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# WOAH Collaborative Centre Reports Activities 2024

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## CENTRE INFORMATION

<b>*Title of WOAHCollaborating Centre</b>	Health of Marine Mammals
<b>*Address of WOAHCollaborating Centre</b>	Istituto Zooprofilattico Sperimentale del Piemonte Liguria e Valle d'Aosta (IZSPLVA) Via Bologna 148, 10154, Torino-Italy; Facultad de Veterinaria, IULPGC, Campus Universitario Cardones de Arucas, 35413 Arucas, Las Palmas-Spain.
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<b>*Name Director of Institute (Responsible Official):</b>	Claudio Ghittino (IZSPLVA); Fernando Real Valcarel (IUSA)
<b>*Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):</b>	Dr Cristina Casalone. Head of Neuropathology Department - IZSPLVA; Prof. Antonio Fernandez. Director of University Institute of Animal Health and Food Safety IUSA-ULPGC
<b>*Name of the writer:</b>	Cristina Casalone

## TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAHC

Category	Title of activity	Scope

<p>Disease control (true)</p>	<p>1. Avian influenza in cetaceans 2. Cetaceans as One Health indicators 3. Emergent viral diseases in cetaceans: pathologic and molecular diagnostic</p>	<p>1. Publication of the WOA "Practical guide for authorised field responders to HPAI outbreaks in marine mammals" <a href="https://www.woah.org/app/uploads/2024/02/woah-practicalguide-forauthorisedfieldresponders-hpaimarinemammals-feb24.pdf">https://www.woah.org/app/uploads/2024/02/woah-practicalguide-forauthorisedfieldresponders-hpaimarinemammals-feb24.pdf</a> ; Approval of the national research project: "Strengthening of national health surveillance for Influenza A Virus in stranded marine mammals – CetIAV" for the years 2025-2026 (funded by the Italian Ministry of Health). 2. Control of cetacean diseases as indicators for different environmental conditions and animal and human diseases situation. 3. Histopathologic and molecular analysis of samples from stranded animals in the Canary Islands.</p>
<p>Epidemiology, surveillance, risk assessment, (true)</p>	<p>1. Phylo-geographic analysis of Brucella ceti strains in marine mammals of Italy (WGS) by WOA Reference Laboratory for Brucellosis (IZSAM, Italy) recovered by C.Re.Di.Ma. Diagnostic coordination activity, Italy 2. Implementation of the International Whaling Commission (IWC) National Progress Report (PR) 3. Andalucía stranding network collaboration 4. Asturias stranding network collaboration 5. Cantabria's stranding network collaboration 6. Pais Vasco stranding network collaboration 7. CEMMA stranding network collaboration</p>	<p>1. Investigation on Brucella ceti infection in marine mammals in Italy, giving insights on the phylogenetic structure of Mediterranean isolates. 2. Implementation of the National Progress Report (PR) with data related to C.Re.Di.Ma database and 2022 ship strike and by catch events recorded in Italy. 3. Histopathologic and molecular analysis of samples from stranded animals in the coasts of Andalucía, Spain. 4. Histopathologic and molecular analysis of samples from stranded animals in the coasts of Asturias, Spain. 5. Histopathologic and molecular analysis of samples from stranded animals in the coasts of Cantabria, Spain. 6. Histopathologic and molecular analysis of samples from stranded animals in the coasts of Pais Vasco, Spain. 7. Histopathologic analysis of samples from stranded animals in the coasts of Galicia, Spain.</p>
<p>Training, capacity building (true)</p>	<p>1. Vth Edition: "What is new in Marine Mammal Pathology" 2. Necropsy training in cetaceans 3. Marine mammal pathology and cetacean necropsy</p>	<p>1. Participation with a number of informative sessions on different marine mammal pathology subjects during 25th Biennial Conference on the Biology of Marine Mammals. 2. Theoretical and practical workshop on the necropsy procedures on cetaceans, with special attention to the detection of avian influenza. 3. Capacity building in marine mammal pathology and cetaceans necropsy. Unit of Veterinary Cetacean Pathology. Biological Science School. Oakland Massey University.</p>
	<p>1. Emerging and re-emerging zoonosis surveillance in marine</p>	<p>1. Coordination of surveillance and control activities performed by the Italian National Public Health Services (Istituti Zooprofilattici Sperimentali</p>

Zoonoses (true)	mammals (i.e. brucellosis, salmonellosis, toxoplasmosis, etc) in Italy 2. Unusual mortality of marine mammals	network). 2. Collaboration on unusual mortality of marine mammals (H5N1 Influenza virus). Servicio Nacional de Pesca y Acuicultura (SERNAPESCA), Chile. /Centro para el Estudio de Sistemas Marinos CESIMAR-CONICET, Puerto Madryn, Chubut, Argentina.
Aquatic animal diseases (true)	1. Alzheimer's like disease screening 2. Arterial Aging 3. Unusual mortality of whales	1. Evaluation of Alzheimer's like signs in the brain of cetaceans stranded in the Mediterranean basin. 2. Age-related arterial dysfunction and gut dysbiosis in mice and cetaceans. 3. Communication. New beaked whale atypical mass stranding linked to military activities around the strait of Gibraltar (2022). 35th Annual Conference of the European Cetacean Society (ECS 2024).
Animal welfare (true)	1. Mitigation of conflict between artisanal fisheries and tusiops 2. Nicola Pussini, Degree course in Animal care- "Infectious diseases: The Management and Medical Care of Pinnipeds and aquatic flightless birds" and "First aid techniques and clinical/surgical procedures in Pinnipeds and Penguins" and "Aquatic animal care in clinical settings", Department of Comparative Biomedicine and Food Science – University of Padova. a.y. 2023/2024. 3. Encouragement of Whale Watching Activities 4. Environmentally sustainable fishing 5. Bycaught dolphins 6. Wildlife Health Surveillance	1. Development of an automatic hydrophone aimed at detecting the interaction between bottlenose dolphins and fishing nets as part of a Pelagos Foundation-funded project. 2. Correct management in live pinnipeds. 3. Encouragement of the ecotourist whale watching activities as a model of sustainable economic development as well as of protection and conservation of the cetacean populations in the Macaronesian Area. 4. Collaboration with the government for the development of fishing methods that are friendly with the cetacean populations and the environment. 5. Collaboration with Fisheries Minister. Evaluation of bycaught dolphins in the Cantabrico Sea (Spain). 6. Diagnosis of causes of death, both natural and anthropogenic, in the native wildlife of Canary Islands. Specific cooperation agreement with the government of the Canary Islands.
Diagnosis, biotechnology and laboratory (true)	1. Decompressive pathology in cetaceans 2. Improvement of molecular diagnostics	1. Development of diagnostic tools for the decompressive pathology in cetaceans, as well as study of the action mechanisms of the disease. 2. Improvements in molecular diagnosis for West Nile virus, H5N1 Influenza virus and Brucella ceti.

## TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable Area
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<p>syndromic surveillance of strandings</p>	<p>Monitor stranding trends along the Italian coastline; early detection of Unusual Mortality Events (UMEs) by a syndromic surveillance tool to monitor stranding trends, useful for early detection of Unusual Mortality Events (UMEs).</p>	<p>Laboratory Expertise Training and Education Health Management Animal Production Veterinary Products Wildlife Health and Biodiversity</p>
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3. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?H?

No

4. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same speciality, to coordinate scientific and technical studies?

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
<p>Cetaceans' strandings Emergency Response Team (CERT) of the University of Padua, Italy</p>	<p>Padua, Italy</p>	<p>Europa</p>	<p>Collaboration with the task force to intervene in case of stranding of live animals, large whales, mass strandings, and Unusual Mortality Events (UMEs), along the whole Italian peninsula.</p>
<p>Istituti Zooprofilattici Sperimentali diagnostic network (IIZZSS)</p>	<p>Italy</p>	<p>Europa</p>	<p>Coordination of diagnostic investigations and data collection on stranded marine mammals and by catch events recorded in Italy.</p>
<p>International Whaling Commission (IWC)</p>	<p>Impigton, Cambridge, UK</p>	<p>Europa</p>	<p>Collaboration with the panel of experts of the organization. Updating of the National Progress Report (PR) with data related to C.Re.Di.Ma database and 2022 ship strike</p>
<p>Cetaceans strandings Emergency Response Team of the University of Las Palmas de Gran Canaria</p>	<p>Canary Islands</p>	<p>Europa</p>	<p>Response to the cases of cetacean strandings in the Canary Islands archipelago, performing the necropsy and managing the disposal of the carcass.</p>

## TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAHC Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAHC CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH Avian Influenza	Spain	Europe	Development of a guide for the detection of Avian Influenza in marine mammals.
WOAH BRC	Italy	Europe	Brucella ceti typing
WOAH BSE	Italy	Europe	Neuropathological investigations and diagnostic tools
WOAH Scrapie	Italy	Europe	Neuropathological investigations and diagnostic tools
WOAH Coll. Centre Animal/Human interface	Italy	Europe	Diagnosis of zoonotic agents

## TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAHC?

Yes

Name of expert	Kind of consultancy	Subject

Antonio Fernández	Training in capacity and remote advice in Influenza infection in marine mammals	Necropsy and cetacean pathology theoretical and practical training. Servicio Nacional de Pesca y Acuicultura (SERNAPESCA), Chile.
Antonio Fernández	Collaboration/Training	Investigation of fisheries interaction in northern Spain and development of a cetacean necropsy protocol. Ministerio de Agricultura, Pesca y Alimentación (MAPA), Spain
Antonio Fernández	Capacity building in marine mammal pathology and cetaceans necropsy	Unit of Veterinary Cetacean Pathology. Biological Science School. Oakland Massey University. Veterinary Pathology Department. Veterinary School, Massey University.
Antonio Fernández	Capacity Building	SMM 2024 Perth Australia Workshop Marine Mammal Pathology. Visit to Veterinary Marine Mammal Pathology (Murdoch University). Workshop Global Stranding Network SMM 2024.
Paula Alonso Almorox Ignacio Molpeceres Diego	Collaboration/Training	Instituto de Desenvolvimento Sustentável Mamirauá", Tefé, Amazon, Brasil. During this time we collaborated in the monitoring of Amazon River Dolphins, doing field work, lab work and necropsies of the corresponding animals. This stay served as a bridge between both continents and institutions as a means to collaborate in future events that affect biodiversity and help towards the conservation of wildlife.
Mauricio Ulloa	Collaboration	Servicio Nacional de Pesca y Acuicultura (SERNAPESCA), Chile.
Yara Bernaldo de Quirós	Training	Arterial function and arterial aging. Project Age-related arterial dysfunction and gut dysbiosis in mice and cetaceans (Arterial Aging). University of Colorado Boulder, United States.
Carla Fiorito	Collaboration/Training	Field and laboratory necropsies of stranded marine mammals (pinnipeds and cetaceans) during Highly Pathogenic Avian Influenza (HPAI) H5N1 outbreak in Chubut, Argentina. Centro para el Estudio de Sistemas Marinos (CESIMAR-CONICET). Centro Nacional Patagónico (CENPAT - CONICET), Puerto Madryn, Chubut, Argentina.
		IIM-CSIC: Collaboration with the project MERMACIFRA. Contribution to the elaboration of reports of cetacean bycatch in Galician waters, organization of workshops (diet, pathology and parasitic study of stomachs of stranded cetaceans in Galician waters; study of age and sexual maturity

Raquel Puig Lozano	Collaboration	<p>through teeth and gonad samples of stranded cetaceans), and formation of the technicians, biologist and veterinarians of the stranding networks of the north of the Iberian Peninsula. CEMMA: Collaboration in field and laboratory necropsies of stranded marine mammals (pinnipeds and cetaceans), sea turtles, and sharks of Galician waters.</p> <p>Rescue and maintenance of alive stranded individuals. Whale-watching studies. Divulcation and citizen science. IMM-CSIC: Instituto de Investigaciones Marinas, Centro Superior de Investigaciones Científicas, Vigo, Pontevedra, Galicia, España. CEMMA: Coordinadora para o Estudo dos Mamíferos Mariños, Nigrán, Pontevedra, Galicia, España.</p>
<p>Antonio Fernandez Cristina Casalone Carla Fiorito Federica Giorda Carla Grattarola Eva Sierra Virginia Mattioda</p>	Elaboration of guidelines	<p>Publication of the WOAHP "Practical guide for authorised field responders to HPAI outbreaks in marine mammals"</p> <p><a href="https://www.woah.org/app/uploads/2024/02/woah-practicalguideforauthorisedfieldresponders-hpaimarinemammals-feb24.pdf">https://www.woah.org/app/uploads/2024/02/woah-practicalguideforauthorisedfieldresponders-hpaimarinemammals-feb24.pdf</a></p>
<p>Antonio Fernandez Cristina Casalone</p>	Participation to WOAHP Group	Being part of WOAHP Wildlife Collaborating Centre Network Group, attending online meetings

## TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

No

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAHP, to personnel from WOAHP Members?

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 60

d) Internships (>1 month) : 0

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
	Vth Edition: "What is new in Marine		

C	<p>Mammal Pathology". This workshop provides a dedicated forum for experts and trainees in marine mammal pathology to share and discuss new pathologies, outbreaks, diagnostic tools, etc. in the context of marine mammal pathology and conservation within the conference. The workshop aims to use pathology as a tool for marine mammal health and conservation. Advances in marine mammal pathology, including field, laboratory diagnosis, new methodologies, and tools, will be presented and discussed. The workshop will consist of case report discussions and presentations. Pathologists working in this field are invited to submit a presentation title and brief outline (less than 200 words) by July 31, 2024. We are looking for an interactive and dynamic atmosphere for exchanging knowledge. The expected outcome of the workshop is the in situ exchange of knowledge, continuing education in marine mammal pathology, and strengthening collaboration and networking among marine mammal pathologists. Previous workshops were very successful with high occupancy and received excellent feedback. We recommend early registration because we had full occupancy with a waiting list in the previous years.</p>	<p>Experts from 15 countries in the USA, South America, Japan, Taiwan, Australia, New Zealand, South Africa, Canada and Europe.</p>	60
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## TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?H?

Yes

National/International	Title of event	Co-organiser	Date	Location	No. Participants



Internationally	The circulating milieu of bottlenose dolphins ( <i>Tursiops truncatus</i> ) may hold the key to preventing arterial aging.	35th Annual Conference of the European Cetacean Society (ECS 2024).	2024-04-09	Catania, Italy	70
Internationally	Pathological study of an open Patent Ductus Arteriosus (PDA) in a 20-year-old Killer Whale ( <i>Orcinus orca</i> ).	35th Annual Conference of the European Cetacean Society (ECS 2024).	2024-04-09	Catania, Italy	90
Internationally	Pathologies and causes of death in stranded cetaceans in the Canary Islands (2013-2018).	5th Cutting Edge Pathology Congress.	2024-08-27	Madrid, Spain	80
Internationally	Gas Bubble Disease model to study the pathophysiology of Decompression Sickness.	48th European Underwater and Baromedical Society (EUBS) and MedSubHyp Annual Scientific Joint Meeting.	2024-09-15	Brent, France	70

## TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAHA that may be useful to Members of WOAHA

a) Articles published in peer-reviewed journals:

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- Scarpa F, Grattarola C, Arillo A, Mattioda V, Testori C, Terracciano G, Senese M, Giorda F, Zoppi S, Sanna D, Casu M, Peletto S. Draft genome of three isolates of *Listeria monocytogenes* isolated from *Stenella coeruleoalba* in Italy. *Microbiol Resour Announc*. 2024 Apr 11;13(4):e0122123. doi: 10.1128/mra.01221-23. Epub 2024 Feb 28.

- Grattarola C, Pietrolungo G, Belluscio D, Berio E, Canonico C, Centelleghes C, Cocumelli C, Crotti S, Denurra D, Di Donato A, Di Francesco G, Di Guardo G, Di Nocera F, Di Renzo L, Gavaudan S, Giorda F, Lucifora G, Marino L, Marcer F, Marsili L, Migliore S, Pascucci I, Petrella A, Pintore A, Puleio R, Rubini S, Terracciano G, Toffan A, Mazzariol S, Casalone C. Pathogen Prevalence in Cetaceans Stranded along the Italian Coastline between 2015 and 2020. *Pathogens*. 2024 Sep 4;13(9):762. doi: 10.3390/pathogens13090762.

- Rebollada-Merino A, Giorda F, Pumarola M, Martino L, Gomez-Buendia A, Romani-Cremaschi U, Casalone C, Mattioda V, Di Nocera F, Lucifora G, Petrella A, Domínguez L, Domingo M, Grattarola C, Rodríguez-Bertos A. Neurobrucellosis (*Brucella ceti*) in striped dolphins (*Stenella coeruleoalba*): Immunohistochemical studies on immune response and neuroinflammation. *Vet Pathol*. 2024 May 17:3009858241250336. doi: 10.1177/03009858241250336.

- Battistini R, Masotti C, Giorda F, Grattarola C, Peletto S, Testori C, Zoppi S, Berio E, Crescio MI, Pussini N, Serracca L, Casalone C. *Photobacterium damsela* subsp. *damsela* in Stranded Cetaceans: A 6-Year Monitoring of the Ligurian Sea in Italy. *Animals (Basel)*. 2024 Sep 30;14(19):2825. doi: 10.3390/ani14192825.

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- Vargas-Castro I, Giorda F, Mattioda V, Gorla M, Serracca L, Varello K, Carta V, Nodari S, Maniaci MG, Dell'Atti L, Testori C, Pussini N, Iulini B, Battistini R, Zoppi S, Nocera FD, Lucifora G, Fontanesi E, Acutis P, Casalone C, Grattarola C, Peletto S. *Herpesvirus surveillance in stranded striped dolphins (Stenella coeruleoalba) and bottlenose dolphins (Tursiops truncatus) from Italy with emphasis on neuropathological characterization. PLoS One. 2024 Oct 23;19(10):e0311767. doi: 10.1371/journal.pone.0311767.*
- Orekhova K, Testori C, Giorda F, Grattarola C, Mattioda V, Di Guardo G, Corona C, Castagnaro M, Sierra E, Casalone C, Favole A, Centelleghes C, Mazzariol S. *Amyloid- $\beta$  and phosphorylated tau screening in bottlenose dolphin (Tursiops truncatus) and striped dolphin (Stenella coeruleoalba) brains from Italy reveals distinct immunohistochemical patterns correlating with age and co-morbidity. PLoS One. 2024 Nov 26;19(11):e0314085. doi: 10.1371/journal.pone.0314085.*
- Pino-Vera, R., Miquel, J., Suárez-Santana, C., Martín-Carrillo, N., Abreu-Acosta, N., Marrero-Ponce, L., Fariña-Brito, A., Rodríguez, B., Fernández, A., & Foronda, P. (2024). Record of *Renicola sloanei* Wright, 1954 (Plagiorchiida: Renicolidae) in the Atlantic puffin *Fratercula arctica* (Linnaeus, 1758) arrived at the Canary Islands (Spain). *Journal of helminthology*, 98, e83. <https://doi.org/10.1017/S0022149X2400066X>
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- Darrah, M. A., Longtine, A. G., Greenberg, N. T., Mahoney, S. A., Venkatasubramanian, R., VanDongen, N. S., Reisz, J. A., D'Alessandro, A., Seals, D. R., de Quiros Miranda, Y. B., & Clayton, Z. S. (2024). The influence of a human macronutrient-matched diet on phenotypes in old mice. *GeroScience*. <https://doi.org/10.1007/s11357-024-01423-6>
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- Hernández-López, V., Reyes, R., García-Álvarez, N., Real, F., Díaz-Marrero, A. R., & Fernández, J. J. (2024). Changes at small intestine induced by food-fish contaminated with ciguatoxins. *Ecotoxicology and environmental safety*, 282, 116741. <https://doi.org/10.1016/j.ecoenv.2024.116741>
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b) International conferences:

27

*Name of conference/meeting: Second ACCOBAMS workshop on ingested marine litter monitoring & entanglement evidence in the Adriatic Sea.*

*Location and date: Online 22/02/2024*

*Title: 8 years monitoring along the Italian coastline: diagnostic framework, new tools and results*

*Authors: Giorda F.*

*Type of participation: Oral presentation*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Anthropic pressure on cetaceans stranded along the Ligurian coast within the Pelagos Sanctuary.*

*Authors: Virginia Mattioda, Federica Giorda, Nicola Pussini, Camilla Testori, Simona Zoppi, Maria Goria, Katia Varello, Laura Serracca, Letizia Marsili, Guia Consales, Matteo Bains, Davide Ascheri, Fulvio Garibaldi, Guido Pietrolungo, Cristina Casalone and Carla Grattarola.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Prevalence of viral skin lesions in two different dolphin species in the Western Ligurian Sea, Italy.*

*Authors: Ascheri D., Fontanesi E., Pedrazzini A., Battaglia F., Mattioda, V., Giorda F., Grattarola C.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Cause of death and evidence of human interaction in cetaceans stranded along the Italian coastline between 2015 – 2020.*

*Authors: Guido Pietrolungo, Cinzia Centelleghes, Giorgia Corazzola, Anna Toffan, Silva Rubini, Ilaria Pascucci, Stefano Gavaudan, Gabriella Di Francesco, Ludovica Di Renzo, Antonio Petrella, Giuseppe Lucifora, Fabio Di Nocera, Emanuele Esposito, Roberto Puleio, Cristiano Cocumelli, Giuliana Terracciano, Antonio Pintore, Daniele Denurra, Federica Giorda, Cristina Casalone, Giovanni Di Guardo, Sandro Mazzariol, Carla Grattarola.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Beta-amyloid immunohistochemistry in cetaceans' brains from Italy.*

*Authors: Ksenia Orekhova, Alessandra Favole, Federica Giorda, Camilla Testori, Virginia Mattioda, Carla Grattarola, Cinzia Centelleghé, Fabio Dinocera, Giuseppe Lucifora, Giovanni Di Guardo, Sandro Mazzariol.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Bottlenose dolphins and small-scale fisheries in the Pelagos Sanctuary: searching new mitigation strategies to the conflict – TursioNet Project.*

*Authors: Camilla Testori, Guido Gnone, Fulvio Garibaldi, Eleonora Coppolella, Marion Bouet, Marie-Catherine Santoni, Davide Ascheri, Elena Fontanesi, Cristina Casalone, Carla Grattarola, Claudio Fossati, Michele Manghi and Federica Giorda.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 35th ECS Annual Conference Marine mammals and human activities: how to reach a sustainable development of coastal areas?*

*Location and date: Catania, Sicily. 10-12 April 2024.*

*Title: Alzheimer-Like  $\beta$ -Amyloid Plaques in the Brain of a striped dolphin.*

*Authors: Alessandra Favole, Camilla Testori, Virginia Mattioda, Marina Gallo, Carla Grattarola, Ksenia Orekhova, Tiziana Avanzato, Barbara Iulini, Antonio Fernández, Simona Sacchini, Paula Alonso-Almorox, Fulvio Garibaldi, Cristina Casalone, Cristiano Corona and Federica Giorda.*

*Type of participation: Poster presentation.*

*Name of conference/meeting: 9th International Conference on Emerging Zoonoses*

*Location and date: Palermo, Sicily. 9-12 June 2024.*

*Title: Emerging zoonotic pathogens in cetaceans stranded along the Italian coastline between 2015 and 2020.*

*Authors: Virginia Mattioda, Sandro Mazzariol, Cristina Casalone, Cinzia Centelleghé, Cristiano Cocumelli, Daniele Denurra, Alessandra Di Donato, Gabriella Di Francesco, Giovanni Di Guardo, Fabio Di Nocera, Ludovica Di Renzo, Stefano Gavaudan, Federica Giorda, Giuseppe Lucifora, Letizia Marsili, Sergio Migliore, Ilaria Pascucci, Antonio Petrella, Antonio Pintore, Roberto Puleio, Silva Rubini, Giuliana Terracciano, Anna Toffan, Guido Pietroluongo, Carla Grattarola.*

*Type of participation: Oral presentation.*

*Name of conference/meeting: 9th International Conference on Emerging Zoonoses*

*Location and date: Palermo, Sicily. 9-12 June 2024.*

*Title: Practical guide for authorized field responders to High Pathogenicity Avian Influenza (HPAI) outbreaks in marine mammals.*

*Authors: Cristina Casalone, Antonio Fernández, Mauricio Ulloa, Marcela Uhart, Carla Grattarola, Virginia Mattioda, Federica Giorda, Alicia Velázquez-Wallraf, Carla Fiorito, Anita Michel, Eva Sierra.*

*Type of participation: Oral presentation.*

*Name of conference/meeting: 9th International Conference on Emerging Zoonoses*

*Location and date: Palermo, Sicily. 9-12 June 2024.*

*Title: Serological diagnosis of Brucella spp. infection in Cetaceans by Rose Bengal Test and competitive ELISA with B. abortus S99 and B. ceti as antigens.*

*Authors: Tiziana Di Febo, Gabriella Di Francesco, Carla Grattarola, Luigina Sonsini, Osvaldo Matteucci, Ludovica Di Renzo, Giuseppe Lucifora, Roberto Puleio, Cristina Esmeralda Di Francesco, Giovanni Di Guardo, Manuela Tittarelli.*

*Type of participation: Poster presentation.*

*Title: Lessons learned about Cuvier's Beaked Whale pathology in the last 30 years (H 26)*

*Authors: Fernandez, A., Suárez-González, Z., Arbelo, M., Sierra, E., Felipe-Jiménez, I., Suárez-Santana, C., Arregui, M., Alonso-Almorox, P.,*

Achille-Consoli, F., Fernandez-Maldonado, C., Colom, A., Câmara, N., Rivero, M., Fiorito, C., Molpeceres, I., Iglesias-González, C., Grandía, R., Jepson, P., Di Guardo, G., Díaz-Santana, P., Díaz-Delgado, J., De la Fuente, J., Velázquez-Wallraf, A., Bernaldo de Quirós, Y.  
Type of participation: Poster Presentation

Name of conference/meeting: 25th Biennial Conference on the Biology of Marine Mammals

Publication: Conference proceedings

Location and date: Perth, Western, Australia, 11-15 November 2024

Title: Highly pathogenic avian influenza (HPAI A H5N1) associated to mass mortality event in South American sea lion (*Otaria flavescens*) (H 34)

Authors: Ulloa, M., Fernandez, A., Neira, V., Sierra, E.

Type of participation: Poster Presentation

Name of conference/meeting: 25th Biennial Conference on the Biology of Marine Mammals

Publication: Conference proceedings

Location and date: Perth, Western, Australia, 11-15 November 2024

Title: The structure of cartilage canals in the laryngeal cartilages of the Delphinidae family (A&P 5)

Authors: Rivero, M., Fiorito, C., Achille-Consoli, F., Segura-Gothlin, S., Arbelo, M., Puig-Lozano, R., Fernandez, A., Sierra, E.

Type of participation: Poster Presentation

Name of conference/meeting: 25th Biennial Conference on the Biology of Marine Mammals

Publication: Conference proceedings

Location and date: Perth, Western, Australia, 11-15 November 2024

Title: Vth Edition: "What is new in Marine Mammal Pathology"

Authors: Fernandez, A., Duignan, P.

Type of participation: Whorkshop

Name of conference/meeting: 25th Biennial Conference on the Biology of Marine Mammals

Publication: Conference proceedings

Location and date: Perth, Western, Australia, 11-15 November 2024

Title: Gas Bubble Disease model to study the pathophysiology of Decompression Sickness

Authors: A.S. Velázquez Wallraf, M.J. Caballero, A. Fernández, Ó. González-Díaz, M. Arregui, P. Saavedra, F. Consoli, Z. Suárez-González, & Y. Bernaldo De Quirós

Type of participation: Oral presentation.

Name of conference/meeting: 48th European Underwater and Baromedical Society (EUBS) and MedSubHyp Annual Scientific Joint Meeting

Publication: Conference proceedings

Location and date: Brest, France, 16-20th September 2024

Title: Structural and ultrastructural (Electron microscopy) contributions to the dolphin's hypophysis

Authors: Alonso-Almorox, P., Blanco, A., Fiorito, C., Suárez-Santana, C., Grandía-Guzmán, R., Consoli, F., Mompeo, B., Andrada, M., Fernández, A.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: New beaked whale atypical mass stranding linked to military activities around the strait of Gibraltar (2022)

Authors: Fernandez, A., Suárez-Santana, C., Suarez-Gonzalez, Z., Fernandez Maldonado, C., Consoli, F., Navarro-Sermiento, J., Cerezo Caro, A., Sierra, E., Colom-Rivero, A., Arbelo, M., Gradía-Guzman, R., Alonso-Almorox, P., Molpeceres-Diego, I., Aguirre, M., Câmara, N.,

Rivero, M., Puig-Lozano, R., Iglesias Gonzalez, C., Bernaldo de Quirós, Y.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Identification of *Crassicauda anthonyi* in renal lesions of Cuvier's beaked whales (*Ziphius cavirostris*) stranded in Canary Island

Authors: Suárez-González, Z., Sierra, E., Colom-Rivero, A., Suárez-Santana, C., Arbelo, M., González, J.F., Hernández, J.N., Grandía-Guzmán, R., Fernández, A.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Fine-scale distribution of the lungworm *Halocercus delphini* in the lungs of the striped dolphin, *Stenella coeruleoalba*: implications about migration pathways and functional significance

Authors: Pool, R.V., Pons-García, N., Consoli, F., Rivero, M., Bombardi, C., Raga, J.A., Aznar, F.J.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Cuvier's beaked whale atypical mass stranding event in Cypriot Coastline (2023)

Authors: Kontemeniotou, E., Komnenou, A., Psalla, D., Drougas, A., Vasiliades, L., Samuel, Y., Gkafas, G., Kofidou, E., Bernaldo de Quiros, Y., Suárez-Santana, C., Fernández, A.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Cetacean's Humerus bone radiodensity: variations between different families and diving behaviour

Authors: Consoli, F., Bernaldo de Quiros, Y., Arbelo, M., Encinosa, M., Saavedra, P., Fernandez, A., Castro-Alonso, A., Rivero, M.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: ATLANTIC WHALE DEAL Project: Mitigating Ship Strikes and Enhancing Carbon Sequestration in the Atlantic

Authors: Hamard, E., Sambolino, A., Aguilar de Soto, N., Arbelo, M., Authier, M., Berrow, S., Caro, P., Carreira, G., Castro-Alonso, A., Díaz López, B., Dinis, A., Dudley, R., Fernández, A., Hernández Guerra, A., Kelly-Quinn, M., Lambert, C., Lima, A., Mafalda Correia, A., Magalhães, S., Mora, C., Neves, S., Peña Fabiano Bendicho, M., Soares, J., Sousa-Pinto, I., Fernandez, M., Alves, F.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Alzheimer-Like  $\beta$ -Amyloid plaques in the brain of an aged stenella

Authors: Favole, A., Testori, C., Mattioda, V., Gallo, M., Grattarola, C., Orekhova, K., Avanzato, T., Iulini, B., Fernández, A., Alonso-Almorox, P., Sacchini, S., Garibaldi, F., Casalone, C., Corona, C., Giorda, F.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: 9.5 kg ambergris coprolite linked to a lethal septicemia in a stranded male Sperm Whale in La Palma (Canary Islands)

Authors: Sierra, E., Suárez-Santana, C., Alonso-Almorox, P., Achille-Consoli, F., Suárez-González, Z., Molpeceres-Diego, I., Iglesias-González, C., Lorente-Hernández, M., Hugo-Pérez, A., Martín-Barrasa, J.L., Iglesias-Llorente, L., Medina-Hijazo, F.M., Grandía-Guzmán, R., Llinás-Rueda, D., Arbelo, M., Fernández, A.

Type of participation: Poster Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: Pathological study of an open Patent Ductus Arteriosus (PDA) in a 20-year-old Killer Whale (*Orcinus orca*)

Authors: Câmara, N., Sierra, E., Arbelo, M., Suárez-Santana, C., Rivero, M., Castro-Alonso, A., Bernaldo de Quirós, Y., Fiorito, C., Felipe-Jiménez, I., Alcaraz Rico, L., Colom-Rivero, A., Navarro Sarmiento, J., Alonso-Almorox, P., Molpeceres-Diego, I., Marrero-Ponce, L., Suárez-González, Z., Grandía-Guzmán, R., Grande, F., Fernández, A.

Type of participation: Oral Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: The circulating milieu of bottlenose dolphins (*Tursiops truncatus*) may hold the key to preventing arterial aging

Authors: Bernaldo de Quirós, Y., Mahoney, S.A., VanDongen, N.S., Greenberg, N.T., Venkatasubramanian, R., Bossart, G., Clayton, Z.S., Fernández, A., Seals, D.R.

Type of participation: Oral Presentation

Name of conference/meeting: 35th Annual Conference of the European Cetacean Society (ECS 2024)

Publication: Conference Proceedings

Location and date: Catania, Italy, 10th-12th April 2024

Title: The bottlenose dolphin (*Tursiops truncatus*): A novel model for studying healthy vascular aging

Authors: Bernaldo de Quirós, Y., Mahoney, S., VanDongen, N., Greenberg, N., Venkatasubramanian, R., Bossart, G., Clayton, Z., Fernández, A., & Seals, D.

Type of participation: Poster

Name of conference/meeting: American Physiology Summit 2024

Publication: Physiology. <https://doi.org/10.1152/physiol.2024.39.S1.1165>

Location and date: Long Beach, California, USA, 4-7 April 2024

c) National conferences:

8

Name of conference/meeting: Summer school SIBM (Italian Society Marine Biology)

Location and date: Genoa Aquarium 2/07/2024

Title: Catture accessorie e specie protette: una sfida per la ricerca in Mediterraneo.

Authors: Giorda F.

Type of participation: Oral presentation.



Name of conference/meeting: 8th national congress of the Italian Society for Virology.

Location and date: July 7-9, 2024 – Bologna.

Title: A virologic overview on the cetaceans stranded from 2015 to 2020 along the Italian coastline.

Authors: S. Mazzariol, C. Casalone, C. Testori, C. Centelleghes, C. Cocumelli, D. Denurra, G. Di Francesco, G. Di Guardo, F. Di Nocera, L. Di Renzo, S. Gavaudan, F. Giorda, G. Lucifora, L. Marsili, S. Migliore, I. Pascucci, A. Petrella, A. Pintore, R. Puleio, S. Rubini, G. Terracciano, A. Toffan, G. Pietrolungo, C. Grattarola.

Type of participation: Poster presentation.

Title: Deadly *serratia marcescens* infection in a bottlenose dolphin (*Tursiops truncatus*)

Authors: Reyes-Matute, A., Fernández, A., Martín-Barrasa, J.L., Guerra Garcés, J.V., Gutiérrez Llanos, A.R., Alonso-Almorox, P., Arbelo, M.

Type of participation: Poster Presentation

Name of conference/meeting: 5th Cutting Edge Pathology Congress

Location and date: Madrid, Spain, 28th-31st August 2024

Title: Pathologies and causes of death in stranded cetaceans in the Canary Islands (2013-2018)

Authors: Díaz-Santana, P.J., Arbelo, M., Fernández, A., Suárez-Santana, C.M., Díaz-Delgado, J., Sierra, E., Quesada-Canales, O., Bernaldo de Quiros, Y., Aguerri, M., Puig-Lozano, R., Consoli, F.

Type of participation: Oral Presentation

Name of conference/meeting: 5th Cutting Edge Pathology Congress

Location and date: Madrid, Spain, 28th-31st August 2024

Title: Detection of highly pathogenic avian influenza h5n1 in marine mammals from South America

Authors: Sierra, E., Ulloa, M., Fiorito, C., Colom-Rivero, A., Neira, V., Fernández, A.

Type of participation: Poster Presentation

Name of conference/meeting: 5th Cutting Edge Pathology Congress

Location and date: Madrid, Spain, 28th-31st August 2024

Title: Pathological study of a gas bubble disease model in fish

Authors: Velázquez-Wallraf, A.S., Caballero, M.J., Bernaldo de Quirós, Y., Fernández, A., Betancor, M.B., González Díaz, Ó., Arregui, M., Saavedra, P., Hemingway, H.W.

Type of participation: Poster Presentation

Name of conference/meeting: 5th Cutting Edge Pathology Congress

Location and date: Madrid, Spain, 28th-31st August 2024

Title: Hacia un concepto One Health: El rol del farmacéutico comunitario

Authors: Gómez-Pamo Guerra del Río, F., Domínguez-Boada, L., López Pintor, E., Fernández, A.

Type of participation: Oral Presentation

Name of conference/meeting: XI Congreso Nacional de Farmacéuticos Comunitarios

Publication: Conference Proceedings

Location and date: Las Palmas de Gran Canaria, Spain, 16th-18th May 2024

Title: Causas de muerte de cetáceos varados en las Islas Canarias

Authors: Raquel Puig Lozano

Type of participation: Oral Presentation

Name of conference/meeting: III Jornadas de Avafes Nacional

Publication: Conference Proceedings

Location and date: Majadahonda, Madrid, Spain. 16th-17th March 2024

d) Other (Provide website address or link to appropriate information):

12

**DOCTORAL THESES:**

*PhD Advisors: Arbelo Hernández, Manuel Antonio and Sierra Pulpillo, Eva María*

*Title: Cetacean Poxvirus Skin Disease: A Potential Bioindicator Of Health And Welfare In Marine Mammals*

*Student: Segura Göthlin, Simona Andrea*

*University: Universidad de las Palmas de Gran Canaria*

*Faculty: Facultad de Veterinaria*

*Date: 2024.*

**MASTER'S THESES:**

*Advisors: Antonio Jesús Fernández Rodríguez and Cristian Manuel Suárez Santana*

*Title: Estudio Anatomopatológico En Aves Encontradas En Parques Eólicos De Canarias / Anatomopathological study of birds found in wind farms in the Canary Islands*

*Student: Candela Rivero Herrera*

*Master: Sanidad Animal y Seguridad Alimentaria*

*University: Universidad de Las Palmas de Gran Canaria*

*Faculty: Facultad de Veterinaria*

*Date: academic year 2023-2024*

**DISSEMINATION AND SCIENTIFIC COMMUNICATION ACTIVITIES:**

*Title: Veterinary Pathology as a Tool for Health Surveillance: "One Health" in Globalisation*

*Authors: Antonio J. Fernández Rodríguez*

*Type of participation: Oral presentation*

*Name of Event: Interuniversity Conference "One Health". Monitoring Human, Animal, and Environmental Health*

*Organizer: Cabildo Insular de La Palma; Gobierno de Canarias; Universidad de La Laguna (ULL). IUETSP; Universidad de Las Palmas de Gran Canaria (ULPGC). IUSA.*

*Location and date: Santa Cruz de La Palma, Spain, 03rd December 2024*

*Title: Veterinary Anatomopathological Service SERSASA*

*Authors: Pedro Herráez and José Rodríguez*

*Type of participation: Oral presentation*

*Name of Event: Interuniversity Conference "One Health". Monitoring Human, Animal, and Environmental Health*

*Organizer: Cabildo Insular de La Palma; Gobierno de Canarias; Universidad de La Laguna (ULL). IUETSP; Universidad de Las Palmas de Gran Canaria (ULPGC). IUSA.*

*Location and date: Santa Cruz de La Palma, Spain, 03rd December 2024*

*Title: Practical Session: Standardised Necropsy.*

*Authors: Cristian M. Suárez Santana and Lucía Marrero Ponce*

*Type of participation: Practical Session*

*Name of Event: Power Lines and Birdlife Conservation Training Course*

*Organizer: Red Eléctrica*

*Location and date: Las Palmas de Gran Canaria, Spain, 19th-22nd November 2024*

*Title: Characterisation of Collision Injuries with Power Lines in the Canary Houbara bustard (*Chlamydotis undulata fuertaventurae*).*

*Author: Cristian M. Suárez Santana*

*Type of participation: Oral Presentation*

*Name of Event: Curso Formación Líneas Eléctricas y Conservación de la Avifauna*

*Organizer: Red Eléctrica*

*Location and date: Las Palmas de Gran Canaria, Spain, 19th-22nd November 2024*

*Title: Learn the meaning of One Health from animal health researchers*

*Type of participation: Webinar*

*Name of Event: Science and Innovation Weeks in the Canary Islands 2024*

*Organizer: Agencia Canaria de Investigación, Innovación y Sociedad de la Información (ACIISI)*

*Location and date: Arucas, Spain, 13-14th November 2024*

*Title: One Health, guided visit to IUSA-ULPGC*

*Type of participation: Scientific guided tours*

*Name of Event: Science and Innovation Weeks in the Canary Islands 2024*

*Organizer: Agencia Canaria de Investigación, Innovación y Sociedad de la Información (ACIISI)*

*Location and date: Arucas, Spain, 15th November 2024*

*Title: Cetacean Stranding Simulation Workshop*

*Type of participation: Workshop*

*Name of Event: Arucas y el Mar 2024*

*Organizer: Excmo. Ayuntamiento de Arucas. Concejalía de Medio Ambiente.*

*Location and date: Arucas, Spain, 15-30th September 2024*

*Title: Scientific dissemination stands*

*Type of participation: Workshop*

*Name of Event: Arucas y el Mar 2024*

*Organizer: Excmo. Ayuntamiento de Arucas. Concejalía de Medio Ambiente.*

*Location and date: Arucas, Spain, 15-30th September 2024*

*Title: Immersive journey into our marine ecosystem*

*Type of participation: Workshop*

*Name of Event: Mini Science and Innovation Fairs in the Canary Islands 2024*

*Organizer: Agencia Canaria de Investigación, Innovación y Sociedad de la Información (ACIISI)*

*Location and date: Las Palmas de Gran Canaria, Spain, 10th May 2024*

*Title: Una sola salud "One Health"*

*Authors: Raquel Puig-Lozano*

*Type of participation: Oral presentation*

*Name of Event: Oceanic Culture Cycle: The Conservation of Marine Biodiversity*

*Organizer: Centro de Extensión Universitaria y Divulgación Ambiental de Galicia (CEIDA)*

*Location and date: Castillo de Santa Cruz, A Coruña, Spain, 26th May 2024.*

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

*Application of different laboratory procedures and improvements in molecular diagnostics for the detection of emerging diseases in wildlife.*

12. Additional comments regarding your report: