migratory population of fin whales. It was once home of the iconic Mediterranean monk seal, and we hope it will be again in the future.

Barcelona has over 2000 years of history and conserves important testimonies of its past. It was founded by the Romans, who set up a colony called Barcino at the end of the 1st century BC. The city was bounded by a defensive wall and the remains of it can still be seen in the old town. Do not hesitate to take some free time to get lost in the Gothic Quarter and witness the splendor enjoyed by the city from the 13th to the 15th centuries. Barcelona is also the birthplace and cradle of Catalan art nouveau from the late-19th and early-20th-century, and modernist architecture can be seen all over the city.

Today, Barcelona is an economic and cultural motor of Mediterranean Europe, a cosmopolitan city open to the world with many artistic, cultural, technological and scientific initiatives. It is also an icon of sustainability- the first city in the world to be awarded the BIOSPHERE World Class Destination certification. The Centre de Convencions Internacional de Barcelona Conference center (CCIB) where you are today was chosen because of its certificate of sustainability. It is also adjacent to the Barcelona Natural History Museum where you can see a 20 m 1 tonne fin whale skeleton from 1862. The City is also the site of the signing of The Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, which articulates the legal framework of the Mediterranean Action Plan developed under the United Nations

Environment Programme (UNEP) Regional Seas Programme. Twenty-two Mediterranean countries, under the umbrella of the Barcelona Convention, have pledged to protect the Mediterranean marine and coastal environment while boosting regional and national plans to achieve sustainable development.

It is with this same sense of gathering people from around the globe and working with a common goal that we can achieve the Conference we all wish, a true World conference, which will promote diversity and provide the platform for sharing our research and conservation initiatives. We will use this global event to launch a message of consensus to the world for the study and protection of marine mammals in the coming years, the Barcelona Declaration - Together for Marine Mammal Science and Conservation.

In closing, we wish to thank the magnificent group of very passionate and committed people who have voluntarily worked hard over the last two years to create the best WMMC ever. Please see the very long list of these fine individuals on the next page!

We are very happy to have you all here.

Benvinguts i benvingudes!



Carla and Manel
Conference Co-chairs



Frances and Joan
Scientific Co-chairs



Ann and Mario
SMM and ECS



To reduce the environmental footprint of the Conference, the Organizing Committee agreed not to print the full program in paper. This pocket guide significantly reduced the carbon foot print by at least 1125,00 kg CO₂eq.

CONFERENCE HOSTS



EUROPEAN CETACEAN SOCIETY

The European Cetacean Society (ECS) was established in January 1987 and aims to promote and advance the scientific studies and conservation efforts of marine mammals and to gather and disseminate information about them to members of the Society and the public at large. The ECS is coordinated by a Council of 11 members and each year organizes an Annual Conferences in a European country.



THE SOCIETY FOR MARINE MAMMALOGY

The mission of the Society for Marine Mammalogy (SMM) is to promote the global advancement of marine mammal science and contribute to its relevance and impact in education, conservation and management.

CONFERENCE ORGANIZERS



SUBMON is a marine environmental organization born in 2008 with the aim to conserve, study and educate about the marine environment. It works to preserve marine biodiversity and to reach a sustainable use of the marine environment through promoting a change in the relationship between society and the ocean, conducting in situ actions and sharing knowledge. Its core team has more than 20 years of experience working with marine mammals, sea turtles, sharks and marine habitats. SUBMON is part of the Marine Mammal Expert Group for the implementation of the EU Marine Strategy Framework Directive and of the National Underwater Noise Expert Group.



Founded in 1450, the University of Barcelona is the major public university in Catalonia and the only Spanish university member of the League of European Research Universities (LERU). According to the Center for World University Rankings (CWUR), the UB is listed among the top 100 universities worldwide, and according to The Times Higher Education, the University of Barcelona is listed among the top 25 universities with more than 400 years of history. As WMMC19 Co-organizer, the Large Marine Vertebrates Research Group of the University of Barcelona focuses its research activities on conservation-related aspects of the biology and ecology of large marine vertebrates and its activity spans four main lines of action: conservation-oriented research, training of researchers and technicians, technical implementation of specific actions of conservation, and public awareness on the environmental challenges affecting large marine vertebrates.

WMMC'19 CONFERENCE COMMITTEE

This conference would not have been possible without the hard work and dedication from our conference committees and volunteers!

ORGANIZING COMMITTEE

Manel Gazo - Conference Co-Chair
Carla A. Chicote - Conference Co-Chair
Ann Pabst - President SMM
Mario Aqcuarone - Chair ECS

Frank Cipriano - Workshops Co-Chair
Juanita Zorrilla - Workshops Co-Chair
Eva Flores - Financial Manager
Odei Garcia-Garin - Registration Coordinator
Alba Tojeiro Formoso - Volunteer Coordinator
Irene Cervera - Sponsor/Exhibit/Coordinator & Communication
Natalia Subirà - Exhibit & Sponsorship
Angela Olvera - Exhibit & Sponsorship
Eva van den Berg - Media Coordinator
Mireia Peris - Communication Coordinator
Jonas Teilmann - Posters Coordinator
Eva Hidalgo - Visa Coordinator
Raquel García-Vernet - Student Events Coordinator
Diego Rita - BCN_Pods Coordinator & Travel Grants
Carmen Andrés - Posters & Icebreaker Coordinator
Luis Freitas - Video Night Coordinator
Mariluz Parga - LGTB Event Coordinator
Alicia Cardona - Media Event Coordinator
Sara Fernández - Graphic Design & Media support
Tecla Maggioni - Conference Committee Assistant
Tonya Wimmer - Advisor
Hillary Moors-Murphy - Advisor
Giuseppe Notarbartolo di Sciara - Int. Travel Grants Coordinator
Lindsay Porter - Award Committee Co-Chair
Aviad Scheinin - Award Committee Co-Chair

With special assistance from:

Jarrett Corke - SMM Conference Information and Technology Manager
Katherina Audley - SMM Information and Technology Manager

STUDENT AFFAIRS COMMITTEE

Raquel García-Vernet, SMM
Serena Lagoria, ECS
Courtney Smith, SMM
Rebecca Boys, ECS
Eric Ramos, SMM

SCIENTIFIC PROGRAM COMMITTEE

Joan Gonzalvo - Scientific Committee Co-chair
Frances Gulland - Scientific Committee Co-chair

Peter Tyack - Acoustics and Communication
Ari Friedlaender - Foraging Ecology
Lars Bejder - New Technology
Jaume Forcada - Polar Ecology
Phil Hammond - Population Biology and Abundance
Yara Bernaldo de Quirós - Physiology
Heli Routti - Toxicology
Marcela Uhart - Health
Bruno Cozzi - Anatomy and Morphology
Lucy Keith-Diagne - Education and Outreach
Scott Baker - Phylogeny, Systematics and Genetics
Randy Wells - Behavioural Ecology
Charles Littnan - Conservation
Andy Read - Fisheries Interaction
Peter Thomas - Policy and Management

CONFERENCE SUPPORT COMMITTEE

Silvia Frey, ECS
Katie Moore, SMM
Joan Gonzalvo, ECS
Tara Cox, SMM
Luis Freitas, ECS
Jonas Teilmann, ECS
Michael Dähne, ECS

CONFERENCE CONSULTANTS

Kim Rhodes - Experient Conference Planner
Michael Smith - Experient Account Manager

CODE OF CONDUCT

The **World Marine Mammal Conference** team works to promote a welcoming environment at its meetings that is safe, collaborative, supportive, and productive for all attendees, including volunteers, exhibitors, and service providers, and that values the diversity of views, expertise, opinions, backgrounds, and experiences represented among the conference attendees. To that end, we expect meeting attendees to abide by the following **Code of Conduct:**

EXPECTED BEHAVIOUR

- Treat everyone with respect and consideration.
- Communicate openly and thoughtfully with others and be considerate of the multitude of views and opinions that are different than your own.
- Be respectful in your critique of ideas.
- Be mindful of your surroundings and of your fellow participants. Alert any volunteer if you notice a dangerous situation or someone in distress.
- Respect the rules and policies of all venues associated with the meeting.

UNACCEPTABLE BEHAVIOUR

- Harassment, intimidation or discrimination in any form.
- Physical or verbal abuse of any attendee, speaker, volunteer, exhibitor, conference organizer, service provider or other meeting guest.
- Examples of unacceptable behaviour include, but are not limited to inappropriate comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin; inappropriate use of nudity and/or sexual images in public spaces or in presentations, threatening or stalking any attendee, speaker, volunteer, exhibitor, or service provider.
- Disruption of talks at the meeting or other associated events organized by WMMC.

CONSEQUENCES

- Anyone requested to stop unacceptable behaviour is expected to comply immediately.
- WMMC organizers (or their designee) or security may take any action deemed necessary and appropriate, including immediate removal from the meeting without warning or refund.
- WMMC reserves the right to prohibit attendance at any future meeting.

REPORTING UNACCEPTABLE BEHAVIOUR

If you are the subject of unacceptable behaviour or have witnessed any such behaviour, please immediately notify an ECS or SMM board member (in person or via email) or a designated WMMC'19 organizing committee member at the meeting.

Contact information will be available for this conference on the meeting website.

WMMC'19 SPONSORS

The WMMC'19 would like to thank the following organizations, companies and individuals for their sponsorship and support.

BLUE WHALE 45.000€



Generalitat de Catalunya
Government of Catalonia

RIGHT WHALE 25.000-30.000€



BEAKED WHALE 20.000-25.000€



- Anonymous -

WALRUS 15.000€



POLAR BEAR 10.000€



MEDITERRANEAN MONK SEAL 5.000€

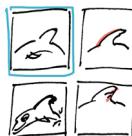


SEA OTTER 2.000€



- GAP, DAP & WAM -

FINS AND FLIPPERS UP TO 1.500€



Thanks to the over **100 individuals** who donated funds for student and international travel grants.

COLLABORATORS & SPONSORS SESSIONS, ITEMS & EVENTS

Plenary Session
Marine Mammals and Climate Change

Plenary Session
Conservation Interventions

Oral Session
Plastic and Pollutants

Posters Theme
Pollutants and Toxicology

WMMC'19 Meeting Point
Finnegan's Point

WMMC'19 Reusable & Travel Mugs

WMMC'19 Student Event
The Estrella Damm Old Brewery

WMMC'19 Banquet
Museu Nacional d'Art de Catalunya

Free entrance for WMMC'19 Attendees
(you have to show your ID badge)
Museu de Ciències Naturals de Barcelona



Generalitat de Catalunya
Government of Catalonia



Agència Catalana
de l'Aigua



Agència de
Residus de
Catalunya



museu de
ciències naturals
de Barcelona

WMMC'19 AWARDS & SPONSORS

STUDENT AWARDS

- **WMMC'19 Regional Student Awards** (Europe; North America; Latin America; Asia; Africa; and Oceania. Each region will have two winners: one for the best doctoral student presentation and one for the best pre-doctoral (undergraduate or masters programme) presentation
- **ACCOBAMS-ECS Student Award** for the best presentation of research from the ACCOBAMS area.
- **Frederic Fairfield Memorial Award** for innovative research by students who developed or applied pioneering techniques or research tools to study marine mammals

AWARDS OPEN TO ALL

- **IFAW Marine Mammal Conservation and Welfare Award** for the best contribution to welfare and/or conservation through research, public involvement or education
- **The Stephen Leatherwood Award** for the most outstanding presentation on marine mammals in South and Southeast Asia that emphasises a conservation challenge and solution
- The daily "**Audience Favourite Award**", which the audience votes on via the conference app
- The "**Judges Discretionary Award**" for any presentation that made us say "Wow"!!!

The WMMC'19 Awards team is extremely grateful to the awards sponsors. **Thank You!**



The Marine Mammal Commission
is proud to support the
World Marine Mammal Conference, Barcelona 2019

Come visit our booth in the Exhibit Hall!



Our mission is to provide independent, science-based oversight of domestic and international policies and actions of U.S. federal agencies addressing human impacts on marine mammals and their ecosystems.

Subscribe to our newsletter and follow us on Twitter!

 mmc.gov/signup

 [@MarineMammalCom](https://twitter.com/MarineMammalCom)



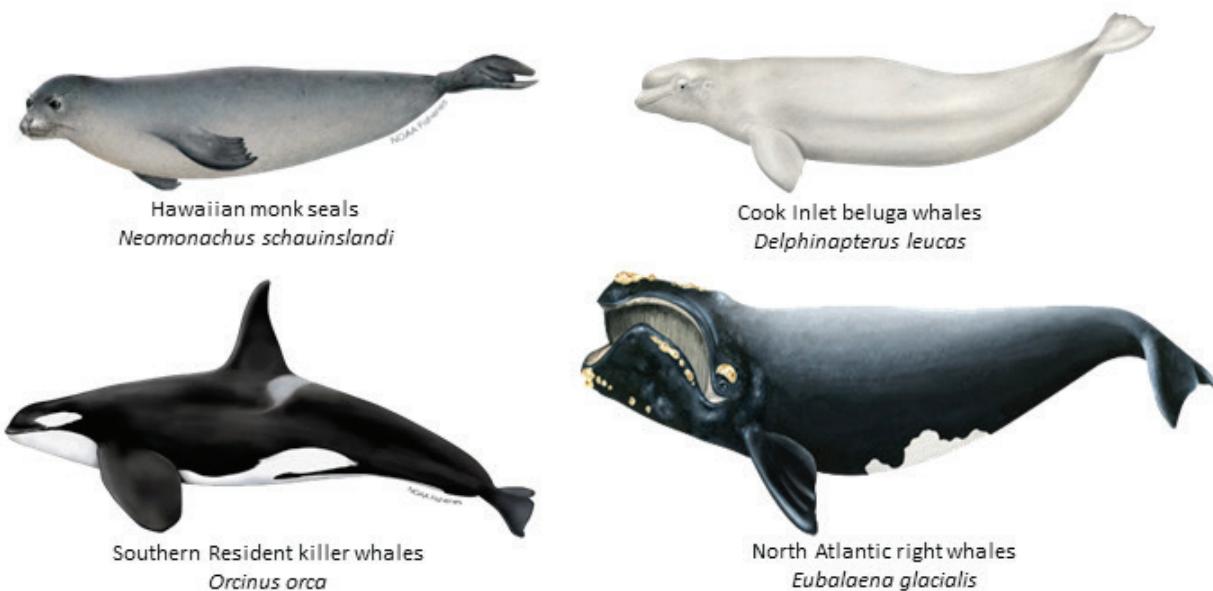
MARINE MAMMAL COMMISSION

AN INDEPENDENT AGENCY OF THE U.S. GOVERNMENT

www.mmc.gov | [@MarineMammalCom](https://twitter.com/MarineMammalCom)

The resilience of our marine ecosystems and coastal communities depend on healthy marine species, including protected species such as whales, sea turtles, corals, and salmon. Under the U.S. Marine Mammal Protection Act of 1972 (MMPA) and the U.S. Endangered Species Act of 1973 (ESA), NOAA Fisheries is responsible for the stewardship of the nation's ocean resources and their habitat in the United States and works to recover protected marine species while allowing sustainable economic and recreational opportunities.

We rely on close partnerships with experts from the scientific community, conservation organizations, and commercial industries to help research and manage species and stocks of marine mammals that are facing threats to their survival. By working with national and international colleagues, we can ensure the best available scientific information is used to support an ecosystem-based approach to management.



"Species in the Spotlight: Survive to Thrive" Initiative

Of all the species NOAA Fisheries protects under the MMPA and ESA, we consider four marine mammals among the most at risk of extinction in the near future: Hawaiian monk seals, Cook Inlet Beluga whales, Southern Resident killer whales, and North Atlantic right whales. The "Species in the Spotlight: Survive to Thrive" initiative was launched in 2015 to bring greater attention and marshal resources to save these highly at-risk species. These four species were selected because they are listed as endangered, their populations are declining, and they are considered a recovery priority #1. A recovery priority #1 species is one whose extinction is almost certain in the immediate future because of rapid population decline or habitat destruction. Additionally, it is a species that conflicts with construction, other developmental projects, or other forms of economic activity. We understand the limiting factors and threats to these species, and we know that the necessary management actions have a high probability of success. Our goal is to focus our recovery actions and motivate partners and interested citizens to work with us on these actions to turn this situation around.

This initiative is a strategic approach to endangered species recovery that involves targeted resources and intensive human efforts to stabilize species' populations. For each species, we have developed 5-year action plans that outline short-term efforts vital for stabilizing their populations and preventing their extinction.



NOAA FISHERIES

Office of Protected Resources

www.fisheries.noaa.gov/protecting-marine-life

GENERAL CONFERENCE INFORMATION

CONFERENCE ETIQUETTE

Presenters should carefully read through and follow presentation guidelines, and be respectful of their peers when giving their presentation by remaining on time. Please avoid movement into or out of rooms once a presentation has started – opening and closing doors are very distracting for presenters! Also minimize any disruptive conversations during spoken presentations. As a courtesy to those around you, please turn off or silence all mobile phones and other noisemakers. If you must talk on your phone, please step out into the hallway quietly so as not to disrupt presenters and other attendees.

CONFERENCE ABSTRACTS

Abstracts will also be available on our WMMC'19 conference app, usable on either Apple or Android phones. Having abstracts distributed in electronic form reduces paper waste and also allows abstracts to be searched more readily. You can download our app via the conference website.

REGISTRATION, MERCHANDISE AND HELP DESK HOURS

The registration desk will be open during the following hours and will be able to assist you with conference and workshop registration, membership renewals and sale of conference merchandise.

Date	Hours of Operation	Room
Friday, December 6	18:00 – 20:00	Entrance Hall
Saturday, December 7	07:00 – 17:00	Entrance Hall
Sunday, December 8	07:00 – 20:00	Entrance Hall
Monday, December 9	07:00 – 16:30	Entrance Hall
Tuesday, December 10	08:00 – 16:30	Entrance Hall
Wednesday, December 11	08:00 – 16:30	Entrance Hall
Thursday, December 12	08:00 – 15:30	Entrance Hall

NAME BADGES

All registrants must wear their name badges to all conference functions and sessions. If you do not display your name badge you will not be allowed to enter. The badge entitles you to admission to the Welcome Reception, all spoken and poster sessions, refreshment breaks and all evening activities (except the Closing Celebration, which requires a separate ticket, and the student event due to limited availability). The name badge is an essential conference item. In the event that you lose your badge, you can replace it for €15 at the registration counter.

IMPROMPTU SESSION ROOMS

If you are looking to have a small group meeting and need a quiet place WMMC does provide impromptu meeting rooms for this reason. These rooms are located in rooms M213, M214 and M215 of the CCIB from 07:00-18:00. Availability of these rooms are on a first-come first-serve basis and there is a sign up sheet outside of each.

COFFEE AND LUNCH BREAKS

There will be one coffee break per day, see schedule for exact times, located in the Hall. In this same space you will find the Exhibitors and Posters.

From Saturday-Thursday, there will be an hour for lunch, see schedule for exact times. **Lunch is on your own**; however, there are cash and carry concessions with seating in the Entrance Hall near registration and various establishments within easy walking distance of the CCIB.

INTERNET

Wireless Internet access is available throughout the Convention Centre. Conference attendees can connect to the "**WMMC19**" network with the password "**Barcelona**".

CONFERENCE APPAREL

Upon check-in, all registrants will be provided with a complimentary conference bag, mug and other goodies. If you have pre-purchased conference souvenirs, you need to pick them up at the Merchandise Table (located next to the Registration Desk in the Entrance Hall) by 16:30 on Monday, December 9.

Registrants and their guests can purchase additional conference bags and mugs, as well as t-shirts and hoodies for an additional charge at the Registration Desk throughout the remainder of the conference, while supplies last. We encourage everyone to purchase additional conference items as souvenirs for themselves, colleagues, and friends back home who were unable to attend the conference.

JUDGES

The Judges Room is located in Room M212 and is open from Monday, December 9th to Thursday, December 12th between 8:00 - 18:00. The room is open for all award or judging enquiries and any software issues. Judging and award related enquiries can be sent to: awards@marinemammalscience.org.

In appreciation of the judges contribution, Sea Mammal Research Unit / SMRU Consulting have sponsored a special judges event, during which the final scores for student awards shall be assessed. This will take place on Wednesday 11th December, 18:30 - 20:30 in Room 115. You must sign up for this event as places are limited. Thank You to WMMC judges, your contribution is much appreciated.

CONFERENCE LOCATIONS

Be sure to familiarize yourself with all the differnt locations where the conference and events will be taking place.

You can also checkout our WMMC'19 Google Map on the conference app and our website (wmmconference.org).



U.S. NAVY'S LIVING MARINE RESOURCES PROGRAM

Funding research to understand potential effects to marine life and supporting Navy efforts to ensure environmental compliance while being a responsible presence at sea.



Find us online at
www.navfac.navy.mil/lmr.



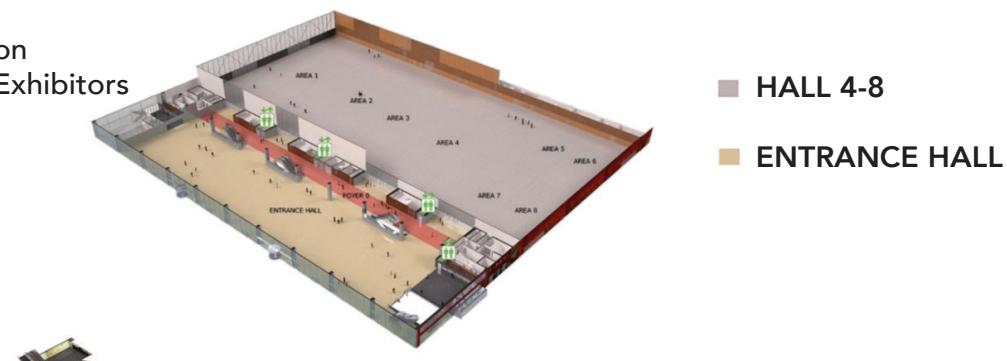
NAVFAC
Naval Facilities Engineering Command
ENGINEERING AND EXPEDITIONARY WARFARE CENTER



CONVENTION CENTRE FLOOR PLANS

P0 FLOOR

- Registration
- Posters / Exhibitors

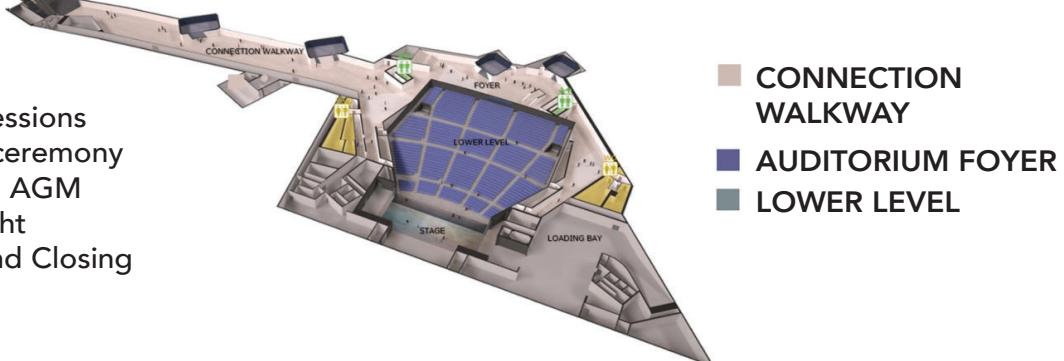


■ HALL 4-8

■ ENTRANCE HALL

P0 FLOOR

- Plenary Sessions
- Opening ceremony
- ECS/SMM AGM
- Video Night
- Awards and Closing

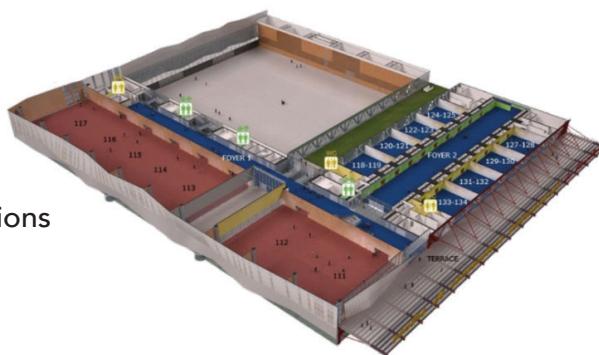


■ CONNECTION
WALKWAY

■ AUDITORIUM FOYER
■ LOWER LEVEL

P1 FLOOR

- Workshops
- Oral Presentations

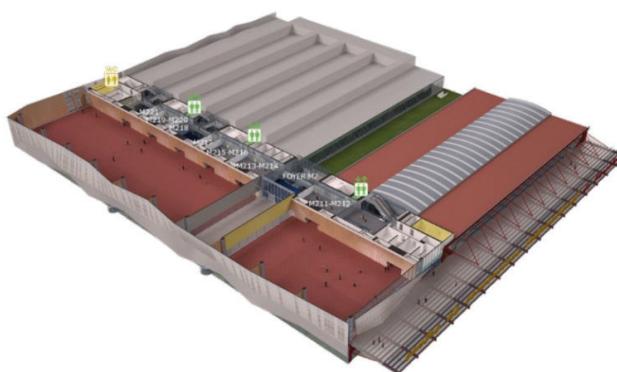


■ ROOM 111
ROOM 112
ROOM 113
ROOM 114
ROOM 115
ROOM 116
ROOM 117

■ ROOM 118-134
FOYER1 / FOYER 2

M2 FLOOR

- Workshops



■ ROOM M211-M215
ROOM M216-M221

A large blue whale is the central focus of the image, swimming gracefully in clear blue ocean water. The whale's body is angled upwards and to the left, with its long, thin tail visible at the top. Its skin is a deep teal color, with lighter, almost white, patches around its mouth and along its side. The background is a clear, gradient blue, suggesting the depth of the ocean.

Working together worldwide
to protect cetaceans

wwf.panda.org/cetaceans



The Marine
Mammal Center®

The Marine Mammal Center is celebrating nearly 45 years of advancing global ocean conservation.

Thank you to all our partners for their support, encouragement and collaboration in marine mammal rescue, veterinary medicine, science and education.



MarineMammalCenter.org



SCIENTIFIC PROGRAM

Welcome to the Scientific Program of the World Marine Mammal Conference!

ORAL PRESENTATIONS

There are two types of talks at WMMC'19:

- Oral presentations are each allotted 15 minutes: 12 minutes for your presentation, two minutes for questions and one minute for transition.
- A speed talk is a four-minute presentation during which you may present key-ideas, results and their meaning/implication. As a guide, three slides should be sufficient to allow you to get your point across.

Five concurrent sessions will be held in the Convention Centre, rooms 111-115. Presenters are asked to check in with their session chair 10 minutes before the start of the session and stay for 10 minutes during the break after their talk to take additional questions. Sessions are organized by topic. A list of all sessions and more details can be found below on the program schedule tabs organized by day.

Each session will have a chair who will be responsible for introducing talks and keeping the schedule. If the schedule is not kept, registrants who move between sessions will not be able to attend talks that interest them. **Speakers are to complete their talks within the allotted time.**

SPEAKER UPLOAD

Detailed instructions have been posted on the website and e-mailed to authors.

The UPLOAD ROOM will be located in Room 119 on level P1 at the CCIB and will be open during these hours:

Sunday, 8 Dec 12:00 – 18:00

Monday, 9 Dec 07:00 – 18:00

Tuesday, 10 Dec 07:30 – 18:00

Wednesday, 11 Dec 07:30 – 18:00

Thursday, 12 Dec 07:30 – 13:00

SPEAKER PRACTICE ROOM

The speaker ready room, Room M213 located on the M2 Floor at the CCIB is where a speaker can go to practice their presentation. There will be a sign-up sheet on the door to sign out a time slot for private use. Here, you may walk through your presentation to ensure you are comfortable and ready to make your presentation at the scheduled time. There will be an LCD projector and screen available in this room, please bring your own computer.

This room is available during the following hours to schedule a practice time:

Monday, 9 Dec 07:30 – 18:00

Tuesday, 10 Dec 07:30 – 18:00

Wednesday, 11 Dec 07:30 – 18:00

Thursday, 12 Dec 07:30 – 13:00

This room is available during the following hours to schedule a practice time:

Monday, 9 Dec 07:30 – 18:00

Tuesday, 10 Dec 07:30 – 18:00

Wednesday, 11 Dec 07:30 – 18:00

Thursday, 12 Dec 07:30 – 13:00



The banner features a blue background with a white penguin icon and the text "WILDLIFE COMPUTERS". To the right, a large whale is shown in the water, with two small circular images overlaid showing seals with tracking devices. The main text reads "BETTER TAGS, BETTER DATA". Below the whale, there is a list of bullet points and a contact message.

• Over 250 different shapes and sizes
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©Alexi Altukhov, NOAA Fisheries, NMFS MMPA/ESA Permit #18528

©Reuters

WildlifeComputers.com | (425) 881 3048 | 8310 154th Ave NE, Suite 150 | Redmond, WA 98052

POSTER PRESENTATIONS

Posters are an extended abstract with easily readable text and graphics. Posters typically include a title, authors, background, methods, 1-3 results, conclusions and acknowledgements.

Two poster groups, Group A and B, will each have its own formal session times. All presenters are expected to present their work at the following times. Presentations with odd Program ID numbers will present on Monday 13:30-15:00 and Wednesday 8:30-9:45. Presentations with even Program ID numbers will present on Tuesday 8:30-9:45 and Thursday 14:00-15:30. All posters will be on display in the Hall from Monday to Thursday - see map of the Hall area. Group A posters are listed by session and row starting on pg.101. Group B posters begin on page ?. Overview of the poster themes can be found below and guidance in the poster pg.125 will be shown with signs using the same colors.

POSTER PODS

Poster Pods are a free, fun and voluntary event that will take place during the WMMC poster sessions! Poster Pods consist of ~10 people who are led through a theme-based series of posters by an enthusiastic expert in the field. Poster presenters will be told in advance by the Poster Pod Leader to present their poster when the pod arrive and everyone can participate in the following discussion. You can sign up for a Poster Pod close to the entrance of the poster/exhibitor hall from Sunday or just turn up when the poster session is starting and see if there are space for more people in the Pod. See list of Poster Pods on pg.147. We look forward to welcome you all to the Poster Pods!



Generalitat de Catalunya Government of Catalonia



**Sea Mammal
Research
Unit**

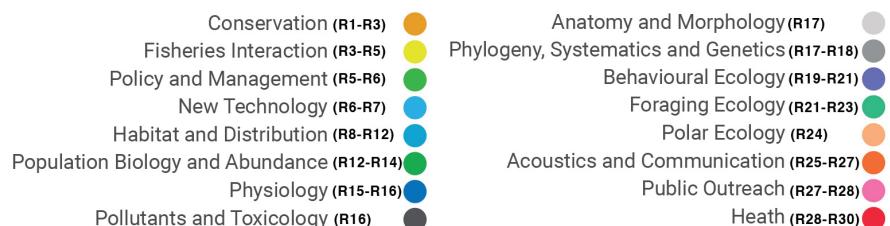
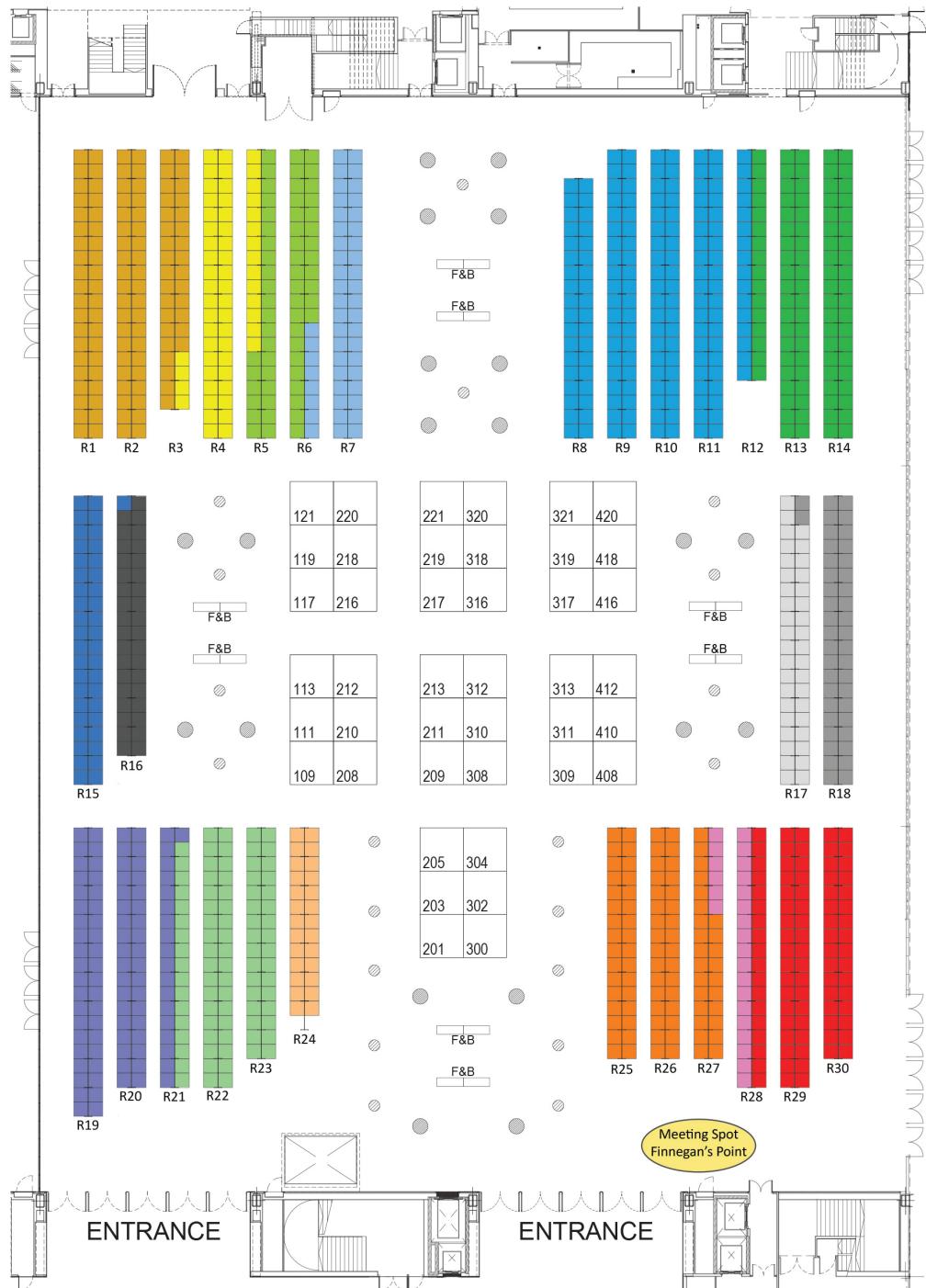


**Sea Mammal
Research Unit
Instrumentation**

The Sea Mammal Research Unit (SMRU) was established in 1978 in Cambridge and moved to the University of St Andrews in 1996. SMRU is part of the Scottish Oceans Institute (SOI), where it functions as an independent research group.

SMRU Instrumentation Group (SMRU-IG) works within SMRU as a Research Group that designs, builds and provides electronic telemetry systems for marine mammals. These telemetry tags provide detailed data about both animal behaviour and their immediate oceanic environment. SMRU Consulting was established in 2006 as the commercial arm of the Sea Mammal Research Unit. The three entities work jointly to bridge the gap between the academic, engineering and commercial worlds.

POSTER AND EXHIBITOR FLOOR PLANS



WMMC'19 EXHIBITORS

Location: Hall

Hours: Monday 10:00-15:00; Tuesday/Wednesday 10:00-16:30; Thursday 10:00-15:30

The following is a complete list of all organizations that will be exhibiting at WMMC'19. Exhibitors are listed in alphabetical order. See pg ? for a map of exhibitor booths.

2023 SMM AUSTRALIA COMMITTEE	BOOTH #308
ANIMAL TELEMETRY NETWORK – ATN	BOOTH #412
ASOCIACIÓN NEREIDE	BOOTH #219-217
ASSOCIACIÓ ANIMAL LATITUDE	BOOTH #113
AWAREOCEAN TECHNOLOGY CO., LTD.	BOOTH #211
BALYENA.ORG	BOOTH #213
BIO-WAVES INC./DSS	BOOTH #300
CLS (COLLECTE LOCALISATION SATELLITES)	BOOTH #310
CUSTOMIZED ANIMAL TRACKING SOLUTIONS - CATS	BOOTH #312
DAUPHIN ISLAND SEA LAB MARINE MAMMAL RESEARCH PROGRAM	BOOTH #216
FRIENDS OF MANATEE ASSOCIATION	BOOTH #221
FUNDACIÓN BIODIVERSIDAD	BOOTH #420
GENERALITAT DE CATALUNYA	BOOTH #201
GLOBAL BYCATCH EXCHANGE	BOOTH #302
GOLDER ASSOCIATES	BOOTH #111
INDO-NIPPON COLLABORATION PROGRAM ON ACOUSTIC SURVEILLANCE TECHNOLOGY FOR SUSU	BOOTH #220
JONAS & JOMOPANS	BOOTH #203
LOTEK	BOOTH #121
MARINE MAMMAL COMMISSION	BOOTH #319-317
MATSU'S FISH CONSERVATION UNION	BOOTH #410
MOM/THALASSA FOUNDATION	BOOTH #316
MUSEO DE LA BALLENA, MÉXICO	BOOTH #321
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)	BOOTH #313
NORTH ATLANTIC MARINE MAMMAL COMMISSION (NAMMCO)	BOOTH #212
OBSERVATION.ORG	BOOTH #416
OCEAN SONICS	BOOTH #119
RS AQUA	BOOTH #209
SEA MAMMAL RESEARCH UNIT	BOOTH #318-320
SPRINGER NATURE	BOOTH #109
SUBMON	BOOTH #113
THE CALVIN PROJECT	BOOTH #311
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE & TECHNOLOGY (IMAREST)	BOOTH #210
US NAVY STEWARDS OF THE SEA	BOOTH #418
VIVA VAQUITA	BOOTH #218
WILDLIFE COMPUTERS	BOOTH #117
WILD ME	BOOTH #208
WMMC19 STUDENTS	BOOTH #408
WWF : WORLD WIDE FUND FOR NATURE	BOOTH #309



知洋科技 Awareocean



Indo-Nippon Collaboration on Acoustic Surveillance Technology for Susu



Protecting the blue planet



building a sustainable marine future

CATS Cam: Engineering Emmy® Award winner 2018

CATS Germany GmbH

Lochbachstrasse 2
87561 Oberstdorf
Germany
Tel.: +49 152 219 33 603
Director
Dr Peter Kraft



WMMC'19 SCHEDULE AT-A-GLANCE



SATURDAY WORKSHOP SESSIONS

8:30 AM – 12:30 PM

- Alternatives to an academic career for women: Where can your degree take you?
- A Pan-Arctic PAM network
- Distance sampling surveys of marine mammal density and abundance: from introductory ideas to latest developments
- Win More Battles for Marine Mammals!!! Science Communication for REAL Impact

ROOM #120

ROOM #122

ROOM #114

ROOM #121

8:30 AM – 5:30 PM

- Application of Stable Isotopes in Studies of Marine Mammal Ecology, Biogeography, and Physiology. An Introduction and Update on Developing Methodologies
- Best Practice Recommendations for Tagging of Cetaceans and Pinnipeds
- Definition of a Road Map for the Implementation of the Regional Strategy for the Monk Seal in Low Density Countries
- Effects of Climate Change on Marine Mammals
- Harmonising Global Strandings Response
- Introduction to Changing the Behaviour of People to Advance Marine Mammal Conservation Goals
- Managing Marine Mammal Tourism: Impacts, Regulations, Certifications, and Compliance
- Marine Mammal eDNA
- Marine Mammal Surveys From Satellite Imagery: Applications, Automation, and Challenges
- Marine Mammal Welfare Under Human Care
- Rare Pinniped Conservation Network (RAPCON)
- UBC Vet School Student Necropsy Workshop
- The Diving Brain – Adaptations for an Extreme Environments
- Training Session to Better Manage Underwater Noise Pollution in the Mediterranean Region

ROOM #124

ROOM #113

ROOM #123

ROOM #116

ROOM #127+128

ROOM #130

ROOM #129

ROOM #115

ROOM #132

ROOM #134

ROOM #125

OFF PROPERTY

ROOM #133

ROOM #131

1:30 PM – 5:30 PM

- Advancing Marine Species Density Surface Modelling with a Focus on Extrapolation.
- Age and Sex Classification of Cuvier's Beaked Whales from Photographs
- Keep On Gramping 2
- PAMguard Upcoming and Desirable Changes
- Using Smart Acoustic Technology to Detect, Classify, Localize and Track Marine Species

ROOM #114

ROOM M216

ROOM #122

ROOM #120

ROOM #121

SUNDAY WORKSHOP SESSIONS

8:30 AM – 12:30 PM

- Developing the Next Generation of Marine Animal Telemetry, Expanding Global Data Availability for Marine Mammal Monitoring
- IUCN Pinniped Specialist Group
- Predator Controls. Lessons from Land to Sea.
- Towards Coordinated Marine Mammal Monitoring Programmes for MSFD Second Cycle 2020-2026

ROOM #121
ROOM M212
ROOM #122

ROOM #120

8:30 AM – 5:30 PM

- III Edition: "What is New in Cetacean Pathology"
- Analysis of High-Resolution Movement Tag Data
- "Arts" as a Tool for Communicating Marine Mammal Science
- Cachalote Consortium 2019: Behavior, Ecology and the Structure of Sperm Whale Societies - Implications for the Conservation of Ocean Nomads
- Developing the Next Generation Framework for Modeling Marine Mammal Responses to Noise: a Workshop to Identify Key Elements for Future Models
- Genomics of Marine Mammals III
- Incentivising Consistent Data Collection and Transparent Reporting of Marine Mammal Bycatch in Fisheries
- Management of Marine Mammal Morbidity and Mortality Events – Emergency Response and Preparedness
- Ninth International Sirenian Symposium
- Pinniped Entanglement Prevention and Response
- Rise of the Machines - Application of Automated Systems for Matching Dolphin Dorsal Fins: Current Status and Future Directions
- Roadmap for the Right Sentinel for Climate Change: Developing an Action Plan to Achieve the IWC-SORP Southern Right Whale Theme Objectives
- Sensory Ecology of Marine Mammals
- Sociality in Riverine, Lagoon-living, and Coastal Cetaceans: a Descriptive Analysis
- TursioMed: an International Collaborative Project to Assess the Ecology and Conservation Status of the Bottlenose Dolphin in the Mediterranean Sea

ROOM #127+128
ROOM #129
ROOM #123

ROOM #134

ROOM #113
ROOM #114

ROOM #124

ROOM #132
ROOM #116
ROOM #133

ROOM #130

ROOM #131
ROOM #115

ROOM #125

ROOM M219 +
M220

1:30 PM – 5:30 PM

- Acoustic Monitoring of Odontocete Population Trends: Discussion of Current Issues, and Introduction to the F-POD.
- Areas of Interest (AoI) for Informing the Identification of Important Marine Mammal Areas (IMMAs)
- Marine Mammal Endocrinology
- Ocean Alert-Flukebook: Streamlining Data for Marine Mammal Protection

ROOM #121
ROOM #122
ROOM #120

ROOM M212

MONDAY AT A GLANCE



<u>Registration</u>	7:00 AM – 4:30 PM Entrance Hall
<u>Opening Addressee</u>	8:30 AM – 9:15 AM Auditorium
<u>Plenary Session: Marine Mammals and Climate Change</u>	9:15 AM – 10:15 AM Auditorium
Chair: Kit Kovacs – <i>Marine Mammals in a Changing Arctic</i> Matt Lettrich – <i>The Climate Vulnerability of U.S. Marine Mammal Stocks in the Western North Atlantic, Gulf of Mexico, and Caribbean</i> Kate Stafford – <i>Listening to Climate Change in the Arctic</i> Gill Braulik – <i>Dams, Freshwater Flow and Climate Change: The Future of the World's River Dolphins</i>	
<u>Exhibitors</u>	10:00 AM – 3:00 PM Hall
<u>Oral Presentations</u>	10:45 AM – 12:30 PM
Assessing Marine Mammals in the High Seas	Room 115
Biology	Room 114
Communication in Marine Mammals I	Room 112
Marine Mammals and Ships	Room 111
Tourism & MPAs	Room 113
<u>Lunch (on your own)</u>	12:30 PM – 1:30 PM
<u>Poster Session: Presenters Group A</u>	1:30 PM – 3:00 PM Hall
<u>Coffee Break</u>	2:30 PM – 3:00 PM Hall
<u>Oral Presentations</u>	3:00 PM – 5:30 PM
Bycatch	Room 114
Feeding Ecology I	Room 115
Hearing and Passive Acoustic Monitoring	Room 112
Polar Ecology I	Room 113
Population Biology I	Room 111
<u>Media Event</u>	5:45 PM – 7:00 PM Room 112
<u>Video Night</u>	7:30 PM – 10:00 PM Auditorium

NOTES

MONDAY, DECEMBER 9 - 10:45-12:30					
	Room 111 Marine Mammals and Ships	Room 112 Communication in Marine Mammals I	Room 113 Tourism & MPAs	Room 114 Biology	Room 115 Assessing Marine Mammals in the High Seas
10:45	Impacts of shipping on a humpback whale breeding ground in a multiple use Marine Park: The Great Barrier Reef.	Underwater hearing and communication in the endangered Hawaiian monk seal	Collaborative evaluation of a booming spinner dolphin watching industry in the Philippines, using social and dolphin behaviour surveys to inform policy development	Updating the assessment of southwestern Atlantic humpback whale population status	Intro Award
	<i>Joshua Smith, Christine Erbe, Natalie Kelly, David Peel</i>	<i>Colleen Reichmuth, Jillian Sills, Kirby Parnell, Brandi Ruscher-Hill</i>	<i>Daniella Hamf, Fabien Vivier, Lorraine Aplasca, Alessandro Ponzo</i>	<i>Guilherme Bortolotto, Philip Hammond, Len Thomas, Alexandre Zerbini</i>	<i>Hannah Cubaynes, Peter Fretwell, Connor Bamford, Laura Gerrish, Jennifer Jackson</i>
10:50				What do whales look like from space?	
11:00	Fat embolism and sperm whale ship strikes.	Parameterizing dolphin behaviour with animal-attached tags to study acoustic communication	Under pressure – Surviving 10 years of human impacts on the smallest population of dolphins in Southern Africa – Namibia's common bottlenose dolphins	Time series analyses of genetic changes in Mediterranean striped dolphin (<i>Stenella coeruleoalba</i>), in response to well known Morbillivirus epizootics over a 21 year period	
	<i>Marina Arregui, Yara Bernaldo de Quirós, Pedro Saavedra, Eva Sierra, Cristian Suárez-Santana, Manuel Arbelo, Josué Díaz-Delgado, RAQUEL PATRICIA PUIG LOZANO, Marisa Andrada, Antonio Fernández</i>	<i>Marco Casoli, Mark Johnson, Frants Havmand Jensen, Vincent Janik, Laela Sayigh, Katherine McHugh, Randall Wells, Peter Tyack</i>	<i>Simon Elwen, Bridget James, Tess Gridley</i>	<i>Andre Moura, Stefania Gaspari, Kypher Shrevees, Letizia Marsili, Chiara Natali, Sabina Aioldi, Caterina Lamfredi, Charles Deeming</i>	

11:05

**Augmenting fieldwork:
Accessible deep learning
for satellite-based whale
detection.**

Alex Borowicz, Hieu Le,
Grant Humphries, Georg
Nehls, Caroline Höschle,
Vladislav Kosarev,
Heather Lynch

11:10

**Seals from space:
Identifying change in
Antarctic ecosystems via
the monitoring of ice-
seals and sea ice
habitats by very high-
resolution satellite and
UAV imagery.**

Prem Gill, Peter Fretwell,
Gareth Rees, Iain Staniland

11:15

**Mom, can you hear me?
Impacts of underwater
noise on mother-calf
contact calls in
endangered belugas**

(Delphinapterus leucas).
Valeria Vergara, Jason
Wood, Audra Ames, Marie-
Ana Mikus, Veronique
Lesage, Robert Michaud

**Coordination is key:
Vocal mechanisms
underlying cooperation
in dolphins.**

Stephanie King, Emily
Guarino, Katy Donegan,
Christina McMullen, Kelly
Jaakkola

**Florida manatee
behavioral response to
boats**

Athena Rycyk, Charles
Deutsch, Margaret Barlas,
Stacie Hardy, Katherine
Frisch, Erin Leone, Doug
Nowacek

**Feeding in marine
mammals: An integration
of evolution and ecology
through time.**

Annalisa Berta, Agnese
Lanzetti

Jennifer Keating
McCullough, Erin Oleson,
Ann Allen, Marie Hill

11:20

**Using sound to detect
changing populations: A
simulation comparison
of bottom-mounted,
surface-towed, and
glider-based PAM
estimates of the density
of deep diving
odontocetes.**

Kalliope Gkikopoulou, Carl
Donovan, Peter Tyack,
Natalia Aguilar de Soto,
Tiago Marques, Mark
Johnson, Douglas Gillespie

MONDAY, DECEMBER 9 - 10:45-12:30

11:25

Humpback whale calls detected by autonomous Wave Glider in tropical ocean basin between known Hawaii and Mexico breeding assemblies.

Beth Goodwin, James D. Darling, Maya K. Goodoni, Adam J. Taftmann, Murray G. Taylor

Can beluga exposure to shipping noise be reduced despite a traffic increase? An individual-based model to inform a noise abatement process in the St. Lawrence estuary and the Saguenay River.

Clément Chion, Tyler Bonnell, Dominic Lagrois, Robert Michaud, Véronique Lésege, Angélique Dupuch

11:40

Behavioral and environmental context of Antarctic minke whale vocalizations

Lessons learned from decades of swimming with dolphins: A New Zealand case study.

Estimating age at weaning for Pacific walruses using trace elements in teeth.

Sarah Weindorf, Caroline Casey, Ari Friedlaender, Emma Levy, Jacob Linsky, Jeremy Goldbogen, David Cade, Doug Nowacek

Cheryl Cross, Matthew Pawley, Karen Stockin
Casey Clark, Lara Horstmann, Nicole Misarti

Applications of a new satellite-linked tag for long-term monitoring of large whale movements, diving, and feeding behavior.

Daniel M. Palacios, Ladd Irvine, Thomas Follett, Barbara Lagerquist, Bruce Mate

Fitness cost of food-provisioning on bottlenose dolphins can be related to an impoverished social environment.

A different kind of wax museum: Forecasting population trajectories of baleen whales using reproductive parameters from earplugs.

MONDAY, DECEMBER 9 - 10:45-12:30

<p>11:50 Increase of cetaceans' ship strikes in the Canary Islands</p>	<p>Individual-specific calls in east Greenland narwhals – another type of signature whistle?</p>	<p>Secretive sea monsters on the South African coast: Patterns of beaked whale strandings in space and time.</p>
		<p>G. J. Greg Hofmeyr, Vic G. Cockcroft, Ken Findlay, Pieter G. H. Kotze, Michael A. Meyer, Stephanie Plön, Meredith Thorntom, Peter B. Best</p>
	<p>Locating ship strike risk hotspots for fin whale (<i>Balaenoptera physalus</i>) and sperm whale (<i>Physeter catodon</i>) along main shipping lanes in the North-western Mediterranean Sea</p>	<p>Context of blue whale vocalizations as determined via tag-mounted accelerometers.</p>
	<p>Elise Lahaye, Anna Borroni, Paola Tepsich, Massimiliano Rosso, Aurelie Moulines</p>	<p>William Oestreich, David Cade, John Calambokidis, Jeremy Goldbogen</p>
	<p>Investigating growth layer group deposition in the earbones of old Florida manatees via tetracycline marking</p>	<p>Species identification of cetaceans by environmental (e)DNA metabarcoding – a new tool for surveys of the high seas.</p>
	<p>Gina Lonati, Amber Howell, Charles Deutsch</p>	<p>C. Scott Baker, Robin Baird, Danielle Cholewiak, Rochelle Constantine, Ivan Fedutin, Olga Filatova, Lauren Jacobsen, Giuseppe Notarbartolo di Sciara, Erin Oleson, Simone Panigada, Gregory Schorr, Holger Klinck, Debbie Steel</p>

MONDAY, DECEMBER 9 - 10:45-12:30

12:00	Ships do not comply with voluntary whale protection measures in Northeast USA waters	Particle motion in vocalizations of the endangered North Atlantic right whale (<i>Eubalaena glacialis</i>) and humpback whale (<i>Megaptera novaeangliae</i>): Implications for communication and anthropogenic noise impacts.	<i>Tim Cole, Jeff Adams, Scott Backholm, David Chevrier, Caroline Good, Peter Kellher, Michael A. Thompson, David Wiley</i>	Using unmanned aerial vehicles (UAVs) to investigate the effect of tourism activities on cetaceans: An aerial perspective on humpback whale behavioral responses to swim-with interactions in Vava'u, Kingdom of Tonga.	<i>Adam Smith, Aran Mooney, Maxwell Kaplan, Marc Lammers, Michael J Moore, Susan E Parks, Peter Corkeron</i>
12:05	Protecting one endangered species at the expense of another? Evaluating the efficacy of vessel speed restrictions in reducing lethal vessel strike risk to blue and right whales in the Gulf of St. Lawrence.	Eavesdropping on foraging and social sounds of conspecifics influence the horizontal movement of Risso's dolphins		Are Florida manatees (<i>Trichechus manatus latirostris</i>) wearing their teeth beyond functionality? Interspecific and intraspecific mesowear in manatees.	

<i>Lucie Barluet de Beauchesne, Mathilde Massenot, Machiel Oudejans, Fleur Visser, Charlotte Curié</i>	<i>Nina Woodard, Daniel Gonzalez-Socoleske, Miriam Marmontel, Camila Carvalho de Carvalho, Daryl Domning, Renata Emin-Lima, Fernanda Lofer Niemeyer Attademo, Ana Carolina Meirelles, Jociery Vergara-Parente</i>
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MONDAY, DECEMBER 9 - 10:45-12:30

<p>12:10 Estimating entanglement and vessel collision scarring rates in southeast Alaskan Humpback whales (<i>Megaptera novaeangliae</i>) using unoccupied aerial systems</p> <p><i>Martin van Aswegen, Andrew Szabo, Fabien Vivier, Aude Pacini, Fred Sharpe, Lars Bejder</i></p>	<p>Identification of potential signature whistles from free-ranging common dolphins (<i>Delphinus delphis</i>) in South Africa.</p> <p><i>Jack Fearey</i></p>	<p>Stable isotopic patterns of epidermis structural layers are good indicators for gestation and lactation stages.</p> <p><i>Michelle Gelippi, Brian Popp, Marco Gauger, Javier Caraveo-Patiño</i></p>	<p>Circum-polar analysis of Southern Ocean humpback whales</p> <p><i>Rochelle Constantine, Ari Friedlaender, Virginia Andrews-Goff, Salvatore Cerchio, Tim Collins, Luciano Dalla Rosa, Maria Claudia Diazgranados, Mike Double, Ken Findlay, Claire Garrigue, Jennifer Jackson, Curt Jenner, Miguel Higüez, Howard Rosenbaum, Mdu Seakamela, Alexandre Zerbini</i></p>
<p>12:15 Locomotive response of narwhal (<i>Monodon monoceros</i>) to large vessel traffic in Milne Inlet, Nunavut.</p> <p><i>Ainsley Allen, Sima Usyatsov, Philippe Rouget, Patrick Abgrall, Mitchell Firman</i></p>	<p>Cognition in the wild: Dolphin communication during a role-specialized foraging tactic.</p> <p><i>Becca Hamilton, Stefanie Gazda, Stephanie King, Josefín Stakhammer, Richard Connor</i></p>	<p>Effect of whale-watching vessels on Rissò's dolphins' behaviour off Pico Island (Azores).</p> <p><i>Jennifer Libotte, Fredrik Christiansen, Mel Cosenzino, Arianna Cecchetti, Karin Hartman, Daniel Garcia Parraga</i></p>	<p>Radiographic assessment of pectoral fin bone maturation in bottlenose dolphins (<i>Tursiops truncatus</i>), as a novel technique to accurately estimate chronological age.</p> <p><i>Ashley Barratclough, Roberto Sanz-Requena, Luis Martí-Bonmatí, Todd Schmitt, Eric Jensen, Daniel García Parraga</i></p>

MONDAY, DECEMBER 9 - 10:45-12:30

12:20	Linking use of ship channels by West Indian manatees (<i>Trichechus manatus</i>) to seasonal migration and habitat use (melon-headed whales (<i>Peponocephala electra</i>) in the Bohol Sea, Philippines).	Singing in the deep: A description of sounds and repeated whistle types recorded from melon-headed whales (<i>Peponocephala electra</i>) in the Bohol Sea, Philippines.	Towards a sustainable whale watching in Reunion island in the South-west Indian Ocean: Assessing and mitigating humpback whale (Megaptera novaeangliae) tourism disturbance.	Lethal interaction of bottlenose dolphins with two other cetacean species in the Western Mediterranean
	Elizabeth Hieb, Carl Cloyd, Merri Collins, Kayla DaCosta, Ruth H. Carmichael	Rebecca Rogers, Clare Embling, Valeria Senigaglia, Gonzalo Araujo, Jessica Labajia, Sally Snow, Joshua Silberg, Alessandro Ponzo	Anne Emmanuelle Landes, Ludovic Hoarau, Mayeul Dalleau, Sylvain Delaspre	Vicente Marco-Cabedo, Jose Luis Crespo-Picazo, Consuelo Rubio-Guerri, M. Angeles Jimenez, Francisco Javier Aznar Avendaño, Mar Melero, Jose Manuel Sanchez-Vizcaíno, Patricia Gozalbes, Daniel Garcia-Parraga
12:25	Diving behaviour of migrating ringed seals crossing ferry line in Moonsund	High frequency vocalizations of Amazon river dolphins (<i>Inia geoffrensis</i>), potential function of acoustic communication in shallow water systems.	Noise drives behavioural responses of humpback whales to whale-watching boats.	Skeletons in the closet: Investigating body size change in California sea lions over 60 years.
	Muhammad Saladin Prawirasasra, Mart Jüssi, Mirko Mustonen, Aleksander Klauson	Tomonari Akamatsu, Yukiko Yamamoto, M. F. da Silva Vera, Shiro Koshima	Kate Sprogis, Simone Videsen, Peter Teglberg Madsen	"Pacific Scan I" and "Global Scan I", towards a long-term Marine Mammal Spatial Observatory
			Ana Valenzuela Toro, Paul Koch, Daniel Costa	Ludwig Houegnigan, Jessica Block, Climent Nadue Camprubi

MONDAY, DECEMBER 9 - 3:00-5:30

Room 111	Room 112	Room 113	Room 114	Room 115
Population Biology I	Hearing and Passive Acoustic Monitoring	Polar Ecology I	Bycatch	Feeding Ecology I
3:00	Linking climate and ocean productivity to the prevalence of southern right whales (<i>Eubalaena australis</i>) in South African waters	Abundance estimation for Mesoplodon beaked whale species using drifting acoustic recorders.	Marine mammal tracking to define ecological hotspots in the extended Southern Ocean: Perspectives from the Retrospective Analysis of Antarctic Tracking Data (RAATD) project.	The 'Dolphin pump'? Dolphins mediate the translocation and recycling of allochthonous oceanic nutrient subsidies to coral reefs.
Gideon van den Berg, Els Vermeulen, Cang Hui, Ken Findlay, Sophie von der Heyden, Guy Midgley	Jay Barlow, Jeff Moore, Jennifer Keating McCullough, Emily T. Griffiths	Ryan Reisinger, Mark Hindell, Yan Ropert-Coudert, Ben Raymond, Ian Jansen, Luis A. Hückstädt, Anton Van de Putte, Simon Wotherspoon, Philip Trathan, Horst Bornemann, Jean-Benoit Charrassin, Daniel Costa, Bruno Danis, Mary-Anne Lea, David Thompson, Leigh Torres, The RAATD Contributors	Charles Anderson, Miguel Herrera, Muhammad Moazzam Khan, Anouk Langakoon, Putu Liza Kusuma Mustika, Dipari Sutaria	Jeremy Kiszka, James Nelson, Michael Heithaus
3:15	Metapopulation dynamics of coastal dolphins through mark-recapture techniques: A case study from southeast China.	Sonic seas: Hearing abilities of an endangered Cook Inlet beluga, in situ noise measurements and implications for masking.	Feeling the squeeze: Antarctic minke whales balance the dual pressures of maximizing energetic gains and finding suitable habitat around the rapidly changing Antarctic Peninsula.	Numerical models to investigate North Atlantic right whale encounter rates with snow-crab gear in the Gulf of St. Lawrence.
Stephen C. Y. Chan, Leszek Karczmarski, Wenzhi Lin, Yuping Wu	Aran Mooney, Manuel Castellote, Ian Jones, Christopher Garme, Theresa Rowles, Deborah Fauquier, Kathy Woodie, Natalie Rouse, Caroline Goertz	Ari Friedlaender, David Cade, Shirel Kahane-Rapport, Jake Linksy, Emma Levy, James Taylor, David Johnston, Doug Nowacek, Jeremy Goldbogen	Kylie Owen, Julie van der Hoop, Kimberley Davies, Stephanie Boudreau, Christopher Taggart	Kylie Owen, Alessandro Bocconcini, Annette Bombosch, Kei Toda, Joe Warren, David Wiley, Koya Tashima, Kentaro Saeki, Daniel Zitterbart

MONDAY, DECEMBER 9 - 3:00-5:30

3:30	Practical tools for assessing extrapolation in models of cetacean abundance.	Double Drone Drama: Using two drones to collect simultaneous visual and underwater acoustic behavioural data from gray whales in Baja California, Mexico.	Some like it cold: Targeted temperature range during feeding in narwhals.	Managing anthropogenic risks to marine mammals in a changing climate: Dynamic humpback whale models to reduce entanglement risk along the U.S. West Coast.
	Phil Bouchet, David Miller, Jason Roberts, Laura Mannocci, Catriona Harris, Len Thomas	Heloise Frouin-Mouy, Ludovic Tenorio-Hallé, Aaron Thode, Steven Swartz, Jorge Urban	Mads Peter Heide-Jørgensen, Susanna B. Blackwell, Terrie Williams, Mikkel-Holger Sinding, Outi Tervo, Eva Garde, Rikke Guldborg Hansen	Karin Forney, Jarrod A. Santora, Elizabeth Becker, Sam M. Woodman, Jessica Redfern, Lauren Saez, Isaac D. Schroeder, Michael Jacox, Elliott L. Hazen, Steven J. Bograd, Dan Lawson
3:45	How wrong and how useful? Using a fully censused population of killer whales to test the robustness of population models.	The underwater soundscape of fear: Behavioural responses of cetaceans to naval sonar and playback of predatory killer whale sounds.	Where to find Spitsbergen bowhead whales – and why?	The impact of spatial scale on the scale of impact: Harbour porpoise Phocoena phocoena bycatch in the Celtic Seas.
	Thomas Doniol-Valcroze, Eva Stradulinsky, Brianna Wright, John K Ford	Patrick Miller, Saana Isojärvi, Eilich Siegal, Frans-Peter Lam, Petter Kvadsheim, Charlotte Curé	Kit M. Kovacs, Mads Peter Heide-Jørgensen, Jade Vacque Garcia, Olga Shpak, Dmitry Glazov, Christian Lydersen	Kelly Macleod, Sara Königsson, Al Kingston, Carlos Pinto, Guðjón Mar Sigurðsson
4:00	Estimating abundance and the effects of ocean conditions on survival and natality in steller sea lions (<i>Eumetopias jubatus</i>) using an integrated population model.	Conditioned hearing suppression in dolphins warned of impending noise	Guess who's coming to dinner. Dwarf minke whales along the Antarctic Peninsula: Evidence of climate migration or historic misidentification?	Electronic camera monitoring of harbour porpoise (<i>Phocoena phocoena</i>) bycatch in bottom-set gillnet fishery: A matter of perspective.
	Amanda Warlick, Devin Johnson, Sarah J. Converse	James Finnigan	K.C. Bierlich, Julian Dale, Ari Friedlaender, Jeremy Goldbogen, David Johnston	Marije Siemensma, Meike Schelat, Bram Couperus
				Keith Hernandez, Lisa Sette, Rebecca Gast, Bogomolni Andrea, Kimberly Murray, Michael Polito

MONDAY, DECEMBER 9 - 3:00-5:30

4:15	In plane sight: A capture-recapture study of North Atlantic right whales in the southern Gulf of St. Lawrence from an aerial platform. <i>Leah Crowe, Peter Corkeron, Angelia Vanderlaan, Tim Cole</i>	Using nonlinear signal processing to identify North Pacific Right Whale sounds and measure calling depths in the Bering Sea <i>Aaron Thode, Julien Bonnel, Dana Wright, Catherine Berchok</i>	Assessing the recovery of an Antarctic predator from historical exploitation. <i>Alexandre Zerbini, Grant Adams, John Best, Phil Clapham, Jennifer Jackson, Andre Punt</i>	Tracking harbour porpoises around static fishing nets using PAM <i>Jamie Macaulay, Alex Coram, Al Kingston, Simon Northridge</i>	Applying novel methods to uncover the source rookery of Little Penguins predated by Long-Nosed Fur Seals <i>Sarah-Lena Reinhold, Simon Goldsworthy, Sean Connell, Rebecca McIntosh</i>
4:20		Observations during a springtime Bering Sea research cruise in a year of record-low sea ice extent. <i>Michael Cameron, Heather Ziel, Brett McClintock, Peter Boveng</i>	Declining winter sea ice is associated with a northward shift of bowhead whale winter range. <i>John Citta, Lori Quakenbush, Stephen Okkonen, Lois Harwood, Matthew Druckenmiller, John "Craig" George, Billy Adams, Ellen Lea, Mads Peter Heide-Jørgensen, James Pokiak, Charles Pokiak</i>		

4:30 Predicting cetacean abundance and distribution in a changing climate.

Elizabeth Becker, Karin Forney, Jessica Redfern, Jay Barlow, Michael Jacox, Jason Roberts, Daniel M. Palacios

Maria Morell, Lonneke IJsseldijk, Adrien Caplot, Jérôme Bourien, Ron Kaststein, Cassandra Girdlestone, Robert Shadwick, Jean-Luc Puel

Charmain Hamilton, Christian Lydersen, Jon Aars, Erik Martin Biuw, Andrei Boltunov, Erik Born, Rune Dietz, Lars Folkow, Dmitry Glazov, Lisa Kettner, Kristin Laidre, Nils Øien, Erling Nordøy, Audun Rikardsen, Aqqalu Rosing-Asvid, Varvara Semenova, Olga Shpak, Øystein Wiig, Kit M. Kovacs

4:35

Sea surface temperature drives narwhals' movements in the Arctic

Philipine Chambault, Outi Tervo, Eva Garde, Rikke Guldborg Hansen, Susanna B. Blackwell, Terrie Williams, Rune Dietz, Pierre Richard, Kristin Laidre, Mads Peter Heide-Jørgensen

Prediction of the cochlear frequency map for the harbor porpoise

Seas as revealed by satellite tracking since 2005

"hotspots" in the Greenland and Barents Seas

Sub-Arctic bottom set gillnet fishery

Testing of two commercially available porpoise bycatch reduction devices in a marine mammal "hotspots" in the porpoise bycatch reduction devices in a gillnet fishery ecosystem.

Inter-annual variability in the lipid and fatty acid profiles of east Australian humpback whales (*Megaptera novaeangliae*) in a changing Antarctic ecosystem.

Jasmin Gross, Patti Virtue, Peter D Nichols, Pascale Eisenmann, Courtney Waugh, Susan Bengtson Nash

Marine mammal "hotspots" in the Greenland and Barents Seas as revealed by satellite tracking since 2005

Factors affecting bycatch rate of harbour porpoise (*Phocoena phocoena*) in Swedish waters

Jingyao Niu, Julia Carlström, Per Berggren, Rune Dietz, Signe Sveegaard, Jonas Teilmann

Rorqual ingestion estimates based on direct measures of feeding rates and prey quality.

Matthew Savoca, Shirel Kahane-Rapport, David Cade, Max Czapanskiy, James Fahibusch, Paolo Segre, John Calambokidis, Doug Nowacek, David Johnston, K.C. Bierlich, Julian Dale, Elliott L. Hazen, Ari Friedlaender, Jeremy Goldbogen

4:40

Abundance and trends of narwhals wintering in polynyas around Greenland

Rikke Guldborg Hansen,
David Borchers, Mads
Peter Heide-Jørgensen

Efficacy of using acoustic alarms on gillnets to reduce harbour porpoise bycatch in Norwegian fisheries

Rikke Guldborg Hansen,
David Borchers, Mads
Peter Heide-Jørgensen

Fin and blue whale distribution, diet and zooplankton backscatter around Isla Chañaral, Northern Chile.

Carlos Olavarria,
Susannah Buchan,
Macarena Santos-

Carvallo, Jorge Oyanadel,

Maritza Sepulveda, Marcel

Ramos, María Valladares,

Mariella Maldonado, Matt

Stone

Can modelling the drift of bycaught dolphin stranded carcasses help identify involved fisheries? An exploratory study.

Jacob Krause, Jeffrey
Buckel, Joseph Hightower,

Barbie Byrd, Aleja A. Hohn

Hélène Peltier, Willy
Dabin, Cécile Dars, Fabien

Demaret, Ghislain

Dorémus, Olivier Van

Canneyt, Sophie Laran,

Paula Méndez-Fernández,

Jérôme Spitz, Matthieu

Authier, Pierre Daniel,

Vincent Ridoux

The trophic interactions among cetaceans in the southwestern Atlantic Ocean inferred through stable isotopes

Jaime Jahncke, R. Cotton

Rockwood, Kaylin

Ingman, Ellen Hines,

Nadav Nur

Geniffer Troina, Silvina

Botta, Frank Dehairs,

Juliana Di Tullio, Eduardo

Secchi

Evidence for fission-fusion grouping pattern in narwhal inferred from telemetry data

Marianne Marcoux,

Courtney Watt

Decreasing whale entanglements in pot and trap fishing gear in Central California.

The trophic interactions

among cetaceans in the

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Ocean inferred through

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Fin and blue whale

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around Isla Chañaral,

Northern Chile. males always do better.

Kirstin Anderson Hansen,

Sara Königson, Mats

Amundin, Andrea Cabrera

García, Andreas Russer,

Ursula Siebert, Prof. Dr.,

Magnus Wahlberg

Jaime Jahncke, R. Cotton

Rockwood, Kaylin

Ingman, Ellen Hines,

Nadav Nur

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Rockwood, Kaylin

Ingman, Ellen Hines,

MONDAY, DECEMBER 9 - 3:00-5:30

4:55

Using Unmanned Aerial Vehicles (UAVs) to estimate availability and group size error for aerial surveys of coastal dolphins.

Alexander M. Brown,
Simon Allen, Natalie Kelly,
Amanda J Hodgson
Karolina Merkens, Jennifer Keating McCullough, Nick Tregenza, Samuel Urmy, Erin Oleson

Fiords of Plenty: Herring overwintering superabundance as a seasonally important and accessible resource for humpback whales and fisheries in Northern Norway.

Amy Knowlton, Timothy Werner, Scott Kraus, Richard Malloy
Erik Martin Biuw, Karl Øystein Gjelland, René Swift, Lars Kleivane, Patrick Miller, Takashi Iwata, Fredrik Broms

5:00 A comparison of three analytical techniques for population monitoring of coastal odontocetes.

Kogia echolocation click source parameters measured with a deep water autonomous vertical array

Haul-out behavior and detectability of bearded, ribbon, and spotted seals in the Bering and Chukchi sea

A computer model for studying fishing gear modifications in virtual reality to prevent large whale entanglements

Spatio-temporal and inter-individual variations in trophic ecology of the manatee in the Mexican Caribbean: Carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotopic composition from bone-collagen over the last 30 years.

Jens Currie, Grace Olson, Jessica McCordic, Abigail Macchernis, Stephanie Stack
Chloe Malinka, Pernille Tornesen, Charlotte Dunn, Diane Claridge, Peter Tegberg Madson

Natalia Garces C, Carlos Alberto Niño-Torres, Nataly Castelblanco-Martínez, Antonio Delgado Huertas, Benjamin Morales-Vela

5:05 Counting what we cannot see: Estimating humpback whale availability bias using UAV.

Species-specific whistles in *Delphinus* delphis and D. capensis enable passive acoustic species identification.

Movements and diving behaviour of Ross Sea orca, along the Ross Sea Region MPA, Antarctica

The perils of relying on handling techniques to reduce bycatch in a partially observed fishery: A fatal flaw in the U.S. false killer whale take reduction plan.

Heloise Pavanato, Matthew Schofield, Len Thomas, Marina Angeli, Milton Marcondes, Daniel Venturini, Richard Barker
Julie N. Oswald, Sam F. Walmsley, Caroline Casey, Vincent Janik, Brandon Southall

Giancarlo Lauriano, Enrico Pirotta, Trevor Joyce, Robert Pitman, Simone Panigada

MONDAY, DECEMBER 9 - 3:00-5:30

<p>5:10 Bayesian mark-recapture assessment of Cuvier's beaked whales on a navy sonar range</p> <p>K. Alexandra Curtis, Erin Falcone, Gregory Schorr, Jeff Moore, Jay Barlow, David Moretti, Erin Keene</p>	<p>Heaviside's dolphins (<i>Cephalorhynchus heavisidii</i>) relax acoustic crypsis to increase communication range.</p> <p>Morgan Martin, Frants Havmand Jensen, Tess Gridley, Simon Elwen</p>	<p>Return of the fin whales: Feeding aggregations of fin whales around the Northern Antarctic Peninsula.</p> <p>Helena Herr, Sacha Viquerat, Abigail Lees, Fredi Devas, Bettina Meyer Santos, Helder Araujo, Isabel Oliveira, Sara Sa, José Vingada, Catarina Eira</p>	<p>Bycatch reduction in Portuguese set nets</p> <p>Andreia T. Pereira, Ferreira Marisa, Silvia Monteiro, Jorge Bastos-Santos, Helder Araujo, Isabel Oliveira, Sara Sa, José Vingada, Catarina Eira</p>	<p>Trophic niche comparison among sympatric coastal dolphins off Southwest Atlantic Ocean</p> <p>Clarissa Teixeira, Silvina Botta, Luiza Pereira, Fábio G. Daura-Jorge, Seth Newsome, Paulo C. Simões-Lopes</p>
<p>5:15 Assessing dolphin extinction risk in presence of hybridization</p>	<p>Bottlenose dolphin social sounds during interaction with bottom-trawl fishery in the Mediterranean Sea</p>	<p>Minke whales (<i>Balaenoptera bonaerensis</i>) in the Antarctic Weddell Sea – Spatial and temporal patterns derived from long-term passive acoustic monitoring</p>	<p>Rethinking the process of whale entanglement through first person observations.</p>	<p>The top-down effects of cetaceans in the Gulf of Mexico: Who are the key players?</p>
<p>Nina Luisa Santostasi, Paolo Ciucci, Giovanni Bearzi, Silvia Bonizzoni, Olivier Gimenez</p>	<p>Sara Marini, Elena Papale, Giancarlo Giacomini, Margherita Silvestri, Chiara Di Marco, Sara Ferri, Alessandro Frachea, Gaspare buffa, Giuseppe Buscaino, Dario Angeletti, Gianni Pavan, Giandomenico Ardizzone, Daniela Silvia Pace</p>	<p>Diego Filun, Karolin Thomisch, Olaf Boebel, Thomas Brey, Ana Sirovic, Ilse Catharina Van Opzeeland</p>	<p>Bob Lynch, Maria Harvey, Scott Landry, David Mattila, Jooke Robbins, Everett Sacrey, Doug Sandilands, Lisa Sette, Jennifer Tackaberry</p>	<p>Vincent Quiquempois, Matthew Woodstock, Yuying Zhang, Michael Heithaus, Jeremy Kiszka</p>
<p>5:20 Tired eyes no more: Automated image recognition of humpback whale fluke identification surpasses human manual matching.</p>	<p>High-frequency echo sounders produce lower frequency signals audible and with the potential to affect behaviour of marine mammals.</p>	<p>What will it take to protect whales in the Antarctic Peninsula? How innovative science and collaboration can inform Antarctic conservation and policy.</p>	<p>Marine megafauna catch in Thai small-scale fisheries</p>	<p>The trophic ecology and habitat of the Gulf of Mexico Bryde's whale</p>
<p>Ted Cheeseman, Ken Southerland, Jinmo OPark, Phil Clapham</p>	<p>Denise Risch, Paul Lepper, Ben Wilson</p>	<p>Chris Johnson, Ari Friedlaender, David Johnston</p>	<p>Thevarit Svarachorn, Per Berggren</p>	<p>Lance Garrison, Melissa Soldevilla, Anthony Martinez, Jeremy Kiszka, John Hildebrand, Keith Mullin, Kevin Boswell</p>

MONDAY, DECEMBER 9 - 3:00-5:30

5:25	Abundance estimation of Striped dolphins (<i>Stenella coeruleoalba</i>): Spatial models with distance sampling methods in the area of the Hellenic Trench.	Current flows cause variation in high frequency noise at a fine scale: Implications for passive acoustic studies of high frequency cetaceans.	The scale of the whale: Using video-recording tags to determine the sea ice habitat used by Antarctic minke whales (<i>Balaenoptera bonaerensis</i>).	Sperm whale and killer whale depredation on demersal longline fishery: A technological approach to understand animal behavior.	Comparison of salmon predation by harbour seals in estuary and non-estuary habitats in British Columbia, Canada
	Niki Koutouzi, Kallopi Gkikopoulou, Vasilis Valavanis, Paraskevi (Voula) Alexiadou, Persefoni Megalofonou, Alexandros Frantzis	Gemma Veneruso, Jenny Bond, Alice Goward-Brown, Line Cordes, Lewis LeVay, Gordon Hastie	Nicole Wilson, Jake Linksy, David Crade, Shirel Kahane-Rapport, Jeremy Goldbogen, Doug Nowacek, Ari Friedlaender	Gaëtan Richard, Julien Bonnel, Paul Tixier, John Arnould, Anaïs Janc, Christophe Guinet, Flore Samaran	Strahan Tucker, Sheena Majewski, Chad Nordstrom, Angela Schulze, Kristi Miller

TUESDAY AT A GLANCE



<u>Registration</u>	7:00 AM – 4:30 PM Entrance Hall
<u>Exhibitors</u>	10:00 AM – 4:30 PM Hall
<u>Poster Session: Presenters Group B</u>	8:30 AM – 10:00 AM Hall
<u>Coffee Break</u>	9:30 PM – 10:00 PM Hall
<u>Oral Presentations</u>	10:00 AM – 12:30 PM
Behavioral Ecology I	Room 115
Communication in Marine Mammals II	Room 112
Conservation I	Room 113
Physiology	Room 114
Population Biology II	Room 111
<u>Lunch (on your own)</u>	12:30 PM – 1:30 PM
<u>Oral Presentations</u>	1:30 PM – 4:00 PM
Acoustics, Distribution and Abundance	Room 112
Anatomy	Room 114
Human Dimensions	Room 113
New Technology I	Room 115
Pinniped Population Dynamics	Room 111
<u>Transition to Plenary Session</u>	4:00 PM – 4:30 PM
<u>Plenary Session: Conservation Interventions</u>	4:30 PM – 5:30 PM Auditorium
Chair: Randall Wells - <i>Chicago Zoological Society's Sarasota Dolphin Research Program</i>	
Lorenzo Rojas-Bracho - <i>Learning the Hard Way: the Vaquita Case</i>	
Wang Ding - <i>A Reserve Network of Translocation Brings Hope and Offers Opportunities for the Recovery of the Critically Endangered Yangtze Finless Porpoise</i>	
Michelle Barbieri - <i>An Ounce of Prevention is Worth a Pound of Cure: Vaccination and Other Conservation Interventions in Hawaiian Monk Seals</i>	
Mervi Kunnasantra - <i>Coping With Climate Change in Conservation of the Endangered Saimaa Ringed Seal</i>	
Brian Smith - <i>River and Ocean Guardians Protect Endangered Cetaceans in Asia</i>	
<u>Society for Marine Mammalogy— AGM</u>	5:45 PM – 7:00 PM
Auditorium	
<u>Evening Events located outside of the CCIB</u>	
Student Event - The Estrella Damm Old Brewery & Razzmatazz	from 7:30 PM

NOTES

TUESDAY DECEMBER 10 - 10:00-12:30					
	Room 111 Population Biology II	Room 112 Communication in Marine Mammals II	Room 113 Conservation I	Room 114 Physiology	Room 115 Behavioral Ecology I
10:00	Gray whale migratory movements between the western and eastern North Pacific	Variations on the same theme: Bowhead whale versatility and stereotypy within a song sharing framework.	Managing cumulative effects of multiple stressors on marine mammals.	A fine-scale and longitudinal assessment of energy requirements for Arctic seals	Use of social network analysis to understand disease transmission and its impacts on a Northeast Florida estuarine dolphin population
	Jorge Urban, Dave Weller, Olaga Tyurneva, Sergio Martinez-Aguilar, Amanda Bradford, Alexandre Burdin, Aimee Lang, Steven Swartz, Olga Sychenko, Lorena Villoria Gomora, Edson Hernández-López, Yuri Yakovlev	Florence Erbs, Mike van der Schaar, Jürgen Weissenberger, Serge Zaugg, Michel Andre	Peter Tyack	Nicole Thometz, Colleen Reichmuth, Brandon Russell, Holly Hermann-Sorensen, David Rosen	Emily Szott, Kristy Brightwell, Quincy Gibson
10:15	Counting needles in a complex haystack- first abundance estimates for endemic Chilean dolphins in northern Patagonia, Chile	Syntactic features in humpback whale song revealed through network analysis facilitate population-wide cultural learning.	Socio-spatial dynamics of a coastal delphinid in a heavily anthropogenically impacted estuarine seascape	Do bigger bodies require bigger radiators? Insights into thermal ecology from closely related marine mammal species and implications for ecogeographic rules.	Guiana dolphins increase group cohesion after playbacks of bottlenose dolphin sounds
	Sonja Heinrich, Cayetano Espinosa-Miranda	Jenny Allen, Ellen Garland, Rebecca Dunlop, Michael Noad	Leszek Karczmarski, Stephen C. Y. Chan, Yuen Wa Ho, Wenzhi Lin, Carmen K.M. Or, Lang Guo, Yuping Wu	Stephanie Adamczak, Ann Pabst, William McLellan, Lesley Thorne	Julia Pierry, Leonardo Liberati Wedekin, Marcos Rossi-Santos, Paulo A.C. Flores, Fábio G. Daura-Jorge

TUESDAY DECEMBER 10 - 10:00-12:30

10:30

Humpback whale call use across time, space and context.

Impacts of sand-dredging on the critically endangered Yangtze finless porpoise in its major inhabited lake

Energy balance effects of persistent organic pollutants in marine mammals: Linking in vitro experiments on blubber tissue function with mass change trajectories in grey seals.

Inbreeding and inbreeding avoidance in Yangtze finless porpoise

Mikala Epp, Michelle E.H. Fournet, Gregory K. Silber, Gail Davoren

Yi Han, Mei Zhigang, Ding Wang

Kimberley Bennett, Kelly Robinson, Holly Armstrong, Georges Scholl, Gauthier Eppe, Jean-Pierre Thomé, Simon Moss, Cathy Debier, Alisa Hall

Yang Zheng, Jinsong Zheng, Yujiang Hao, Mei Zhigang, Kexiong Wang, Ding Wang

Abundance, population growth and latent mortality of humpback whales in the Gulf of Maine in relation to human activities

When revolutions fail: Understanding the underlying mechanisms of humpback whale song revolutions through investigating failures.

Will conservation translocations play a critical role in maintaining future marine mammal biodiversity and are we ready for it?

Chronic exposure to glucocorticoids increases the expression of atrophy-related genes in elephant seal muscle fibers.

Male Risso's dolphins (*Grampus griseus*) maintain a multi-level network of intra-alliance associations.

Jooke Robbins, Regina Arnautis-Silvia, Martine Bérubé, Alex Hill, Laura Howes, Scott Landry, Shelley Loneragan, David Mattila, Per Palsbøll, Dianna Schulte, Jennifer Tackaberry, Mason T Weinrich, Richard M Pace,

Ellen Garland, Luke Rendell, Michael Noad, M. Michael Poole

Charles Littnan, Jason Baker

Julia Torres-Velarde, Jose Pablo Vazquez-Medina, Jane Khudyakov, Daniel Crocker

III

TUESDAY DECEMBER 10 - 10:00-12:30

11:00	The ACCOBAMS Survey Initiative: The first synoptic survey of the Mediterranean Sea.	Convergence and divergence of songs suggests ongoing, but annually variable, mixing of humpback whale populations throughout the North Pacific	The energetic cost of being a humpback whale and the consequence of losing energy to disturbance	Precision-cut adipose tissue slices: A novel approach to study adipose function under multiple stressors in marine mammals.	Life histories of Galápagos sea Lions: Variation and population consequences.
	<i>Simone Panigada, Helder Araujo, Julie Belmont, Ana Cañadas, Léa David, Nathalie Di-Méglio, Ghislain Dorémus, Joan Gonzalvo, Draško Holcer, Sophie Laran, Giancarlo Lauriano, Célia Le Ravallec, Pau Romulus-Marià, Morgane Perri, Nino Pierantonio, Dimitar Popov, Vincent Riddoux, Jose Antonio Vazquez</i>	<i>James D. Darling, Jo Marie Acebes, Oscar Frey, Jorge Urban, Manami Yamaguchi</i>	<i>Stella Villegas-Amtmann, Lisa Schwarz, Daniel Costa Verhaegen, Laura Pirard, Donald Smith, Gilles Tinant, Yvan Larondele, Jean-françois Rees, Jane Khudyakov, Daniel Crocker</i>	<i>Cathy Debier, Marie Verhaegen, Laura Pirard, Fritz Trillmich</i>	<i>Oliver Krueger, Stephanie Kalberer, Kristine Meise,</i>
11:15	Deep diving cetaceans of the Mediterranean basin: The vessel survey component of the ACCOBAMS Survey Initiative (ASI), summer 2018.	Ecuador humpback song reveals the extent a song revolution can spread across the South Pacific.	Prospective impact assessment of offshore wind farm development on harbour porpoise distribution in the southern European North Sea.	Fecal thyroid hormone as a biomarker of nutritional status in North Atlantic right whales (Eubalaena glacialis).	The plight of Galápagos sea lions: Population decline and future prospects of a colony in the centre of the archipelago.
	<i>Oliver Boisseau, Conor Ryan, Anna Moscrop, Richard McLanaghan, Julie Belmont, Célia Le Ravallec, Simone Panigada</i>	<i>Natalie Sinclair, Luke Fendell, Judith Denkinger, Javier Oña, M. Michael Poole, Ellen Garland</i>	<i>Auriane Virgili, Sophie Laran, Matthieu Authier, Ghislain Dorémus, Olivier Van Canneyt, Jérôme Spitz</i>	<i>Roz Rolland, Elizabeth Burgess, Katharine Graham, Kathleen Hunt, Scott Kraus</i>	<i>Stephanie Kalberer, Oliver Krueger</i>

TUESDAY DECEMBER 10 - 10:00-12:30

11:20 Fin whale trends in the Mediterranean sea from the FLT MED MonNet long-term monitoring program

humpback whales

(Megaptera novaeangliae)

Paola Tepsich, Simone Cominelli, Ilaria Schettino, Aurelie Moulins, Massimiliano Rosso, Fabrizio Atzori, Francesca Frau, Ilaria Campana, Miriam Paraboschi, Léa David, Nathalie Di-Méglio, Marine Roul, Clara Monaco, Giuliana Pellegrino, Roberto Crosti, Martina Gregorietti, Veronica Mazzucato, Lara Cairosso, Marta Azzolini, Sébastien Saintignan, Antonella Arcangeli

Tess Gridley, Bridget James, Christopher Wilkinson, Md Seakamela, Silva Marianna, Catherine Nadin, Simon Elwen

Living together yet a life apart: The behavior, distribution and abundance of sympatric inshore bottlenose dolphin and pantropical spotted dolphin in Golfo Dulce, Costa Rica.

Lenin Oviedo, David Herrera-Miranda, Juan Diego Pacheco-Polanco

11:25 Humpback whale

(Megaptera novaeangliae)

reproductive success takes a dive in Alaska during and after the North Pacific marine heatwave.

Christine Gabriele, Janet Neilson

Decreasing sociality of male sperm whales (*Physeter macrocephalus*) with age.

Hayao Kobayashi, Hal Whitehead, Kagarri Aoki, Masao Amano

TUESDAY DECEMBER 10 - 10:00-12:30

11:30	Calving rate decline in humpback whales (<i>Megaptera novaeangliae</i>) of northern British Columbia, Canada. Janie Wray, Eric Keen	Temporal patterns of humpback whale non-song calls on their Newfoundland foraging grounds Anna Mikhailichenko, Gail Davoren	Balancing the risk: Harbour porpoises respond to piling and vessel activities during offshore windfarm construction. Aude Benhemma-Le Gall, Isa Graham, Nathan Merchant, Paul M. Thompson	Sounds of stress: Evaluating the relationships between variable soundscapes and gray whale stress hormones. Leigh Torres, Sharon Nieukirk, Joseph Haxel, Leila Lemos, Todd Chandler, Kathleen Hunt, John Calambokidis	Dolphin specialized behavior is resistant to demographic and environmental changes
11:35	Temporal trends in humpback whale abundance in Hawai'i and response to climatic drivers Adam S. Frankel, Christine Gabriele, Suzanne Yin, Susan Rickards	Acoustic examination of non-song call production as a function of humpback whale (<i>Megaptera novaeangliae</i>) pod composition and subsurface behavior in Hawaii. Sabena Siddiqui, Adam Pack, Alison Stimpert, Patrick Hart		Regional variation in humpback whale song within the western Indian Ocean	Drivers of unique social partitioning in a dolphin social network Tilen Genov, Paul Jepson, Jonathan Barber, Morgana Vighi, Tina Centrih, Polona Koinjek, Philip Hammond
11:40	The humpback whale sentinel program reveals 2017 as an anomalous year in the eastern Antarctic Sea-ice ecosystem Susan Bengtson Nash, Julian Castrillon, Jasmin Gross, Greta Dalle Luche, Alison Druskat, Ruma Ghosh				Quality over quantity: Social bond strength and partner fidelity determine reproductive success in male bottlenose dolphins. Livia Gerber, Richard Connor, Simon Allen, Stephanie King, Sonja Wild, Samuel Wittwer, Michael Krützen

TUESDAY DECEMBER 10 - 10:00-12:30

<p>11:45 Genetic identification of North Atlantic right whale calves challenge our assumptions of growth, weaning and survival.</p> <p>Philip Hamilton, Moira Brown, Lisa Conger, Tim Frasier, Breanna Frasier, Clay George, Katie Jackson, Tom Pitchford, Brad White</p>	<p>Song production by the eastern North Pacific right whale, <i>Eubalaena japonica</i>.</p> <p>Jessica Crane, Catherine Berchok, Dana Wright, Arial Brewer, Daniel Woodrich</p>	<p>Exploring influences of lower-frequency Acoustic Deterrent Devices (ADDs) on harbour porpoise in Scottish coastal waters.</p> <p>Steven Benjamins, Denise Risch, Paul Lepper, Ben Wilson</p>	<p>Environmental pollution impacts lipid metabolism and adipogenesis in polar bears</p> <p>Courtney Alice Waugh, Sabrina Tartu, Jon Aars, Etienne Lefai, Megan Lee, Sille Strand Lundgren, Heli Routti</p>	<p>Behavioral contexts change the social connectedness of individual dolphins specialized in foraging with fishermen</p> <p>Joao Valle-Pereira, Alexandre Marcel Silva Machado, Fábio G. Daura-Routti</p>
<p>11:50 The depths of winter: Seasonal distribution and abundance of deep diving cetaceans in the North-East Atlantic.</p> <p>Emer Rogan, Patricia Breen, Ana Cañadas, Steve Geelhoed, Oliver Ó Cadhla, Meike Scheidat, Mark Jessopp</p>	<p>Studying call types and sub-call types of Killer Whales in complex and non-stationary acoustic environment using Deep Learning: A data-driven approach.</p> <p>Xi Cheng, Manuel Schmitt, Elmar Noeth, Andreas Maier, Simone Pika, Volker Barth, Christian Berger</p>	<p>Predicting cumulative impacts of disturbances on marine populations.</p> <p>Jacob Nabe-Nielsen, Floris M. van Beest, Volker Grimm, Richard Sibly, Jonas Teilmann, Paul M. Thompson</p>	<p>Photogrammetry supports tag-derived tissue density as a proxy for body condition: Seasonal and locational changes in body condition of humpback whales on their feeding grounds.</p> <p>Kagari Aoki, Saana Isojunnio, Charlotte Bellott, Takashi Iwata, Joanna Kershaw, Lucia Martina Martin Lopez, Christian Ramp, Erik Martin Biuw, Yu Akijama, René Swift, Paul Wensveen, Tomoko Narazaki, Katsufumi Sato, Patrick Miller</p>	<p>Revelations from an aerial perspective: How hungry whales work smarter not harder.</p> <p>Madison Kosma, Alexander J. Werth, Andrew Szabo, Jan Straley</p>
<p>11:55 A comparison of Northeast Atlantic killer whale (<i>Orcinus orca</i>) stereotyped call repertoires</p> <p>Anna Selbmann, Volker B. Deecke, Ivan Fedutin, Olga Filatova, Patrick Miller, Jörundur Svavarsson, Filipa Samarra</p>	<p>Distribution, density, and habitat use of harbor porpoises, <i>Phocoena phocoena</i>, in Frenchman Bay, Maine in relation to cruise ship presence</p> <p>Kate Piellmeier</p>	<p>Stressed and slim or relaxed and chubby? A simultaneous assessment of gray whale body condition and hormone variability.</p> <p>Lelia Lemos, Amy Olsen, Angela Smith, John Burnett, Todd Chandler, Alie Perez, John Calambokidis, Shawn Larson, Kathleen Hunt, Leigh Torres</p>	<p>Follow the leader or take a vote? Long-finned pilot whales choose democracy for their day-to-day diving decisions.</p> <p>Elizabeth Zwamborn, Hal Whitehead</p>	

TUESDAY DECEMBER 10 - 10:00-12:30						
12:00	Abundance and site fidelity of common bottlenose dolphins off a remote oceanic island (Reunion Island, southwest Indian Ocean)	A study of beluga (Delphinapterus leucas) vocal ontogeny.	Effect of mussel farms on endemic endangered Hector's dolphins, <i>Cephalorhynchus hectori</i> hectori, at Banks Peninsula, New Zealand: An ecosystem perspective.	Assessing intrinsic and seasonal variability in killer whale morphometrics, blubber thicknesses, and body condition indices via monthly assessments of trained individuals.	Using lagged re-identification rates to define associations from photographic data	
	Vanessa Estrade, Violaine Dulau	Audra Ames, Jason Wood, Valeria Vergara	Maria Jesus Valdes, Steve Dawson, Chris Hepburn, Will Rayment	Dawn Noren, Todd Schmitt, Lydia Staggs, Kristine Burris, Taylor Kaplan, Amy McCoy, Steven Osborn, Judith St. Leger	Sara B. Tavares, Hal Whitehead, Thomas Doniol-Valcroze	
12:05	Surfacing and diving behaviour of snubfin dolphins (Orcaella heinsohni) and implications for visual surveys	Precocious echolocation ontogeny and click development in the harbour porpoise (<i>Phocoena phocoena</i>).	Predicting and mitigating the impacts of windfarm construction on harbour porpoises	Automated pixel-based tool for assessment of body condition in large whales.	Inferring animal social networks with imperfect detection.	
	Sarah Marley, Joshua Smith, Chandra Salgado Kent	Lara Delgado-Garcia, Magnus Wahlberg	Isla Graham, Nathan Merchant, Adrian Farcas, Aude Benhemma-Le Gall, Timothy Barton, Barbara Cheney, Paul M. Thompson	Kelly Cates, Fredrik Christiansen, Lars Bejder, Bryn Keller	Olivier Gimenez, Lorena Mansilla, Javier Klaich, Mariano Coscarella, Suzanna Pedraza, Enrique A. Crespo	
12:10	An increase of harbour porpoises in Polish waters? A case study using passive acoustic monitoring.	Vocal imitation in a Grey seals pup	Between a rock and a hard place: Vessel traffic and declining ice cause compounding risks to harbor seals in a glacial fjord.	Oxygenating blubber: A challenge for fat animals.	Temporal stability of social behavior in bottlenose dolphins (<i>Tursiops aduncus</i>)	
	Klaudyna Swistun, Gulce Yalcyn, Marta Aniowska, Olga Brocawik, Mariusz Sapota, Frank Thomsen	Laura Redaelli, Anna Salazar Casals, Ana Rubio-Garcia, Andrea Ravignani	John Jansen, Jamie Womble, Scott Gende, Brett McClintock, Peter Boveng	Laura Oller, Joel Rocha, J. Chris McKnight, Mark Dagleish, Kimberley Bennett	Taylor Evans, Ewa Krzyszczynska, Janet Mann	

TUESDAY DECEMBER 10 - 10:00-12:30

<p>12:15 Bridging population genomics and conservation for harbour porpoises (<i>Phocoena phocoena</i>) in the North Atlantic and adjacent waters.</p> <p>Maijke Autenrieth, Katja Harenstein, Biria De Calsan, Morten Tange Olsen, Harald Benke, Iwona Pawliczka, Anna Roos, Ursula Siebert, Prof. Dr., Thorvaldur Gunnlaugsson, Gísli Vikingsson, Alice Dennis, Ralph Tiedemann</p>	<p>Acoustic activity patterns of the Antillean manatee (<i>Trichechus manatus manatus</i>) in Belize.</p> <p>Maria Maust-Mohr, Eric Angel Ramos, Kristi Collom, Marcelo Magnasco, Diana Reiss</p>	<p>Are killer whales attracted to Norwegian herring fishing vessels?</p>	<p>At-sea responses to acoustic disturbance in diving northern elephant seals: Venous blood temperature and control of perfusion.</p>	<p>Sexually diagnostic morphometrics enable photogrammetric monitoring of size structure and group composition for common dolphins</p>
<p>12:20 Nature vs nurture. Echolocation clicks of <i>Sotalia fluviatilis</i> and <i>Sotalia guianensis</i>; Sister species in contrasting environments.</p> <p>Mafáida de Freitas, Michael Ladegaard, Renata Sousa-Lima, Vera da Silva, Peter Teglberg Madsen</p>	<p>New Zealand sea lion pup behaviour around natural terrain traps and effectiveness of ramps for mitigation on Campbell Island</p>	<p>Conflicting physiological adaptations between thermoregulation and diving energetics in elephant seals</p>	<p>Let sleeping dolphins swim: Characterizing sleep behaviour of wild Indo-Pacific bottlenose dolphins (<i>Tursiops aduncus</i>) in the Northern Red Sea, Egypt.</p>	<p>Samantha Leander, John Durban, Kerri Daniel, Holly Fearnbach, Lisa T. Ballance</p>
<p>12:25 Cetacean abundance and distribution in the northern Gulf of Mexico after Deepwater Horizon oil spill</p> <p>Joel Ortega-Ortiz, Jenny Litz, Gina Rappucci, Aichinger-Dias Laura, Anthony Martinez, Melissa Soldevilla, Keith Mullin, Lance Garrison</p>	<p>Evolutionary shifts in body size and signal frequency suggest independent evolutionary histories</p> <p>Laura J May-Collado, Nelish Pradhan, Susan E Parks, Ingi Agnarsson</p>	<p>Emerging interactive digital technologies in cetacean and marine conservation</p> <p>Henry Chun Lok Tsui, Brian Chin Wing Kot</p>	<p>Metabolic rate determination in wild dugongs</p>	<p>Abiotic stressors expose Peruvian fur seal parental care</p> <p>Janet Lanyon, Helen Sneath, Trevor Long, Wendy Blanshard, Graham Worthy, David Booth</p>

TUESDAY DECEMBER 10 - 1:30-4:00

	Room 111 Pinniped Population Dynamics	Room 112 Acoustics, Distribution and Abundance	Room 113 Human Dimensions	Room 114 Anatomy	Room 115 New Technology I
1:30	AgentSeal: Movement of harbour seals: an individual-based modelling framework as a reliable management tool to study multiple stressors.	Geographic variation in the acoustic repertoires of common bottlenose dolphins in the Atlantic Ocean and the Mediterranean Sea	The Growing Important Marine Mammal Areas (IMMAs) Network: An update on the global process for informing the management practices of marine mammal place-based conservation.	Porpoise sex is literally kinky: Unique lateralized mating behavior coevolve with genital asymmetry in harbor porpoises (Phocoena phocoena).	Estimating body mass of free-living whales using non-invasive aerial photogrammetry and 3D volumetrics.
1:45	Estimating relative mortality from satellite tracking data: A quantitative approach on Southern elephant seals.	Gulf of Mexico Bryde's whales in the Northwestern Gulf: Call variation and occurrence.	Protection and valuation of whales and dolphins by the local community in the municipalities of Anakao, Soalara Sud and Saint Augustin, Toliara, south-west of Madagascar.	Proposed mechanism by which retia mirabilia dampen pulsatility in the cranial circulation of the fin whale.	The quick and the dead: Novel sonar tags reveal interactions in southern elephant seals.

TUESDAY DECEMBER 10 - 1:30-4:00

<p>2:00 Hormones reflect impacts of reproductive rest on subsequent pregnancy in Weddell seals</p> <p>Amy Kirkham, Michelle Sherø, Gregg Adams, Robert McCorkell, Donald Thompson, Roxanne Beltran, Shannan Atkinson DelMaster, Jennifer Burns</p>	<p>From seismic to science: Using passive acoustic monitoring data to enhance the knowledge of marine mammals off Brazil.</p> <p>Aline Boutros de Mello, Dalane Anzolin, Laura Viana</p>	<p>SouSA: A nation-wide collaboration to improve the conservation of South Africa's Indian Ocean humpback dolphins (Sousa plumbea).</p> <p>Sasha Dines, Els Vermeulen, Bridget James, Danielle Danielle, Enrico Gennari, Gwenith Penny, Keshni Gopal, Meredith Thornton, O. Alejandra Vargas-Fonseca, Pierre Pistorius, Sandra Hörbst, Shanan Atkins, Simon Elwen, Stephanie Plön, Stephen Kirkman, Vic G. Cockcroft, Wilfred Chivell, Tess Gridley</p>	<p>Vertebral morphology in partially sympatric dolphin species: A 3D approach.</p> <p>Maria Constanza Marchesi, Matias Mora, Silvana Dans, Rolando Gozález-José</p>	<p>A novel use of unoccupied aerial systems for 3-dimensional photogrammetry: Tracking grey seal maternal-offspring energy dynamics across lactation.</p> <p>Michelle Sherø, Alexander Seymour, Mike Hammill, Samuel Mongrain, Julian Dale, David Johnston</p>
<p>2:15 The status of harbour seals (<i>Phoca vitulina</i>) in the United Kingdom: Regional trends and potential drivers.</p>	<p>Marine Mammal Acoustic and Spatial Ecology (MAPS) research project: 'Physe-terrace', seasonal distribution of sperm whales (<i>Physeter macrocephalus</i>) in the western North Atlantic.</p>	<p>Using emerging hot spot analysis of stranding records to inform 'Physe-terrace', seasonal distribution of sperm management</p>	<p>The unprecedented sensitivity of the external ear canal of odontocetes, evolutionary adaptation, functional morphology, and histopathology</p>	<p>Software to manually review aerial surveys images collected from unmanned aerial vehicles (UAVs) and record fauna sighting details</p>
<p>Dave Thompson, Callan Duck, Chris Morris, Deborah Russell</p>	<p>Doug Nowacek, Oliver Boisseau, Ann Pabst, William McLellan, Conor Ryan, Richard McLanaghan, Jacob Levenson, Jennifer R. Bosyk, Jason Roberts</p>	<p>Emma Betty, Barbara Bolland, Sinead Murphy, Mike Ogle, Hannah Hendriks, Mark Orams, Karen Stockin</p>	<p>Steffen De Vreeze, Michel Andre, Sandro Mazzaroli</p>	<p>Julian Tyne, Christophe Cleguer, Amanda J Hodgson</p>

TUESDAY DECEMBER 10 - 1:30-4:00

<p>2:30 Population-level impacts of natural and anthropogenic causes of death in Main Hawaiian Islands monk seals</p> <p>Jason Baker, Albert Harting, Michelle Barbieri, Tracy Mercer, Thea Johanos, Stacie Robinson, Charles Littnan, Kathleen Colegrove, David Rotstein</p>	<p>Passive acoustics identifies a new blue whale population in the Indian Ocean</p> <p>Emmanuelle Leroy, Tracey Rogers</p>	<p>Cetacean conservation through citizen science in Kenya</p> <p>Michael Mwango'mbe, Sergi Pérez-Jorge, Jane Helen Spiisbury, Steven Jeffrey Trott, Ines Gomes</p>	<p>An investigation of the cervical gland secretion of the pygmy sperm whale (<i>Kogia breviceps</i>).</p> <p>Tiffany Keenan-Bateman, William McLellan, Ying Wang, Alison Taylor, Shu-Yu Liao, Alex Costidis, Craig Harms, 'Hans' J.G.M. Thewissen, David Rotstein, Sentinel Rommel, Charles Potter, Ann Pabst</p>	<p>Using drones, artificial intelligence and geospatial techniques to revolutionise dugong and seagrass protection globally.</p> <p>Amanda J Hodgson, Christophe Cleguer, Frederic Maire, Martin Wieser, Julian Tyne, Samantha Matthews, Donna Kwan</p>
<p>2:45 Oceanographic conditions predict at-sea behavioural states in a sexually size-dimorphic marine predator: The grey seal (<i>Halichoerus grypus</i>).</p> <p>Bernadette Nowak, Don Bowen, Damian Lidgard, Sara Iversen</p>	<p>OK Google: Where are the humpback whales? Identification of trends in Hawaiian Island humpback whale occurrence using machine learning on passive acoustic data.</p> <p>Ann Allen, Karlina Merkens, Matt Harvey, Erin Oleson</p>	<p>Porpoises versus people? Mental models, conflict, and conservation pathways in the case of vaquita (<i>Phocoena sinus</i>) conservation.</p> <p>Tara Sayuri Whitty, Samantha Young, Areli Hernandez Martinez, Veronica Y. Vargas Zendejas</p>	<p>Comparative anatomy of the Saimaa (Pusa hispida saimensis) and Baltic (Pusa hispida botnica) ringed seals.</p>	<p>Foraging habitat associations of North Atlantic right whales (<i>Eubalaena glacialis</i>) measured using ocean gliders</p>
<p>2:50</p>	<p>Combining an unmanned aerial vehicle and computer vision to monitor and automate abundance counts of northern fur seals (<i>Callorhinus ursinus</i>)</p> <p>Ivan Usatov, Vladimir Burkanov, Alexey Altukhov, Evgeny Mamaev, Russel Andrews, Thomas Gelatt</p>	<p>Kimberley Davies, Hansen Johnson, Delphine Durette-Morin, Mark Baumgartner, Richard Davis, Adam Comeau, Fred Whoriskey, Christopher Taggart</p>		

Development of a novel drone-based method to survey marine megafauna at local spatial scales. Lessons learnt from a dugong drone survey in the Pilbara, Western Australia.

Christophe Cleguer,
Julian Tyne,
Martin Wieser,
Natalie Kelly,
David Peel,
Amanda J Hodgson

Recent status and fate of the north-eastern Mediterranean monk seal populations.

Singing in South Africa: Monitoring the occurrence of humpback whale (Megaptera novaeangliae) song near the Western Cape.

Socio-economic incentives for vaquita conservation: Unrealized opportunities and daunting challenges.

Merve Kurt, Meltem Ok, Ali
Cemal Güçü
Erin Ross-Marsh, Tess
Gralléry, Simon Elwen,
Bridget James, Alexa
Prinsloo

Sarah Mesnick, Oriana
Poindexter, Enrique
Sanjuro, Tomo Eguchi,
Dale Squires, Rebecca
Lent

Tadasu K. Yamada,
Shotaro Nakagun, Ayaka
Matsuda, Akiko Yatabe,
Yuko Tajima

Daniel Zitterbart, Heather
Smith, Michael Flau, Elke
Burkhardt, Valerie
Moullon, Olaf Boebel

Is there a time and place to start singing? The timing and distribution of western North Atlantic humpback whale singing behavior in the fall.

**Katie Kowarski, Hillary
Moors-Murphy, Salvatore
Cerchio**

Look up: Potential impacts of UAVs on Arctic Marine Mammals.

Albert Palomino Gonzalez,
Kit M. Kovacs, Christian
Lydersen, Rolf Anker Ims,
Andrew Lowther

The distribution and vocal behavior of the Atlantic white-sided dolphins (*Lagenorhynchus acutus*) in northern Norway

This is not the drone you are looking for.... The challenges of adopting new UAS technologies in marine science.

*Elyne Hamran, Jarle Tryti
Nordeide, Felipe Matos,
Heike Vester*

*Julian Dale, K.C. Bierlich,
David Johnston*

TUESDAY DECEMBER 10 - 1:30-4:00

<p>3:15 Identifying the northwesternmost reproductive site of the endangered Mediterranean monk seal (<i>Monachus monachus</i>) in the Eastern Mediterranean Sea</p> <p><i>Panagiotis Dendrinos, Styliani Adamantopoulou, Kimon Koemtzopoulos, Eleni Tounta, Alexandros Karamanlidis Karamanlidis</i></p>	<p>Spatio-temporal distribution of pygmy and Antarctic blue whales in central New Zealand, via passive acoustic monitoring</p> <p><i>Victoria Warren, Rochelle Constantine, Ana Sirovic, Craig McPherson, Craig Radford, Kimberly Goetz</i></p>	<p>Conservation status of the Mediterranean monk seal <i>Monachus monachus</i> population at Madeira archipelago</p> <p><i>Rosa Pires, Fernando Aparicio García, Sérgio Pereira, Miguel Angel Cedenilla, Pablo Fernández De Larrinoa</i></p>	<p>The economics of extinction: The illegal totoaba fishery and the impending loss of the vaquita.</p> <p><i>Andy Read, Charles Litman, Randall Reeves</i></p>	<p>Monitoring acoustic labels to determine abundance and individual movement of coastal bottlenose dolphins, <i>Tursiops truncatus</i></p> <p><i>Emma Longden, Simon Elwen, Barry McGovern, Bridget James, Clare Embling, Tess Gridley</i></p>	<p>The power of passive acoustic monitoring – a powerful tool for detecting trends in harbour porpoise densities</p> <p><i>Mike Hammill, Caroline Sauvé</i></p>	<p>The gross morphology of the internal tracheobronchial venous plexus of cetaceans</p> <p><i>Alex Costidis</i></p>	<p>International efforts to advocate for the imperilled vaquita: Lessons learned.</p> <p><i>Kathleen O'Connell, Sarah Uhlemann, Alejandro Olivera</i></p>	<p>Feeling out your Food: A histological analysis of the vibrissal system in pinnipeds.</p> <p><i>Cameron Cooper, Heather Liwanag</i></p>	<p>Global marine mammal bycatch in fisheries: Dispelling the myths and identifying the challenges in implementing the Marine Mammal Protection Act Import Provisions.</p> <p><i>Nina Young, Lauren Fields, Glynnis Roberts, Rachael Confair</i></p>	<p>Assessing the impact of drones on the behaviour of small dolphins</p> <p><i>Alexander J. Werth, Haruka Ito, Keiichi Ueda</i></p>	<p>Estimating calf production of Cook Inlet beluga whales using an Unmanned Aircraft System and photogrammetry</p> <p><i>Paul Wade, Hollis Europe, Jacob Barboro, Janice Waite, Christy Sims, Justin Jennings, Tom Gage, John Durban</i></p>	<p>Biomechanics of the rorqual temporomandibular joint.</p> <p><i>Joana Castro, Marina Laborde, André Cid, Ruiz Rosa, Heidi Pearson</i></p>
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TUESDAY DECEMBER 10 - 1:30-4:00

<p>3:30 Validation of dive foraging indices using archived and transmitted acceleration data: The case of the Weddell seal.</p> <p>Sam L Cox, Karine Heerah, Pierre Blevin, Christophe Guinet, Jean-Benoit Charrassin</p>	<p>Passive acoustic monitoring of individual movements in a bottlenose dolphin population.</p> <p>Lorenzo Gordigiani, Kaitlin Palmer, Riona Bray, Ian Davies, Ewan Edwards, Kate Brookes, Luke Rendell</p>	<p>How U.S. laws work to protect and recover endangered marine mammals.</p> <p>Cari Sakashita, Kristen Monsell</p>	<p>The evolution and diversification of delphinid skull shapes.</p> <p>Rachel Racicot, Anders Galatius, Michael McGowen, Morten Tange Olsen</p>	<p>Novel balloon census method for fusion of acoustic and visual census for the Ganges river dolphins (<i>Platanista gangetica</i>)</p> <p>Harumi Sugimatsu, Junichi Kojima, SungMin Nam, Tamaki Ura, Rajendar Bahl, Vivek Sheel Sagar, Rajeev Chauhan</p>
<p>3:35 Examining New Zealand leopard seals: The first resident population outside of Antarctica.</p> <p>Krista Hupman, Ingrid Visser, Ella Benninghaus, Jim Fyfe, Martin Cawthron, Giverny Forbes, Alexander Grabham, Rick Bout, Brittany Mathias, Kimberly Mautucci, Tracy Cooper, London Fletcher, Daniel Godoy</p>	<p>Monitoring odontocetes via their clicks: Surprising strengths and weaknesses of high-resolution time-domain data analysis.</p> <p>Nick Tregenza</p>	<p>Using U.S. law to protect endangered marine mammals from entanglement and promote ropeless fishing gear.</p> <p>Kristen Monsell, Cari Sakashita</p>	<p>Assessment of disturbance to Hawaiian monk seals and birds in the Northwestern Hawaiian Islands by a hexacopter UAS</p> <p>Carolina Loch, Shaun Vaz Viegas, Neil Waddell, Catherine Kemper, Alexander J. Werth</p>	<p>Assessment of disturbance to Hawaiian monk seals and birds in the Northwestern Hawaiian Islands by a hexacopter UAS</p> <p>Anne Harshbarger, Jessica Bohlander, Stacie Robinson, Charles Lithian</p>

TUESDAY DECEMBER 10 - 1:30-4:00

3:40 Long-term trends in Steller sea lion abundance in the Commander Islands, Russia.	<p>Stereotypy of whistles: Can whistles be used to estimate dolphin abundance?</p> <p>Vladimir Burkanov, Alexey Altukhov, Russel Andrews, Evgeny Mamaev, Thomas Gelatt</p>	<p>Carmen Bazúa Durán, Elena Montejano-Zea</p> <p>Francine Kershaw, Isabel Avila, Emily Chou, Corrie Curtice, Susan Gallon, Patrick Halpin, Eleanor Heywood, María Esther Jimenez Lopez, Connie Y. Kot, Anne Nelson, Patricia Puig, Melinda Rekdahl, Aaron N. Rice, Howard Rosenbaum, Mike Teteley, Luciano Valenzuela, Tara Van Belleghem, Kelly Waples, Laura Williamson</p>	<p>Interpreting multiple types of geospatial scientific information to protect marine mammals: A practical guide for decision-makers.</p> <p>Vladimir Burkanov, Alexey Altukhov, Russel Andrews, Evgeny Mamaev, Thomas Gelatt</p>	<p>Visual cortices of cetaceans: Evidence of reduced specialization and laminar organization. DIY (drone it yourself) alternative.</p> <p>Jean-Marie Graïc, Cinzia Centelleghè, Michela Podestà, Antonella Peruffo, Livo Corain, Bruno Cozzi</p>	<p>Isometric relationships in humpback whales studied using drone-based imaging</p>	<p>How to remotely assess body condition on Antillean manatees: The DIY (drone it yourself) alternative.</p> <p>Sarah Landeo-Yauri, Nataly Castelblanco-Martínez, Eric Angel Ramos, Carlos Alberto Niño-Torres, María Renée Arreola</p>
3:45 Abundance of ice-associated seals in the eastern Bering sea in spring of 2012 and 2013: A cause for concern?	<p>Applying the CAF-mapping algorithms to marine bioacoustics.</p> <p>Peter Boveng, Erin Moreland, Michael Cameron, Paul Conn, Josh London, Brett McClintock, Jay Ver Hoef</p>	<p>The evolution of emergency response approach to the management of large-scale marine mammal mortality events</p> <p>David Lechner, Shane Guan, Joseph Vignola, Diego Turo</p>	<p>Is natural selection shaping Florida manatees? An investigation into the body shapes between the subspecies of the West Indian manatee.</p> <p>Mandy Garron, Robert DiGiovanni Jr., Kim Durham, Allison DePerte, Lynda Doughty, Sarah Wilkin, Deborah Fauquier</p>	<p>Juliane Johnson, Daniel Gonzalez-Socoleske, Leon D. Olivera-Gomez, Benjamin Morales-Vela</p>	<p>Charlotte Bellott, Patrick Miller</p>	

TUESDAY DECEMBER 10 - 1:30-4:00

<p>3:50 Spatial haul-out dynamics of three sympatric Alaskan pinnipeds</p> <p>Gregory Larsen, Erin Moreland, Alexander Seymour, Everett Newton, David Johnston</p>	<p>Inter-annual variability in acoustic detection of blue (<i>Balaenoptera musculus</i>) and fin whale (<i>B. physalus</i>) 20 Hz calls in the Northeast Atlantic High Arctic.</p> <p>Heidi Ahonen, Kate Stafford, Christian Lydersen, Kit M. Kovacs</p>	<p>Translating the science of oceanic blue carbon into policy action to promote marine mammal conservation and climate change mitigation.</p> <p>Heidi Pearson, Steven Lutz</p>	<p>Four-flippered dolphin: A new interpretation of hind flipper evolution.</p> <p>Joy S. Reidenberg, Ph.D., Haruka Ito, Keiichi Ueda, Hiroto Ichishima, Kenji Koizumi</p>	<p>The use of Unmanned Aerial Vehicles (UAVs) to sample small cetaceans blow microbiome.</p> <p>Cinzia Centelleghe, Lisa Carraro, Joan Gonzalvo, Massimiliano Rosso, Erika Esposti, Claudia Gili, Marco Bonato, Davide Pedrotti, Barbara Cardazzo, Michele Povinelli, Sandro Mazzarol</p>
<p>3:55 Trends in strandings of dead California Sea Lions (<i>Zalophus californianus</i>) along the northern California coast, 1972–2018</p> <p>Meredith Sherrill, Denise Greig, Maureen Flannery</p>	<p>Putting passive acoustic data to work: Developing a standardized, open-source approach to automated analysis of passive acoustic data.</p> <p>Taki Sakai, Shannon Rankin, Frederick (Eric) Archer, Anne Simonis</p>	<p>Moving towards a sustainable cetacean-based tourism industry – a case study in Mozambique.</p> <p>Diana Rocha, Sarah Marley, Jonathan Potts, Benjamin Drakeford, Michelle Hale, Angie Gullan</p>	<p>Regional differences in the cranial morphometry of adult male Galapagos sea lion</p> <p>Diego Paez-Rosas, Jorge Torres, Salome Izurieta</p>	

WEDNESDAY AT A GLANCE



<u>Registration</u>	7:00 AM – 4:30 PM Entrance Hall
<u>Exhibitors</u>	10:00 AM – 04:30 PM Hall
<u>Poster Session: Presenters Group A</u>	8:30 PM – 10:00 PM Hall
<u>Coffee Break</u>	9:30 PM – 10:00 PM Hall
<u>Oral Presentations</u>	10:00 AM – 12:30 PM
Behavioral Ecology II	Room 115
Effects of Noise I	Room 112
Genetics	Room 114
Habitat and Distribution I	Room 111
Health I	Room 113
<u>Lunch (on your own)</u>	12:30 PM – 1:30 PM
<u>Oral Presentations</u>	1:30 PM – 4:00 PM
Conservation II	Room 115
Effect of Noise II	Room 112
Habitat and Distribution II	Room 111
Marine Mammals and Diving	Room 114
Pollution and Plastics	Room 113
<u>Transition to Plenary Session</u>	4:00 PM – 4:30 PM
<u>Plenary Session: Overcoming Challenges to Conducting Marine Mammal Research</u>	4:30 PM – 5:30 PM Auditorium
Chair: Dipani Sutaria - <i>Going with the Flow or against the Tide: Inspiring Marine Mammal Research and Conservation in Indian waters</i>	
Tim Collins – <i>The Unexpected Benefits of Ferries: Lessons in Humility and Patience from Oman and Congo</i>	
Louisa Poonapalam – <i>Navigating through people and systems to enable marine mammal science and conservation - a Malaysian/Southeast Asian Odyssey</i>	
Simone Panigada – <i>The ACCOBAMS Survey Initiative - a tool to facilitate conservation effort across cultural, social and political boundaries</i>	
Fernando Trujillo – <i>Living with the River dolphins of South America: More than a decade of unlearning and letting go, to conserve across country borders.</i>	
<u>European Cetacean Society – AGM</u>	5:45 PM – 7:30 PM
Auditorium	
<u>Evening Events located outside of the CCIB</u>	
BCN Pods - walks around the city center	07:45 PM – 10:30 PM
LGBT night - Restaurant Marisma, Barceloneta Market	07:30 PM – 10:30 PM

NOTES

WEDNESDAY DECEMBER 11 - 10:00-12:30

	Room 111 Habitat and Distribution I	Room 112 Effects of Noise I	Room 113 Health I	Room 114 Genetics	Room 115 Behavioral Ecology II
10:00	Thirty years of records highlight an Australian stranding hotspot for a resident community of Indo-Pacific bottlenose dolphins within a microtidal estuary	Behavioral responses of satellite tracked Blainville's beaked whales (Mesoplodon densirostris) to mid-frequency active sonar.	Veterinary Expert System for Outcome Prediction (VESOP): A Bayesian model to predict changes in cetacean population vital rates from measures of individual health.	Phylogenomic resolution of the cetacean tree of life using target sequence capture.	The role of sociality in the response of killer whales to an additive mortality event
10:15	Cloudy with a chance of whales: Forecasting blue whale occurrence based on tiered, bottom-up models to mitigate industrial impacts.	Bearded seals adjust calling behavior to compensate for ambient noise in the Alaskan.	Bottlenose dolphins and red tide harmful algal blooms: Are patterns of dolphin responses emerging from repeated events?	The genetic legacy of extreme exploitation in a polar vertebrate	The answer for resident killer whales: Mating is by female choice. What was the question?

WEDNESDAY DECEMBER 11 - 10:00-12:30

<p>10:30 Bridging the gap between visual and acoustic data for north Atlantic right whales.</p> <p>Genevieve Davis, Jason Roberts, Darryl MacKenzie, Solange Brault, Sofie Van Parijs</p>	<p>Harbour seals and ship noise: Quantifying the potential for masking of mating calls in Kattegat, the Baltic Sea, by acoustic modelling.</p> <p>Thomas Folegot, Jakob Tougaard, Dominique Clorenne, Anders Galatius, Aleksander Klauson</p>	<p>Causes of death of harbour porpoises (<i>Phocoena phocoena</i>) found in Belgium between 1990 and 2017</p> <p>Thierry Jauniaux, Natacha Delrez, Jan Haeflers, Francis Kerckhof, Freddy Coignoul</p>	<p>Global dataset of killer whale genomes reveal a complex history of recurrent admixture and vicariance.</p> <p>Andrew Foote, Michael Martin, Marie Louis, George Pacheco, Kelly Robertson, Mikkel Sinding, Ana Amaral, Robin Baird, C. Scott Baker, Lisa T. Ballance, Jay Barlow, Andrew Brownlow, Tim Collins, Rochelle Constantine, Willy Dabin, Luciano Dalla Rosa, Nick Davison, John Durban, Ruth Esteban, Steven Ferguson, Tim Gerrodette, Christophe Guinet, Bradley Hanson, Wayne Hoggard, Cory Matthews, Filipa Samarra, Renaud de Stephanis, Sara B. Tavares, Paul Tixier, John Totterdell, Paul Wade, Laurent Excoffier, Thomas Gilbert, Jochen Wolf, Phillip Morin</p>	<p>From birth to death: Life history strategies in wild bottlenose dolphins, Shark Bay, Australia.</p> <p>Janet Mann, Molly McEntee, Caitlin Karniski, Vivienne Foroughirad, Taylor Evans, Alison Gaëzo, Ewa Krzyszczyk, Robert Rankin, Céline Frère</p>
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WEDNESDAY DECEMBER 11 - 10:00-12:30

10:45 Environmental factors affecting the Irrawaddy dolphin (Orcaella brevirostris) distribution in the Mahakam River, East Kalimantan. <i>February Suyatiningsih Purnomo, Danielle Kreb, Kevin Collier</i>	Effects of anthropogenic sound on harbor porpoises (Phocoena phocoena) and harbor seals (Phoca vitulina): Masking and temporary hearing threshold shifts. <i>Ron Kastelein, Lean Helder-Hoek, Suzanne Cornelisse, Robin Gransier, Léonie Huijser, John Terhune, Wim Verboom</i>	“Broken Heart Syndrome” in Cetaceans: Histological, histochemical and immunohistochemical study. <i>Nákita Câmara, Eva Sierra, Carolina Fernández Maldonado, Antonio Espinosa de los Monteros, Manuel Arbelo, Antonio Fernandez, Jesus De La Fuente, Tania Ramírez-Herrera, Simone Segura Gothlin, Natalia García-Álvarez, María José Caballero, Pedro Herráez</i>	Investigating epigenetic manifestations of stress in southern resident killer whales <i>Carla Crossman, Tim Frasier, Lance Barrett-Lennard</i>	Intraspecific variation in social structure in female bottlenose dolphins is driven by a combination of ecological, genetic, and cultural aspects <i>Svenja Martfert, Livia Gerber, Simon Allen, Sonja Wild, Erik Willems, Michael Krützen</i>
11:00 Residency, local movements and potential isolation of the Madagascar Omura's whale population	Risk balancing by a marine mammal: Man-made noise reduces the foraging success of seals.	Developing a diagnostic tool to assess respiratory health in bottlenose dolphins (<i>Tursiops truncatus</i>) through spirometry	The evolutionary history of the porpoise family across the speciation continuum through the lens of a comparative genomic approach: Putting conservation issues into an evolutionary framework.	Impact of herring spawning events on killer whale migratory behavior. <i>Michael C. Fontaine, Yacine Ben Chehida, Alex Aguilar, Asunción Borrell, Ferreira Marisa, Barbara Taylor, Lorenzo Rojas-Bracho, Kelly Robertson, Julie Thumloup, Cassie Schumacher, Timothy Hawkins, Gisli Vikingsson, Arthur Weyna, Jonathan Romiguier, François Sabot, Phillip Morin</i>

WEDNESDAY DECEMBER 11 - 10:00-12:30

<p>11:15 Cultural geography of Eastern Caribbean sperm whales.</p> <p><i>Felicia Vachon, Shane Gero, Luke Rendell, Taylor Hersh, Hal Whitehead Kristian Beedholm, Jakob Tougaard, Peter Teglberg Madsen</i></p>	<p>High-frequency masking noise decreases echolocation performance of harbour porpoises.</p> <p><i>Line Hermannsen, Pernille Tønnesen, Michael Ladegaard, Chloe Malinka, Thompson Kristian Beedholm, Jakob Tougaard, Peter Teglberg Madsen</i></p>	<p>Novel non-invasive techniques for health monitoring and investigating the physiological response to stressors in cetaceans</p> <p><i>Tracy Romano, Maureen Driscoll, Ebru Unal, Laura Thompson</i></p>	<p>Anthropogenic factors important for seascape genetics in the Florida manatee.</p> <p><i>Madison Hall, Eric Hoffman, Rodhey Dyer, Graham Worthy</i></p>
<p>11:20 Assessing the wintering range of Southern Hemisphere humpback whales (<i>Megaptera novaeangliae</i>) using satellite telemetry.</p> <p><i>Laurène Trudelle, Olivier Adam, Virginia Andrews-Goff, Artur Andriolo, Salvatore Cerchio, Jean-Benoit Charrassin, Phil Clapham, Daniel Daniewicz, María Claudia Díazgranados, Mike Double, Violaine Dulau, Jacques Fayart, Sabrina Fossette, Ari Friedlaender, Claire Garrigue, Ygor Geyer, Hector Guzman, Nan Hauser, Mads Peter Heide-Jørgensen, Jean-Luc Jung, Francine Kershaw, François-Xavier Mayer, Howard Rosenbaum, Jean-Baptiste Sallée, Federico Sucunza, Michel Vély, Alexandre Zerbini</i></p>	<p>Numerical modeling tools investigating marine mammal lung and melon response to underwater explosion impulse</p> <p><i>Monica DeAngelis, Thomas Fetherston, Emily Guzas, Stephen Turner, Glenn Mitchell, Rachel Hesse, Daniel Perez</i></p>	<p>Genomic divergence of coastal bottlenose dolphins (<i>Tursiops australis</i>) in southern Australia is driven by strong environmental gradients.</p> <p><i>Eleanor Pratt, Luciano Beheregaray, Kerstin Bligmann, Nikki Zanardo, Fernando Diaz-Aguirre, Luciana Moller</i></p>	<p>Evaluating anthropogenic activities on humpback whales (<i>Megaptera novaeangliae</i>) using behavioral changes as a measure of impact: Two case studies.</p> <p><i>Stephanie Stack, Jessica McCordic, Abigail Machernis, Grace Olson, Jens Currie</i></p>

WEDNESDAY DECEMBER 11 - 10:00-12:30

11:25 Beyond Maui: Humpback whale occurrence across the Hawaiian archipelago revealed through the prevalence of song.	<i>Marc Lammers, Anke Kuegler, Eden Zang, Jonathan Martinez, Matt Harvey, Leila Hatch, Edward Lyman</i> <i>Vincent Janik, Thomas Goetz, Lucia Martina Martin Lopez, Julie N. Oswald, Massimiliano Rosso, Nicola Quick, Alessandro Bocconcini, Andy Read, Doug Nowacek</i>	Startle and avoidance reactions of Cuvier's beaked whales to sudden onset sounds	Data from the dead: New methods extract genetic data from poor-quality samples to breathe life into detecting population structure of harbor porpoise in the Pacific.
11:30 Re-evaluation of the ocean-basin-wide movement patterns of North Atlantic humpback whales, Megaptera novaeangliae	<i>Lindsey Jones, Peter Stevick, Frederick Wenzel, Sean Todd, Judith Allen, Kenneth Balcomb, Liliana Betancourt, Tenna Boye, Fredrik Broms, Laurent Bouvieret, Roger Etcheberry, Jodi Frediani, Beatrice Jann, Reg Kempen, Jon Lien, Pedro Lopez Suarez, Mithriel MacKay, David Mattila, Nils Øien, Renaldo Rinaldi, Jooke Robbins, Christian Schmidt, Richard Sears, Omar Shamir Reynolds, Mason T Weinrich, Hal Young</i>	Impacts on odontocete occurrence from offshore construction using a novel anchoring system	Molecular biomarkers of stress and immune system function in beluga blow
		<i>Andrew Temple, Kelsey Potlock, Per Berggren</i>	<i>Ebru Ünal, Tracy Romano</i>
		Migration patterns of eastern North Atlantic humpback whales revealed by satellite tracks	Genomic monitoring of New Zealand's Māui dolphins using ddRAD sequencing.
		<i>Philip Morin, Brittany Hancock-Hanser, Kelly Robertson, Karin Forney, Carla Crossman, Lance Barrett-Lennard, Cassie Schumacher, Timothy Harkins, Michael C. Fontaine, Kim Parsons, Brenna Forester</i>	<i>Debbie Steel, Ana Paula Faro, Rebecca M. Hamner, Rochelle Constantine, C. Scott Baker</i>
		<i>Lisa Kettemer, Audun Rikardsen, Evert Mui, Fredrik Broms, Erik Martin Biuw, Marie-Anne Blanchet, Alexandre Zerbini, Kjell Arne Fagerheim, Nils Øien</i>	

WEDNESDAY DECEMBER 11 - 10:00-12:30

11:35 Using prey availability and environmental covariates to forecast humpback and fin whale distributions in the Northeast United States	Behavioural responses of harbour seals to vessel noise in the North Sea	Beyond hormones: Gaining the most physiological data from blow sampling using shotgun proteomics.	Hide and RADseq: Revealing global population structure and genetic diversity in two enigmatic beaked whale species.	Whales of the deep: Horizontal and vertical movements shed light on humpback whale use of critical pelagic habitats in the western South Pacific.
Julia Stepanuk, Carolina Chong-Montenegro, Janet Nye, Hyemi Kim, Jason Roberts, Patrick Halpin, Debra Palka, Ann Pabst, William McLellan, Susan G. Barco, Lesley Thorne Siebert, Prof. Dr.	Dominik Nachtsheim, Tobias Schaffeld, Abbo van Neer, Mark Johnson, Lonnie Mikkelsen, Jonas Teilmann, Heather Vance, Peter Teglberg Madsen, Andreas Ruser, Ursula Siebert, Prof. Dr.	Laura Thompson, Benjamin Neely, Tracy Romano	Aubrie Onoufriou, Oscar Gaggiotti, Natacha Aguilar de Soto, Morten Tange Olsen, Phillip Marin, Massimiliano Rosso, Merel Dalebout, Nick Davison, Megan Anderson, Robin Baird, C. Scott Baker, Simon Berrow, Daniel Burns, Diane Claridge, Rochelle Constantine, Covelo Pablo, Fabien Demaret, Jim Dines, Martina Duras, John Durban, Alexandros Frantzis, Luis Freitas, Gabrielle Gentyl, Ana Galov, Nan Hauser, Paul Jepson, Dan Kerem, Zoe Lucas, Vidal Martin, James G. Mead, Kathryn Medlock, Antonio Mignucci, Valeria Montano, Aurelie Moulins, Carlos Olavarria, Marc Oremus, M. Michael Poole, Charles Potter, Emer Rogan, Conor Ryan, Paola Tepsich, Jorge Urban, Devi Veytia, Emma Carroll	Solene Derville, Leigh Torres, Alexandre Zerbini, Marc Oremus, Claire Garrigue

WEDNESDAY DECEMBER 11 - 10:00-12:30

<p>11:40 High collocation between humpback whales and sand lance in the southwestern Gulf of Maine</p> <p>Tammy Silva, David Wiley, Michael A. Thompson, Peter Hong, Hannes Baumann, Les Kaufman, Joel Llopiz, Justin Suga, Gavin Fay</p>	<p>Risk of auditory damage and displacement from acoustic deterrent devices (ADDs) used in aquaculture</p> <p>Charlotte Findlay, Dmitry Aleynik, Adrian Farcas, Nathan Merchant, Denise Fisch, Ben Wilson</p>	<p>Estimating circulating concentrations of cortisol in large whales via blow sample collection with an unmanned aerial vehicle.</p> <p>Thomas Grove, Natalie Homer, Mark Romanov, Marianne Helene Rasmussen, Lea-Anne Henry</p>	<p>Uncovering past declines, recent bottlenecks, and historical selection in endangered monk seals</p> <p>Stephen Gaughan</p>	<p>Cuvier's beaked whales in high fidelity: Medium-term archival tags allow for detailed behavioral studies.</p> <p>Gregory Schorr, Brenda Rose, Erin Falcone, Stacy DeRuiter, Russel Andrews, Stephanie Watwood</p>
<p>11:45 Calving during migration: Recovering humpback whales giving birth in unprotected waters.</p> <p>Laura Torre-Williams, Joshua Reinke, Jan-Olaf Meynecke, Emmanuelle Martinez, Karen Stockin</p>	<p>Acoustic harassment devices (seal scarers) can affect harbour porpoise hearing temporarily</p> <p>Tobias Schaffeld, Andreas Rüser, Joseph Schnitzler, Benno Woelfling, Johannes Baltzer</p>	<p>Skin conditions and body anomalies of humpback whales, Megaptera novaeangliae in Sainte-Marie channel (North east of Madagascar).</p> <p>Rakotoharimalala Sophia Nirina, Anjara Saloma</p>	<p>Effective population sizes and modeling future genetic variation in the endangered Australian sea lion.</p> <p>Kerstin Bilgmann, Nicolette Armansin, Anne-Laure Ferchaud, Eric Normandeau, Louis Bernatchez, Rob Harcourt, Heidi Ahonen, Andrew Lowther, Simon Goldsworthy, Adam Stow</p>	<p>momentuHMM: R package for generalized hidden markov models of animal movement</p> <p>Brett McClintock, Theo Michelot</p>
<p>11:50 Humpback whale winter distribution and core habitats in relation to SST in offshore and coastal areas off the coast of Ecuador.</p> <p>Judith Denkinger, Ana Eguiguren, Laia Julian Muñoz, Francisco Rubianes, Javier Oña</p>	<p>Are near-distance seal scarer effects as strong as the effects of offshore piling noise on harbour porpoise (<i>Phocoena phocoena</i>)?</p> <p>Mareike Volkenandt, Veronika Wahl, Andreas Michalik, Armin Rose, Raul Vilela, Miriam Brandt, Ansgar Diederichs, Helmut Wendeln</p>	<p>Visual assessments of skin lesions on free-ranging bottlenose dolphins (<i>Tursiops truncatus</i>); Reliability and utility of quantitative tools.</p> <p>Christina Toms, Tori Stone, Traci Och</p>	<p>Population genomic structure of common dolphins (<i>Delphinus delphis</i>) in Australia and New Zealand</p> <p>Continuous-time state-space models for marine mammal tracking data: Validation, quality control and behavioural inference.</p>	<p>Continuous-time state-space models for marine mammal tracking data: Validation, quality control and behavioural inference.</p> <p>Ian Jonsen, Toby Patterson, Christophe Guinet, Rob Harcourt, Mark Hindell, Clive McMahon</p>
				<p>Andrea Barcelo, Karen Stockin, Kerstin Bilgmann, Jonathan Sandoval-Castillo, Catherine Attard, Krista Hupman, Chris Brauer, Luciano Beheregaray, Luciana Moller</p>

WEDNESDAY DECEMBER 11 - 10:00-12:30

<p>11:55 Five years studying blue whales in Southern Chile.</p>	<p>Is the effect of noise mitigation during pile driving for offshore wind farms on the protection of harbour porpoises (<i>Phocoena phocoena</i>) overrated?</p>	<p>Clinical diagnostic advancements to better inform disposition decisions for live stranded small cetaceans</p>	<p>Genomic evidence for hybrid speciation in <i>Stenella dolphins</i></p>	<p>Short-finned pilot whale population and social structure off Cape Hatteras, North Carolina, USA.</p>
<p><i>Sonia Espanol, Paulina Bahamonde, Alessandro Bocconcini, Carlos Cantergiani, Leigh Hickmott, Gloria Howes, Raftaela Landea, Mark Saddler, Laela Sayigh, Paolo Segre, Joe Warren, Daniel Zitterbart, Gustavo Chiang</i></p>	<p><i>Armin Rose, Raul Vilela, Miriam Brandt, Mareike Volkenandt, Veronika Wahl, Andreas Michalik, Helmut Wendeln, Ansgar Diederichs</i></p>	<p><i>Kathryn Rose, Sarah Sharp, Olivia Guerra, Jane Hoppe, Kira Kasper, Misty Niemeyer, Kristen Patchett, Kirsten Spray, Emma Shanahan, Kristen Volker, Michaela Wellman, Michael J Moore, Brian Sharp</i></p>	<p><i>Ana Amaral, Vitor Sousa, Maria Manuela Coelho, George Amato, Howard Rosenbaum</i></p>	<p><i>Vivienne Foroughirad, William Cioffi, Zachary Swaim, Danielle Waples, Heather Foley, Nicola Quick, Andy Read</i></p>
<p>12:00 Seasonal and geographical occurrence of blue whale stereotyped and non-stereotyped calls in the Southern Indian Ocean.</p>	<p>Clear response of seals to acoustic deterrence sounds using on-animal sound and movement recording tags</p>	<p>New diagnostic techniques to characterize fetal, placental, and maternal health in bottlenose dolphins following the Deepwater Horizon oil spill</p>	<p>Oceanographic barriers, divergence, and admixture: Phylogeography and taxonomy of two putative subspecies of short-finned pilot whale.</p>	<p>First comparisons of testosterone levels in male humpback whales (Megaptera novaeangliae) of different behavioral roles and body sizes in the breeding grounds</p>
<p><i>Maëlle Torterrot, Flore Samaran, Jean-Yves Royer Johnson, Jakob Tougaard, Heather Vance, Anders Galatiüs, Rune Dietz, Andreas Ruser, Jonas Tellmann</i></p>	<p><i>Lonnie Mikkelsen, Mark Gómez, Marina Ivancic, Whitney Musser, Ashley Barratclough, Jenny Meegan, Sophia Waitt, Abraham Cárdenas Llerenas, Eric Jensen, Theresa Rowles, Veronica Cendelias, Eric Zolman, Brian Balmer, Todd Speakman, Brian Quigley, Forrest Townsend, Randall Wells, Lorelei Schwacke</i></p>	<p><i>Cynthia Smith, Forrest Baird, C. Scott Baker, Salvatore Cerchio, Diane Claridge, Russell Fielding, Andrew Foote, Brittany Hancock-Hanser, Jacobo Marrero, Karen Matien, Antonio Mignucci, Erin Oleson, Marc Oremus, M. Michael Poole, Patricia Rosel, Barbara Taylor, Phillip Morin</i></p>	<p><i>Amy Van Cise, Robin DeMaster, Christine Gabriele, Jan Straley, Suzanne Yin, Marc Lammers</i></p>	<p><i>Adam Pack, Kelly Cates, Shannon Atkinson DeMaster, Christine Gabriele, Jan Straley, Suzanne Yin, Marc Lammers</i></p>

WEDNESDAY DECEMBER 11 - 10:00-12:30

12:05	Distribution and occurrence of large whales in New York Bight prior to 2017: Establishing baselines and informing management. <i>Emily Chou, Melinda Rekdahl, Ricardo Antunes, Christopher Spagnoli, Arthur Kopelman, Paul Sieswerda, Robert DiGiovanni Jr., Caroline Good, Howard Rosenbaum</i>	Effects of vessels and their sounds on the foraging dives of endangered fish-eating killer whales (<i>Orcinus orca</i>) <i>Maria Holt, Jennifer Tennessem, Bradley Hanson, Candice Emmons, Deborah Giles, Jeffrey Hogan</i>	Perinate bottlenose dolphin mortality following the Northern Gulf of Mexico unusual mortality event <i>Alissa Deming, Ruth H. Carmichael</i>	Marked phylogeographic differentiation of sei whale based on mitochondrial DNA analyses from Northern and Southern Hemisphere populations <i>Maria Jose Perez Alvarez, Francisca Rodriguez, Sebastián Kraft, Carlos Olavarria, C. Scott Baker, Debbie Steel, Naoko Furukoshi, Verena Hausermann, Mauricio Ulibarri, Camilo Naretto, Elie Poulin</i>	High risk, high reward: Sex-specific foraging and life history strategies of northern elephant seals. <i>Sarah Kienle, Ari Friedlaender, Daniel Crocker, Rita Mehta, Daniel Costa</i>
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WEDNESDAY DECEMBER 11 - 10:00-12:30

<p>12:10 Islands in the stream: Movement patterns of satellite-tagged pilot whales in the south Atlantic bight.</p> <p>Heather Foley, Jessica Aschettino, Robin Baird, Zachary Swaim, Danielle Waples, Daniel Webster, Andy Read</p>	<p>Improving our understanding of Cook Inlet beluga disturbance by anthropogenic noise</p> <p>Manuel Castellote, Mandy Keogh, Arial Brewer, Brian Taras, Justin Jennings, Christopher Garner</p>	<p>Gross and histopathologic diagnoses from North Atlantic right whale (<i>Eubalaena glacialis</i>) mortalities between 2003 and 2018.</p> <p>William McLellan, Sarah Sharp, David Rotstein, Alex Costidis, Susan G. Barco, Kim Durham, Katie Jackson, Tom Pitchford, Pierre Yves Daoust, Tonya Wimmer, Emilie Couture, Laura Bourque, Deborah Fauquier, Michael J Moore</p>	<p>Population structure characterised by high within-area relatedness in North Atlantic and Mediterranean Sea fin whales (<i>Balaenoptera physalus</i>)</p> <p>Anna Schleiner, Alex Aguilar, Susan G. Barco, Eduard Degollada, Simon Berrow, Dorete Bloch, Asunción Borrell, Fossi Maria Cristina, Pauline Gauffier, Janie Giard, Wensi Hao, Mads Peter Heide-Jørgensen, Kit M. Kovacs, Scott Landry, Finn Larsen, Christian Lydersen, Vidal Martin, Robert Michaud, Bjarni Mikkelsen, Christophe S. Pampouille, Simone Panigada, Cristina Panti, Rui Prieto, Juan Antonio Raga, Christian Ramp, Vania Elizabeth Rivera Leon, Jooke Robbins, Conor Ryan, Richard Sears, Johann Sigurjónsson, Monica Silva, Malene Simons, Renaud de Stephanis, Jorge Urban, Gísli Vikingsson, Frederick Wenzel, Lars Wittung, Nils Øien, Per Palsbøll, Martine Bérubé</p>	<p>Agonistic behaviour between breeding females of the northern elephant seal (<i>Mirounga angustirostris</i>) at Islas San Benito, Mexico.</p> <p>Elena Salogni, Filippo Galimberti, Simona Sanvito, Edward H. Miller</p>
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WEDNESDAY DECEMBER 11 - 10:00-12:30

12:15 30 years of Southern right whale monitoring shows that Australia's major calving ground has reached capacity	An evaluation of Mahalanobis distance as a method to detect behavioural response in marine mammals from tag data	Thermal infrared detection of peri-callosity heat loss, core temperature and subsurface movement in surfacing and skin feeding north Atlantic right whales.	Using a novel 'baitSTR' approach to genotype thousands of short-tandem repeats simultaneously – Implications for <i>Sousa sahlensis</i> conservation	Repeatability and reproductive consequences of birth-site selection in grey seals (<i>Halichoerus grypus</i>).
<i>Dr. Claire Charlton, Rhiannon Ward, Robert McCauley, Robert L. Brownell, Chandra Salgado Kent, Stephen Burnell</i>	<i>Katherine Whyte, Stacy DeRuiter, Caitriona Harris, Patrick Miller, Deborah Russell, Gordon Hastie, Len Thomas</i>	<i>Michael J Moore, Gina Lonati, Carolyn Miller, Daniel Zitterbart, Peter Corkeron</i>	<i>Samuel Wittwer, Danièle Cagnazzi, Guido J. Parra, Logan Kistler, Livia Gerber, Michael Krützen</i>	<i>Don Bowen, Sydney Allen, Cornelia den Heyer</i>
12:20 Satellite imagery and citizen science reveal the ecology of abundance and distribution of Crabeater seals in the Weddell Sea	Simulating collision risk between marine mammals and a tidal energy device: How varying ecological and behavioural parameters impacts our conclusions.	Insights into long term harbour porpoise (<i>Phocoena phocoena</i>) strandings monitoring on the west coast UK	High genetic diversity of Southwestern Atlantic sei whales (<i>Balaenoptera borealis</i>) and evidence of strong genetic differentiation with North Atlantic Ocean	Partial breeding migration of harbour seals in the southern North Sea
<i>Mia Wege, Michelle LaRue, Leo Salas</i>	<i>Nicholas Horne, Ross Culloch, Pal Schmitt, Lilian Lieber, Sverker Molander, Linus Hammar, Ben Wilson, Andrew Dale, Jonathan Houghton, Louise Kregting</i>	<i>Ceri Morris, Mariel ten Doeschate, James Barnett, Nick Davison, Robert Deaville, Paul Jepson, Charles Lindenbaum, Rod Penrose, Matthew Perkins, Tom Stringell, Andrew Brownlow</i>	<i>Ana Lucia Cypriano- Souza, Clarence Baracho Neto, Leonardo Liberali Wedekin, Sandro Bonatto</i>	<i>Sophie Brasseur, Peter Reijnders, Roger Kirkwood, Geert Aarts</i>

WEDNESDAY DECEMBER 11 - 10:00-12:30

12:25 Identifying important habitat for endangered northern bottlenose whales along the Scotian Shelf in eastern Canada.	Behavioral effects of sound from marine geophysical surveys on marine mammals: A literature review.	Developing a health baseline for narwhals (<i>Monodon monoceros</i>) from the eastern Canadian Arctic	Environmental DNA effective for cetacean research in all regions? A case study of seawater sampling in the presence of killer whales (<i>Orcinus orca</i>) in the Northeast Atlantic.	Tidal drivers of harbour seal <i>Phoca vitulina</i> fine-scale movement, behaviour, and spatio-temporal distribution
<i>Hilary Moors-Murphy, Joy Stanistreet, Laura Feyrer Fertl, Sarah Courbis, Aude Pacini</i>	<i>Alexandria Loureiro, Robert Gisiner, Dagmar Duignan, John R. Orr, James Simonee, Natasha Simonee, Matilde Tomaselli Mirimin, Jonas Niemann, Thomas E. Reed, David G. Reid, Emer Rogan, Filipa Samarra, Eva Egelyng Sigsgaard, Andrew Foote</i>	<i>Sandra Black, Pádraig J. Duignan, John R. Orr, James Simonee, Natasha Simonee, Matilde Tomaselli Mirimin, Jonas Niemann, Thomas E. Reed, David G. Reid, Emer Rogan, Filipa Samarra, Eva Egelyng Sigsgaard, Andrew Foote</i>	<i>Roisin Pinfield, Eileen Dilane, Anne Kathrine W. Runge, Alice Evans, Luca Wilson, Ursula Siebert, Prof. Dr., James Bull</i>	<i>William Kay, Luca Boiger, Tom Stringell, Rory Wilson, Ursula Siebert, Prof. Dr., James Bull</i>

WEDNESDAY DECEMBER 11 - 1:30-4:00

	Room 111 Habitat and Distribution II	Room 112 Effect of Noise II	Room 113 Plastics and Pollutants	Room 114 Marine Mammals and Diving	Room 115 Conservation II
1:30	North Pacific killer whales and climate change: Past, present and future.	Are current European Environmental Impact Assessments (EIAs) sufficient for odontocete conservation during offshore wind farm development?	Cetaceans as a potential indicators of micro- and macroplastic impact in the marine environment: Trend topic and emerging gaps.	Foraging strategies in wild harbour porpoises: Physiological vs. ecological drivers of diving behaviour.	Environmental determinants of habitat use by Caspian seals (<i>Pusa caspica</i>) and implications for marine conservation planning
	Olga Filatova, Olga Shpak, Ilya Meschersky, Ivan Fedutin, Alexander Burdin, Erich Hoyt	Kelsey Potlock, John Bythell, Per Berggren	Fossi Maria Cristina, Matteo Baini, Cristina Panti	Laila Rojano-Doñate, Julie van der Hoop, Frants Havmand Jensen, Danuta Maria Wisniewska, Mark Johnson, Jonas Tellmann, Ursula Siebert, Prof. Dr., Peter Teglberg Madsen	Simon Goodman, Lilia Dmitrieva, Mart Jüssi, Mikhail Verevkin, Mirgaly Baimukanov, Susan Wilson
1:45	Seasons and submarine shakes: Dynamic habitat use by sperm whales in a highly productive, earthquake-struck canyon.	Effects of distance and received level on sonar-induced behavioural disturbance in two deep-diving cetaceans.	First detection of microplastics in wild northern fur seals, <i>Callorhinus ursinus</i>, throughout their eastern Pacific range.	Extreme synchrony in diving behavior of Cuvier's beaked whales (<i>Ziphius cavirostris</i>) off Cape Hatteras, North Carolina.	Wetlands sedimentation as a major threat to manatee survival: An analysis of Antillean manatee stranding cases in the Magdalena River (Colombia).
	Marta Guerra, Tamlyn Somerford, Steve Dawson, Liz Slooten, Will Rayment	Paul Wensveen, Saana Isojummo, Petter Kvadsheim, Frans-Peter Lam, Alexander von Benda-Beckmann, Charlotte Curé, Lars Kleivane, Rune Hansen, Patrick Miller	Mary Donohue, Julie Masura, Thomas Gelatt, Rolf Ream, Jason Baker, Kayleigh Faulhaber, Darren Lerner	William Cioffi, Nicola Quick, Heather Foley, Danielle Waples, Zachary Swain, Jeanne Shearer, Daniel Webster, Ari Friedlaender, Brandon Southall, Robin Baird, Doug Nowacek, Andy Read	Belkis Aguilari Rodriguez, Nataly Castelblanco-Martinez

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>2:00 Decadal and regional-scale response of the North-East Atlantic cetacean community to environmental change</p> <p>James Waggett, Peter Evans</p>	<p>The Sea Mammals and Sonar Safety (3S) project: 13 years of Behavioral Response Studies investigating the impact of naval sonar on marine mammals.</p> <p>Frans-Peter Lam, Petter Kvadsheim, Charlotte Curé, Saana Isojunno, Lise Sivle, Alexander von Benda-Beckmann, Paul Wensveen, Patrick Miller</p>	<p>Toxicological and management implications of toothed whales having higher exposure to contaminants than carnivore species</p> <p>Rune Dietz, Christian Sonne, Frank Rigét, Katrin Vorkamp, Jean-Pierre Desforges, Igor Eulaers, Aqqalu Rosing-Asvid, Melissa McKinney, Robert Letcher</p>	<p>Acoustic communication is cheap in whistling dolphins</p> <p>Michael Pedersen, Andreas Fahlman, Alicia Borque Espinosa, Julietta Arenarez, Andres Jabois, Peter Teglborg Madsen, Frants Havmand Jensen</p>	<p>A story of how a critical habitat of an endangered species is lost: The Mediterranean monk seal in the Northeastern (NE) Mediterranean.</p> <p>Meltem Ok, Serdar Saknan, Ali Cemal Gücü</p>
<p>2:15 Deep sea prey layer in Cuvier's beaked whale foraging habitat modulated by ocean dynamics</p> <p>Hatteras, North Carolina, USA</p> <p>Ashlyn Giddings, Jennifer Trickey, David Demer, Peter Franks, Simone Baumann-Pickering</p>	<p>Atlantic behavioral response study – Responses of Cuvier's beaked whales and short-finned pilot whales to military sonar off Cape Hatteras, North Carolina, USA</p> <p>Brandon Southall, William Cioffi, Nicola Quick, Robert Schick, Doug Nowacek, Daniel Webster, Zachary Swaim, Heather Foley, Danielle Waples, Catriona Harris, Len Thomas, Tetyana Margolina, John Joseph, Matthew Bowers, Ari Friedlaender, Kristin Southall, Stacy DeRuiter, Jillian Wisse, Jeanne Shearer, Andy Read</p>	<p>Modelling the bioaccumulation of microplastics in a marine mammalian food web of the Northeastern Pacific</p> <p>Juan José Alava</p>	<p>Pulling the plug on rorqual breathing - and pushing it in for protection at depth.</p> <p>Kelsey Gil, Margo Lillie, A. Wayne Vogl, Robert Shadwick</p>	<p>Effects of limited dispersal by sea otters (<i>Enhydra lutris</i>) on population dynamics; Relevance to the threatened Southwest Alaska distinct population segment.</p> <p>Daniel Monson, (Martin) Tim Tinker, Heather Coletti, George Esslinger, James Bodkin, Shawn Larson, Daniel Esler</p>

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>2:30 Decadal-scale changes in cetacean species-habitat relationships and distribution in summer in European Atlantic waters</p>	<p>Integrating remote sensing methods to measure social delphinid baseline behavior and responses to navy sonar</p>	<p>Elevated persistent organic pollutants exposure in St. Lawrence Estuary belugas (Canada): Relationships with lipid profiles and body condition.</p>	<p>Mechanisms of tolerance to hypoxia and oxidative stress in primary endothelial cells isolated from seals.</p>	<p>An evaluation of the ecological needs and effects of a potential sea otter reintroduction to Oregon, USA.</p>
<p><i>Philip Hammond, Patricia Breen, Ana Cañadas, Steve Geelhoed, Anita Gilles, Helena Herr, Mark Jessopp, Claire Lacey, Kelly Macleod, Oliver Ó Cadhla, Vincent Ridoux, Emer Rogan, M. Begona Santos, Meike Scheidat, Jonas Teilmann, José Vingada, Nils Øien</i></p>	<p><i>Caroline Casey, Brandon Southall, John Durban, Fleur Visser, Nick Kellar, Ari Friedlaender, Holly Fearnbach, Machiel Oudejans, Trevor Joyce, Cassidy O'Bryant, John Calambokidis</i></p>	<p><i>Alexandre Bernier-Graveline, Stéphane Lair, Robert Michaud, Veronique Lesage, Maikel Rosabal, Jonathan Verreault</i></p>	<p><i>Kaitlin Allen, Allyson Hindle, Jose Pablo Vazquez-Medina</i></p>	<p><i>Dominique Kone, (Martin) Tim Tinker, Leigh Torres</i></p>
<p>2:35 Decadal-scale changes in deep diving cetacean distribution in the central and North-East Atlantic.</p>	<p>Deep trouble: Investigation into an unprecedented number of beaked whale strandings, eastern Atlantic, July-October 2018.</p>	<p>Changes in bottlenose dolphin immune functions associated with the deepwater horizon oil spill in the northern Gulf of Mexico, a recurrence?</p>	<p>The respiratory physiology of the harp seal (<i>Pagophilus groenlandicus</i>): Total lung capacity, anatomical dead space, and ventilatory response to exercise.</p>	<p>Modernizing Canada's approach to North Atlantic Right Whale management: Lessons learned and future challenges.</p>
<p><i>Nadya Ramirez-Martinez, Gíslí Vikingsson, Nils Øien, Bjarni Mikkelsen, Thorvaldur Gunnlaugsson, Philip Hammond</i></p>	<p><i>Andrew Brownlow, Nick Davison, Mariel ten Doeschate, Simon Berrow, Mark Dagleish, Robert Deaville, Nienke van Geel, Georg Hantke, Paul Jepson, Aubrie Onoufriou, Denise Risch, Mara Rocchi, Andrew Dale</i></p>	<p><i>Sylvain De Guise, Milton Levin, Lindsay Jasperse, Erika Gebhard, Jean Herrman, Cynthia Smith, Forrest Townsend, Randall Wells, Brian Balmer, Eric Zolman, Theresa Rowles, Lorelei Schwacke</i></p>	<p><i>Judith Ullmann, Erik Martin Biuw, Marie-Anne Blanchet, Mario Acquarone, Lars Folkow</i></p>	<p><i>Brett Gilchrist</i></p>

WEDNESDAY DECEMBER 11 - 1:30-4:00

2:50 True's beaked whale: A cryptic species revealed.

Danielle Cholewiak, Dee Allen, C. Scott Baker, Salvatore Cerchio, Lisa Conger, Annamaria DeAngelis, Leigh Hickmott, Nicholas Metheny, Robert Pitman, Joy Stanistreet, Debbie Steel, Christopher Tremblay

Be prepared for muddled messages when monitoring management effectiveness in the face of sample noise and a changing environment

Richard M Pace, III, Jooke Robbins

2:55 Cuvier's beaked whales of Guadalupe Island: A possible resident population in a "natural laboratory" of México.

Gustavo Cárdenas-Hinojosa, Jennifer Trickey, Gregory Schorr, Brenda Rone, Erin Falcone, Lorenzo Rojas-Bracho, Rodrigo Huerta, Andrea Bonilla Garzon

Working with the lobster fishery to develop conservation measures for North Atlantic right whales in the Gulf of Maine, USA

Erin Summers, Caitlin Cleaver, Nathaniel Willse, Forrest Bell, Patrice McCarron, Yong Chen

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>3:00 Diving behavior and movements of a Sowerby's beaked whale tagged near Norfolk Canyon</p>	<p>Co-occurrence of beaked whale strandings and naval sonar in the Mariana Islands, Western Pacific.</p>	<p>Evidence of intestinal polycyclic aromatic hydrocarbon (PAH) DNA adduct formation links PAH exposure to gastrointestinal cancers in St. Lawrence Estuary Beluga.</p>	<p>Studying the effects of ocean properties on the diving ecology of Weddell seals using hidden Markov models.</p>	<p>Decreasing population trend and reproductive output in bottlenose dolphins (<i>Tursiops truncatus</i>) from the Aeolian Archipelago, Italy.</p>
<p>Dan Engelhaupt, Amy Engelhaupt, Jessica Aschettino, Joel Bell</p>	<p>Anne Simonis, Robert L. Brownell, Bruce Thayre, Jennifer Trickey, Erin Oleson, Roderick Huntington, Kristi West, Simone Baumann-Fickering</p>	<p>Miriam C Poirier, Stéphane Lair, Robert Michaud, Elena Hernandez-Ramon, Kathayayini Divi, Jennifer Dwyer, Lisa Loseto, Stephen Raverty, Judith St. Leger, William Van Bonn, Kathleen Burek-Huntington, Robert Suydam, Raphaela Stimmelmayer, Sandra Wise, John Pierce Wise, Kathleen Colegrove, Guy Beauchamp, Daniel Martineau</p>	<p>Theoni Photopoulou, Lars Boehme</p>	<p>Monica Francesca Blasi, Chiara Anastasia Bruno, Luigi Boitani</p>
<p>3:05 Habitat and distribution of cetaceans from the first comprehensive survey of coastal and offshore waters in the Canadian Pacific.</p>	<p>Short-term effects of airgun pulses on narwhals.</p>	<p>The decrease in the occurrence of cancers in St. Lawrence estuary beluga (<i>Delphinapterus leucas</i>) supports a causal relationship with polycyclic aromatic hydrocarbon exposure.</p>	<p>Investigating the energetic cost of human disturbance on the southern sea otter (<i>Enhydra lutris nereis</i>).</p>	<p>Lessons from a decade of monitoring coastal dolphins in port areas in Brazil: Guidelines to improve and align monitoring actions.</p>
<p>Brianna Wright, Thomas Donoi-Vacroze, Linda M. Nichol, Robin Abernethy, Eva Stredulinsky</p>	<p>Outi Tervo, Susanna B. Blackwell, Terrie Williams, Alexander S. Conrad, Susanne Ditlevsen, Eva Garde, Manh Cuong Ngo, Mikkel-Holger Sinding, Rikke Guldborg Hansen, Nynne Nielsen, Per Trinhammer, Mads Peter Heide-Jørgensen</p>	<p>Stéphane Lair, Robert Michaud, Véronique Lesage, Pierre Béland, Nadia Ménard, Daniel Martineau</p>	<p>Heather Barrett, Gena Bentall, (Martin) Tim Tinker, Gitte McDonald</p>	<p>Tara Van Belleghem, Stephane P.G. de Moura, Gabrieli Messias Rodrigues, Camila Domit</p>

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>3:10</p>	<p>Effects of coastal development on Indo-Pacific humpback dolphin habitat use in Hong Kong.</p>	<p>Fine-scale movements of small cetaceans around an operational tidal turbine.</p>	<p>Are there relationships between contaminant exposure and gene transcripts or metabolite profiles in the endangered St. Lawrence Estuary beluga (<i>Delphinapterus leucas</i>) population?</p>	<p>Novel, non-invasive methods for neurophysiological monitoring during rest behavior in phocids.</p>	<p>Integrating demography and genetics to guide conservation: A case study of coastal dolphin populations.</p>
<p>3:15</p>	<p>Harbour porpoises in the southern North Sea – seasonal migration from East to West?</p>	<p>Quantifying the response of Blainville's beaked whales to Naval sonar exercises in Hawaii</p>	<p>Occurrence and pathologies associated with foreign body ingestion in stranded cetaceans, Canary Islands.</p>	<p>Deep diving pilot whales make cheap, but powerful, echolocation clicks with extremely small volumes of air.</p>	<p>Recent advances and challenges in marine mammal impact assessments for underwater noise</p>
	<p>Sarah Piwetz, Thomas Jefferson, Bernd Wursig</p>	<p>Laura Palmer, Douglas Gillespie, Jamie MacAulay, Carol Sparling, Gordon Hastie</p>	<p>Antoine Simond, Magali Houde, Veronique Lesage, Robert Michaud, Jonathan Verreault</p>	<p>Jessica Kendall-Bar, Julie Pitman, Luis A. Hückstädt, Cara Field, Shawn Johnson, Daniel Costa, Terrie Williams</p>	<p>Oliver Manlik, Delphine Chabanne, Lars Bejder, Simon Allen, Michael Krützen, Anna Kopps, Claire Daniel, Janet Mann, Céline Frère, Richard Connor, William Sherwin</p>

WEDNESDAY DECEMBER 11 - 1:30-4:00

3:20 Prey abundance and habitat type are characteristics of 'hotspots' in the distribution of the endangered Hector's dolphin <i>Tom Brough, Will Rayment, Liz Slooten, Steve Dawson</i>	Behavioral response function for Cuvier's beaked whales on a Navy training range <i>Stephanie Watwood, Eirene Jacobson, Cornelia Odekooven, Nancy DiMarzio, Karin Dolan, Joseph Fayton, Peter Hulton, Len Thomas, David Moretti</i>	Epigenetic effects of environmental contaminants on the skin of the fin whale (<i>Balaenoptera physalus</i>) in the Mediterranean basin. <i>Annalaura Mancia, Luigi Abelli, Matteo Baini, Fossi Maria Cristina, Cristina Panti Lauriano</i>	Skin in the game: Epidermal molt as a driver of long-distance migration in whales. <i>Robert Pitman, John Durban, Trevor Joyce, Holly Fearnbach, Simone Panigada, Giancarlo Lauriano</i>	Population size and IUCN Red Listing of a threatened franciscana population <i>Federico Sucunza, Daniel Daniiewicz, Alexandre Zerbini</i>
3:25 Minimizing competition in space and time in a limited marine insular coastal habitat: Cetaceans in the Madeira archipelago. <i>Luis Freitas, Cláudia Ribeiro, Adalberto Carvalho, Ana Cañadas, Philip Hammond</i>	Simulating humpback whales response to airgun sounds using agent based models <i>Frank Thomsen, Lars Mortensen, Jonas Mortensen, Teo Zhi En Theophilus, Rebecca Dunlop, Joshua Jon van Berkel</i>	Emerging contaminants in humpback whales (<i>Megaptera novaeangliae</i>) foraging in Antarctic waters, and their impact on whale fibroblast cell viability <i>Maria Valeria Casa, Greta Dalle Luche, Ruma Ghosh, Michael Burkard, Kristin Schirmer, Susan Bengtson Nash</i>	More than metronomes: Variation in diving behaviour of Cuvier's beaked whales (<i>Ziphius cavirostris</i>). <i>Nicola Quick, William Cloffi, Catriona Harris, Stacy DeRuitter, Brandon Southall, Andy Read</i>	Insights into habitat use and identification of critical areas for two endangered populations of franciscana dolphins (<i>Pontoporia blainvillii</i>) in southeastern Brazil. <i>Natalia Berchieri, Federico Sucunza, Paulo Henrique Ott, Mariana Capello Neves, Ana Paula Farro, Agnaldo Martins, Alexandre Zerbini, Daniel Daniiewicz</i>

WEDNESDAY DECEMBER 11 - 1:30-4:00

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>3:40 In the path of floodwaters: Short-term effects of Hurricane Harvey on bottlenose dolphins (<i>Tursiops truncatus</i>) in upper Galveston Bay, Texas.</p> <p>Kristi Fazioli, Vanessa Mintzer, George Guillen</p>	<p>Signal degradation as a potential cue for judging sonar distance: Discrimination of acoustic stimuli with high-frequency attenuation and reverberation in bottlenose dolphins.</p> <p>Jason Muisow, James Finneran, Carolyn Schlundt, Ryan Jones</p>	<p>A cost-efficient standardised methodology for microplastics analysis: Case study of cetaceans and Mediterranean monk seals stranded on Samos Island coastline, Greece.</p>	<p>Physiological and behavioural responses of wild harbour porpoises to a commercial seal scarer</p>	<p>Bottlenose dolphins in the Sound of Barra (western Scotland): A community with the potential to flourish, or one doomed to disappear?</p>
<p>3:45 Investigating the habitat use of coastal bottlenose dolphins (<i>Tursiops truncatus</i>) in response to a major hurricane</p>	<p>Recent insights into the susceptibility of harbor porpoises (<i>Phocoena phocoena</i>) to airgun exposures</p>	<p>Assessment of sublethal cardiac injury in bottlenose dolphins (<i>Tursiops truncatus</i>) in the Gulf of Mexico following exposure to deepwater horizon oil-associated chemicals</p>	<p>Scaling of swimming performance in the largest animals</p>	<p>X Marks the spot: Suspected broadhead arrow injuries in two bottlenose dolphins (<i>Tursiops truncatus</i>) along the Alabama Coast.</p>
<p>Valeria Paz, Jeremy Kiszka, Michael Heithaus</p>	<p>Alexander von Benda-Beckmann, Ron Kastlein, Leen Helder-Hoek, Suzanne Cornelisse, Frans-Peter Lam, Christ de Jong, Erwin Jansen, Darlene Ketten</p>	<p>Forrest Gomez, Kathleen Colegrave, Sharon Huston, Adonia Hsu, Barb Linnehan, Ryan Takeshita, Whitney Musser, Craig Harms, Theresa Rowles, Eric Zolman, Brian Balmer, Forrest Townsend, Randall Wells, Lorelei Schwacke, Eric Jensen, Cynthia Smith</p>	<p>William Gough, Paolo Segre, K.C. Bierlich, David Cade, Jean Potvin, Frank Fish, Julian Dale, Jacopo Di Clemente, Ari Friedlaender, David Johnston, Shirel Kahane-Rappaport, John Kennedy, John Long, Machiel Oudejans, Gwenith Perry, Matthew Savoca, Malene Simon, Simone Videsen, Fleur Visser, David Wiley, Jeremy Goldbogen</p>	<p>Nienke van Geel, Lauren Hartney-Mills, Gordon Hastie, Ben Wilson</p>
				<p>Merrill Collins, Alissa Deming, David Rotstein, Jason Byrd, Ruth H. Carmichael</p>

WEDNESDAY DECEMBER 11 - 1:30-4:00

<p>3:50</p> <p>Bottlenose dolphin, <i>Tursiops truncatus</i>, seasonal distribution and behavioral response to a freshwater flood in Pensacola Bay, Florida.</p>	<p>Scoring of the severity of responses to pulsed and continuous active sonar signals</p> <p>Shauna McBride-Keberl, Christina Toms</p>	<p>Mercury speciation and stable isotopic composition in marine mammals: New insights and perspectives.</p> <p>Charlotte Curé, Saana Isojärvi, Maijile Siemersma, Paul Wensveen, Lise Sivle, Benjamin Bentil, Rune Hansen, Petter Kvadsheim, Frans-Peter Lam, Patrick Miller</p>	<p>Estimating work and power during a controlled swimming task – lessons learnt from the selection of potential EU special areas of conservation for harbour porpoise in the UK</p> <p>K. Alex Shorter, Joaquin Gabaldon, Ding Zhang, Julie van der Hoop, Julie Rocho-Levine, Michael J Moore</p>	<p>Identification of discrete and persistent high density offshore areas of mobile marine mammals</p> <p>Henrik Skov, Mark Tasker, Stefan Heinänen, Eunice Pinn, Kelly Macleod, Frank Thomsen</p>
<p>3:55</p> <p>Behavioral responses of common bottlenose dolphins (<i>Tursiops truncatus</i>) to changes in salinity within the Barataria Basin in Louisiana</p>	<p>Fine-scale 3-D whale movement: A simulation model to assess the impact of noise exposure to naval exercises in range.</p>	<p>Apex predator killers: The global science and policy of PCB pollution.</p>	<p>Development of a fine-scale activity proxy to estimate the energetic cost of swimming in common bottlenose dolphins</p>	<p>Intensive illegal hunting of the African manatee (<i>Trichechus senegalensis</i>) for subsistence and traditional medicine in southeastern Nigeria, West Africa.</p>
<p>Ryan Takeshita, Brian Balmer, Eric Zolman, Len Thomas, Randall Wells, Theresa Rowles, Lorelei Schwacke</p>	<p>Ruth Joy, John Joseph, Robert Schick, Tetyana Margolina, Michael Dowd, Len Thomas</p>	<p>Paul Jepson, Robert Deaville, Andrew Brownlow, Jonathan Barber</p>	<p>Austin Allen, Andreas Fahrlman, K. Alex Shorter, Ashley Blawas, Joaquin Gabaldon, Julie Rocho-Levine, Andy Read</p>	<p>Austin Allen, Andreas Fahrlman, K. Alex Shorter, Edwin Egwali, Aniek van Abasi Uwatt, Grace Alawa, Lucy Keith Diagne</p>

THURSDAY AT A GLANCE



<u>Registration</u>	8:00 AM – 3:30 PM
	Entrance Hall
<u>Oral Presentations</u>	8:30 AM – 10:15 AM
Education and Outreach	Room 113
Habitat and Distribution III	Room 111
New Technology II	Room 114
Ocean Soundscape	Room 112
<u>Exhibitors</u>	10:00 AM – 3:30 PM
	Hall
<u>Oral Presentations</u>	10:45 AM – 1:00 PM
Communication in Marine Mammals III	Room 112
Feeding Ecology II	Room 114
Health II	Room 113
Polar Ecology II	Room 111
<u>Lunch (on your own)</u>	1:00 PM – 2:00 PM
<u>Poster Session: Presenters Group B</u>	2:00 PM – 3:30 PM
	Hall
<u>Coffee Break</u>	3:00 PM – 3:30 PM
	Hall
<u>Awards, Messages & Closing</u>	4:00 PM – 6:00 PM
Auditorium	
<u>Evening Events located outside of the CCIB</u>	
Closing Banquet, Museu Nacional d'Art de Catalunya (MNAC)	from 7:00PM
*Buses start to depart at 6:45 PM outside the CCIB.	
**Tickets are required to attend this event	

NOTES

THURSDAY DECEMBER 12 - 10:00-12:30

	Room 111 Habitat and Distribution III	Room 112 Ocean Soundscape	Room 113 Education and Outreach	Room 114 New Technology II
8:30	To be or not to be: The role of absences when modelling cetacean distributions.	Marine mammals, sound and the Global Ocean Observing System: Implementing a globally sustained observing system for these essential ocean variables.	Blending science and conservation with science fiction to reach a shiny new audience.	Machine learning techniques to automate Steller sea lion ID data extraction from high-resolution images.
	<i>Marc Fernandez Morra, Neftali Sillero, Chris Yesson</i>	<i>Samantha Simmons, Daniel Costa, Nic Bax, Patricia Miloslavich, Daniel Dunn, Karen Evans, Peter Tyack</i>	<i>Andrew Wright, Bettina Wurche</i>	<i>Alexey Altukhov, Russell Andrews, Vladimir Burkhanov, Ivan Usatov, Thomas Gelatt</i>
8:45	Using fine-scale variation in habitat features and environmental productivity to estimate local carrying capacity and range-wide recovery potential for Southern sea otters	Marine mammal acoustic presence in relation to sea ice concentration off Tasiliaq, East Greenland.	Predator controls: Lessons from land to sea. A comparison of how marine and terrestrial mammals are managed in human-wildlife conflict scenarios in Europe.	Automated cetacean identification and measurement using drones and deep learning.
	<i>(Martin) Tim Tinker, Lillian Carswell, Joseph Tomoleoni, Brian Hatfield, Emily Saarman, Tom Bell, Kristin Laidre, Keith Miles, Julie Yee</i>	<i>Ramona Mattmüller, Karolin Thomisch, Tenna Boye, Ilse Catharina Van Opzeeland, Malene Simon</i>	<i>Mark Peter Simmonds, Laetitia Nunny</i>	<i>David Johnston, Patrick Gray, K.C. Bierlich, Sydney Mantell, Ari Friedlaender, Jeremy Goldbogen</i>

THURSDAY DECEMBER 12 - 10:00-12:30

<p>9:00 Combining multiple surveys increases precision and provides more reliable mapping of marine mammals distribution.</p> <p>Valentin Lauret, Hélène Labach, Olivier Gimenez</p>	<p>Bowhead whale acoustic occurrence and vocal behavior in central Fram Strait</p> <p>Olaf Boebel, Katharina Hiemer, Svenja Neumann, Stefanie Spiesecke, Ilse Catharina Van Opzeeland, Karolin Thomisch</p>	<p>Outreach on the case of Arctic sealing: Opening up for a reframing of the sustainability discourse?</p> <p>Geneviève Desportes, Fern Wickson</p>	<p>Satellite telemetry in Amazon river dolphins: A regional initiative to evaluate habitat use and movements.</p> <p>Fernando Trujillo, Federico Mosquera Guerra, Miriam Marmontel, Paul Van Damme, Marcelo Oliveira, Elizabeth Campbell, Leslie Cordova, Joanna Alfaro, Jeffrey Mangel, Jose Luis Mena, Saulo Usma, Nicole Franco</p>
<p>9:15 Trophic connections between sperm whales and their prey in the Gulf of Alaska.</p> <p>Lauren Wild, Franz Mueter, Briana Witteveen, Jan Straley</p>	<p>Whales, dolphins, fish, and boats: Why defining the contributors of soundscapes in Australian Marine Parks matters for policy and management.</p> <p>Logan Kline, Annamaria DeAngelis, Candace McBride, Giverny Rodgers, Timothy J. Rowell, Jeremy Smith, Jenni Stanley, Andrew Read, Sofie Van Parijs</p>	<p>Discovery of sound in the sea: Communicating underwater acoustics research to decision makers.</p> <p>Kathleen Vigness-Raposa, Gail Scowcroft, Holly Morin, Christopher Knowlton</p>	<p>Measurement of feeding-related dental microtexture using 3D surface texture analysis in Eastern Atlantic harbour seals (<i>Phoca vitulina</i>).</p> <p>Elehna Bethune, Anita Gilles, Kristina Lehnert, Ellen Schulz-Kornas, Ursula Siebert, Prof. Dr., Thomas M. Kaiser</p>
<p>9:20 Calibrating Unoccupied Aerial System (UAS) photogrammetry to derive delphinid population demographic parameters.</p> <p>Fabien Vivier, Amanda Bradford, Marie Hill, Erin Oleson, Kym Yano, Aude Pacini, Cormac Booth, Jeff Pawloski, Julie Rocho-Levine, Lars Bejder</p>			

9:25

**Sights, sounds and touch:
Wearable brain imaging using
functional near-infrared
spectroscopy.**

*J. Chris McKnight, Peter Tyack,
Kimberley Bennett, Mathijs
Bronkhorst, Ryan Milne, Simon
Moss, Gordon Hastie*

**Using UAVs for morphometric
measurements of harbour
porpoises (Phocoena phocoena).**

**Multidecadal tooth growth
chronologies allow insight into
environmental influences of
energy budgets and foraging
movements of sperm whales from
southern Australia.**

*Vicki Hamilton, Karen Evans, Ben
Raymond, Mark Hindell*

**Eavesdropping on Northern
Resident killer whales: Passive
acoustic monitoring reveals
overlap with endangered Southern
Resident killer whales in proposed
critical habitat.**

*Candice Emmons, Bradley Hanson,
Amelia Johnson, Draven Hawk, Marc
Lammers*

**Mind the gap: A striking absence
of welfare science in marine
mammal conservation.**

*Karen Stockin, Rebecca Boys, Emily
Palmer, Emma Betty, Isabella Clegg,
Mark Peter Simmonds*

Magnus Wahlberg

**3D Reconstruction of marine
mammals from 360° photographs.**

**Another brick in the wall:
Assessing population structure of
Bryde's whales (*Balaenoptera
brydei*) through a multi-method
approach.**

*Larissa Dalpaz de Azevedo, Fábio
G. Daura-Jorge, Ana Lucia Cypriano-
Souza, Marta Cremer, Leonardo
Liberali Wedekin*

*Christin Murphy, David Daily, Marilyn
Marx, Joy Lepseitits, Tracy Romano,
Andrew Guarendi, Michael J Moore*

**Length of the free-ranging wild
Indo-Pacific bottlenose dolphins
Tursiops aduncus around Mikura
Island determined using an
underwater 3D camera.**

*Tadamichi Morisaka, Mai Sakai,
Kazunobu Kogi, Hiromitsu Hama*

THURSDAY DECEMBER 12 - 10:00-12:30

<p>9:45 Cetacean-habitat relationships are poorly transferable across the North Atlantic Ocean</p> <p><i>Laura Mannocci, Jason Roberts, Eric Pedersen, Patrick Halpin</i></p>	<p>Estimating exposure to ship noise of the Southern Resident killer whale population in the Salish Sea, Canada</p> <p><i>Simone Cominelli, Rodolphe Devillers, G. Brent Hall, Michael Leahy, Alexander MacGillivray, Lauren McWhinnie</i></p>	<p>SEAFARI: Facilitating citizen science and stranding response.</p> <p><i>Anna Osiecka, Alexander Vogel</i></p>	<p>From competition to collaboration: Automated identification of right whales.</p> <p><i>Christin Khan, Jason Holmberg, Philip Hamilton, Heather Pettis, Marek Cygan, Robert Bogucki, Jason Parham, Drew Blount, Marcin Mucha, Maciej Klimek, D. Claire Charlton, Vicky Rountree, Els Vermeulen, Will Rayment, Steve Dawson, David Johnston, Karina Groch</i></p>
<p>9:50 MiCO: An online system to explore important use areas and migratory connectivity for marine species.</p> <p><i>Corrie Currie, Eleanor Heywood, Ari Friedlaender, Michelle Modest, Connie Y. Kot, Sarah Poulin, Ei Fujioka, Ben Donnelly, Jesse Cleary, Autumn-Lynn Harrison, Patrick Halpin, Daniel Dunn</i></p>	<p>Characterising the small vessel fleet using passive acoustics: implications for Southern Resident killer whale critical habitat management.</p> <p><i>Lauren McWhinnie, Matthew Pine, Tom Dakin, Patrick O'Hara, Francis Juanes</i></p>	<p>Humans and whales under the weather: Using generalized additive models to predict visitors of the largest marine and whale museum of Germany.</p> <p><i>Michael Dähne, Timo Moritz, Diana Meyen, Harald Benke</i></p>	<p>'Water, water, everywhere': Comparing marine mammal detections from eDNA with acoustic and visual data in the New York Bight.</p> <p><i>Howard Rosenbaum, S. Elizabeth Alter, Melinda Rekdahl, Sam Chin, Carissa King, Emily Chou</i></p>
<p>9:55 Marine mammals seeking for prey in tridimensional environments</p> <p><i>Maike Louzao, Amaia Astarloa, Isabel García-Baón, Udane Martínez, Jon Uranga, Anna Rubio, Guillermo Boyra</i></p>	<p>Baleen whale acoustic presence and behaviour at a Mid-Atlantic migratory habitat, the Azores Archipelago.</p> <p><i>Miriam Romagosa, Mark Baumgartner, Irma Crascão, Marc Lammers, Tiago Marques, Ricardo S. Santos, Monica Silva</i></p>	<p>Booth in a box: An innovative tool to help right whales (<i>Eubalaena glacialis</i>).</p> <p><i>Jennifer Kennedy, Cynthia McNinnis, Kathryn Pelon</i></p>	<p>An evaluation of machine learning algorithms for detecting ice seals in images collected during aerial surveys</p> <p><i>Stacie Hardy, Erin Moreland, Cynthia Christian, Benjamin Hou, Yuval Boss, Neel Joshi, Marcel Simon, Dan Morris, Peter Baer, Josh London, Peter Boveng</i></p>

THURSDAY DECEMBER 12 - 10:00-12:30

10:00	High use of a risky shallow-water foraging environment by common bottlenose dolphins (<i>Tursiops truncatus</i>) in Namibia – not restricted to resident animals.	Porpoise Listening Station – Long-term monitoring of harbour porpoise in relation to noise and artificial reef structure.	From necropsy to 3D reconstruction: How 3D models can help to attract youth into STEM.	Experimental evaluation of two computer-assisted dorsal fin identification systems
	Bridget James, Tess Gridley, Simon Elwen	Jeppe Dalggaard Balle, Chris Pierpoint, James Morris, Maria Kristina Holst Paine, Jakob Tougaard, Katja Vinding Petersen, Line Kyhn, Jonas Teilmann	Krishna Das, Dennis Brenecke, Katrin Knickmeier, Géraldine Bolen, Valeria Busoni, Thierry Jauniäux, Eric Parmentier	Jason Allen, Reny Tyson Moore, Drew Blount, Carolyn Cush, Jason Holmberg, Jason Parham, Jaime Thompson, Kim Urian, Randall Wells
10:05	The effects of seasonal variation, El Niño-Southern Oscillation events, and climate change on the tuna-dolphin association in the eastern tropical Pacific Ocean.	Assessing cetacean presence and ocean noise in and around one of the busiest waterways in the world: The New York Harbor.	Saving whales, one smartphone at a time: The development of the WhaleReport Alert System.	Variation in body condition in maternal female humpback whales over the course of the breeding season provides a useful tool for the comparative assessment of the quality of humpback whale nursery grounds
	Caitlyn Birch, Michael D. Scott	Carissa King, Melinda Rekdahl, Aaron N. Rice, Howard Rosenbaum	Caitlin Birdsall, Jessica Torode, Sarah Patton, Karina Dracott, Lance Barreit-Lennard	Charlotte Dempster, Rachel Cartwright
10:10	A dynamic approach to estimate the probability of exposure of marine predators to oil exploration seismic surveys over continental shelf waters.	Underwater noise levels around the Port of Saint John	Summary of recorded cetacean stranding in Krasnodar region of Russian Federation in 2018 and 2019.	Accounting for localization errors in models of behavioural responses of minke whales to sonar activity during Navy training
	Luis A. Hücksstädt, Lisa Schwarz, Ari Friedlaender, Bruce Mate, Alexandre Zeitbini, Amy Kennedy, Jooke Robbins, Nick Gales, Daniel Costa	Jillian Duggan, Mark Wood, Rose Fisher	Oxana Fedorova, Tatyana Denisenko	Ian Durbach, Steve Martin, Cameron Martin, Tyler Helble, Elizabeth Henderson, Glenn Ierley, Catriona Harris, Len Thomas

THURSDAY DECEMBER 12 - 1:30-4:00

Room 111
Polar Ecology II

Room 112
Communication in Marine Mammals III

Room 114
Feeding Ecology II

10:45 Movement patterns, diving behavior and physiology of the leopard seal in the Antarctic peninsula.

Daniel Costa, Sarah Kienle, Stephen Trumble, Shane Kanatous, Mike Goebel, Daniel Crocker, Douglas Krause

Mother-offspring and sibling whistle comparisons in bottlenose dolphins

Laela Sayigh, Adriana Rozas, Randall Wells, Vincent Janik Saliki, Susan Sanchez, Wendy

Phocine distemper outbreak in phocid seals off the United States east coast in 2018-2019.

Tracey Goldstein, Lynda Doughty, Deborah Fauquier, Kathleen Colegrove, David Rotstein, Jeremiah

Jeremy Goldbogen

Fine-scale oceanographic drivers of foraging in California blue whales

THURSDAY DECEMBER 12 - 1:30-4:00

11:15 A multi-method approach to evaluating patterns and variability in the diet of Baffin Bay polar bears.	Clan specific coda playbacks to Caribbean sperm whales.	Investigating Brucella ceti infection in cetaceans of Italy	From feast mode to least mode: How lunge filter feeding biomechanics constrain orca foraging ecology across scale.
<i>Jennifer Stern, Kristin Laidre, Melissa McKinney, Erik Born, Øystein Wig, Christian Sonne, Rune Dietz, Aaron Fisk</i>	<i>Shane Gero, Pernille Tomesen, Peter Teglberg Madsen</i>	<i>Carla Grattarola, Giuliano Garofolo, Antonio Petrella, Giuseppe Lucifora, Gabriella Di Francesco, Giovanni Di Guardo, Alessandra Pautasso, Marco Ballardini, Barbara Iulini, Kafia Varello, Federica Giorda, Maria Goria, Alessandro Dondo, Simona Zoppi, Cristina Esmeralda Di Francesco, Stefania Giglio, Furio Ferringo, Luigina Serrecchia, Mattia Anna Rita Ferrantino, Anna Janowicz, Lorenna Sacchini, Walter Mignone, Cristina Casalone</i>	<i>Shirel Kahane-Rapport, Matthew Savoca, David Cade, Paolo Segre, K.C. Bierlich, John Calambokidis, Max Czapansky, Julian Dale, Jacopo Di Clemente, James Fahrlbusch, Ari Friedlaender, David Johnston, Doug Nowacek, Gwenith Penny, Alexander J. Werth, Jeremy Goldbogen</i>
11:30 Do polar bear ecotypes in the Barents Sea region have different energetic requirements?	Harbour porpoises modify biosonar behaviour in different environmental contexts	Influence of human population size, proximity and development on the presence of antimicrobial resistance genes within the intestines of pinnipeds	First documentation of coordinated bottom-feeding by humpback whales
<i>Marie-Anne Blanchet, Jon Aars, Magnus Andersen, Heli Routti</i>	<i>Peter Teglberg Madsen, Michael Ladegaard</i>	<i>Mark Dagleish, Scott Hamilton, Simon Moss, Kelly Robinson, Hannah Wood, W. Chris Oosthuizen, Nuno Silva, Stephanie Kalberer, P.J. Nico de Bruyn, Alisa Hall, Eleanor Watson</i>	<i>David Wiley, Peter Hong, Tammy Silva, Michael A. Thompson, Susan E Parks, Colin Ware, David Cade, Jeremy Goldbogen, Ari Friedlaender</i>
11:45 Combined stable isotopes and tracking analyses reveal an environmental-driven change in the female southern elephant seals foraging strategies	Prey echoes reveal long range biosonar behaviour in sperm whales.	Immune-mediated hookworm clearance and survival of an otariid decrease with warmer ocean temperatures	Making fish feeding possible: How humpback whales avoid dispersing schools of maneuverable prey.
<i>Julie Mestre, Joan Giménez, Matthieu Authier, Yves Chérel, Mark Hindell, Clive McMahon, Rob Harcourt, Jean-Benoit Charrassin, Christophe Guinet</i>	<i>Pernille Tomesen, Cláudia Oliveira, Mark Johnson, Peter Teglberg Madsen</i>	<i>Mauricio Seguel, Felipe Montalva, Diego Perez-Venegas, Josefina Gutierrez, Hector Paves, Nicole Gottdenker</i>	<i>David Cade, Nicholas Carey, Paolo Domenici, Jean Potvin, Jeremy Goldbogen</i>

THURSDAY DECEMBER 12 - 1:30-4:00

12:00	Mating season inferences from annual testosterone cycles in baleen of adult male bowhead whales (<i>Balaena mysticetus</i>)	Coda type variation over 30 years in Galápagos sperm whale clans.	Seal parapoxvirus in north American pinnipeds: A molecular and phylogenetic analysis.	Feeding at depth: Insights into the feeding habits of an opportunistic delphinid revealed by stable isotope analysis.
	Kathleen Hunt, C. Loren Buck, Justine Hudson, Alejandro Fernández Ajó, Mads Peter Heide-Jørgensen, Steven Ferguson, Cory Matthews	Taylor Hersh, Shane Gero, Luke Rendell, Mauricio Cantor, Hal Whitehead	Helena Costa, Jörn Klein, Eva Breines, Keith Matassa, Mendy Garron, Pádraig J. Duignan, Todd Schmitt, Hendrik Nollens, Tracey Goldstein, Morten Tryland	Katharina J. Peters, Sarah Bury, Guido J. Parra, Gabriela de Tezanos-Pinto, Emma Betty, Karen Stockin
12:05		First report of striped dolphin (<i>Stenella coeruleoalba</i>) strandings due to dolphin morbillivirus in Greece.		Variation, selection, and heritability of foraging strategies and their influence on lifetime reproductive success in northern elephant seals.
12:10		Anastasia Komenou, Chrysostomos Dovas, Aimilia Drougas, Theofilos Poutahidis, Serafeim Chaintoutis, Ioanna Stylianaki, Evangelia Kofidou, Sokratis Perdikaris, Manuel Garcia Hartman	Roxanne Beltran, Richard Condit, Burney LeBoeuf, Patrick Robinson, Daniel Crocker, Daniel Costa	Circumpolar southern right whale foraging ecology and population recovery: Insights from isotopes.

THURSDAY DECEMBER 12 - 1:30-4:00

<p>12:15 Assessing the seasonal foraging ecology of bowhead whales (<i>Balaena mysticetus</i>) using baleen thyroid hormone (T3) profiles.</p> <p>Justine Hudson, Cory Matthews, Steven Ferguson, Marianne Marcoux</p>	<p>The active space of sperm whale codas: Inter-click information for intra-unit communication.</p> <p>Ellen Jacobs, Shane Gero, Chloe Malinika, Pernille Tornesen, Kristian Beedholm, Peter Teglberg Madsen</p>	<p>Seasonal and spatial occurrence of <i>Brucella ceti</i> in stranded bottlenose dolphins (<i>Tursiops truncatus</i>) from South Carolina, USA waters</p> <p>Wayne McFee, David Wu, Lorelei Schwacke, Kathleen Colegrove, Andrew Meredith, Robert Young</p>	<p>Kinematic detection of prey capture reveals sex reversals in foraging behavior between two populations of fish-eating killer whales</p> <p>Jennifer Tennessee, Marla Holt, Brianna Wright, Bradley Hanson, Candice Emmons, Deborah Giles, Jeffrey Hogan, Sheila Thornton, Graeme M. Ellis, Volker B. Deecke, John K Ford</p>
<p>12:20 Dentine stable isotopes reveal weaning age and variation in diet among narwhals (<i>Monodon monoceros</i>) harvested 30 years apart.</p> <p>Shu-Ting Zhao, Cory Matthews, Steven Ferguson, Cortney Watt</p>	<p>Late evoked potentials in porpoises speak against a per-click view of echolocation and suggest potential for electrophysiological audiograms at low frequencies</p> <p>Kristian Beedholm, Peter Teglberg Madsen, Michael Ladegaard, Peter Tyack</p>	<p>Occurrence of antimicrobial resistant <i>Escherichia coli</i> in marine animals in the North and Baltic Sea: Preliminary results.</p> <p>Stephanie Gross, Diana Seinige, Corinna Kehrenberg, Manuela Oliveira, Dieter Steinhagen, Ursula Siebert, Prof. Dr.</p>	<p>Effects of body size, food type, and ontogeny on chewing cycle duration in West Indian manatees (<i>Trichechus manatus</i>).</p> <p>Adam Weir, Daniel Gonzalez-Socoleske, Roberto Sanchez Okrucky</p>
<p>12:25 Pollutants in polar bears from the Barents Sea – key drivers for spatial and temporal variation.</p> <p>Echoes from harbour porpoise echolocation signals bouncing off gill nets propagates larger distances than previously assumed</p> <p>Heli Routti, Pierre Blevin, Anna Lippold, Sabrina Taftu, Jon Aars, Magnus Andersen, Marie-Anne Blanchet, Sophie Bourgeon, Jenny Bytingsvik, Andrew Derocher, Linda Hanssen, Dorte Herzke, Rachel Jeffreys, Bjørn Munro Janssen, Benjamin Merkel, Andrew Lowther, Jan Ludwig Lyche, Erling Nordøy, Marianna Pinzone, Anuschka Polder, Camille de la Vega, Jeffrey Welker</p>	<p>The origin and spread of distemper virus in phocids</p> <p>Magnus Wahlberg</p>	<p>Tool use increases foraging success in southern sea otters.</p> <p>Iben Stokholm, Thilde Bagger Terkelsen, Ursula Siebert, Prof. Dr., Morten Tange Olsen</p>	<p>Kinematic detection of prey capture reveals sex reversals in foraging behavior between two populations of fish-eating killer whales</p> <p>Chris Law, (Martin) Tim Tinker, Jessica Fujii, Teri Nicholson, Michelle Staedler, Joseph Tomoleoni, Colleen Young, Rilla Mehta</p>

THURSDAY DECEMBER 12 - 1:30-4:00

12:30	Learning to forage in a changing Arctic: Foraging ontogeny and migration of newly weaned hooded seal pups.	Quantifying harbour porpoises foraging behaviour in CPOD data	Use of SNPs to investigate the molecular epidemiology of M. pinnipedi infections.	Individual strategies are determining factors to gain insight on harbour and grey seals' foraging ecology
	Tiphaine Jeanniard-du-Dot, Christophe Guinet, Mike Hammill, Garry Stenson, Henry Weimereskirch	Benoit Berges, Meike Scheidat, Steve Geelhoed, Jakob Tougaard	Wendi Roe, Fengqin Wen, Marian Price-Carter, K Subhrarat, Noel Smith, Johannes Krause, Anna Kokosinska, Alex Herbig, Kristene Gedye	Yann Planque, Cecile Vincent, Jérôme Spitz, Florence Caurant
12:35	The Greenlandic harbour porpoise – a separate ecotype?	What's with all the buzzing? – Propagation and potential function of short burst pulses produced by resident-type killer whales (<i>Orcinus orca</i>).	Evidence for factors that shift virus from endemic to outbreak in ongoing circulation of both IAV and PDV within pinnipeds of the Northwest Atlantic	Individual foraging plasticity of harbour seals in a tidally energetic habitat.
	Nynne Nielsen, Vincent Biard, Jonas Teilmann, Gísli Vikingsson, Garry Stenson, Jack Lawson, Ljerka Lah, Ralph Tiedemann, Manh Cuong Ngo, Mads Peter Heide-Jørgensen, Morten Tange Olsen	Harald Yurk, Caitlin O'Neill, James Pilkington	Wendy Puryear, Kaitlin Sawatzki, Bogomolin Andrea, Alexa Foss, Amy Klink, Lynda Doughty, Misty Niemeyer, Tracey Goldstein, Kathryn Zagzebski, Ashley Stokes, Janelle Shuh, Kimberly Murray, Deborah Fauquier, Mendy Garron, Eric Bortz, Jonathan Runstadler	Joseph Onoufriou, Dave Thompson, Deborah Russell, Gordon Hastie
12:40	Environmental DNA for assessing habitat use and genetic diversity of bowhead whales	Dig this! – acoustics of detection and localization of a buried target by a bottlenose dolphin (Tursiops aduncus)	Sarcocystis neurona Type II and Type VI genotypes associated with fatal polyphasic rhabdomyositis in stranded California sea lions	Beaked whale (Hyperoodon ampullatus) body condition and the starvation-predation trade-off
	Morten Tange Olsen, Natasja Corfixen, Louise Mørch, Steen W. Knudsen, Jonas Teilmann, Mads Peter Heide-Jørgensen	Matthias Hoffmann-Kuhnt, Abel Ho, Eszter Matrai, Rick Kwock	Elizabeth Zhang, Pádraig J. Duignan, Mauricio Seguel, Barbie Halaska, Gloria Adedoyin, Cara Field, Michael Grigg	Eilidh Siegal, Sascha Hooker, Saana Isoluunno, Patrick Miller
12:45	Sequencing the mitochondrial genome of bowhead whales (<i>Balaena mysticetus</i>) from environmental DNA	Acoustic tracking reveals at-depth coordination in groups of Blainville's beaked whales	Feral cat fiasco: Prioritizing and mitigating the threat of toxoplasmosis to endangered Hawaiian monk seals.	Amino acid nitrogen isotope values as new tool for identifying fasting events in free-ranging marine mammals
	Dora Szekely, Natasja Corfixen, Louise Mørch, Steen W. Knudsen, Mads Peter Heide-Jørgensen, Morten Tange Olsen	Tiago Marques, Len Thomas, Charlotte Dunn, Diane Claridge, Frants Havmand Jensen, David Moretti, Karin Dolan, Kelly Benoit-Bird	Angela Amlin	Nico Lubcker, John Whiteman, Robert Millar, P.J. Nico de Bruyn, Seth Newsome

THURSDAY DECEMBER 12 - 1:30-4:00

12:50 Arctic marine mammal ecology and health: Finding common ground between conventional science and Indigenous Knowledge to track arctic ecosystem variability. <i>Donna Hauser, Sue Moore</i>	A whale bio-echosounder tell-tale of niche diversification in deep-diving beaked and pilot whales <i>Jesús Alcázar Treviño, Mark Johnson, Patricia Aranz, Jacobo Marrero, Peter Teglborg Madsen, Natacha Aguilar de Soto</i>	Diet shape the gut microbial composition of the Pacific harbor seal (<i>Phoca vitulina richardii</i>). <i>Arlette Pacheco, María Asunción Lago-Lestón, Yolanda Schramm, Gisela Heckel</i>	Reconstruction of amino acids' carbon and nitrogen stable isotopes profiles in baleen whales earplug <i>Stephen Trumble, Farzaneh Mansouri, James Fulton, Danielle Crain, Zach Winfield, Sascha Usenko</i>
12:55 Remote sensing of polar bears using aerial multispectral imagery <i>Eclipse Sound, Canada, on narwhal (<i>Monodon monoceros</i>) call rate.</i>	The impacts of ship noise in developing non-invasive fecal biomarkers to monitor Florida manatee health <i>Crystal Prieur, Hélène Frouin-Mouy, Philippe Rouget, John Terhune</i>	Developing non-invasive fecal biomarkers to monitor Florida manatee health <i>Elizabeth Burgess, Robert Bonde Bonde, Martine de Wit, Charles Deutsch, Maggie Hunter, Roz Rolland, Janet Lanyon</i>	WhaleFeast - Ecological, commercial and social implications of the recent extreme winter arrivals of herring and whales in Northern Norway <i>Audun Rikardsen, Marie-Anne Blanchet, Erik Martin Biuw, Kim Praebel, Niels Øien, Evert Mull, Lisa Kettner, Emma Vogel, Theresia Ramm, Anniken Førde, Britt Kramvig, Berit Kristoffersen, Fredrik Brøms</i>
<i>Erin Moreland, Paul Conn, Eric Regehr, Benjamin Hou, Peter Boveng</i>	<i>Philippe Rouget, John Terhune</i>	<i>Elizabeth Burgess, Robert Bonde Bonde, Martine de Wit, Charles Deutsch, Maggie Hunter, Roz Rolland, Janet Lanyon</i>	<i>Audun Rikardsen, Marie-Anne Blanchet, Erik Martin Biuw, Kim Praebel, Niels Øien, Evert Mull, Lisa Kettner, Emma Vogel, Theresia Ramm, Anniken Førde, Britt Kramvig, Berit Kristoffersen, Fredrik Brøms</i>

POSTERS - GROUP A

Location: Hall

Presentation: Monday 13:30-15:00 and Wednesday 8:30-9:45 / Hall



Acoustics and Communication - Group A - Hall R25-R27

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- 13 Temporal acoustic occurrence of deep-diving cetaceans off western Ireland in areas under seismic license.
Cynthia Barile, Simon Berrow, Joanne O'Brien
- 97 Passive acoustic platforms to investigate spatiotemporal patterns in distribution and acoustic behavior of Indo-pacific humpback dolphins southwest of Hainan island, China.
Francesco Caruso, Lijun Dong, Mingli Lin, Mingming Liu, Wanxue Xu Xu, Songhai Li
- 95 Do fin whales avoid noisy area? Analyse of trajectories in relation to shipping noise.
Eva Chamorro, Florent Le Courtois, Bénédicte Madon
- 21 How do dolphins communicate their emotions? Potential role of behavioral laterality.
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- 39 The acoustic repertoire of free-ranging bottlenose dolphins (*Tursiops truncatus*) in south Abaco, Bahamas.
Ashley Cook, Charlotte Dunn, Jill Richardson, Michael Brown
- 1247 Exceptional survey and acoustic recording of the wild bottlenose dolphin (*Tursiops Truncatus*) during bycatch event in the Adriatic Sea
Valentina Corrias, Giovanni de Vincenzi, Virginia Sciacca, Antonello Sala, Maria Ceraulo, Giuseppe Andrea de Lucia, Francesco Filiciotto
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- 1 The impact of dredging activity on harbour porpoise, *Phocoena phocoena*, behaviour in Dublin Bay.
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- 91 Effect of boat activity on the acoustic communication of bottlenose dolphins (*Tursiops truncatus*) of Dolphin Bay, Bocas Del Toro, Panama
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- 999 Characterizing the seasonal and geographic distribution of North Atlantic right whales (*Eubalaena glacialis*) using an expansive spatial network of passive acoustic moorings
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- 45 A whistle in the model - prediction of bottlenose dolphin presence by an Artificial Neural Network
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- 3 An interactive open-source acoustic analysis tool in R.
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- 1245 Anticipatory and overnight whistling behaviour of bottlenose dolphins in human care
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- Characterization of cetacean morbillivirus from striped dolphins (*Stenella coeruleoalba*) stranded along the Italian Adriatic coast , 2017-2019.
789 **Ludovica Di Renzo**, Gabriella Di Francesco, Daniela Malatesta, Antonio Petrella, Antonio Parisi, Vincenzo Olivieri, Guendalina Zaccaria, Nicola Ferri, Giovanni Di Guardo, Alessio Lorusso, Antonio Petrini
- Assessing summer body condition of humpback and blue whales using an Unmanned Aerial System (UAS) in Skjálfandi Bay, Northern Iceland
783 **Flor despina Dodds**, Thomas Grove, Beverly Tan, Marianne Helene Rasmussen, Lea-Anne Henry
- Clinico-pathological findings in juvenile fur seals (*Arctocephalus australis* and *A. tropicalis*) stranded in São Paulo, Brazil, 2018: Preliminary results.
801 **Aricia Duarte Benvenuto**, Priscilla Carla Santos-Costa, Daniela Mello, Cíntia Maria Favero, Kátia R. Groch, Josué Díaz-Delgado, José Luiz Catao-Dias
- First report on *Antarctophthirus microchir* (Anoplura: Echinophthiriidae) from free-ranging “urban” South American sea lions (*Otaria flavescens*) by using a novel non-invasive method.
791 **David Ebmer**
- Application of molecular techniques to the diagnosis of Cetacean Morbillivirus and Herpesvirus in beaked whales stranded in the Canary Islands.
805 **Idaira Felipe Jiménez**, Eva Sierra, Manuel Arbelo, Yara Bernaldo de Quirós, RAQUEL PATRICIA PUIG LOZANO, Nakita Câmara, Marina Arregui, Paula San Martín-Lorén, Antonio Fernandez
- 751 Antimicrobial resistance determinants in free-ranging Australian pinniped pups.
Mariel Fulham, Michelle Power, Rachael Gray
- From phocine distemper to avian influenza: An ecological perspective on immunogenetic diversity of two sympatric pinniped species.
759 **Alayna Hawkins**, Don Bowen, Mike Hammill, Wendy Puryear, Jonathan Runstaedler, Frederick Wenzel, Kristina Cammen
- 795 Creation of an atlas for the assessment of skin disorders in Canary Islands atlantic spotted dolphins (*Stenella frontalis*).
Deborah Johanna Hopfer, Christian Walzer, Vidal Martin
- 829 Investigating an ongoing Florida manatee Unusual Mortality Event through gut microbiome metagenomics
Maggie Hunter, Deborah Iwanowicz, Carrie Givens
- Adapting nanopore (MinION) next generation sequencing methods to detect novel RNA virus genomes in Alaskan marine mammal species.
741 **Amy Klink**, Amy Bishop, Kathleen Burek-Huntington, Kaitlin Sawatzki, Wendy Puryear, Jonathan Runstaedler, Eric Bortz
- Welfare and cognitive bias in captive killer whales (*Orcinus orca*).
827 **Anastasia Krasheninnikova**, Oriol Tallo-Parra (Universitat Autònoma de Barcelona, VAT ESQ0818002H), Xavier Manteca, Auguste von Bayern, Francisco Javier Almunia Portoles
- 731 Cholangiocarcinoma in a harbour porpoise from the North Sea.
Jan Lakemeyer, Peter Wohlsein, Ursula Siebert, Prof. Dr.
- 823 Reference intervals for traditional and novel physiological biomarkers for healthy common bottlenose dolphins, Indo-Pacific bottlenose dolphins, Pacific white-sided dolphins, and beluga whales.
Lisa Lauderdale, Mike Walsh, Douglas Granger, Jill Mellon, Joy Mench, Lance Miller

- 737 Atlas, frequency and pathology of skin lesions in beluga whales (*Delphinapterus leucas*) from the St. Lawrence estuary, Quebec, Canada.
Rozenn Le Net, Sylvain Larrat, Robert Michaud, Stéphane Lair
- 797 Evaluating long-term change in the risk of parasitism by anisakid spp. nematodes for endangered and threatened marine mammals.
Natalie Mastick, Evan Fiorenza, Chelsea Wood
- 819 Euthanasia of an adult humpback whale (*Megaptera novaeangliae*) in South Brazil.
Cristiane Kiyomi Miyaji Kolesnikovas, Derek Amorim, Marzia Antonelli, Janaína Carrion Wickert, Magnus Machado Severo
- 775 Skin lesions on the cetacean community of the Santos Basin, Brazil
Gabriela Oms, Samira Costa-Silva, Fábio G. Daura-Jorge, Leonardo Liberali Wedekin
- 743 The relationship between polychlorinated biphenyls in blubber and levels of nematode infestations in harbour porpoises, *Phocoena phocoena*, using standings data from 1992-2012.
Rebecca Phillips, Martin Lee, Robert Deaville, Paul Jepson, James Bull
- 747 Prevalence of ulcers provoked by *Anisakis* spp. in cetaceans from the Northwest Atlantic: A signal of a long-term increase in anisakis populations?
Claudia Pons Bordas, Amber Hazenberg, Alberto Hernandez Gonzalez, Covelo Pablo, Pablo Sánchez Hermosin, Alfredo López Fernández, Camilo Saavedra Penas, Natalia Fraija, Mercedes Fernández Martínez, Francisco Javier Aznar Avendaño
- 769 Are lungworm infections in the striped dolphin, *Stenella coeruleoalba*, higher during DMV outbreaks?
Rachel Pool, Nilani Chandradeva, Georgios Gkafas, Juan Antonio Raga, Mercedes Fernández Martínez, Francisco Javier Aznar Avendaño
- 793 Protozoal agents infecting tissues from hunter harvested beluga (*Delphinapterus leucas*) in the Beaufort and Bering Seas
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- 765 Developing minimally invasive diagnostic methods for monitoring lungworm infections and cortisol in harbour porpoises (*Phocoena phocoena*).
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- 767 Molecular identification of trematode parasites of West Indian manatees (*Trichechus manatus*), and their role as bio-indicators of their distribution and diet
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- 813 The harmful effects of captivity and chronic stress on the well-being of orcas (*Orcinus orca*).
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- 761 Effect of rehabilitation on the distal gut microbiome of stranded harbour seals (*Phoca vitulina*).
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- 815 Cetacean morbillivirus in Spanish Mediterranean Sea: Update.
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- 745 Morbillivirus infection and fishing interaction affecting cetacean species in the Paraná state, southern Brazil.
Vivian Sampaio Santos, Victor Hugo Brunaldi Marutani, Andressa Maria Rorato Nascimentos de Matos, Lucas Parra Cesar Nogueira Carreira, Jessica Regina Moreira, Daniela Farias de Nóbrega, Isabela Domiciano Guarnier, Camila Domit, Ana Paula Frederico Rodrigues Loureiro Bracarense
- 733 Variation in ringed seal (*Pusa hispida*) bone mineral density from 1897-2018.
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- 753 Investigation for the helminthic parasites of odontocetes using stranded/by-caught individuals in Japan.
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- 773 Epidemiologic survey on the period prevalence of pinniped ocular disease and husbandry conditions within central European facilities
Miriam Stach, Corinna Eule

- 757 Per and polyfluorinated alkyl substances (PFAS) in coastal and estuarine Indo-Pacific bottlenose dolphins (*Tursiops aduncus*), Western Australia (WA)
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- 755 Core intestinal microbiota of captive bottlenose dolphins at three aquaria
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- 807 Evaluation on activities of radiocesium released by the Fukushima Dai-ichi Nuclear Power Plant(FNPP1) accident damaged by The Great East Japan Earthquake. – preliminary study using stranded odontoceti-
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- 809 Skin lesion prevalence of estuarine bottlenose dolphins (*Tursiops truncatus*) in the outer banks of North Carolina, with comparisons to other East coast study sites.
Jessica Taylor, Leslie Hart, Jeff Adams
- 811 A novel pulmonary vasculitis in grey seals (*Halichoerus grypus*) associated with *Otostrongylus circumlitus* infection.
Mark Wessels, James Barnett, Steve Bexton, Natalia Fraija, Darren Chooneea
- 771 80 Years of chemical exposure profiles reconstructed through baleen whale earplugs
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- 749 The simultaneous analysis of multiple reproductive and stress hormones in small blubber samples of gray (*Eschrichtius robustus*) and fin whale (*Balaenoptera physalus*) using liquid chromatography mass spectrometry .
Christiana Wittmaack, Jorge Urban, Daniela Bernot Simon, Sergio Martínez-Aguilar, Seenivasan Subbiah, Naveen Kumar, Barbie Halaska, Pádraig J. Duignan, Céline Godard-Codding

New Technology - Group A - Hall R6-R7

- 853 Acoustic identification of cetaceans using deep learning techniques
Georgia Atkinson, Matt Sharpe, Cameron Trotter, Steve McGough, Nick Wright, Per Berggren
- 849 Space vs Sea: A novel method for estimating marine mammal density.
Connor Bamford, Natalie Kelly, Luciano Dalla Rosa, Peter Fretwell, Philip Trathan, Hannah Cubaynes, Laura Gerrish, Andréa Mesquita, Jennifer Jackson
- 865 Application of Artificial Intelligence to the photo-identification of common bottlenose and Risso's dolphins.
Rosalia Maglietta, Carmelo Fanizza, Giulia Cipriano, Karin Hartman, Massimiliano Nitti, Giovanni Dimauro, **Stefano Bellomo**, Francesca Cornelia Santacesaria, Ettore Stella, Roberto Carlucci, Vito Renò
- 857 Ideal flight parameters for the integration of Unmanned Aerial Vehicles in traditional cetacean surveys.
Eyal Bigal, Amanda J Hodgson, Christophe Cleguer, Tali Treibitz, Deborah Levy, Dan Tchernov, Aviad Scheinin
- 867 An affordable, hand-deployable, rope-less and acoustically silent mooring design for passive acoustic monitoring, TOSSIT.
Alessandro Bocconcelli, Miles Ochs, Daniel Zitterbart
- 847 Objective separation of body motion and orientation from accelerometer data
Manon den Haan, Sophie Brasseur, Paul M. Thompson, Philip Lovell, Rory Wilson, Geert Aarts
- 871 Behayve: Configurable iPhone app maps behaviors and tracks with real-time display, integrating with ArcMap™ and supporting focal, scan, behavior and ad libitum sampling.
Bill Fulton, Robbi Luscombe-Newman
- 879 Can elemental analyses in narwhal tusks reveal population structure and environmental changes?
Eva Garde, Daniel Wielandt, Tonny B. Thomsen, Mads Peter Heide-Jørgensen
- 877 Characterization of side scan-sonar images produced by Amazonian River dolphins (*Inia geoffrensis*) to reduce potential confusion during surveys of Amazonian manatees (*Trichechus inunguis*).
Daniel Gonzalez-Socoloske, Camila Carvalho de Carvalho, Miriam Marmontel
- 859 Automated seal counts using aerial images and machine learning techniques
Jeroen Hoekendijk, Sophie Brasseur, Jessica Schop, Andre Meijboom, Jenny Cremer, Hans Verdaat, Geert Aarts
- 835 An assessment of UAS technology for studying Atlantic spotted dolphins.
Liah McPherson, Denise Herzing
- 833 Droplet digital PCR (ddPCR): Embracing novel technologies for the conservation of endangered marine wildlife: The Australian sea lion (*Neophoca cinerea*).
MariaIgnacia Meza, Rachael Gray, Damien Higgins

- 841 Gollum is dead: Presentation of a cetacean online relational database under a Creative Commons license.
Jazel Ouled-Cheikh Bonan, Renaud de Stephanis
- 839 Harbour porpoise (*Phocoena phocoena*) mother-calf behaviour revealed by drone observations
Gema Palacino-Gonzalez, Sara Torres Ortiz, Magnus Wahlberg
- 837 Alternative of species distribution models using R and Python in the study of bottlenose dolphin in the Veracruz Reef System, Mexico.
Francisco Polanco, Emmanuel García, Ibiza Martínez-Serrano, Emilio Suárez-Dominguez, Alejandra García, María Yesenia Zavaleta-Sánchez
- 843 Clinical assessment of bone density in the common bottlenose dolphin, *Tursiops truncatus*
James Powell, Deborah Duffield, Jonathan Kaufman, Randall Wells, Wayne McFee
- 861 The curiosity of metabolism of lipids in toothed whales; Multi-omics approach.
Jayan Senevirathna, Shuichi Asakawa
- Comparison of photographic and observer-based aerial surveys for monitoring marine litter and mega-fauna
845 **Maria Serrano**, Odei Garcia-Garin, Alex Aguilar, Asunción Borrell, Juan Antonio Raga, Ohiana Revuelta, Jaime Penadés-Suay, Patricia Gozalbes, Agustín Lobo, Morgana Vighi
- 873 Seeing the northern fur seals from the boulders: Developing an UAS approach for abundance assessments.
Katie Sweeney, Frank Padula, Monica Cook, Jeremy Sterling, Rod Towell, Rolf Ream, Thomas Gelatt
- 851 Photo identification of marine cetaceans using convolutional neural networks
Cameron Trotter, Matt Sharpe, Georgia Atkinson, Nick Wright, Steve McGough, Per Berggren
- 831 DNA barcoding based identification of fish species in the diet of cetaceans at the South-Western coast of the Black Sea.
Nastassia Uluduz, Aleksey Yanchukov, Ayşegül Er, Mustafa Sözen, Emre Keskin

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- 909 DNA collection from free-ranging Hector's dolphin and its environment
JiYe Ahn, Wendi Roe, Kristene Gedye, Jody Weir
- Hologenomics for conservation: A first test of utility using New Zealand's endemic Māui and Hector's dolphins.
939 **Alana Alexander**, Rochelle Constantine, Wendi Roe, C. Scott Baker, Dorothea Heimeier, Rebecca M. Hamner, Debbie Steel, Gert-Jan Jeunen, Neil Gemmell
- 895 Development of a SNP panel for genotyping polar bears from non-invasive samples.
D Neve Baker, Megan Supple, Eric Regehr, Beth Shapiro
- Determinants of dispersal and phylogeographic history of a highly mobile cetacean species: The North Atlantic harbour porpoise.
889 **Yacine Ben Chehida**, Loughnane Roisin, Julie Thumloup, Patricia Rosel, Michael C. Fontaine
- 901 Contrasting population-genetic structures in the Saimaa ringed seal (*Pusa hispida saimensis*) and its specialist helminth parasite *Corynosoma magdalenii*
Vincent Biard, Eeva Ylinen, Mervi Kunnasranta, Tommi Nyman
- 897 Exploring the genetic basis of boldness in female grey seals.
Christine Bubac, Don Bowen, David Coltman
- 913 Genetic structure as revealed by mtDNA and Microsatellites in Northern Fur Seals, *Callorhinus ursinus*
Aoi Chubachi, Yuki F. Kita, Rolf Ream, Yoko Mitani
- Population genomics of the Atlantic spotted dolphins (*Stenella frontalis*) across the Atlantic Ocean.
887 **Karina Bohrer Do Amaral**, Dalia Barragán-Barrera, Roosevelt Mesa, Nohelia Farías-Curtidor, Susana Caballero, Paula Méndez-Fernandez, Renaldo Rinaldi, Marcos Santos, Salvatore Siciliano, Ana Carolina de Meirelles, Valentina Franco-Trecu, Manuel Carrillo Carillo, Vidal Martin, Nelson Jurandi Rosa Fagundes, Ignacio Benites Moreno, L. Lacey Knowles, Ana Amaral
- 937 Combining near-field acoustic records and genetic identity of an individual eastern North Pacific blue whale off the central Oregon coast.
Robert Dziak, Angela Sremba, Bruce Mate, Joseph Haxel, Debbie Steel, C. Scott Baker, Daniel M. Palacios, Craig Hayslip, John Calambokidis, Ana Sirovic
- 941 Genetic structure analysis of northern fur seals (*Callorhinus ursinus*) using MiG-seq method.
Yuki F. Kita, Aoi Chubachi, Miwa Suzuki, Rolf Ream, Yoko Mitani

- 921 Genetic diversity of Atlantic spotted dolphin (*Stenella frontalis*) from Southwest Atlantic Ocean and global genetic differentiation
Drienne Faria, Salvatore Siciliano, Larissa Rosa de Oliveira, Paulo Henrique Ott, José Martins Silva-Jr, Ana Paula Farro
- Genetic diversity of leopard seal *Hydrurga leptonyx* at Danco Coast, Antarctic peninsula.
927 **Laura Valentina Hernandez Ardila**, Dalia Barragán-Barrera, Javier Negrete, Federico German Riet Sapriza, Sebastian Poljak, Susana Caballero
- Clarifying the taxonomy of the delphinoid cetaceans: A comprehensive review of all nominal species.
931 **Thomas Jefferson**
- Global phylogeography and genetic diversity of the long-finned pilot whale *Globicephala melas*, with new data from the Southeast Pacific
903 **Sebastián Kraft**, María Jose Pérez Alvarez, Carlos Olavarria, Elie Poulin
- Impact of past climate changes on narwhal population structure and demographic history.
943 **Marie Louis**, Mikkel Skovrind, Jose Alfredo Samaniego Castruita, Cristina Garilao, Kristin Kaschner, Shyam Gopalakrishnan, James Haile, Christian Lydersen, Kit M. Kovacs, Eva Garde, Mads Peter Heide-Jørgensen, Lianne Postma, Steven Ferguson, Eske Willerslev, Eline Lorenzen
- Mitogenomic phylogeny and comparative genomics support a third species in the genus *Berardius*.
881 **Morgan McCarthy**, John Gatesy, Mark Springer, Morten Tange Olsen, Phillip Morin
- Comparisons and relationships of genetic characteristics of Japanese harbour seals in eastern Hokkaido between breeding and non-breeding seasons.
911 **Mariko Mizuno**, Mari Kobayashi, Takeshi Sasaki, Shun Ikuta
- Successful DNA extraction, bisulfite conversion and amplification of baleen whale lamina growth layers in earplugs for use in epigenetic analysis
925 **Brooke Morris**, Danielle Crain, Bryan King, Patricia Kamanda, Sascha Usenko, Stephen Trumble
- A take on years of wrangling over a controversial taxonomy: *Delphinus* spp. in South African waters.
891 **Sibu Ngqulana**, Michael Christiansen, Rus Hoelzel, Anders Galatius, Pierre Pistorius, Stephanie Plön, G. J. Greg Hofmeyr
- Kinship of mass-stranded populations for Steno and Feresa.
929 **Shin Nishida**, Daiki Kurihara, Yuichi Miyashita, Nobuyuki Kashiwagi, Toshiyuki Tatsukawa, Mari Ochiai, Mitsuhiro Aizuhirano, Toshio Kurita, Tadasu K. Yamada, Yuko Tajima, Masao Amano
- De novo genome and transcriptome assemblies of the Caspian seal
915 **David Orr**, Mary O'Connell, Ian Carr, Simon Goodman
- BaitSTR facilitates simultaneous large scale genotyping of STR loci in non-model organisms – a test case in deep-pedigree reconstruction of Indo-Pacific bottlenose dolphins
923 **Haley Pedersen**, Livia Gerber, Logan Kistler, Samuel Wittwer, Michael Krützen
- Pre-whaling population structuring and diversity of blue whales (*Balaenoptera musculus*) in the high latitudes of the North Atlantic
919 **Eva Prendergast**, Jennifer Jackson, Julian Dowdeswell, Richard Sabin, Danielle Buss, Adrian Glover, Will Goodall-Copestake
- Population genomics of killer whales (*Orcinus orca*) in Australia.
893 **Isabella Reeves**, John Totterdell, Andrea Barcelo, Robert Pitman, Jonathan Sandoval-Castillo, Catherine Attard, Lisa T. Ballance, David Donnelly, Rebecca Wellard, Luciano Beheregaray, Luciana Moller
- Revisiting differential reproductive rates in Gulf of Maine humpback whales in relation to mitochondrial lineages
905 **Vania Elizabeth Rivera Leon**, Jooke Robbins, Martine Bérubé, Jeroen Hoekendijk, Marcos Suarez, David Mattila, Per Palsbøll
- Mitochondrial genetics of narwhals (*Monodon monoceros*): A study in a minimally destructive method of ancient DNA extraction in narwhal tusk material.
885 **K.M.C. Smith**, Iain S. Smith, E.C.M. Parsons, Lorelei Crerar
- Heteroplasmy; Detection, verification and recurrence in baleen whales.
915 **Marcos Suarez**, Vania Elizabeth Rivera Leon, Anna Schleimer, Xênia Moreira Lopes, Alex Aguilar, Susan G. Barco, Simon Berrow, Asunción Borrell, Dorete Bloch, Phil Clapham, Eduard Degollada, Fossi Maria Cristina, Pauline Gauffier, Janie Giard, Wensi Hao, Tore Haug, Mads Peter Heide-Jørgensen, Kit M. Kovacs, Scott Landry, Finn Larsen, Christian Lydersen, Vidal Martin, David Mattila, Bjarni Mikkelsen, Tom Oosting, Richard M Pace, III, Christophe S. Pampoulie, Simone Panigada, Cristina Panti, Rui Prieto, Juan Antonio Raga, Christian Ramp, Jooke Robbins, Conor Ryan, Richard Sears, Jóhann Sigurjónsson, Monica Silva, Malene Simon, Renaud de Stephanis, Hans J. Skaug, Jorge Urban, Jurjan van der Zee, Yvonne I. Verkuil, Gísli Víkingsson, Lars Witting, Frederick Wenzel, Nils Øien, Martine Bérubé, Per Palsbøll

- 899 Population dynamics and structure of sperm whales (*Physeter macrocephalus*) in the Mediterranean Sea.
Biagio Violi, Menno de Jong, Alexandros Frantzis, Paraskevi (Voula) Alexiadou, Denis ODY, Céline Tardy, Renaud de Stephanis, Joan Giménez, Luca Bittau, Mattia Leone, Giuseppe Andrea de Lucia, Andrea Camedda, Giuseppe Lucifora, Alfredo López Fernández, Covelo Pablo, Filipe Alves, Ana Dinis, Marisa Tejedor, Antonio Fernandez, Marina Arregui, Manuel Arbelo, Monica Silva, Cláudia Oliveira, Maurizio Würtz, Alberta Mandich, Rus Hoelzel

- 935 Palaeogenomic and stable isotope data reveal the responses of bowhead whales to climatic perturbations during the Late Pleistocene and Holocene.
Michael Westbury, Lutz Bachmann, Arthur S Dyke, Øystein Wiig, Paul Szpak, Eline Lorenzen

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- 997 Blubber cortisol concentrations as a bioindicator of stress response and overall health status in stranded striped dolphins (*Stenella coeruleoalba*).
Clara Agustí-Pujol, Annaïs Carballo Brossa, Sergi Olvera Maneu, Oriol Tallo-Parra (Universitat Autònoma de Barcelona, VAT ESQ0818002H), Mariano Domingo Álvarez, Manel López Béjar
- 957 Reproductive seasonality and breeding grounds of the fin whale, *Balaenoptera physalus*, in the Gulf of California.
Daniela Bernot Simon, Lorena Viloria Gomora, Christiana Wittmaack, Naveen Kumar, Céline Godard-Codding, Jorge Urban
- 967 Respiration-coupled heart rate changes in common bottlenose dolphins (*Tursiops truncatus*).
Ashley Blawas, Andreas Fahlman, Austin Allen, Julie Rocho-Levine, Doug Nowacek
- 965 Excretion of Dehydroepiandrosterone Sulfate (DHEAS) in polar bears
Monica Brandhuber, Erin Curry, Terri Roth, Shannon Atkinson DeMaster
- 953 Inter-island variation in endocrine stress responses may be linked to anthropogenic pressures on the endangered Galapagos sea lion.
Eugene DeRango, Diego Paez-Rosas, Jonas F.L. Schwarz, Fritz Trillmich, Daniel Crocker, Oliver Krueger
- 1007 Sleepless whales: Characterization of cetacean melatonin receptors and clock genes, and associated behavioral activity patterns.
Jeffry Fasick, Danielle Beyes
- 983 Blubber stratification of *Tursiops australis* and implications for using remote biopsies
Chantel Foord, Kate Robb, Dayanthi Nugegoda
- 1009 Plasma and fecal sex steroid analysis for monitoring reproductive function in captive Risso's dolphins.
Noriko Funasaki, Yurie Watanabe, Daiki Inamori, Tetsuo Kirihata, Ryoko Hashizume, Satoshi Kusuda, Motoi Yoshioka
- 971 ¡Hurry, up up! The hematocrit development of an oceanic top predator: The Guadalupe fur seal.
Cassandra Gálvez, Fernando R. Elorriaga-Verplancken, Cara Field
- 989 Fatty acid content of Pacific walrus (*Odobenus rosmarus divergens*) skeletal muscle lipids.
Genevieve Godfrey, Stephen Trumble
- 975 Seasonal changes in body condition for spotted, ringed, and bearded seals
Michelle Hartwick, Colleen Reichmuth, Nicole Thometz
- 949 In vivo measurements of ringed seal (*Pusa hispida*) lung volumes: Insights from biomedical imaging.
Holly Hermann-Sorensen, Kathy Woodie, Nicole Thometz, Colleen Reichmuth
- 1003 Determining the preferred swimming styles of leopard seals through skeletal muscle physiology.
Shane Kanatous, Sarah Kienle, Daniel Costa, Stephen Trumble, Mike Goebel
- 993 Fatty acids and diving development: Age class and sex differences in skeletal muscle fatty acid compositions the northern elephant seal (*Mirounga angustirostris*).
Aaron Kirkpatrick, Shane Kanatous, Daniel Crocker, Stephen Trumble
- 977 Direct reprogramming of dermal fibroblasts derived from Northern elephant seals into muscle cells
Emily Lam, Julia Torres-Velarde, Kaitlin Allen, Daniel Crocker, Jose Pablo Vazquez-Medina
- 959 Whose pregnant? Parsing out postpartum and parturient Pacific walruses using endocrine profiles.
Jenell Larsen, Shannon Atkinson DeMaster
- 969 Hormones and whales: Unveiling physiological mysteries of blue and gray whales in the North Pacific Ocean.
Valentina Melica, Shannon Atkinson DeMaster, John Calambokidis, Diane Gendron, Aimee Lang, Kendall Mashburn, Tonia Osborne, Jonathan Scordino

- 963 Infrared thermal imaging of sperm whales (*Physeter macrocephalus*) off the western North Atlantic outer continental shelf.
Laura Murley, William McLellan, Doug Nowacek, Oliver Boisseau, Richard McLanaghan, Jacob Levenson, Jennifer R. Bosyk, Andrew Westgate, Ann Pabst
- 995 Blubber fatty acid signature analysis of harbor seals in Alaska over 14 years
Victoria Neises, Shawna Karpovich, Mandy Keogh, Ryan King, Stephen Trumble
- 985 Cortisol concentrations in baleen from a suckling calf fin whale (*Balaenoptera physalus*)
Sergi Olvera Maneu, Oriol Tallo-Parra (Universitat Autònoma de Barcelona, VAT ESQ0818002H), Annaïs Carbajal Brossa, Mariano Domingo Álvarez, Manel López Béjar
- 947 Hair testosterone levels of Northern fur seals correlate with month and testicular morphometric parameters.
Mayuko Otsuki, Takanori Horimoto, Motoki Kobayashi, Shigeho Ijiri, Yoko Mitani
- 1001 Physiological response of an isolated population of bottlenose dolphins (*Tursiops truncatus*) to anthropogenic stressors, Bocas del Toro, Panama.
Betzi Perez, Valentina Melica, Shannon Atkinson DeMaster
- 999 Predictors of breathing in migrating humpback whales (*Megaptera novaeangliae*)
Marjoleine Roos, Michael Noad, Rebecca Dunlop
- 951 Osmoregulation and electrolyte balance in a fully marine mammal, the dugong (*Dugong dugon*).
Laetitia Smoll, Lyn Beard, Janet Lanyon
- 979 How do marine mammals maintain blood flow while diving?
Rhea Storlund, David Rosen, Marco Margiocco, Martin Haulena, Andrew W. Trites
- 991 Changes in saliva steroid hormone levels of grey seal pups during lactation and post-weaning fast.
Vaida Surviliene, Simon Moss, Osvaldas Rukšėnas
- 981 Ontogeny of muscle physiology in arctic seals
Mariah Tengler, Anna Bryan, Colleen Reichmuth, Nicole Thometz

Polar Ecology - Group A - Hall R24

- 1037 Ringed, bearded, and spotted seal productivity in Alaska using harvest-based monitoring, 1960s–1980s and 2000–2018.
Anna Bryan, Lori Quakenbush, Justin Crawford, Louise Biderman, Ryan Adam
- Variation in ringed seal habitat use and feeding across a latitudinal gradient of sea ice.
- 1011 **Cody Carlyle**, David Yurkowski, Cassandra Debets, Benjamin Lange, Doreen Kohlbach, Brent Young, Thomas Brown, Christine Michel, Jim Roth, Steven Ferguson
- Oceanographic characteristics associated with movements and high-use areas of spotted seals (*Phoca largha*) in the Chukchi and Bering seas.
Justin Crawford, Lori Quakenbush, Mark Nelson, Ryan Adam, Anna Bryan, John Citta, Andrew VonDuyke, Stephen Okkonen
- Ringed seals at the edge of their geographic range undergo acute seasonal and annual blubber depth changes compared to core populations.
Steven Ferguson, David Yurkowski, Brent Young, Aaron Fisk, Derek Muir, Xinhua Zhu, Gregory Thiemann
- 1023 Long-term prey selection of polar bears in a region of rapid ecological change in the eastern Canadian Arctic
Melissa Galicia, Gregory Thiemann, Markus Dyck, Steven Ferguson, Ian Stirling
- Niche partitioning in the largest Antarctic fur seal, *Arctocephalus gazella*, colony revealed by stable isotopes in whiskers
Kayleigh Jones, Stephen Votier, Norman Ratcliffe, Gabriele Stowasser, John Dickens, Jason Newton, Iain Staniland
- 1027 Killer whale (*Orcinus orca*) dive behaviour in the eastern Canadian Arctic
Kyle Lefort, Cory Matthews, Steven Ferguson
- 1025 Quantifying ringed seal lair habitat and emergence timing in the eastern Bering and Chukchi Seas
Jessica Lindsay, Kristin Laidre, Paul Conn, Peter Boveng
- 1019 Seal and polar bear behavioral response to an icebreaker vessel in Petermann Fjord, Northwest Greenland.
Kate Lomac-MacNair, José Pedro Andrade, Eduardo Esteves
- 1021 Photographic identification of beluga whales in Cumberland Sound, Canada.
Kasey Ryan, Steven Ferguson, Marianne Marcoux, William R. Koski, Brent Young, Courtney Watt

- 1029 Spatio-temporal patterns in humpback whale acoustic behavior in the Southern Ocean
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- 1015 Shifting focus: Using stable isotope analyses to distinguish carbon sources of Alaskan polar bears.
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Irina Trukhanova, Vladimir Chernook, Alexander Vasilev, Dennis Litovka, Dmitry Glazov, Vladimir Burkanov
- 1041 First abundance estimate of the white whale (*Delphinapterus leucas*) stock in Svalbard, Norway.
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- 1043 Using passive acoustic data to explore spatio-temporal patterns in marine mammal community composition.
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Luena Fernandes, Marcos Rossi-Santos
- 1233 Discharge water effects study consumed by the inhabited dwellings in ecosystem systems from the Mediterranean area, within the circular economy and climate change circle.
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- 1053 Implementing the Population Consequences of Disturbance (PCoD) Framework: A case study for marine mammals of the California current.
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- 1061 Geo-spatial analysis on oil-spill risks for marine mammals in Peru: In need of an action plan.
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- 1057 Examining patterns in human interaction with bottlenose dolphins (*Tursiops truncatus*) and assessment of public awareness of policy: A multiple regression model provides a dual approach for understanding a conservation issue in Tampa Bay.
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- 1085 Skies with limits: Optimising Unmanned Aerial Vehicles (UAVs) as a marine mammal survey tool for remote and challenging environments – a Welsh case study.
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- 1097 Exposure of marine mammals to noise pollution in the Northeast Atlantic.
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- 1081 Cultural heritage in animals: What is it and why does it matter?
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- 1219 Sex, age, and hormone correlates of phthalate exposure among common bottlenose dolphins (*Tursiops truncatus*) from Sarasota Bay, FL
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- 1191 Persistent organic pollutant burdens in blubber of eastern North Pacific gray whales (*Eschrichtius robustus*) and the influence of life history parameters.
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1187 **Rosie Williams**, Susan Jobling, Andrew Brownlow, David Curnick, Jonathan Barber, Nick Davison, Robert Deaville, Matthew Perkins, Paul Jepson
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- Shedding light on common minke whales in the Gulf of St. Lawrence, Canada: Photo identification, effects of biopsy sampling and exposure to contaminants.
1225 **Dany Zbinden**, Antoine Simond, Jacqueline Egger, Johanne Lemieux, Jonathan Verreault, Magali Houde

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- 1131 Population parameters of southern right whales (*Eubalaena australis*) off Península Valdés, Argentina, for the period 1971-2015
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- “I don’t want to go Mrs. Mom”... Survival rates for mothers and calves in common bottlenose dolphins from the southwestern Gulf of Mexico.
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1127 **DAVIDE ASCHERI**, Elena Fontanesi, Marco Ballardini, Barbara Nani, Jessica Alessi
- What if...?: Population viability analysis of resident Bottlenose Dolphins (*Tursiops truncatus*) in the Shannon Estuary (Ireland) to help inform management.
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- 1147 Assessing the relationship between residency and population parameters in bottlenose dolphins off the southwestern Gulf of Mexico
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- 1141 Amazon river dolphin abundance at an area of high touristic interest and implications for its management
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- 1142 Environmental drivers of grey seal (*Halichoerus grypus*) pupping phenology in the Irish Sea.
1175 **James Bull**, Andrew Roberts, Luca Borger, Roma Banga, Novella Franconi, Kate Lock, Lisa Morgan, Lara Howe, Ceri Morris, Tom Stringell
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- 1167 Aerial surveys for protected marine species around Norfolk Canyon, Virginia, USA
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- 1177 Gulf of Mexico Dolphin Identification System (GoMDIS) – A collaborative program to better define bottlenose dolphin (*Tursiops truncatus*) movements.
Carolyn Cush, Shauna McBride-Kebert, Randall Wells, Jeff Adams, Ei Fujioka, Kim Urian
- 1101 Assessing sperm whale (*Physeter macrocephalus*) occurrence, distribution and group size in Southern Tyrrhenian Sea through photo-identification.
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- 1165 Stranding records of the Guiana dolphins *Sotalia guianensis* (van Bénédén, 1864) in the Amazon estuary, northern coast of Brazil
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- 1137 Abundance and terrestrial habitat preferences of the Guadalupe fur seal (*Arctocephalus philippii townsendi*) at Isla Guadalupe, México
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- 1173 Adapting to climate change: Trends in Weddell seal abundance over two decades.
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- 1153 Female productivity and calf survivorship of bottlenose dolphins (*Tursiops truncatus*) in Bocas, Panama
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- 1107 Genetic variability and social structure in north-east Atlantic humpback whales (*Megaptera noveangliae*) off the Icelandic coast.
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- 1139 Regional and seasonal distribution of stranded cetaceans in Jeju Island, Republic of Korea, from 2014 to 2018
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- 1115 Impact of climate variability on the abundance of gray whale (*Eschrichtius robustus*) in Ojo de Liebre Lagoon, Baja California Sur, Mexico.
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- 1121 Assessing pinniped response to diadromous fish conservation efforts in the Penobscot River estuary
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- 1119 Reproductive parameters of Indo-pacific humpback dolphin (*Sousa chinensis taiwanensis*) in Taiwan
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- 1111 Using citizen science to assess migration patterns of humpback whales in Australia.
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- 1135 Bite me: Using cookie-cutter shark bite scars to estimate age of Blainville's beaked whales in Hawaiian waters.
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- 1169 Abundance estimate of beaked whales (Family Ziphiidae) in the Canary Islands from a distance line transect acoustic survey.
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- 1149 Photographic identification of long-finned pilot whales (*Globicephala melas*) in the Pelagos Sanctuary
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1099 **Logan Pallin**, C. Scott Baker, Debbie Steel, David Johnston, Doug Nowacek, Andy Read, Nick Kellar, Megan Cimino, Ari Friedlaender
- 1157 Strong impact of epizootics on long-finned pilot whales (*Globicephala melas*) in Strait of Gibraltar
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- 1183 Estimating abundance trends of humpback whale population in Southeast Alaska from 2008 to 2019.
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- 1125 Marine mammals vital rate estimation through a new regression approach
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- Studies of Northern elephant seal (*Mirounga angustirostris*) population demographics and social structure at Piedras Blancas, California: A multi-faceted collaborative effort.
1145 **Gabriel Santos Elizondo**, Tyler Peck-Burnett, Paige Edwards, Cameron Cooper, Emma Weitzner, Melissa Voisinet, Heather Liwanag
- 1163 Long-term cetacean population presence and abundance in relation to moon cycles off Pico Island (Azores)
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- 1143 Social structure and demography of Blainville's and Cuvier's beaked whales at El Hierro, Canary Islands.
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1171 **Sara Wing**, Veronique Lesage, Jean-François Gosselin, Robert Michaud, Dominique Berteaux
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- 60 Bottlenose dolphins (*Tursiops truncatus*, Montagu, 1821) and underwater noise pollution: Simulate the exposure of three Mediterranean groups..
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786 **Pádraig J. Duignan**, Emily Whittmer, Abby McClain, Barbie Halaska, Sophie Whoriskey, Dayna Goldsmith, Michael Zabrodski, Helena Saura Martinez, Carlos Rios, Jseirose Poblacion, Cara Field, Shawn Johnson, Benny Borremans, James Lloyd-Smith, Katherine Prager
- 762 Surface drifting helium balloons posing ingestion and entanglement risks to marine mammals and turtles in the New York bight, USA.
Raffaela Falkner, Grace Russell, Laura Marin-Samper
- Dermatophitosis by Trichophyton spp. causing generalized skin lesions in a bottlenose dolphin (*Tursiops truncatus*): First report in a free-ranging cetacean.
784 **Carolina Fernández Maldonado**, Eva Sierra, Manuel Arbelo, Henrik-Elvang Jensen, Maria Soledad Vivas, Eugenio Montes, Antonio Fernandez

- 810 Veterinary pathology of stranded cetaceans in Canary Islands (06-12)
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- 800 Hematological abnormalities in stranded Guadalupe fur seals (*Arctocephalus townsendi*)
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- 856 Skin disorders in Risso's dolphins off the west coast of the UK; A photographic assessment.
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- 770 Virological and serological surveillance of canine morbillivirus infection among caspian seals (2007-2017).
Aidyn Kydyrmanov, Kobey Karamendin, Yermuhammet Kassymbekov, Simon Goodman
- 804 Reduced cytokine expression and lymphocyte proliferative capacity in diseased harbor porpoises (*Phocoena phocoena*) – biomarkers for health assessment in wildlife cetaceans
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- 772 Morphological and molecular identification of gastrointestinal parasites in free-living striped dolphin (*Stenella coeruleoalba*) of the Gulf of Taranto (Northern Ionian Sea, Central Mediterranean Sea)
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- 792 Microbial diversity in the intestine of stranded southern right whale calves (*Eubalaena australis*)
Carina F. Marón, Kevin D. Kohl, Andrea Chirife, Matías Di Martino, Mariola Penadés Fonse, Mauricio A. Navarro, Juliann Beingesser, Denise McAloose, Francisco A. Uzal, M. Denise Dearing, Vicki Rountree, Marcela Uhart
- 766 A new, multidisciplinary approach to monitor the health status of free-living fin (Physeter macrocephalus) and sperm (Physeter macrocephalus) whales in the Pelagos Sanctuary, Corsican-Ligurian-Provençal basin.
Marianna Marangi, Sabina Aioldi, Luciano Beneduce, Annunziata Giangaspero, Claudio Zaccone
- 846 Morphological and molecular characterization of *Pennella* sp. (Copepoda: Pennellidae) isolated in sperm and fin whales from the Mediterranean Sea.
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- 788 Evaluation of gray whale's body condition in Laguna San Ignacio, BCS, Mexico, during 2018 and 2019 breeding seasons.
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- 854 Insights into the *Brucella ceti* genome
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- 822 The one that got away? Evidence of failed predation events between a grey seal (*Halichoerus grypus*) and a harbour porpoise (*Phocoena phocoena*).
Matthew Perkins, Robert Deaville, Paul Jepson, Shinto John
- 816 Welfare in the wild: The status and future research needs of UK marine mammals.
Joe Perry, Sarah Dolman
- 760 Temporal trend of intestinal ulcers in the Baltic grey seal (1977-2016).
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- 830 Health parameters of common bottlenose dolphins (*Tursiops truncatus*) in various salinity environments within the Barataria Basin, Louisiana
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- 840 Pseudomonas stutzeri and Candida spp. isolated from blowhole samples and associated with free-ranging killer whale (*Orcinus orca*) in coastal waters of Kamchatka Peninsula.
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- 790 Subcutaneous encapsulated fat necrosis and loose cavitary fat bodies in bowhead whales (*Balaena mysticetus*) from Alaska
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- 808 Scans of the beach; International assessment of harbour porpoise strandings along the North Sea coastline.
Mariel ten Doeschate, Andrew Brownlow, Nick Davison, Robert Deaville, Anders Galatius, Andrea Gröne, Jan Haelters, Paul Jepson, Guido Keijl, Carl Kinze, Morten Tange Olsen, Ursula Siebert, Prof. Dr., Charlotte Bie Thøstesen, Hans Heesterbeek, Lonneke IJsseldijk

- 848 Plugging into marine mammal science: The power of the earplug.
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- 852 Cetacean Morbillivirus infection in a Guiana dolphin (*Sotalia guianensis*) off the coast of São Paulo, Brazil: A case report.
Rodrigo Valle, Vanessa Ribeiro, Camila Brandão Seabra, Kátia R. Groch, JOSUE DIAZ DELGADO, Isabella Cristina da Rocha Boaventura, Priscilla Maracini, Giovanna Daniele Ribeiro Taccani, Eliana Reiko Matushima, José Luiz Catao-Dias, Carolina Bertozzi
- 796 Keep an eye on me: Using underwater photos and video from citizen science to evaluate prevalence of injury in pygmy killer whales (*Feresa attenuata*) in Hawai‘i.
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- 828 Three concurrent Western Atlantic large whale unusual mortality events
Sarah Wilkin, Kim Durham, Lynda Doughty, Michael J Moore, William McLellan, Alex Costidis, Sarah Sharp, David Rotstein, Kathleen Colegrave, Tracey Goldstein, Craig Harms, Mendy Garron, Ainsley Smith, Erin Fougeres, Blair Mase-Guthrie, Matthew Hardy, Hilary Moors-Murphy, Theresa Rowles, Deborah Fauquier
- 794 Helicobacter pylori infection in South American sea-lions (*Otaria byronia*): High risk of human transmission.
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- 812 Target region selection for characterization of the microbiota of beluga (*Delphinapterus leucas*) by 16S MiSeq sequencing
Jack Wei-Cheng Yang, Ming-An Tsai, Meng-Jung Hsieh, Yu-Te Lin, Tsung-Hsien Li
- 826 Measuring wild cetacean body temperature via blowholes using infrared thermal imaging from a drone
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- 842 Structural and biophysical characterization of the Cetacean morbillivirus haemagglutinin.
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- 896 Using drone images as a new tool for fin whale (*Balaenoptera physalus*) photo-identification
Natalia Amigo, Beatriu Tort, Eduard Degollada, Elizabeth Fresneda
- 870 Marine mammals and argos satellite telemetry
Sophie Baudel, Anna Catalina Salsac Jimenez, Anne-Marie Breonce
- 904 NanoPAM: A novel low-cost acoustically networked system for marine mammal monitoring.
Per Berggren, Richie Burnett, Liangliang Yang, Gavin Lowes, Ben Sherlock, Jeffrey Neasham
- 876 A comparison of percent dorsal scar cover between populations of humpback whales (*Megaptera novaeangliae*) off California and the Western Antarctic Peninsula
Clara Bird, K.C. Bierlich, Julian Dale, Ari Friedlaender, Jeremy Goldbogen, David Johnston
- 882 Improving behavioral studies of wild cetaceans with an Android device
Laurent Delrocq, Adrien Gannier
- 918 Use of MOTE systems to augment argos data collection and maximize temporal resolution of GPS locations for a narwhal tracking study in Milne Inlet, Nunavut.
Mitchell Firman, Ainsley Allen, Sima Usvyatsov, Phillippe Rouget
- 902 New active and passive sound and movement tags enable long-duration studies of behaviour, ecology and effects of disturbance
Mark Johnson, Heather Vance, Pauline Goulet, René Swift, K. Alex Shorter, Peter Teglberg Madsen
- 866 Assessing respiratory microbiome of small- and medium-sized cetaceans using unmanned aerial systems: Breath sampling humpbacks is so 2016.
Jordan Lerma, Linda Rhodes, Bradley Hanson, Robin Baird
- 894 Next generation of animal telemetry, getting more data from marine mammal satellite tags
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- 878 Using side-scan sonar with GIS applications for marine mammal research
Mindy McLarty, Daniel Gonzalez-Socoloske, Anmari Alvarez Aleman, Jorge Angulo-Valdes

- 890 Open source, autonomous, camera system to facilitate the monitoring of Mediterranean monk seal caves
Julien Pfyffer, Joan Gonzalvo, Cédric Georges
- 906 UAV derived photogrammetric assessment of Mediterranean monk seal *Monachus monachus* body-length and condition
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- 898 The coastal acoustic buoy: A new tool for remote and real-time acoustic monitoring.
Lindsay Porter, Arthur Lee, Jason Wood, Jesse Turner
- 884 Evaluating the utility of drone technology to survey the remote population of Pribilof Island harbor seals
Erin Richmond, Josh London, Peter Boveng, Erin Moreland, Alexander Seymour, Lauren Divine, Everette Newton
- 868 Mobilizing Hawaiian monk seal data accessibility for the 21st century.
Hope Ronco, Thea Johanos, Vikram Khurana, Stacie Robinson
- 900 The ‘Glider and Whales’ project: How to explore occurrence and distribution of whales in the Indian Ocean using acoustic glider.
Flore Samaran, Julie BEESAU, Richard Dreo
- 910 Review of specific night vision technologies for cetacean detection
Mari Smultea, Gregory K. Silber, Paul Donlan, Stephanie Wilson, Laura Morse, Dagmar Fertl, Dave Steckler
- 872 DNA profiling by SnotBot® sampling from the spout of a whale
Angela Sremba, Iain Kerr, Andy Rogan, Debbie Steel, Logan Pallin, C. Scott Baker
- 908 New technology instantly shares sightings and protects North Atlantic right whales in real-time
Dave Steckler, Paul Donlan, Laura Morse, Mari Smultea
- 912 Drone videos: A new method for photogrammetry of fin whales (*Balaenoptera physalus*)?
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- 880 Auto-detection of gray whales (*Eschrichtius robustus*) off Sakhalin Island, Russia using shore-based infrared
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- 888 A low-order model of dolphin swimming dynamics: Fluke flexibility and energetics.
Enric Xargay Mata, K. Alex Shorter, Kira Barton, William Gough, Danielle Adams, Frank Fish
- 864 Studio Porpoise, a novelty for science and tourism.
Frank Zanderink, Annemieke Podt, Diederik Padmos, Jordan Lee Hoeneveld, Cathelijne Jansen
- 886 Tracking the Yangtze finless porpoise by using the non-invasive radio system
Mei Zhigang, Ding Wang, Kexiong Wang

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- 948 Mitochondrial phylogeography of southern elephant seals (*Mirounga leonina*) around Antarctic waters with emphasis on the population structure of the colony at Isla 25 de Mayo (King George Island) South Shetland Islands, Antarctic Peninsula
Dalia Barragán-Barrera, Federico German Riet Sapriz, Alejandro Quiroga, Diego Mojica-Moncada, Javier Negrete, Susana Caballero
- 926 An epigenetic clock for aging endangered cook inlet beluga whales
Eleanor Bors, Steve Horvath, Michael Thompson, Simon Jarman, Kaimyn O'Neil, Paul Wade, C. Scott Baker
- 934 Comparative genomics of *Sotalia guianensis* and *Sotalia fluviatilis*: Divergence and adaptation to a riverine environment.
Susana Caballero, C. Scott Baker
- 946 Population structure of two minke whales species (*Balaenoptera acutirostrata* and *B. bonaerensis*) in the southern hemisphere.
Sarah Teodoro, **Pedro Fruet**, Ana Lucia Cypriano-Souza, Luciano Dalla Rosa, Leonardo Liberali Wedekin, Eduardo Secchi, Javier Negrete, Gabriel Melo-Santos, Sandro Bonatto, Maira Proietti
- 942 Marine mammal biodiversity in Oaxaca analysed through the mitochondrial genetic characterisation of strandings and eDNA.
Valentina Islas Villanueva, Carlos Tamayo Millan, Abraham Villa-Melchor, Francisco Villegas, Castillejos-Moguel Fátima, Owen Wangensteen
- 932 Fine-scale population structure and connectivity of bottlenose dolphins, *Tursiops truncatus*, in European waters and implications for conservation
Milaja Nykänen, Marie Louis, Eileen Dillane, Eric Alfonsi, Simon Berrow, Joanne O'Brien, Andrew Brownlow, Covelo Pablo, Willy Dabin, Robert Deaville, Renaud de Stephanis, François Gally, Pauline Gauffier, Simon Ingram, Tamara Lucas, Luca Mirimin, Rod Penrose, Emer Rogan, Monica Silva, Benoit Simon-Bouhet, Oscar Gaggiotti

- 936 The age of epigenetics: A molecular biomarker for ageing killer whales using DNA methylation patterns from skin.
Kim Parsons, Michael Thompson, Bradley Hanson, Linda Park, Steve Horvath

From settlers to subspecies: Genetic differentiation in Commerson's dolphins between South America and the Kerguelen Islands.

- 928 **Elie Poulin**, Sebastián Kraft, Carlos Olavarria, Rodrigo Moraga, C. Scott Baker, Debbie Steel, Paul Tixier, Christophe Guinet, Amelia Viricel, Paul Brickle, Marina Costa, Enrique A. Crespo, Rocío Loizaga, Lida Pimper, Maria Jose Perez Alvarez

- 924 Genetic investigation on Cuvier's beaked whale, *Ziphius cavirostris* on the coast of Turkey and Northern Cyprus, based on mtDNA sequences.
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- 970 Conservation implications of loss of both blubber and muscle mass in cetaceans
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- 964 Influence of sample location on blubber cortisol concentration in striped dolphins (*Stenella coeruleoalba*)
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- 952 Effects of cold on skin temperature in Florida manatees (*Trichechus manatus latirostris*).
Nicola Erdsack, Robert Bonde Bonde, John E. Reynolds
- 954 Insulin and blubber deposition in rehabilitating harbor seal pups (*Phoca vitulina*).
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- 958 Annual variation in female humpback whale (*Megaptera novaeangliae*) pregnancy rates, calving rates and physiological state linked to changes in prey abundance in the Gulf of St Lawrence
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- 962 Do controlled exposure experiments with navy sonar signals elicit a startle response in cetaceans?
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- 956 Cortisol binding globulin response to repeated ACTH administrations in juvenile northern elephant seals (*Mirounga angustirostris*)
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- 960 Measurement of progesterone in the blubber of the Franciscana dolphin, *Pontoporia blainvillei* (Cetartiodactyla; Pontoporiidae), off the coast of São Paulo, Brazil.
Vanessa Ribeiro, Daniela Mello, Cláudio de Oliveira, Rodrigo Valle, Juarez Cabral, Lucas Spinelli, Carolina Bertozzi
- 976 Why Baja? An empirical model for estimating field metabolic rates and thermoregulatory costs of gray whale calves (*Eschrichtius robustus*).
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- 974 Antioxidant properties of dolphin serum albumin
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- 968 Oxytocin quantification in serum using liquid chromatography/mass spectrometry (LC/MS) and enzyme immunoassay (EIA) in bottlenose dolphins (*Tursiops truncatus*)
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- 982 Haul-out behavior of male Antarctic fur seals *Arctocephalus gazella* during late summer and early fall at the South Shetland islands
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- 984 Leopard seal migration phenology responds to long-term variation in sea ice extent
Jaume Forcada, Iain Staniland
- 996 The response of harp seals to long-term changes in Arctic sea-ice cover
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- Pattern and tempo of southern right whale (*Eubalaena australis*) recovery at South Georgia/Islas Georgias del Sur
Jennifer Jackson, Amy Kennedy, Michael J Moore, Artur Andriolo, Susannah Calderan, Ted Cheeseman, Karina Groch,
986 Ailsa Hall, Natalie Kelly, Russell Leaper, Matthew Leslie, Sarah Lurcock, Brian Miller, Vicky Rountree, Emilie Nicoline Stepien, Gabriele Stowasser, Philip Trathan, Luciano Valenzuela, Els Vermeulen, Florencia O. Vilches, Alexandre Zerbini, Emma Carroll
- Coastal polynyas: Winter oases for subadult southern elephant seals in East Antarctica.
988 **Sara Labrousse**, Guy Williams, Takeshi Tamura, Sophie Bestley, Jean-Baptiste Sallée, Alexander Fraser, Michael Sumner, Fabien Roquet, Karine Heerah, Baptiste Picard, Christophe Guinet, Rob Harcourt, Clive McMahon, Mark Hindell, Jean-Benoit Charrassin
- Mesoscale dynamics of blue and fin whales and Antarctic krill off East Antarctica
990 **Ana Sirovic**, Megan Wood, Joe Warren, Kate Stafford, Brian Miller
- Analysis of growth layer groups in harp seal (*Pagophilus groenlandicus*) teeth reveals temporal changes in stable isotope ratios.
994 **Sophie Smout**, Camille de la Vega, Rachel Jeffreys, Garry Stenson, Anne Kirstine Frie, Joanna Kershaw
- Killer whale predation on bowhead whales in the Pacific Arctic – on the rise?
980 **Amy Willoughby**, Megan Ferguson, Raphaela Stimmelmayr, Janet Clarke, Amelia Brower

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- Vessel activity trends in the Arctic, 2015-2018
1034 **Jeff Adams**, Gregory K. Silber
- Assessment of online information as a tool to improve the documentation of aquatic wildmeat in Asia.
1036 **Naomi Brannan**, Lindsay Porter, Niki Yeung
- Monitoring marine mammals in Brazil: Beyond the legal commitments.
1066 **Barbara Prates Carpeggiani**, Fernando Almeida, Denise Rosario
- The latest findings on cetacean welfare in captivity (and how it links to wild research and conservation)
1010 **Isabella Clegg**
- Offshore wind and marine mammals in the US: Integrating legal compliance and ecological needs for practicable policy development.
1028 **Sarah Courbis**, Laura Morse, Koen Broker, Tyler Studds, Katherine Guttenplan
- Broad-scale acoustic monitoring for cetaceans and underwater noise in relation to offshore wind farm construction in Scotland.
1004 **Ross Culloch**, Ian Davies, Ewan Edwards, Pablo Chevallard, Nathan Merchant, Nienke van Geel, Kate Brookes
- International and multidisciplinary network for the preservation of the good environmental status of the marine areas of Macaronesian region and the conservation of their cetacean populations (SANICET)
1060 **Jesus De La Fuente**, Manuel Arbelo, José Juan Hernández, Ayoze Castro, Eric Delory, Silvana Neves, Fernando Rosa, Francisco Javier Almunia Portoles, Marco Santos, Gilberto P. Carreira, Ana Dinis, Rita Ferreira, Filipe Alves, Nuno Marques, Luis Freitas, Katia Santos, Nilson Bras, Carolina Oujo, Pedro Lopez Suarez, Antonio Fernandez
- Policy approaches for more sustainable marine wildlife watching
1032 **Heidrun Frisch-Nwakanma**, Agnese Mancini, Amina Cesario, Maddalena Fumagalli, Melanie Virtue, Giuseppe Notarbartolo di Sciara
- A critical analysis of the French marine mammal monitoring programme for MSFD first cycle, and perspectives for second cycle 2020-2026.
1050 **Benjamin Guichard**, Jérôme Spitz
- Renewals of incidental harassment authorizations under the U.S. Marine Mammal Protection Act: Process streamlining.
1022 **Julia Harrison**, Holly Wheeler
- Overview of the U.S. navy's living marine resources (LMR) program.
1020 **Anu Kumar**, Mandy Shoemaker, Danielle Kitchen
- New standard mitigation protocols for geophysical surveys in U.S. waters.
1058 **Ben Laws**, Eric Patterson, Jordan Carduner, Allison Hernandez

- 1042 The IWC at 75 years: Evolving with the challenges.
Sarah Ferriss, Cherry Allison, Kate Wilson, **Rebecca Lent**,
- 1012 The International Impulsive Noise Register for the Mediterranean Sea Region (INR-MED)
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- 1026 Marine protected areas dedicated to marine mammals in the Caribbean
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- 1008 Status of marine mammals in Papua New Guinea waters.
Wilma Mavea, Isabel Beasley, Augustine Mungkage
- 1002 Science, law and marine mammals - analysis of a complex relationship and review of the legal framework in place to protect marine mammals in the UK.
Helen Mitcheson
- 1038 Population assessment of the southern sea lion in the southeast Pacific between 18° and 48°S: New information for future stock assessment report.
Doris Oliva Ekelund, Daniel Cárcamo, Marlene Pizarro, Anahi Canto, Muriel Orellana, Pablo Herrera, Maritza Sepulveda, L. René Durán
- 1014 Defining residency: Can a standardized approach with photographic-identification data be used to classify site fidelity patterns for coastal and estuarine small cetaceans?
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- 1070 Productive harmony: Offshore wind and marine mammals.
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- 1040 Inter-governmental framework for tackling cetacean bycatch
Jenny Renell, Melanie Virtue, Florence Descroix-Comanducci, Heidrun Frisch-Nwakanma
- 1024 Assessment of spatial distribution of industrial gillnet fishery fleet and its overlap with franciscanas (*Pontoporia blainvilliei*) in southern Brazil.
Alessandra Rocha, Marta Cremer, Daniel Daniewicz, Paulo Henrique Ott, Julia Ribeiro, Federico Sucunza
- 1000 Ship strike management in priority regions of the U.S. West Coast: Effectiveness of past efforts and potential for new strategies.
R. Cotton Rockwood, Jeff Adams, John Calambokidis, Jaime Jahncke
- 1030 A variable policy landscape for protecting marine species during offshore wind development
Kathryn Roy, Martha McConnell, Sarah Fortuna
- 1048 World Heritage Site “Wadden Sea” – a challenging habitat for cetacean conservation and management.
Meike Scheidat, Jonas Teilmann, Ursula Siebert, Prof. Dr., Inger van den Bosch
- 1072 An alternative to captive cetacean displays in the Mediterranean: The Aegean Marine Life Sanctuary.
David Schofield, Míriam Martínez-Macipe, Guido Pietroluongo, Anastasia Miliou
- 1074 Permanent placement trends and survivorship of stranded, non-releasable marine mammals
Courtney Smith, Jordan Rutland, Jennifer Skidmore, Sarah Wilkin, Amy Sloan
- 1068 How much is too much? A global review of thresholds of ‘acceptable’ impacts on marine mammal populations.
Carol Sparling, Dominic Tollit, Jason Wood, Dave Thompson, Ursula Verfuss, Aonghais Cook, Tom Stringell, Kate Brookes, Kate Smith, Sophie Smout, Rachael Sinclair, Finlay Bennet
- 1006 Conservation of Irrawaddy dolphins in Bago City and Municipality of Pulupandan, Philippines: A multi-sectoral approach.
Romeo Gotera Teruel, Manuel Eduardo de la Paz, Jessica Pacalioga, Virgilio Aguilar, Maribeth Pillo, Mary Ann Pandan, Mercedes Canal, Rowena Banes
- 1046 Advancing anthropogenic noise risk and noise mitigation assessments for endangered Southern Resident Killer Whales
Dominic Tollit, Ruth Joy, Jason Wood
- 1054 Marine mammal science and ethical dilemmas: The case of dolphin drive hunts.
Courtney Vail, Diana Reiss, Philippa Brakes, Andrew Butterworth
- 1064 Translating science into policy: How the presence (or absence) of evidence can be used to develop conservation measures for endangered whale populations.
Colleen Weiler, Regina Asmutis-Silvia, Deborah Giles, Samuel Wasser

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- 1198 Patterns of persistent organic pollutant concentrations in common bottlenose dolphins (*Tursiops truncatus*) at multiple spatial scales.
Tara Cox, Jaelyn Leslie, Robin Perrtree, Sena Tay, Gina Ylitalo, Brian Balmer, Jennie Bolton, Daryle Boyd, Emily Griffin, Patricia Rosel
- 1222 Persistent Organic Pollutants and Mercury in estuarine coastal bottlenose dolphins (*Tursiops truncatus*) of the Gulf of Guayaquil, Ecuador: A first ecotoxicological assessment.
Patricia Fair, Juan José Alava, Paola Calle, George Biedenbach, Omar Alvarado Cadena, Pedro Jiménez, Keith Maruya, Wenjian Lao, Greg Bossart, Ana Tirapé, Gustavo Dominguez
- 1216 Small-scale patterns of distribution and ecotoxicological features in bottlenose dolphins (*Tursiops truncatus*) in the southern Gulf of Mexico
Erik de Jesus Flores Sanchez, Alberto Delgado-Estrella, Roberto Carlos Barrientos-Medina, Ruben Ruiz-Ramos
- 1204 Establishing skin cell cultures in gray whales to examine their sensitivity to marine contaminants (PAHs, PFCs, PCBs, oil).
Céline Godard-Codding, Christiana Wittmaack, Jocylin Pierro, Jeff Jacobsen, Aimee Lang, James Surles
- 1214 Microplastics in the digestive tracts of manatees in Tampa Bay Florida
Shannon Gowans, Shane Felde, Sabrina Sorace, Martine de Wit, Amy NS Siuda
- 1202 Spatiotemporal trends and risks of per- and polyfluoroalkyl substances in Indo-Pacific humpback dolphins from the Pearl River Estuary, China.
Duan Gui, Yuping Wu
- 1220 Standardization of protocols for quantifying GST activity and CYP1A levels in integument biopsies of *Tursiops truncatus*, *Stenella longirostris* and *Balaenoptera brydeei*
Karim Hahn Lüchmann, Barbara P.H. Righetti, Jaco J. Mattos, Daína Lima, Lígia H. Lanzarin, Luiza M. Rodrigues, Luiz O.B.V. Bôas, Afonso C.D. Bainy
- 1206 Insights into cetacean immunology: Do ecological and biological factors make the difference?
Letizia Marsili, Giovanni Di Guardo, Sandro Mazzariol, Silvia Casini
- 1226 Hg and Se in tissues of three species of dolphins stranded in the Mediterranean coastline of Southeastern Spain.
Emma Martínez-López, José Peñalver, Luisa Lara, Antonio Juan García-Fernández
- 1218 Metals in cetaceans in Greenlandic waters
Anna Roos, Tenna Boye, Malene Simon
- 1210 Generational cycling of PCBs in harbour porpoises of the southern North Sea
Martine van den Heuvel-Greve, Anneke van den Brink, Michiel Kotterman, Christiaan Kwadijk, Steve Geelhoed, Andrea Gröne, Lonneke IJsseldijk
- 1200 Of whales and men: Understanding metal pollution in the Sea of Cortez through a one environmental health approach.
John Pierce Wise, John Wise, Jennifer Toyoda, Tayler Croom-Perez, AbouEl-Makarim Aboueissa, Carlos Lopez Montalvo, Idoia Meaza, Sandra Wise, Catherine Wise, James Wise, Tania Li Chen, Christopher Perkins, Mark Martin Bras, Rachel Speer, Andrea Bonilla Garzon, Jorge Urban
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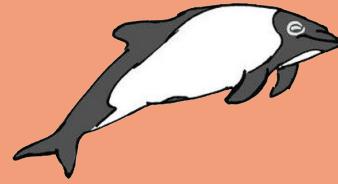
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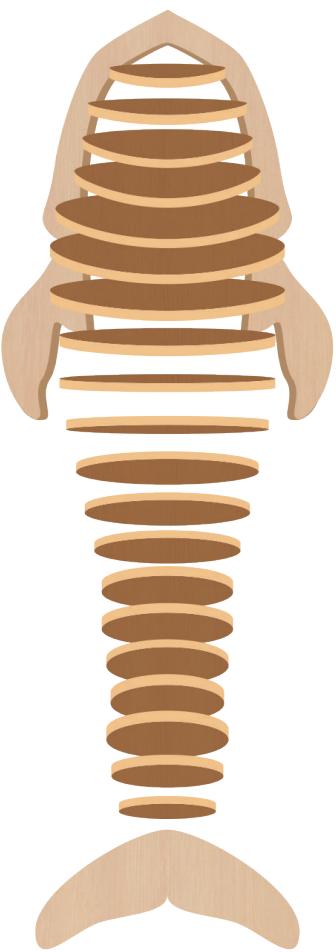
POSTER PODS

Sign up for a Poster Pod close to the entrance of the Hall from Sunday onward or just turn up to see if there is still space available.

Pod Number and Country Flag	Name of Poster Pod Leader	Date / Time	Theme
1	Adam frankel	Monday Dec 9th 13:30-15:00	Acoustics and Communication
2	Belfu Çetinkaya	Monday Dec 9th 13:30-15:00	Acoustics and Communication
3	Sofie Van Parijs	Monday Dec 9th 13:30-15:00	Acoustics and Communication
4	Laura Redaelli	Monday Dec 9th 13:30-15:00	Behavioural Ecology
5	Norma lira	Monday Dec 9th 13:30-15:00	Behavioural Ecology
6	Kathy Zagzebski	Monday Dec 9th 13:30-15:00	Education and Outreach
7	Ada Natoli	Monday Dec 9th 13:30-15:00	Fisheries Interaction
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9	Perla Salzeri	Monday Dec 9th 13:30-15:00	Foraging Ecology
10	Nicole todd	Monday Dec 9th 13:30-15:00	Habitat and Distribution
11	Lionel Yamb	Monday Dec 9th 13:30-15:00	Habitat and Distribution
12	Frances Gulland	Monday Dec 9th 13:30-15:00	Health
13	Tracey Goldstein	Monday Dec 9th 13:30-15:00	Health
14	John Calambokidis	Monday Dec 9th 13:30-15:00	New Technology
15	Luis Huckstadt	Monday Dec 9th 13:30-15:00	Polar Ecology
16	Juan Jose Alava	Monday Dec 9th 13:30-15:00	Toxicology
1	Lu Zhou	Tuesday Dec 10th 8:30-9:45	Acoustics and Communication
2	Iris Borrajo	Tuesday Dec 10th 8:30-9:45	Anatomy and Morphology

3	Ayshah Kassamali-Fox	Tuesday Dec 10th 8:30-9:45	Conservation
4	Caitlin Fitzmaurice	Tuesday Dec 10th 8:30-9:45	Conservation
5	Guilherme A. Bortolotto	Tuesday Dec 10th 8:30-9:45	Habitat and Distribution
6	Katie Colegrove	Tuesday Dec 10th 8:30-9:45	Health
7	Jessie Hoffman	Tuesday Dec 10th 8:30-9:45	New Technology
8	Duminda Senevirathna	Tuesday Dec 10th 8:30-9:45	Phylogeny, Systematics and Genetics
9	Marianne Marcoux	Tuesday Dec 10th 8:30-9:45	Polar Ecology
10	Rebecca Lyal	Tuesday Dec 10th 8:30-9:45	Polar Ecology
11	Clare Andvik	Tuesday Dec 10th 8:30-9:45	Toxicology
1	Michele Manghi	Wednesday Dec 11th 8:30-9:45	Acoustics and Communication
2	Karlina Merkens	Wednesday Dec 11th 8:30-9:45	Acoustics and Communication
3	Chiara DeNeve	Wednesday Dec 11th 8:30-9:45	Behavioural Ecology
4	Luena Fernandes	Wednesday Dec 11th 8:30-9:45	Behavioural Ecology
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6	Carlos Yaipen-Llanos	Wednesday Dec 11th 8:30-9:45	Health
7	Douglas Nowacek	Wednesday Dec 11th 8:30-9:45	New Technology
8	Dani Crain	Wednesday Dec 11th 8:30-9:45	Physiology
9	Kit M. Kovacs	Wednesday Dec 11th 8:30-9:45	Polar Ecology
10	Annalisa Zaccaroni	Wednesday Dec 11th 8:30-9:45	Toxicology
1	Charlotte Findlay	Thursday Dec 12th 14:00-15:30	Acoustics and Communication
2	Frants Havmand	Thursday Dec 12th 14:00-15:30	Acoustics and Communication

3	David Pfender	Thursday Dec 12th 14:00-15:30	Behavioural Ecology
4	John Jansen	Thursday Dec 12th 14:00-15:30	Conservation
5	Vania Elizabeth Rivera Leon	Thursday Dec 12th 14:00-15:30	Conservation
6	William Kay	Thursday Dec 12th 14:00-15:30	Foraging Ecology
7	Jan Lakemeyer	Thursday Dec 12th 14:00-15:30	Health
8	Veronique Lesage	Thursday Dec 12th 14:00-15:30	New Technology
9	Alana Alexander	Thursday Dec 12th 14:00-15:30	Phylogeny, Systematics and Genetics



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