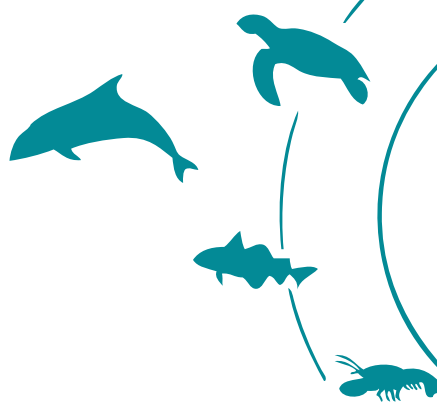


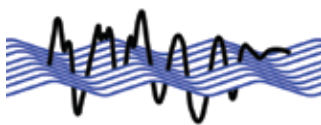


Budapest 2013



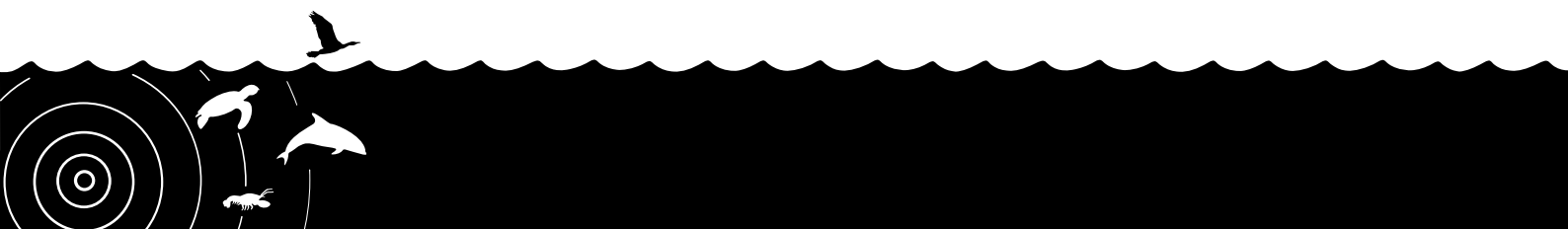
The Effects of Noise on Aquatic Life

Sponsors



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ACKNOWLEDGMENTS

We are grateful to the following organizations for providing the financial assistance that has enabled us to support attendance of a large number of delegates.

Agencies

Fisheries Joint Management Committee (Canada).
National Oceanographic and Atmospheric Administration (USA)
National Science Foundation (USA)
NAVFAC (USA)
Office of Naval Research (USA)
Office of Naval Research – Global (UK)

Companies

BP
Chevron
ExxonMobil
Gardline Environmental Ltd.
Greenridge Associates
HDR
Illingworth & Rodkin
JASCO Applied Sciences
Loggerhead Instruments
Loughine Ltd.
RTsys
SIMRAD

Organizations

Acoustical Society of America
Aquatic Noise Trust
Discovery of Sound in the Sea (DOSITS.ORG)
The Company of Biologists
University of Maryland, College of Chemical and Life Sciences and the Center for
Comparative and Evolutionary Biology of Hearing
Wildlife Acoustics

We would also like to express our gratitude to a large number of people who have provided help in planning and executing the meeting.

We start with our wives, Susan Hawkins and Helen A. Popper, for substantial and invaluable guidance in selecting the meeting site and planning the nonscience activities for the meeting.

The logistics and organization of the meeting in Budapest, and the running of the meeting, could not have been carried out without the exceptional guidance, wisdom, and help of the staff of Venues World. In particular, we acknowledge the enormous contributions of Terri Cullinane, Andras Meszaros, and Jennifer Loftus. We do not know what we would have done without their help.

We thank Patty Doerfler of the Department of Biology at the University of Maryland for her meticulous work to ensure that our funding was managed properly and that we are in the position to reimburse delegates getting support in the most efficient manner.

We are grateful to Ann Avouris, our editor at Springer New York, for showing great flexibility and resourcefulness as we worked to develop ways to rapidly produce a very high quality book as the work product of this meeting.

We are grateful to Erica Casper for helping with organization of financial arrangements.

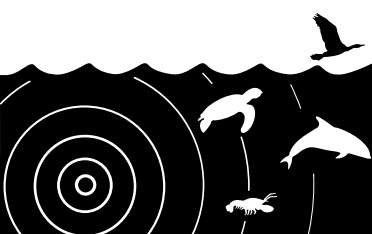
We are also grateful to our co-organizers and the Advisory Committee for their dedication, insights and guidance.

Tony Hawkins

Art Popper

August 11th 2013

Funding for the conference brochure came from Wildlife Acoustics.



CONFERENCE ORGANIZERS AND ADVISORS

Organizers

Anthony D. Hawkins, UK

Arthur N. Popper, USA

Co-organizers

Christine Erbe, Australia

James Miller, USA

Joseph Sisneros, USA

Advisory Committee

Michael Ainslie, TNO, The Netherlands

Sarah Dolman, WDCS, Whale and Dolphin Conservation Society, UK

Rebecca Dunlop, University of Queensland, Australia

Bruce Hanna, Fisheries and Oceans Canada

Craig Johnson, National Marine Fisheries Service, USA

Jill Lewandowski, BOEM, USA

David Mann, University of South Florida & Loggerhead Instruments, USA

Jennifer Miksis-Olds, Pennsylvania State University, USA

Roberto Racca, JASCO Applied Sciences, Canada

Gail Scowcroft, DOSITS Project, URI Graduate School of Oceanography, USA

Hans Slabbekoorn, IBL - Leiden University, The Netherlands

Michael Stocker, Ocean Conservation Research, USA

Brandon Southall, Southall Environmental Associates, Inc. & University of California,

Santa Cruz, USA

Bill Streever, BP Exploration, Alaska, Inc., USA

Michael Weise, Office of Naval Research, USA

Program for Social Advisors

Susan Hawkins, UK

Helen A. Popper, USA

GENERAL INFORMATION & CONFERENCE ACCOMMODATION

Budapest

Straddling the Danube River with the Buda Hills to the west and the start of the Great Plain to the east, Budapest is the most beautiful city in central Europe. Architecturally, Budapest is a gem, with enough baroque, neoclassical, eclectic, and art nouveau (or Secessionist) buildings to satisfy anyone's appetite. With parks brimming with attractions, museums filled with treasures, pleasure boats sailing up and down the scenic Danube, and Turkish-era thermal baths belching steam, the Hungarian capital is a delight both by day and by night. The food and wine are excellent, offering great value and abundance.

Summer is a time to enjoy the outdoors in Budapest, and experience its pools, parks, patios, festivals, and nightlife, all within easy access of the conference hotel.

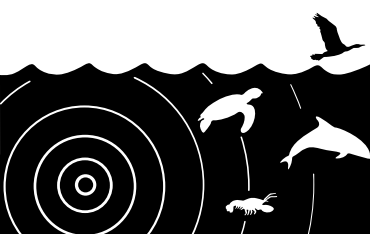
The Conference Hotel: Corinthia Hotel

The Third International Conference on the Effects of Noise on Aquatic Life will take place in the Corinthia Hotel Budapest, also known affectionately by its historic name, the Grand Hotel Royal. Its façade has graced Budapest's fashionable thoroughfare, Erzsébet Avenue, for well over a century. After decades of faded glory, the hotel reopened in December 2002, having been faithfully restored into a magnificent luxury hotel.

Today the hotel includes 414 spacious bedrooms, an elegant spa, and a choice of bars and restaurants while the conference facilities are unsurpassed, providing a venue with style and gravitas yet with state-of-the-art facilities.

Large open space offering great flexibility for poster sessions, meeting sessions, banqueting, and networking makes the Corinthia Hotel Budapest the ideal choice for our meeting in 2013.

The main conference sessions will take place in the Ballroom.



Registration Desk

The registration desk is located in the main lobby of the Corinthia Hotel, near the main entrance and close to the hotel reception desk. On Monday it moves upstairs to the first floor, just outside the Ballroom where the main sessions take place.

Inquiries for the following should be made at the registration desk:

- To register for the conference and collect your participant pack
- Any payment queries relating to your registration and accommodation
- General information regarding the conference
- To book any social events or tours
- Accommodation changes
- All inquiries relating to approved reimbursements for the meeting to be made at the registration desk for the attention of Ms. Patty Doerfleuer.

Registration Desk Opening Times

Sunday August 11:	15:00 – 19:00
Monday August 12:	07.00 – 17.00
Tuesday August 13:	07.30 – 17.00
Wednesday August 14:	07.30 – 17.00
Thursday August 15:	07.30 – 17.00
Friday August 16:	07.30 – 16.30

Lunch

Lunch will be served each day in the Brasserie Restaurant. Your badge is your ticket, so please ensure you wear it at all times.

Poster Presentations

Poster boards are located in Valletta 1 on the first floor.

Please note that all posters should be put up no later than noon on Monday and removed by 17:00 on Thursday. Posters should be placed on the boards according to the number given in the Poster listings in this program.

Oral and Lightning Presentations

The speaker review room (room 1213) is located on the first floor opposite the Grand Ballroom. Speakers should load their power point presentations from a CD-ROM or USB stick onto the conference laptop on the previous evening ("e.g., Sunday for Monday presentations).

Dedicated staff will be available in the speaker review room to assist as required.

Please note that speakers will not be able to use their own laptops for presenting talks.

Badges

Your badge must be worn at all times while in the conference region of the Corinthia Hotel as it is your ticket to the conference sessions, lunch, tea/coffee, welcome reception on Sunday, and buffet dinner on Wednesday. Separate tickets are issued for other social events. Loss of your badge will incur a replacement charge of €10.

List of Delegates

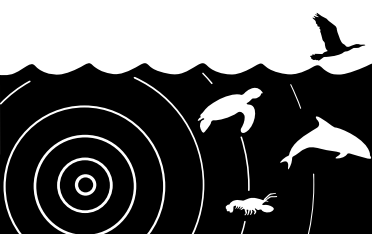
A list of delegates during the conference will be available at the registration desk.

Internet Access

Full WIFI access will be available in all public areas in the conference venue. Details on how to connect are available at the registration desk. WIFI in all meeting areas is sponsored by Loggerhead Instruments on Monday through Wednesday, by RTsys on Thursday and by Ocean Sonics on Friday

Reimbursement for Delegates Receiving Financial Support

If you have received financial support from the meeting for transportation, hotel, and/or other expenses, it is important that at some point during the meeting (probably better earlier in the week to avoid a rush) you must see Ms. Patty Doerfler at the registration desk. Please bring your letter of support, any receipts you already have (which Patty will copy), and, for non US citizens and green card holders, your passport (which, again, Patty will copy). By seeing Patty at the meeting and providing this information, you will expedite reimbursement (which will be after the meeting and you have sent in the reimbursement form). Please note that you will still need to mail Patty the reimbursement form we sent you, along with original receipts, prior to getting reimbursed. We also ask that you do not request reimbursement for more than the amounts allocated to you.



Eating Out

Budapest has a wide variety of great restaurants. A list of restaurants will be available at the registration desk.

No Smoking Policy

Under Hungarian law, smoking is not permitted in public areas, which includes bars and restaurants. Smoking is possible outside of the main and back entrance of the Corinthia Hotel and in addition there are two small smoking areas on the first floor near the meeting space.

Lost and Found

Articles found should be taken to the registration desk on the first floor.

For articles lost, please contact the hotel reception desk.

Insurance

The Conference Organizing Committee or its agents will not be responsible for any medical expenses, loss or accidents incurred during the conference. Delegates are strongly advised to arrange their own personal insurance to cover medical and other expenses including accident or loss. Where a delegate has to cancel for medical reasons, the normal cancellation fee will apply. It is recommended that citizens from EU countries bring with them a current EHIC card (E111).

Transport

Taxi: The concierge (concierge desk situated in the hotel lobby) will be happy to call a taxi for you.

Emergency Contact Numbers

Emergency, Police, Fire, Ambulance Tel: 112

Shopping

The main shopping areas are located in Pest's City Center. One of them is Vaci Street (Váci utca), perhaps the most famous shopping street in Budapest. Designated as a pedestrian precinct, it runs from Vorosmarty Square to Vármház körút, and features, a large number of fashionable shops, restaurants, and cafés

There are five large market halls in Budapest, all dating from the 19th century. The largest of these is the Central Market Hall on Vármház körút. Here you will find a huge variety of vegetables, fruits, cheeses, and meats. Souvenirs such as paprika and Tokaji are also available. On the second floor, you'll find vendors selling folk art, as well as a small food court and a restaurant serving traditional Hungarian dishes.

CONFERENCE ACCOMMODATION

Corinthia Hotel Budapest (Conference Hotel)

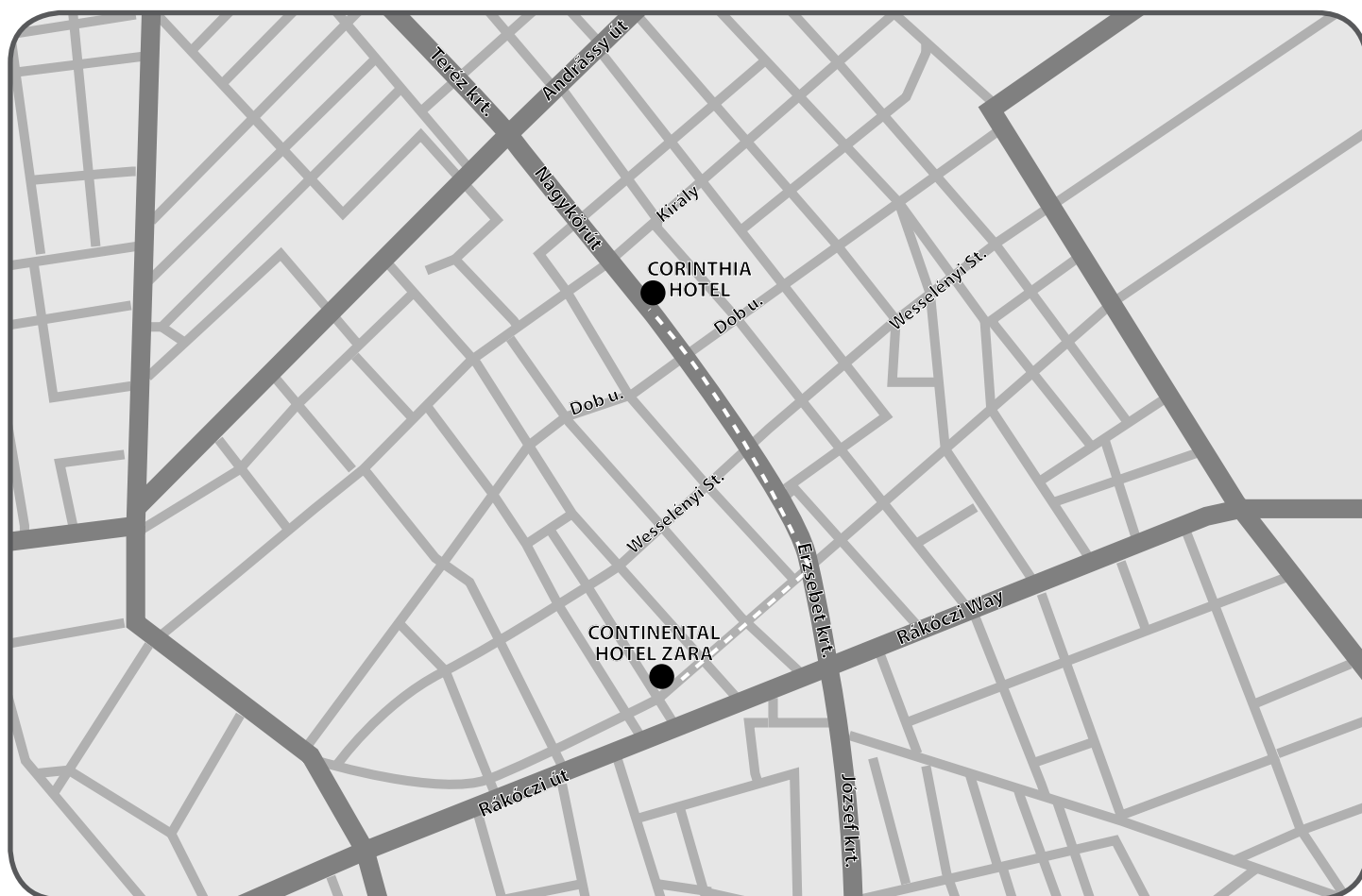
Erzsébet körút 43, 1073 Budapest, Hungary

Tel: 00 36 1 479 4000

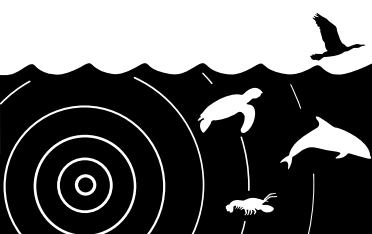
Continental Hotel Zara

Dohány utca 42-44, 1074 Budapest, Hungary

Tel: 00 36 1 815 1043



Proximity of hotels to one another



SOCIAL PROGRAMME

Welcome Reception

Date: Sunday, August 11

Time: 18:00 - 21:00

Venue: Atrium 11

Cost: Included in your registration fee

Following registration in the Corinthia Hotel, guests are invited to attend the official welcome reception, which takes place in the Atrium II on the ground floor. You will be free to mingle with your fellow conference attendees in a relaxed and welcoming environment. Finger food and a complimentary drink will be provided. Partners and children are welcome to attend. **Dress:** Casual

Student Reception (Students and Postdocs only)

Kindly sponsored by Illingworth & Rodkin, Inc.

Date: Monday August 12

Time: 20:30

Venue: Grand Ballroom

AN2013 is pleased to host a special evening reception and discussion for students and postdocs at 20:30 just outside of the main meeting room, the Grand Ballroom. The purpose of the reception is to enable students and postdocs to meet their peers in an informal setting and to discuss issues related to education, outreach, and communication of their research. The evening will be led by Gail Scowcroft and Kathleen Vigness-Raposa, internationally known experts on communicating the science of underwater sound and founders of the award-winning Discovery of Sound in the Sea (DOSITS.org) Web-site.

Buffet Dinner

Date: Wednesday, August 14

Time: 18:45 – 19:45

Venue: Brasserie Restaurant

Cost: The cost is included for all students and paid accompanying persons. For full delegates, the rate is €15.00 which is payable in advance at the registration desk.

This buffet dinner is followed immediately by the Lightning Session in the Grand Ballroom.

Conference Dinner “Hungarian Experience”

Date: Friday, August 16

Time: 19:00

Venue: Grand Ballroom, Corinthia Hotel

Cost: €85.00

The Conference Dinner will be an authentic Hungarian experience of food, wines, music, song, and dance. Please note that children may not attend the Gala Dinner.

Dress: Smart Casual

OPTIONAL TOURS

TUESDAY AUGUST 13

Castle District Walking Tour

Depart Time: 16.45 (meet in the lobby of the Corinthia Hotel)

Return Time: 19.45

Cost: €49.00 price includes:

Deluxe coach with fully licensed English-speaking guide for up to 3 hours.

Entrance and welcome drink on the Fishermen's Bastion

Entrance and guided tour of the Military Rock Hospital

This tour explores the Castle District with its romantic narrow lanes and one-story buildings and its charming Fishermen's Bastion formal Royal Palace where a welcome drink will be served. An exclusive visit of the special exhibition of the Military Rock Hospital is also included.

Danube Cruise

Depart Time: 16:45 (meet in the lobby of the Corinthia Hotel)

Return Time: 19:15

Cost: €40.00 price includes:

Deluxe coach with fully licensed English-speaking guide for up to 3 hours.

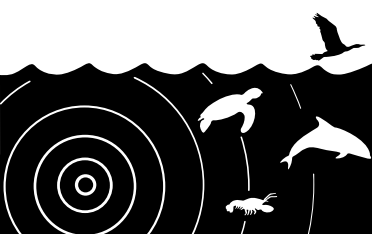
2-hour cruise on privately chartered boat

Dessert buffet with soft drinks and coffee

Budapest offers a unique view from the River Danube, from where guests can enjoy the atmosphere of a 2000 year old city and admire the buildings and monuments from both the Middle Ages and from the 20th century at the same time.

An exclusively chartered boat will take you to the southern end of Budapest - passing by the Gellert Hill, the famous Gellért Bath and Hotel, the Technical University, and the Market Hall with the University of Economics. On our way to the north, guests will enjoy a breathtaking view of the entire Castle District, the Buda Hills, Parliament, and Margaret Island.

The excursion includes a round-trip transfer by bus and English-speaking guide from the hotel to the pier. While sailing between Buda and Pest, a dessert buffet with soft drinks and coffee will be offered.



Authentic Hungarian dinner with horse show at the Lazar Equestrian Park

Depart Time: 17:00 (meet in the lobby of the Corinthia Hotel)

Return Time: 22:00

Cost: €74.00 - price includes:

Deluxe coach with fully licensed English-speaking guide during the tour

Welcome, horse show, carriage ride at the Equestrian Park

Dinner with drinks

Gypsy music

The Lazar Equestrian Park in Domonyvolgy is located only 35 km from Budapest, in the very heart of the Gödöllő hills - 5 km from the Royal Mansion. This enterprise combines the atmosphere of Hungarian villages with the flavor of a horse farm of European excellence and Hungarian hospitality. Transfer by bus/guide takes approximately 45 minutes to the Lazar Equestrian Park. Upon arrival at the Equestrian Park guests are offered fresh-made leavened biscuits, palinka (Hungarian brandy,) and mineral water. Afterwards guests proceed to the tribune to watch the horse show. This is followed by a 3 course Hungarian meal served family style with goulash, mixed plate, and dessert. Wine, water, and coffee are also served.

During dinner a Gypsy band will provide entertainment.

Wine tasting and dinner in the vineyards of Budapest

Depart Time: 17:00 (meet in the lobby of the Corinthia Hotel)

Return Time: 22:00

Cost: €76.00 - price includes:

Deluxe coach with fully licensed English-speaking guide during the tour

Wine tasting and wine estate visit

Dinner with drinks

Etyek is a settlement with nearly 4,000 inhabitants 26 km from Budapest on the edge of Zsámbék basin, in the northeastern part of Fejér county. As a result of centuries-long viticulture, Etyek has recently joined Hungary's historic wine districts. The Törley champagne of Budafok and the more and more popular wines of Etyek are made from the grapes grown on an area of almost 800 ha. The transfer from Budapest to Etyek takes about 45 minutes.

Upon arrival at the private winery, guests will be offered a welcome wine and pogatscha – salty scones. A guided tour will then take place, followed by a professional wine tasting where guests are served with 4 types of the house's quality white wine.

After the wine tasting, a traditional Hungarian 3-course menu complemented by Hungarian wines and soft drinks will be served in the winery.

Conference Program

All Meeting Events Take Place at the Corinthia Hotel. Main sessions will be held in the Grand Ballroom

Arrival Day: Pre-Program – Sunday Evening

18.00 21.00 Informal running welcome buffet in Atrium II

First Day: Monday

Introduction

08.15	08.25	Conference Opening	Arthur Popper & Tony Hawkins
08.25	08.40	Welcome to Budapest	Aniko Ferenczy
08.40	09.15	New Perspectives on Noise Damage	M. Charles Liberman

Hearing & Sound Communication - Chaired by Arthur Popper

09.20	09.40	Hearing and Habitat	Darlene Ketten
09.40	10.00	TTS and recovery in harbor porpoises	Ronald Kastelein
10.00	10.20	Sound reception and effects in marine invertebrates	Michel André

10.20 10.40 Break – sponsored by Greenridge Sciences/LGL

10.40	11.00	Evaluating the effects of anthropogenic noise	Robert Dooling
11.00	11.20	Underwater hearing in turtles	Katie Willis
11.20	11.40	Auditory weighting functions in sea lions and dolphins	James Finneran
11.40	12.00	AEP audiograms compared with behavioral audiograms	Joe Sisneros

12.00 13.30 Lunch in Hotel Restaurant

Hearing & Sound Communication - Chaired by Tony Hawkins

13.30	13.50	Functional morphology and symmetry in the odontocete ear complex	Ted Cranford
13.50	14.10	Hearing sensation changes when a warning predicts a loud sound in the false killer whale	Paul Nachtigall
14.10	14.30	Effects of hatchery rearing on mechano-sensory systems in salmonids	Allison Coffin
14.30	14.50	Psychoacoustic studies of spotted and ringed seals	Colleen Reichmuth
14.50	15.10	Discussion	

15.10 15.30 Break – sponsored by Greenridge Sciences/LGL

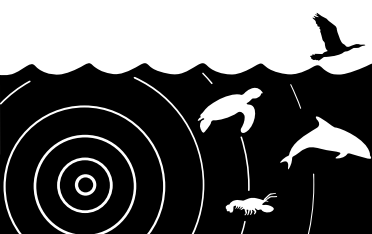
15.30 16.30 First Lightning Session: 15 presentations, each 4 minutes long
Chaired by Christine Erbe

16.30 18.00 Poster Viewing

Dinner – Own arrangements in Budapest City

20.30 **Reception for Students & Postdocs - Grand Ballroom**

This reception is intended to provide an opportunity for graduate students and post-docs to meet their peers from around the world and discuss the potential for collaborations related to education, outreach, and communication activities. The evening will be led by Gail Scowcroft and Kathleen Vigness-Raposa.



Conference Program

Second Day: Tuesday

Soundscapes - Chaired by Hans Slabbekoorn

08.20	08.40	Soundscape ecology: a new emerging science of sound of landscapes	Bryan Pijanowski
08.40	09.00	Global trends in ocean noise	Jennifer L. Miksis-Olds
09.00	09.20	Natural ambient sea noise in Australian waters	Robert McCauley
09.20	09.40	Predicting anthropogenic noise contributions to U.S. waters	Jason Gedamke
09.40	10.00	The European Marine Strategy Directive - noise monitoring in marine waters	René Dekeling

10.00	10.20	Break
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Soundscapes - Chaired by Ronald Kastelein

10.20	10.40	Soundscapes and larval settlement	David Eggleston
10.40	11.00	Characterizing marine soundscapes	Christine Erbe
11.00	11.20	Reef fish can acclimatize to boat noise while nearby sea hares suffer impaired development and higher mortality	Sophie Holles
11.20	12.00	Discussion	
12.00	13.30	Lunch in Hotel Restaurant	

Sound Sources & their Characterization I - Chaired by Jennifer Miksis-Olds

13.35	13.55	Sources of underwater sound and their characterization	Michael Ainslie
13.55	14.15	Pile driving pressure and particle velocity at the seabed	James H. Miller
14.15	14.35	The intrinsic directional information of ground roll waves	Dick Hazelwood
14.35	15.00	Discussion	

15.00	15.30	Break
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15.30	16.30	Second Lightning Session: 15 Presentations, each 4 minutes long - Chaired by Michael Stocker
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From 17.00 Optional Excursions for Delegates

Conference Program

Third Day: Wednesday

Effects of Sound on Behavior - Chaired by Rob McCauley

08.15	08.40	Acoustic communication in fishes and potential effects of noise	David Mann
08.40	09.00	Interaction of high-speed catamarans using waterjet propulsion, and humpback whales in Hawaii	Whitlow Au
09.00	09.20	Controlled sonar exposure experiments on cetaceans	Frans-Peter Lam
09.20	09.40	Does vessel noise affect oyster toadfish calling rates?	Joseph Luczkovich
09.40	10.00	Changes in right whale calling behavior in shifting background noise conditions	Susan Parks

10.00 10.20 Break

Effects of Sound on Behavior - Chaired by Whit Au

10.20	10.40	Anthropogenic noise fundamentally impacts the ecology of reef fishes	Stephen Simpson
10.40	11.00	Addressing challenges in studies of behavioral responses of whales to noise	Douglas Cato & Rebecca Dunlop
11.00	11.20	Results of a harbour seal telemetry study during pile driving	Gordon Hastie
11.20	12.00	Discussion	
12.00	13.30	Lunch in Hotel Restaurant	

Effects of Sound on Behavior - Chaired by Marta Picciulin

13.30	13.50	An overview of the MOCHA project	Catriona Harris
13.50	14.10	Vessel noise increases bio fouling	Jenni Stanley
14.10	14.30	Risk functions of dolphins and sea lions exposed to sonar signals	Dorian Houser
14.30	14.50	Cephalopod behavioral responses and potential for habituation to acoustic stimuli	Julia Samson
14.50	15.20	Discussion	
15.20	18.00	Break and Poster Viewing	
18:45	19:50	Informal Buffet Dinner at Hotel	

Third Lightning Session - Chaired by Michael Weise & Loes Bolle

20.00 21.00 12 presentations, each 4 minutes long

21:00 21:20 Break

21:20 22:10 10 presentations, each 4 minutes long



Conference Program

Fourth Day: Thursday

Wider Implications of Sound Exposure - Chaired by Bill Streever

08.20	08.40	Understanding the population-level consequences of acoustic disturbance (PCAD) for marine mammals	John Harwood
08.40	09.00	A bioenergetics approach to understanding the population consequences of disturbance: elephant seals as a model system	Daniel Costa
09.00	09.20	Are masking-based models of risk useful?	Robert Gisiner
09.20	09.40	The effects of impulsive pile driving exposure in fishes	Brandon Casper
09.40	10.00	Effect of pile-driving sounds on the survival of larval fish	Loes Bolle

10.00	10.20	Break
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Wider Implications of Sound Exposure - Chaired by Rebecca Dunlop

10.20	10.40	Stochastic modeling of behavioral response to anthropogenic sounds	Kathleen J. Vigness-Raposa
10.40	11.00	Pile driving at the new bridge at Tappan Zee: Potential environmental impacts	Fred Jacobs
11.00	11.20	Effects of seismic airguns on pallid sturgeon and paddlefish	Arthur Popper
11.20	11.40	Sound exposure criteria for fishes	Tony Hawkins
11.40	12.10	Discussion	
12.10	13.30	Lunch in Hotel Restaurant	

Sound Sources & their Characterization II - Chaired by Michael Ainslie

13.30	13.50	Offshore dredger sound: source levels, sound maps and risk assessment	Christ de Jong
13.50	14.10	Underwater sound propagation modeling methods for predicting marine animal exposure	Craig Hamm
14.10	14.30	Particle motion measurements: Evaluation of methods	David Zeddies
14.30	14.50	Parvulescu revisited: Small tank acoustics for bio-acousticians	Peter Rogers
14.50	15.15	Discussion	

15.15	16.30	Break and Poster Viewing
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Optional Excursions for Delegates

Conference Program

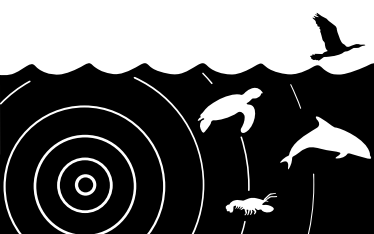
Fifth Day: Friday

Assessing, Mitigating, and Monitoring the Effects of Aquatic Noise Chaired by Joe Sisneros

08.15	08.35	How might we assess the effects of underwater noise on populations of marine animals?	Mark Tasker
08.35	08.55	Active acoustic detections of marine mammals in the Canadian Beaufort Sea	Cynthia Pyć
08.55	09.15	Noise mitigation during pile driving efficiently reduces disturbance to marine mammals	Georg Nehls
09.15	09.35	Noise exposure criteria for harbor porpoises	Jakob Tougaard
09.35	09.55	Discussion	
09.55	10.20	Break	
10:20	12.00	Panel Discussions (4 concurrent) SEE BELOW	
12.00	13.30	Lunch in Hotel Restaurant	

Assessing, Mitigating, and Monitoring the Effects of Aquatic Noise Chaired by Mark Tasker

13.30	13.50	Acoustic modeling and monitoring to mitigate effects of seismic surveys	Roberto Racca
13.50	14.10	Assessing the effectiveness of ramp-up during sonar operations using exposure models – a killer whale case study	Alexander von-Benda Beckmann
14.10	14.50	Report back from panels - Chaired by Tony Hawkins	
14.50	15.20	Break	
15:20	16:00	Conclusions from the Conference	Christine Erbe, James H. Miller, Joe Sisneros
16:00	16:30	Final Discussion and Reflections by Participants	
16:30	16:40	Closing Remarks	Tony Hawkins and Arthur Popper
18:30		Optional Conference Dinner	



Discussion Panels

There will be 4 concurrent discussion panels on the final day, as follows:

1. Communication and Interpretation: Presenting information to the General Public

To be led by Gail Scowcroft, with presentations from Paul Thompson, Marta Picciulin, Kathleen Vigness-Raposa, and Sarika Cullis-Suzuki

2. Regulatory Issues

To be led by Craig Johnson, with presentations from Bill Streever, Mark Tasker and Sarah Dolman

3. Protocols and Standards

To be led by Christine Erbe, with presentations from Michael Ainslie and Roberto Racca

4. Gap Analysis from the Perspective of Animal Biology

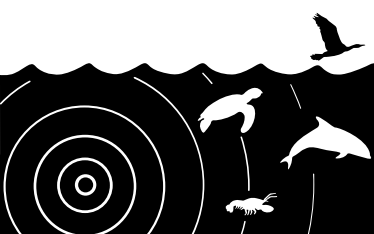
To be led by Jill Lewandowski, with presentations from Joseph Luczkovich, Rebecca Dunlop and Douglas Cato

LIGHTNING PRESENTATIONS¹

NB These presentations are also to be accompanied by Posters

Monday Afternoon Lightning Presentations (15)		
Modeled and measured underwater sound isopleths and implications for marine mammal mitigation in Alaska	Lisanne	Aerts
Assessment of impulsive and continuous low frequency noise in Irish waters	Suzanne	Beck
Effects of pile driving on fish larvae: a field experiment	Elisabeth	Debusschere
“Large” tank acoustics: How big is big enough?	Michael	Gray
Directional hearing and head-related transfer function in odontocete cetaceans: Can you hear me hollerin?	Petr	Krysl
Real-time remote monitoring of sound pressure and particle velocity on open ocean sites	Eugene	McKeown
Auditory discrimination of natural and high-pass filtered bark vocalizations in a California sea lion (<i>Zalophus californianus</i>)	Jason	Mulsow
Are the 1/3 octave 63 and 125 Hz band noise levels predictive of local vessel and dolphin distributions? The case of the Cres-Lošinj archipelago (northern Adriatic Sea, Croatia)	Marta	Picciulin
Underwater sound propagation from marine pile driving	James	Reyff
The meaning of noise-induced behavioral changes	Hans	Slabbekoorn
Active acoustic monitoring of aquatic life	Peter	Stein
Measuring in-air and underwater hearing in seabirds	Sara	Therrien
Noise dependent fish distribution in kelp beds	Xuguang	Zhang
Anthnt in marine larvae	Natacha	Aguilar de Soto
Singing fish in an ocean of noise	Sarika	Cullis-Suzuki

¹ Each Lightning Session presentation is also presented as a poster. See listing of posters below.



LIGHTNING PRESENTATIONS

NB These presentations are also to be accompanied by Posters

Tuesday Lightning Session Presentations (15)

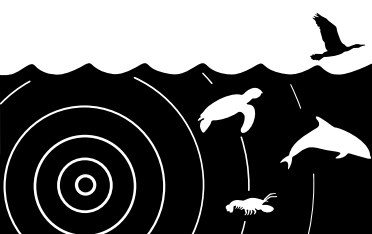
Measurements of operational wind turbine noise in UK waters	Samuel	Cheesman
Does primary productivity turn up the volume? Exploring the relationship between chlorophyll and the soundscape of coral reefs in the Pacific	Pollyanna	Fisher Pool
Soundscapes and larval settlement: characterizing the stimulus from a larval perspective	Ashlee	Lillis
Measurement of underwater noise emitted by wave and tidal stream energy devices	Paul	Lepper
Spatial patterns of inshore marine soundscapes	Jamie	McWilliam
Noise impact on European sea bass behavior: temporal structure matters	Errol	Neo
Sharing waters with marine turbines	Matthew	Pine
Sensitivity of crustaceans to substrate borne vibration	Louise	Roberts
The relationship between hair cell loss and hearing loss in fishes	Michael	Smith
Sound exposure level: Is it a convenient metric to characterize fatiguing sounds? A study in beluga whales	Alexander	Supin
Review of offshore wind farm mitigation and impact monitoring with regards to marine mammals	Ursula	Verfuß
Mapping the acoustic soundscape off Vancouver Island using the NEPTUNE Canada ocean observatory	Carrie	Wall
A deep-sea neutrino telescope reveals and tracks on the internet the behavior of sperm whales when exposed to shipping noise	Michel	André
Beyond a simple effect: Condition-dependent, carry-over and repeated-exposure impacts of noise on behavior and physiology	Andrew	Radford
Seismic survey footprints in Irish waters: a starting point for effective mitigation	Thomas	Folegot

LIGHTNING PRESENTATIONS

NB These presentations are also to be accompanied by Posters

Wednesday Evening, First Lightning Session Presentations (12)

In-air and underwater hearing in the great cormorant (<i>Phalacrocorax carbo</i>)	Sasia	Johansen
Soundscape and noise exposure monitoring using AIS data and time-lapse footage	Nathan	Merchant
Does noise from shipping and boat traffic affect predator vigilance in the European common hermit crab?	Anna	Nousek McGregor
Acoustic ecology in the ocean pelagic zone?	Craig	Radford
Auditory effects of multiple impulses from a seismic air gun on bottlenose dolphins (<i>Tursiops truncatus</i>)	Carolyn	Schlundt
Characterization of sounds produced by temperate and tropical sea urchins from the east coast of Australia	Natalie	Soars
Anthropogenic noise causes physiological stress in wood frogs (<i>Lithobates sylvaticus</i>)	Jennifer	Tennessee
Holding-tank acoustic conditions can influence the behavioral responses of fish during playback experiments	Irene	Voellmy
Underwater equal-reaction time contours of a harbor porpoise	Paul	Wensveen
Detection of complex sounds in quiet conditions by seals and sea lions	Kane	Cunningham
Amphibious hearing in the sea otter (<i>Enhydra lutris</i>)	Colleen	Reichmuth
Avoidance of pile-driving noise by Hudson River sturgeon during construction of the New NY Bridge at Tappan Zee	Justin	Krebs

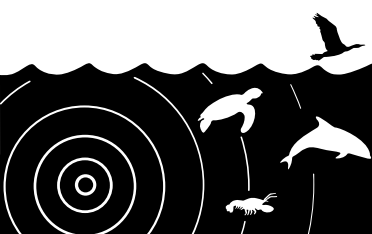


LIGHTNING PRESENTATIONS

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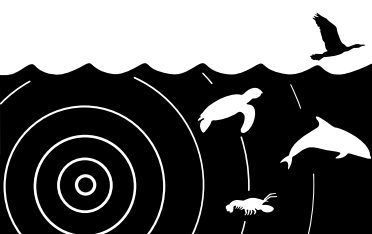
Wednesday Evening, 2nd Lightning Session Presentations (10)		
Lessons from the UK offshore wind farm developments	Sofia	Patricio
Potential population consequences of active sonar disturbance in Atlantic herring: estimating the maximum risk	Lise	Doksæter
Assessment of cumulative effects of anthropogenic underwater sound on marine mammals	Erica	Fleishman
The acoustic response to playback of pile driving sounds by invertebrates	Ilaria	Spiga
Harp seals do not increase their call frequencies when it gets noisier	John	Terhune
Cardio-respiratory responses to acoustic noise in belugas	Oleg	Lyamin
Passive underwater noise attenuation using large encapsulated air bubbles	Mark	Wochner
What we can learn from artificial lateral line sensor arrays	Adrian	Klein
Assessment of cetacean's safety zones for use of military sonar in the Baltic Sea	Mathias	Andersson
Implementing mitigation in practice: The MMO/PAM's perspective	Phil	Johnston

Poster board #	POSTERS		
1L ²	Modeled and measured underwater sound isopleths and implications for marine mammal mitigation in Alaska	Lisanne	Aerts
2	A voluntary moratorium to naval sonar: from the Canary Islands success to the Mediterranean	Natacha	Aguilar de Soto
3L	Anthropogenic noise causes body malformations and delays development in marine larvae	Natacha	Aguilar de Soto
4	Assessment of marine mammal safety zones for military sonars operating in the Baltic Sea	Mathias	Andersson
5L	A deep-sea neutrino telescope reveals and tracks on the internet the behavior of sperm whales when exposed to shipping noise	Michel	André
6	A low cost open source acoustic recorder for bioacoustics research	John	Atkins
8L	Assessment of impulsive and continuous low frequency noise in Irish waters	Suzanne	Beck
9	Withdrew		
10	Is the Venice lagoon noisy? First passive listening monitoring of the Venice lagoon: possible effects on the typical fish community.	Marta	Bolgan
11	The challenge of using passive acoustic monitoring in noisy, high energy environments: UK tidal environments and other case studies.	Cormac	Booth
12	Hearing mechanisms and noise metrics related to auditory masking in bottlenose dolphins (<i>Tursiops truncatus</i>).	Brian	Branstetter
13	Singing fish in an ocean of noise	Sarika	Cullis-Suzuki
14	Review of the effects of offshore seismic surveys in cetaceans: are mass strandings a possibility?	Manuel	Castellote
15L	Measurements of operational wind turbine noise in UK waters	Samuel	Cheesman
16	Underwater ambient noise measurement in Northern Adriatic Sea (Italy): a Marine Strategy Framework Directive (MSFD - 2008/56/EC) approach.	Antonio	Codarin



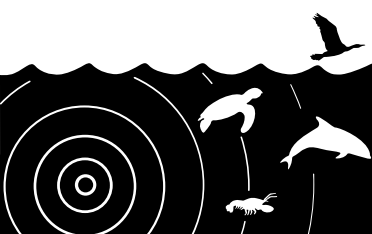
Poster board #	POSTERS		
17L	Detection of complex sounds in quiet conditions by seals and sea lions	Kane	Cunningham
18L	Effects of pile driving on fish larvae: a field experiment	Elisabeth	Debusschere
19L	Potential population consequences of active sonar disturbance in Atlantic herring: estimating the maximum risk	Lise	Doksæter
20	Fulfilling EU laws to ensure marine mammal protection during marine renewable piling operations	Sarah	Dolman
21	Expert elicitation methods in quantifying the consequences of acoustic disturbance from off-shore renewable energy developments	Carl	Donovan
22	Documenting and assessing dolphin vocalizations and ambient and anthropogenic noise levels via PAM and an SPL meter	Kathleen	Dudzinski
23	The effects of anthropogenic noise on distribution of cetaceans in the English Channel	Ayca	Eleman
24	Effects of pile-driving noise on fish behaviour and physiology	Kirsty	Everley
25L	Does primary productivity turn up the volume? Exploring the relationship between chlorophyll and the soundscape of coral reefs in the Pacific	Pollyanna	Fisher Pool
26	Expert elicitation of population-level effects of disturbance	Erica	Fleishman
27L	Assessment of cumulative effects of anthropogenic underwater sound on marine mammals	Erica	Fleishman
28L	Seismic survey footprints in Irish waters: a starting point for effective mitigation	Thomas	Folegot
29	Underwater sound levels at a wave energy device testing facility in Falmouth Bay, UK	Joanne	Garrett
30	A high performance system for passive acoustics monitoring of benthic fauna (natural behavior & responses to anthropogenic noise)	Cédric	Gervaise
31	Anthropogenic sound contribution of the soundscape of the first French Natural Marine Park (Iroise Sea)	Cédric	Gervaise
32L	"Large" tank acoustics: How big is big enough?	Michael	Gray

Poster board #	POSTERS		
33	High-resolution analysis of seismic airgun impulses and their reverberant field as contributors to an acoustic environment	Melania	Guerra
34	NOAA's Cetacean and Sound Mapping Effort (CetSound): continuing forward with an integrated ocean noise strategy	Jolie	Harrison
35	A permanent soundscape monitoring system for aquatic animals	Kathy	Heise
36	Anthropogenic noise and sound transmission in wetland habitats	Adrienne	Hopson-Costa
37	Natural variation in stress hormones, comparisons across matrices, and impacts resulting from induced stress in the bottlenose dolphin	Dorian	Houser
38	Hidden Markov models capture behavioural responses to suction-cup tag deployment	Saana	Isojunno
39	A change in the use of regulatory criteria for assessing potential impacts of sound on fishes	Fred	Jacobs
40L	In-air and underwater hearing in the great cormorant (<i>Phalacrocorax carbo</i>)	Sasia	Johansen
41	Habituation and stress response to motorboat noise in two common coastal fish species in the Bothnian Bay of Sweden	Kajsa	Johansson
42	Implementing Mitigation in Practice: The MMO/PAM's Perspective	Phil	Johnston
43	Insonification of water layer by airgun's pulse in shallow water	Boris	Katsnelson
44	What we can learn from artificial lateral line sensor arrays	Adrian	Klein
45	Protection of Marine Mammals (PoMM)	Michaela	Knoll
46	Methods for predicting potential impacts of pile driving noise on endangered shortnose and Atlantic sturgeon during bridge construction	Justin	Krebs
47L	Avoidance of pile-driving noise by Hudson River sturgeon during construction of the New NY Bridge at Tappan Zee	Justin	Krebs
48L	Directional hearing and head-related transfer function in odontocete cetaceans: Can you hear me hollerin?	Petr	Krysl



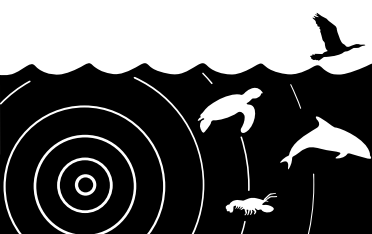
Poster board #	POSTERS		
49	Using passive acoustics to monitor the presence of marine mammals during naval exercises	Anurag	Kumar
50	Testing the effectiveness of an acoustic deterrent for Eastern gray whales	Barbara	Lagerquist
51	SOFAR: A new sound acquisition software package for underwater noise monitoring	Robert	Lee
52L	Measurement of underwater noise emitted by wave and tidal stream energy devices	Paul	Lepper
53	Likely age-related hearing loss (presbycusis) in a stranded Indo-Pacific humpback dolphin (<i>Sousa chinensis</i>)	Songhai	Li
54	Impacts of underwater noise on marine vertebrates – project and first results	Thomas	Merck
55L	Soundscapes and larval settlement: characterizing the stimulus from a larval perspective	Ashlee	Lillis
56	The Office of Naval Research Global (ONRG) - worldwide S&T	Ellen	Livingston
57	Comparison of PAM systems for acoustic monitoring and further risk mitigation application	Stefan	Ludwig
58L	Cardio-respiratory responses to acoustic noise in belugas	Oleg	Lyamin
60	A study of potential impacts of air gun exposures on scallops and berried lobster in southern Australia.	Robert	McCauley
61L	Real-time remote monitoring of sound pressure and particle velocity on open ocean sites	Eugene	McKeown
62L	Spatial patterns of inshore marine soundscapes	Jamie	McWilliam
63L	Soundscape and noise exposure monitoring using AIS data and time-lapse footage	Nathan	Merchant

Poster board #	POSTERS		
64	Variation in hearing abilities in wild beluga whales (<i>Delphinapterus leucas</i>) and comparisons to local noise conditions	T Aran	Mooney
66L	Auditory discrimination of natural and high-pass filtered bark vocalizations in a California sea lion (<i>Zalophus californianus</i>)	Jason	Mulsow
67	Does masking matter? Shipping noise and fish vocalizations	Sarah	Neenan
68L	Noise impact on European sea bass behavior: temporal structure matters	Errol	Neo
69L	Does noise from shipping and boat traffic affect predator vigilance in the European common hermit crab?	Anna	Nousek-McGregor
70	Sound transmission validation and sensitivity studies in numerical models	Steve	Oberrecht
71	The use of deep water berths and the effect of noise on bottlenose dolphins in the Shannon Estuary cSAC	Joanne	O'Brien
72	Hearing in whales and dolphins: relevance and limitations	Aude	Pacini
73L	Lessons from the UK offshore wind farm developments	Sofia	Patricio
74	Getting it right for the right whale: a last opportunity for effective marine spatial planning along the U.S. Atlantic coastline.	Loren	Petruny
75L	Are the 1/3 octave 63 and 125 Hz band noise levels predictive of local vessel and dolphin distributions? The case of the Cres-Lošinj archipelago (northern Adriatic Sea, Croatia)	Marta	Picciulin
76	The good, the bad and the distant: soundscape cues for larval fish	Julius	Piercy
77L	Sharing waters with marine turbines	Matthew	Pine
78	Temporary threshold shifts in naïve and experienced belugas: learning to dampen effects of fatiguing sounds?	Vladimir	Popov
80L	Beyond a simple effect: Condition-dependent, carry-over and repeated-exposure impacts of noise on behavior and physiology	Andrew	Radford



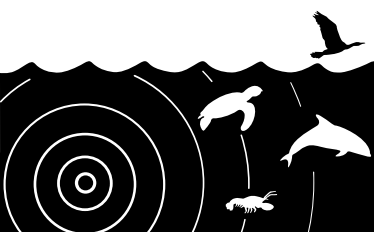
81L	Acoustic ecology in the ocean pelagic zone?	Craig	Radford
82L	Amphibious hearing in the sea otter (<i>Enhydra lutris</i>)	Colleen	Reichmuth
83L	Underwater sound propagation from marine pile driving	James	Reyff
84	Effects of noise on the behavior of wild, unrestrained fish schools	Louise	Roberts
85L	Sensitivity of crustaceans to substrate borne vibration	Louise	Roberts
86	The calibration and characterization of autonomous recorders used in measurement of underwater noise	Stephen	Robinson
87	Automatic classification of marine mammals with speaker classification methods	Kreimeyer	Roman
88	Assessing the underwater naval noise levels in the North Tyrrhenian Sea	Eduardo	Rossi
89	Evoked potential audiograms of grey seals (<i>Halichoerus grypus</i>) from the North and Baltic Seas	Andreas	Ruser
90	Identifying baseline behaviour of killer whales (<i>Orcinus orca</i>): variations in feeding behaviour	Filipa	Samarra
91	Using effort, sightings, and body condition data to estimate survival and health of individuals and the entire right whale population	Robert	Schick
92L	Auditory effects of multiple impulses from a seismic air gun on bottlenose dolphins (<i>Tursiops truncatus</i>)	Carolyn	Schlundt
93	Communicating the issue of underwater noise pollution: the "deaf as a fish" project	Linda	Sebastianutto
94	Mapping underwater noise for the Dutch part of the North Sea	H. Özkan	Sertlek
95	The effect of temporal variation in experimental noise exposure on swimming and foraging behavior of captive zebrafish	Saeed	Shafiei Sabet

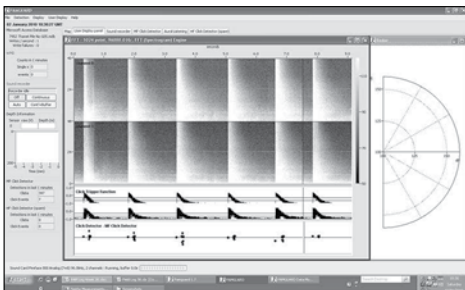
Poster board #	POSTERS		
96	Passive acoustic monitoring of environmental impact of oil exploration in the Gulf of Mexico	Natalia	Sidorovskaia
97	To manage the soundscape of the Baltic Sea	Peter	Sigra
98	A seaway acoustic observatory in action: The St. Lawrence	Yvan	Simard
99L	The meaning of noise-induced behavioral changes	Hans	Slabbekoorn
100	Withdrawn		
101L	The relationship between hair cell loss and hearing loss in fishes	Michael	Smith
102L	Characterization of sounds produced by temperate and tropical sea urchins from the east coast of Australia	Natalie	Soars
103L	The acoustic response to playback of pile driving sounds by invertebrates	Ilaria	Spiga
104	Development of a Finite Difference Time Domain (FDTD) model for propagation of transient sounds in very shallow water	Mark	Sprague
105	Detection and use of acoustically coded transmitter signals in grey seals (<i>Halichoerus grypus</i>)	Amanda	Stansbury
106L	Active acoustic monitoring of aquatic life	Peter	Stein
107	Assessing the effects of sound on marine wildlife for EIA - Balancing the Issues	Simon	Stephenson
108L	Sound exposure level: Is it a convenient metric to characterize fatiguing sounds? A study in beluga whales	Alexander	Supin
109	Frequency tuning of hearing in the beluga whale	Evgeniya	Sysueva
110L	Anthropogenic noise causes physiological stress in wood frogs (<i>Lithobates sylvaticus</i>)	Jennifer	Tennessen
111L	Harp seals do not increase their call frequencies when it gets noisier.	John	Terhune
112L	Measuring in-air and underwater hearing in seabirds	Sara	Therrien



Poster board #	POSTERS		
113	The WODA guidance paper on underwater sound from dredging	Frank	Thomsen
114	Noise management in marine protected areas: shipping noise footprints from AIS data	Mike	van der Schaar
115L	Review of offshore wind farm mitigation and impact monitoring with regards to marine mammals	Ursula	Verfuß
116	Discovery of Sound in the Sea: resources for educators, students, the public, and policymakers	Kathleen	Vigness-Raposa
117L	Holding-tank acoustic conditions can influence the behavioral responses of fish during playback experiments	Irene	Voellmy
119L	Mapping the acoustic soundscape off Vancouver Island using the NEPTUNE Canada ocean observatory	Carrie	Wall
120L	Underwater equal-reaction time contours of a harbor porpoise	Paul	Wensveen
121	Quantitative measure of anthropogenic noise on harbor porpoises – testing the reliability of acoustic tag recordings	Danuta	Wisniewska
122	Development of a model to assess masking potential for marine mammals by the use of airguns in Antarctic waters	Dietrich	Wittekind
123L	Passive underwater noise attenuation using large encapsulated air bubbles	Mark	Wochner
124	Sleeping behavior in wild harbor porpoise	Andrew	Wright
125L	Noise dependent fish distribution in kelp beds	Xuguang	Zhang
126	Searching for the input to the odontocete middle ear	Aleks	Zosuls

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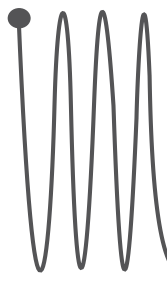
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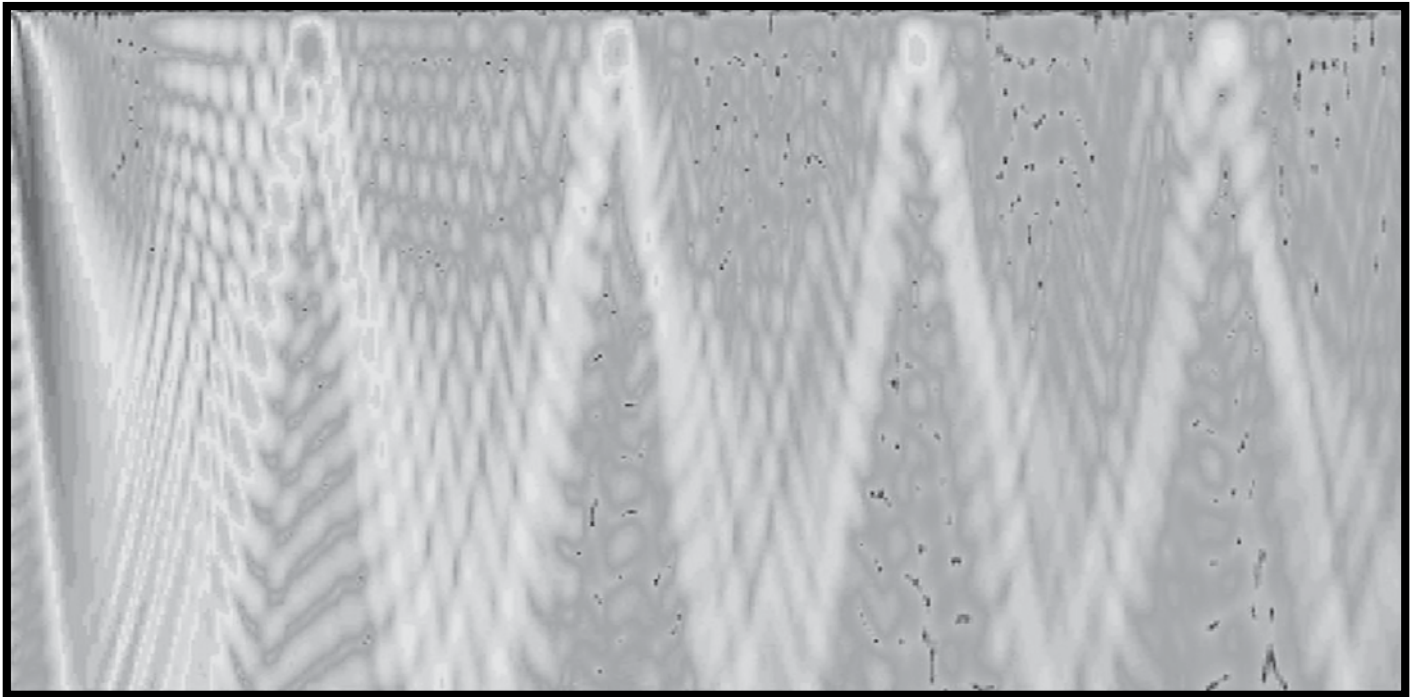




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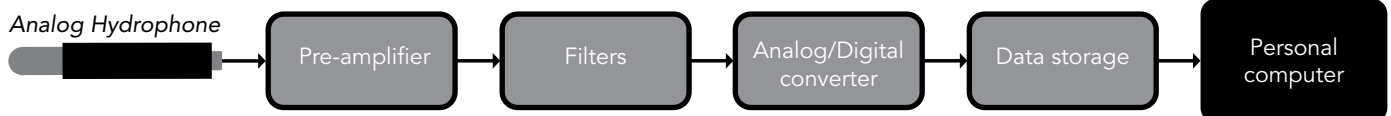


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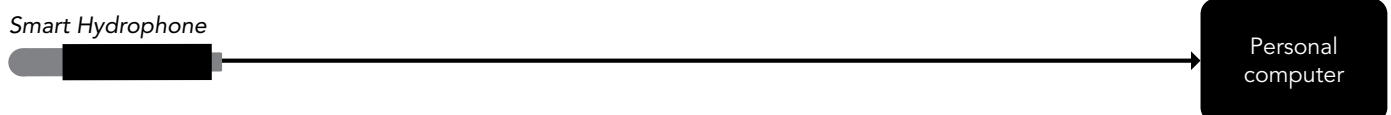
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Traditional approach



Smart Hydrophone approach



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icTalk Calibrated Smart Projector:

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- Process data while the data is being collected
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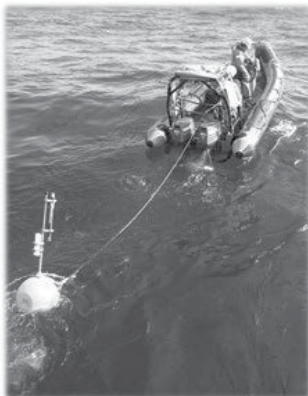
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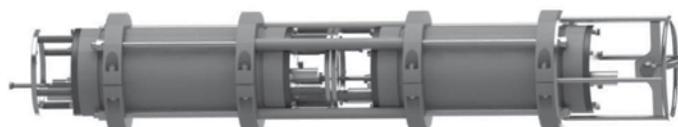
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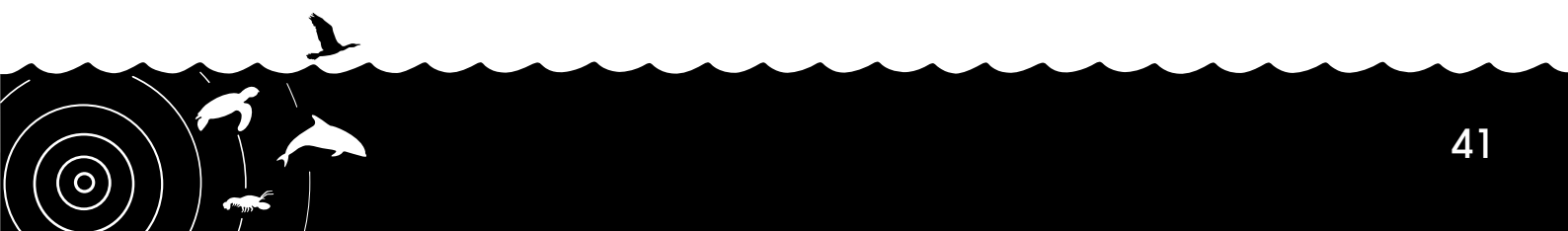
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- Standard (250 m) and Deep (2500 m) models
- Eight 24-bit acoustic channels at up to 128 kbps
- One high-speed 16-bit acoustic channel at up to 687.5 kbps
- Multiple analog and digital interfaces for additional sensors
- Extremely low noise floor
- Up to 1792 GiB solid-state storage memory
- Highly configurable duty-cycling and recording options
- Autonomous recording or real-time data streaming via cable or telemetry system

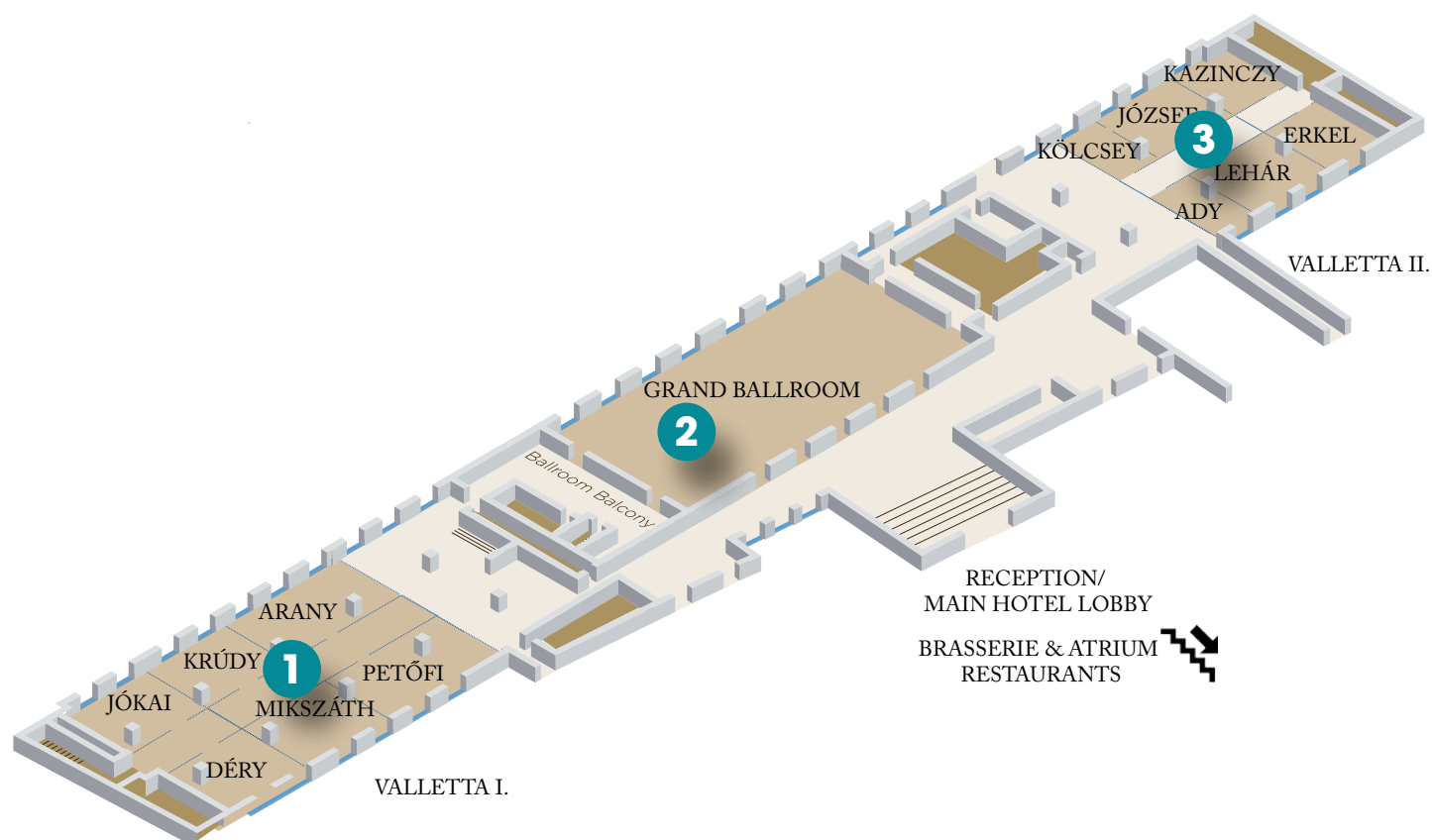


NOTES



NOTES

HOTEL FLOOR PLAN



- 1. POSTER VIEWING & PARALLEL SESSIONS**
- 2. PLENARY SESSION**
- 3. PARALLEL SESSIONS**



Program at a Glance - August 2013

Sunday 11th	Monday 12th	Tuesday 13th	Wednesday 14th	Thursday 15th	Friday 16th
15:00 Registration - Hotel lobby, Corinthia Hotel	07:00 Registration - Lobby area outside Grand Ballroom on 1st floor 08:15 Opening of Meeting - Grand Ballroom 08:25 Welcome to Budapest - Grand Ballroom 08:40 Keynote Address - Grand Ballroom 09:20 Presentations - Grand Ballroom	07:30 Registration - Lobby area outside Grand Ballroom on 1st floor 08:20 Presentations - Grand Ballroom	07:30 Registration - Lobby area outside Grand Ballroom on 1st floor 08:15 Presentations - Grand Ballroom	07:30 Registration - Lobby area outside Grand Ballroom on 1st floor 08:20 Presentations - Grand Ballroom	07:30 Registration - Lobby area outside Grand Ballroom on 1st floor 08:15 Presentations - Grand Ballroom
	10:20 Break - lobby outside Grand Ballroom 10:40 Presentations - Grand Ballroom 12:00 Lunch - Brasserie Restaurant, Corinthia Hotel 13:30 Presentations - Grand Ballroom 15:10 Break - lobby outside Grand Ballroom 15:30 First Lightning Session - Grand Ballroom 16:30 Poster Viewing - Valletta I	10:00 Break - lobby outside Grand Ballroom 10:20 Presentations - Grand Ballroom 12:00 Lunch - Brasserie Restaurant, Corinthia Hotel 13:35 Presentations - Grand Ballroom 15:00 Break - lobby outside Grand Ballroom 15:30 Second Lightning Session - Grand Ballroom	10:00 Break - lobby outside Grand Ballroom 10:20 Presentations - Grand Ballroom 12:00 Lunch - Brasserie Restaurant, Corinthia Hotel 13:30 Presentations - Grand Ballroom 15:20 Break & Poster Viewing - Valletta I	10:00 Break - Lobby outside Grand Ballroom 10:20 Presentations - Grand Ballroom 12:10 Lunch - Brasserie Restaurant, Corinthia Hotel 13:30 Presentations - Grand Ballroom 15:15 Break & Poster Viewing - Valletta I	09:55 Break - lobby outside Grand Ballroom 10:20 Panel Discussions (4) - Grand Ballroom, Valette I and Valette II 12:00 Lunch - Brasserie Restaurant, Corinthia Hotel 13:30 Presentations - Grand Ballroom 16:30 Closing Remarks - Grand Ballroom
18:00 Welcome Reception - Atrium II, off the hotel lobby, Corinthia Hotel	20:30 Reception for Students & Post Docs - Grand Ballroom	16:45 Optional Excursion for delegates & families: Castle District Walking Tour or Danube Cruise	18:45 Buffet dinner, Brasserie Restaurant, Corinthia Hotel 20:00 Third Lightning Session - Grand Ballroom	16:30 Optional excursion & dinner for delegates & families to Wine Tasting or Equestrian Show	19:00 Optional conference dinner - Grand Ballroom Corinthia Hotel