

# WOAH Collaborative Centre Reports Activities 2022

## Activities in 2022

This report has been submitted : 27 janvier 2023 11:41

### Centre Information

<b>Title of WOA Collaborating Centre</b>	Instituto Universitario de Sanidad Animal y Seguridad Alimentaria de la Universidad de Las Palmas de Gran Canaria
<b>Address of WOA Collaborating Centre</b>	Campus Universitario Cardones de Arucas, 35413 Arucas. (Canary Islands, Spain)
<b>Tel.:</b>	(+34) 928 459711
<b>E-mail address:</b>	direccion_iusa@ulpgc.es
<b>Website:</b>	www.iusa.eu
<b>Name Director of Institute (Responsible Official):</b>	Antonio Fernández Rodríguez
<b>Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):</b>	Director: PhD Antonio Fernández Rodríguez..
<b>Name of the writer:</b>	Antonio Fernández Rodríguez

### TOR1 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 WOA

Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Phylo-geographic analysis of Brucella ceti strains in marine	Investigation on Brucella ceti infection in marine mammals in

mammals of Italy (WGS) by WOAHA Reference Laboratory for Brucellosis (IZSAM, Italy) recovered by C.Re.Di.Ma. Diagnostic coordination activity, Italy	Italy, giving insights on the phylogenetic structure of Mediterranean isolates
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Genomic sequencing of morbillivirus strains in marine mammals of Italy, recovered by C.Re.Di.Ma. diagnostic coordination activity, Italy	Investigation on morbillivirus infection in marine mammals in Italy, giving insights on genome sequences of strains circulating
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Implementation of the International Whaling Commission (IWC) National Progress Report (PR)	Implementation of the National Progress Report (PR) with data related to C.Re.Di.Ma database and 2021 ship strike and by catch events recorded in Italy
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
CEMMA stranding network collaboration	Histopathologic analysis of samples from stranded animals in the coasts of Galicia, Spain
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Andalucía stranding network collaboration	Histopathologic and molecular analysis of samples from stranded animals in the coasts of Andalucía, Spain
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Asturias stranding network collaboration	Asturias stranding network collaboration Histopathologic and molecular analysis of samples from stranded animals in the coasts of Asturias, Spain
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Cantabria's stranding network collaboration	Histopathologic and molecular analysis of samples from

	stranded animals in the coasts of Cantabria, Spain
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
GLOBICAN	Sanitary evaluation of the local groups of <i>G. macrorhynchus</i> in the Canary Islands, as well as of the risk factors for their conservation associated with the anthropic action on their areas of residency
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Environmental pollutants	Biological study of the environmental pollutants that affect cetaceans in Gran Canaria during the year 2022
Training, capacity building	
Title of activity	Scope
Round table "Regional experiences on stranding events: discussion of case reports" Selection of significant and of dubious interpretation case reports (2021-2022)	This panel discussion was held within the Annual Congress of C.Re.Di.Ma. on May 4-5th, 2022. The aim was to increase the participants' knowledge in the diagnostic field and to allow an effective exchange of views for the evaluation of diagnostic cases of doubtful interpretation. Participants: Italian Network of Istituti Zooprofilattici Sperimentali- Italian National Public Health Services - Italian Universities
Training, capacity building	
Title of activity	Scope
Oceanographic Knowledge transference seminar	New technologies that contribute to the health and conservation of cetaceans
Zoonoses	
Title of activity	Scope
Emerging and re-emerging zoonosis surveillance in marine mammals (i.e. brucellosis, salmonellosis, toxoplasmosis, etc) in Italy	Coordination of surveillance and control activities performed by the Italian National Public Health Services (Istituti Zooprofilattici Sperimentali network)
Disease Control	
Title of activity	Scope

Emergent viral diseases in cetaceans: pathologic and molecular diagnostic	Histopathologic and molecular analysis of samples from stranded animals in the Canary Islands
Diagnosis, biotechnology and laboratory	
Title of activity	Scope
Histopathological and molecular diagnostic	Collaboration with the General Direction of marine and terrestrial biodiversity in Ceuta, Spain, for the diagnostic of a stranding event in the coast of Ceuta.
Diagnosis, biotechnology and laboratory	
Title of activity	Scope
Decompressive pathology in cetaceans	Development of diagnostic tools for the decompressive pathology in cetaceans, as well as study of the action mechanisms of the disease.
Animal welfare	
Title of activity	Scope
Nicola Pussini, Short Specialization Course in Conservation Medicine of Aquatic Animal - Anesthesia, teleanesthesia and Euthanasia in marine mammals. Department of Comparative Biomedicine and Food Science – University of Padova. a.y. 2021/2022.	Correct management of live stranded cetaceans
Animal welfare	
Title of activity	Scope
Encouragement of Whale Watching Activities	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

## TOR3: 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
	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	Laboratory expertise

	Macaronesian Area	
	Stranding trends Monitor stranding trends along Italian coastline; early detection of Unusual Mortality Events (UMEs) Development of a syndromic surveillance tool to monitor stranding trends, useful for early detection of Unusual Mortality Events (UMEs)	health management

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

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Cetaceans' strandings Emergency Response Team (CERT) of the University of Padua, Italy	Padua, Italy	Europe	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.
Istituti Zooprofilattici Sperimentali diagnostic network (IZSPLV, IZSLT, IZSME, IZSSA, IZSSI, IZSPB, IZSAM, IZSUM, IZSLER, IZSVE)	Italy	Europe	Coordination of diagnostic investigations and data collection on stranded marine mammals
International Whaling Commission (IWC)	Impington, Cambridge, UK	Europe	Updating of the National Progress Report (PR) with data related to C.Re.Di.Ma database and 2021 ship strike and by catch events recorded in Italy.
CEMMA stranding Network	Galicia, Spain	Europe	Collaboration on diagnostic investigations and data collection of stranded marine mammals in Galicia, Spain
Cetaceans' strandings Emergency Response Team of the University of Las Palmas de Gran Canaria	Canary Islands, Spain	Europe	Response to the cases of cetacean strandings in the Canary Islands archipelago, performing the necropsy and managing the disposal of the carcass.

## **TOR4 AND 5: NETWORKING AND COLLABORATION**

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

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
OIE BRC	Italy	Europe	Brucella ceti typing
OIE BSE	Italy	Europe	Neuropathological investigations and diagnostic tools
OIE Scrapie	Italy	Europe	Neuropathological investigations and diagnostic tools
OIE Coll. Centre Animal/Human interface	Italy	Europe	Diagnosis of zoonotic agents

## **TOR6: EXPERT CONSULTANTS**

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

## **TOR7: SCIENTIFIC AND TECHNICAL TRAINING**

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

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

Yes

a) Technical visit :

b) Seminars : 80

c) Hands-on training courses: 30

d) Internships (>1 month) :

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
B	Providing scientific data on: emerging biological threats for cetaceans in the Mediterranean Sea; impact of anthropogenic activities on Marine Mammals Health; Persistent Organic Pollutants (POPs) and the health of marine mammals; the Accobams survey initiative-a tool to facilitate conservation effort across cultural, social and political boundaries; the role of Coast Guard on protection of the marine environment	Italy	6
B	Providing scientific data on: Veterinary Pathology and Cetacean Health and Conservation	Spain	1
B	Providing scientific data on: Management of unusual mortality events related to harmful algal blooms and oil spills	United States	1
B	Aquatic animal health and water environment: One Health WOAHEurope activities	Central Asia	1
C	Workshop for the coordination of Marine Mammal Stranding Networks	Spain	7

## TOR8: 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 WOAHE?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	Impact of environmental and climate changes on	WOAHE- C.Re.Di.Ma	2022-10-01	Catania (Italy)	80

## TOR9: 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:

27

Giorda F, Crociara P, Iulini B, Gazzuola P, Favole A, Gorla M, Serracca L, Dondo A, Crescio MI, Audino T, Peletto S, Di Francesco CE, Caramelli M, Sierra E, Di Nocera F, Lucifora G, Petrella A, Puleio R, Mazzariol S, Di Guardo G, Casalone C, Grattarola C.

"Neuropathological Characterization of Dolphin Morbillivirus Infection in Cetaceans Stranded in Italy". *Animals (Basel)*. 2022 Feb 12;12(4):452. doi: 10.3390/ani12040452.

Audino T, Berrone E, Grattarola C, Giorda F, Mattioda V, Martelli W, Pintore A, Terracciano G, Cocumelli C, Lucifora G, Di Nocera F, Di Francesco G, Di Renzo L, Rubini S, Gavaudan S, Toffan A, Puleio R, Bold D, Brunelli F, Gorla M, Petrella A, Caramelli M, Corona C, Mazzariol S, Richt JA, Di Guardo G, Casalone C. "Potential SARS-CoV-2 Susceptibility of Cetaceans Stranded along the Italian Coastline". *Pathogens* 2022, 11, 1096. <https://doi.org/10.3390/pathogens11101096>

Fernández-Escobar M, Giorda F, Mattioda V, Audino T, Di Nocera F, Lucifora G, Varello K, Grattarola C, Ortega-Mora LM, Casalone C, Calero-Bernal R. "Toxoplasma gondii Genetic Diversity in Mediterranean Dolphins". *Pathogens*. 2022 Aug 12;11(8):909. doi: 10.3390/pathogens11080909.

Angelucci CB, Giacomini-Stuffer R, Baffoni M, Di Francesco CE, Di Francesco G, Di Renzo L, Tittarelli M, Petrella A, Grattarola C, Mazzariol S, et al. "Cellular Prion Protein Expression in the Brain Tissue from Brucella ceti-Infected Striped Dolphins (Stenella coeruleoalba)". *Animals* 2022, 12, 1304. <https://doi.org/10.3390/ani12101304>

Audino, T.; Grattarola, C.; Centelleghes, C.; Peletto, S.; Giorda, F.; Florio, C.L.; Caramelli, M.; Bozzetta, E.; Mazzariol, S.; Di Guardo, G.; et al. SARS-CoV-2, a Threat to Marine Mammals? A Study from Italian Seawaters. *Animals* 2021, 11, 1663. <https://doi.org/10.3390/ani11061663>

Casalone C, Audino T, Giorda F, Mattioda V, Pintore A, Terracciano G, Cocumelli C, Lucifora G, Di Nocera F, Di Francesco G, Rubini S, Gavaudan S, Toffan A, Puleio R, Pussini N, Petrella A, Caramelli M, Centelleghes C, Di Guardo G, Grattarola C, Mazzariol S. "I mammiferi marini: una rete nazionale spiaggiamenti al servizio della salute dei nostri mari". 30 giorni, April 2022.

Casalone C. "I cetacei, sentinelle della salute dei nostri mari". *Verde Ambiente*, Year 2, Number 2, pag 7-8 – awarded in Sorrento (NA) - november 30th, 2022

Authors: Bode, A., Saavedra, C., Álvarez-González, M., Arregui, M., Arbelo, M., Fernández, A., Freitas, L., Silva, M.A., Prieto, R., Azevedo, J.M.N., Giménez, J., Pierce, G.J., Santos, M.B.

Title: Trophic position of dolphins tracks recent changes in the pelagic ecosystem of the Macaronesian region (NE Atlantic)

Journal: *Marine Ecology Progress Series* 2022, 699, 167-180 <https://doi.org/10.3354/meps14176>

Citations: 0

IF: 2.915 (Q2-2021)

Authors: Navas-Suárez, P. E., Diaz-Delgado, J., Caiaffa, M. G., da Silva, M. C., Yogui, D. R., Alves, M. H., Cereda, J. F., da Silva, M. P., Cremer, M. J., Ascensão, F., Lorigados, C., Medici, E. P., Desbiez, A., & Catão-Dias, J. L.

Title: Characterization of Traumatic Injuries Due to Motor Vehicle Collisions in Neotropical Wild Mammals

Journal: *Journal of Comparative Pathology* 2022, 197, 1–18. <https://doi.org/10.1016/j.jcpa.2022.06.003>

Citations: 0

IF: 1.083 (Q3-2021)

Authors: Orós, J., Priestnall, S.L., Suárez-Bonnet, A.

Title: Histopathological description of iridophoromas resembling skin nodule syndrome in Siamese fighting fish *Betta splendens*



Journal: *Diseases of aquatic organisms* 2022, 151, p. 23-27 <https://doi.org/10.3354/dao03686>

Citations: 0

IF: 1.769 (Q2-2021)

Authors: Sacristán, C., Ewbank, A. C., Sánchez-Sarmiento, A. M., Duarte- Benvenuto, A., Borges, J., Rebelo, V. A., Díaz-Delgado, J., Borges Keid, L., & Catão-Dias, J. L.

Title: *Erysipelas in a stranded common bottlenose dolphin: first report in a South American odontocete*

Journal: *Brazilian Journal of Microbiology* 2022, <https://doi.org/10.1007/s42770-022-00810-5>

Citations: 0

IF: 2.214 (Q4-2021)

Authors: Bartalini, A., Muñoz-Arnanz, J., García-Álvarez, N., Fernández, A., Jiménez, B.

Title: *Global PBDE contamination in cetaceans. A critical review*

Journal: *Environmental pollution* 2022, 308 (119670) <https://doi.org/10.1016/j.envpol.2022.119670>

Citations: 0

IF: 9.988 (Q1-2021)

Authors: Fernández, A., Jepson, P.D., Di Guardo, G.

Title: *Impact of naval sonar systems on sealife mortality*

Journal: *Veterinary Record* 2022, 190, 329-329.

<https://doi.org/10.1002/vetr.1713>

Citations: 0

IF: 2.560 (Q1-2021)

Authors: Sierra, E., Ramírez, T., Bernaldo de Quirós, Y., Arregui, M., Mompeó, B., Rivero, M.A., Fernández, A.

Title: *Pulmonary and Systemic Skeletal Muscle Embolism in a Beaked Whale with a Massive Trauma of Unknown Aetiology*

Journal: *Animals* 2022, 12 (508). <https://doi.org/10.3390/ani12040508>

Citations: 1

IF: 3.231 (Q1-2021)

Authors: Sacchini S, Fernández A, Mompeó B, Medina R, Arbelo M, Holgersen U, Quesada-Canales Ó, Castro-Alonso A, Andrada M.

Title: *Toothed Whales Have Black Neurons in the Blue Spot*

Journal: *Veterinary Sciences*. 2022; 9(10)525. [10.3390/vetsci9100525](https://doi.org/10.3390/vetsci9100525)

Citations: 0

IF: 2.518 (Q2-2021)

Authors: Fernández A, Jepson PD, Díaz-Delgado J, Bernaldo de Quirós Y, Sierra E, Mompeo B, Vela AI, Di Guardo G, Suárez-Santana C, Espinosa de los Monteros A, Herráez P, Andrada M, Caballero MJ, Rivero M, Consoli F, Castro- Alonso A, Quesada-Canales O, Arbelo M.

Title: *Budd-Chiari-like pathology in dolphins*

Journal: *Scientific Reports*. 2022; 12(1)12635. [10.1038/s41598-022-16947-0](https://doi.org/10.1038/s41598-022-16947-0)

Citations: 0

IF: 4.996 (Q2-2021)

Authors: Consoli F, Bernaldo de Quirós Y, Arbelo M, Fulle S, Marchisio M, Encinosa M, Fernández A, Rivero M.

Title: *Cetaceans Humerus Radiodensity by CT: A Useful Technique Differentiating between Species, Ecophysiology, and Age*

Journal: *Animals*. 2022; 12(14)1793 [10.3390/ani12141793](https://doi.org/10.3390/ani12141793)

Citations: 0

IF: 3.231 (Q1-2021)

Authors: Câmara N, Fernández A, Herráez P, Arbelo M, Andrada M, Suarez- Santana CM., Sierra E.

Title: *Microscopic Findings in the Cardiac Muscle of Stranded Extreme Deep- Diving Cuvier's Beaked Whales (*Ziphius cavirostris*)*

Journal: *Microscopy and Microanalysis*. 2022; 28(5)1641-1648. <https://doi.org/10.1017/S1431927622000605>

Citations: 0

IF: 4.099 (Q1-2021)

Authors: Sierra E, Fernández A, Fernández-Maldonado C, Sacchini S, Felipe- Jimenez I, Segura-Gothlin S, Colom-Rivero A, Câmara N, Puig-Lozano R, Rambaldi A, Suarez-Santana C, Arbelo M.

Title: Molecular Characterization of Herpesviral Encephalitis in Cetaceans: Correlation with Histopathological and Immunohistochemical Findings

Journal: *Animals*. 2022; 12 (9), 1149. <https://doi.org/10.3390/ani12091149>

Citations: 0

IF: 3.231 (Q1-2021)

Authors: Fernández A, Sierra E, Arbelo M, Gago A, Leao JM, García N, Bernaldo de Quirós Y, Arregui M, Vela A, Díaz-Delgado, J.

Title: First Case of Brevetoxicosis Linked to Rough-Toothed Dolphin (*Steno bredanensis*) Mass-Mortality Event in Eastern Central Atlantic Ocean: A Climate Change Effect?

Journal: *Frontiers in Marine Science*. 2022; 9, 834051. <https://doi.org/10.3389/fmars.2022.834051>

Citations: 1

IF: 5.247 (Q1-2021)

Authors: Mompeó B, Sacchini S, Quintana MdP, Rivero M, Consoli F, Fernández A, Bernaldo de Quirós Y.

Title: Morphological Structure of the Aortic Wall in Deep Diving Cetacean Species: Evidence for Diving Adaptation.

Journal: *Veterinary Sciences*. 2022; 9(8):424.

<https://doi.org/10.3390/vetsci9080424>

Citations: 0

IF: 2.518 (Q2-2021)

Authors: Sacchini, S.; Herráez, P.; Arbelo, M.; Espinosa de los Monteros, A.; Sierra, E.; Rivero, M.; Bombardi, C.; Fernández, A.

Title: Methodology and Neuromarkers for Cetaceans' Brains.

Journal: *Veterinary Sciences*. 2022; 9(2):38. <https://doi.org/10.3390/vetsci9020038>

Citations: 3

IF: 2.518 (Q2-2021)

Authors: Velázquez-Wallraf, A., Fernández, A., Caballero, M.J., Arregui, M., González Díaz, Ó., Betancor, M.B., Bernaldo de Quirós, Y.

Title: Establishment of a fish model to study gas-bubble lesions.

Journal: *Scientific Reports* 12, 6592 (2022) [https://doi.org/10.1038/s41598-022-](https://doi.org/10.1038/s41598-022-10539-8)

10539-8

Citations: 0

IF: 4.996 (Q2-2021)

Authors: Pennino, M.G., Rufener, M.-C., Giménez, J., Berlinguer, F., Bollo, E., Appino, S., Zucca, D., Chessa, G., Rotta, A.

Title: Understanding the causes of mortality and contaminant loads of stranded cetacean species in Sardinian waters (Italy) using Bayesian Hierarchical Models Journal: *Journal of Sea Research* 2022, 181

<https://doi.org/10.1016/j.seares.2022.102170>

Citations: 0

IF: 2.287 (Q2-2021)

Authors: Felipe-Jiménez, I.; Fernández, A.; Arbelo, M.; Segura-Göthlin, S.; Colom-Rivero, A.; Suárez-Santana, C.M.; De La Fuente, J.; Sierra E.

Title: Molecular Diagnosis of Cetacean Morbillivirus in Beaked Whales Stranded in the Canary Islands (1999–2017).

Journal: *Veterinary Sciences*. 2022; 9(3):121. <https://doi.org/10.3390/vetsci9030121>

Citations: 1

IF: 2.518 (Q2-2021)

Authors: Díaz-Santana P, Fernández A, Díaz-Delgado J, Vela AI, Domínguez L, Suárez-Santana C, Puig-Lozano R, Fernández-Maldonado C, Sierra E, Arbelo M. Title: Nocardiosis in Free-Ranging Cetaceans from the Central-Eastern Atlantic Ocean and Contiguous

*Mediterranean Sea.*

Journal: *Animals* 2022, 12, 434. <https://doi.org/10.3390/ani12040434>

Citations: 0

IF: 3.231 (Q1-2021)

Authors: Duarte-Benvenuto, A., Sacristán, C., Reisfeld, L., Santos-Costa, P. C., Fernandes, N., Ressio, R. A., Mello, D., Favero, C., Groch, K. R., Diaz-Delgado, J., & Catão-Dias, J. L.

Title: CLINICO-PATHOLOGIC FINDINGS AND PATHOGEN SCREENING IN FUR SEALS (*ARCTOCEPHALUS AUSTRALIS* AND *ARCTOCEPHALUS TROPICALIS*) STRANDED IN SOUTHEASTERN BRAZIL, 2018

Journal: *Journal of Wildlife Diseases* 2022, 58(1), 86–99. <https://doi.org/10.7589/JWD-D-21-00060>

Citations: 2

IF: 1.626 (Q2-2021)

b) International conferences:

7

Audino T, Berrone E, Grattarola C, Giorda F, Mattioda V, Pintore A, Terracciano G, Cocumelli C, Lucifora G, Di Nocera F, Di Renzo L, Rubini S, Gavaudan S, Toffan A, Brunelli F, Gorla M, Petrella A, Caramelli M, Mazzariol S, Di Guardo G, Casalone C. "SARS-CoV-2 in marine mammals: survey results on the potential viral susceptibility in cetaceans stranded along the Italian coastline". ECS Congress 4-7 april 2022, Teams platform.

Giorda F, Crociara P, Mattioda V, Iulini B, Gazzuola P, Favole A, Gorla M, Serracca L, Dondo, Crescio MI, Audino T, Peletto S, CE Di Francesco, Caramelli M, Sierra E, Di Nocera F, Lucifora G, Petrella A, Puleio R, Mazzariol S, Di Guardo G, Casalone C, Grattarola C. "Neuropathological characterization of dolphin morbillivirus infection in cetaceans stranded in Italy". ECS Congress 4-7 aprile 2022, Teams platform.

Cristina Casalone. Event: BSL-3 training/transboundary animal diseases summer program. "From Land to sea in the Mediterranean: an in-depth look on circulating pathogens and the role of the STOR Remesa". University of Kansas (USA); 13 -16 june 2022.

Grattarola C, Petrella A, Lucifora A, Di Francesco G, Di Nocera F, Pintore A, Cocumelli C, Terracciano G, Mignone W, Battisti A, Di Renzo L, Iaccarino D, Di Guardo G, Di Francesco CE, Zoppi S, Dondo A, Iulini B, Varello K, Gorla M, Giorda F, Mattioda V, Audino T, Lauriano G, Janowicz A, Zilli K, Tittarelli M, Casalone C, Garofolo G. "Brucella ceti infection in cetaceans from Italian Seas: associated lesions and epidemiological data". BRUCELLOSIS 2022 INTERNATIONAL RESEARCH CONFERENCE. 16-19 september 2022, Giulianova – Teramo.

Giorda F, Crociara P, Mattioda V, Iulini B, Gazzuola P, Favole A, Gorla M, Serracca L, Dondo, Crescio MI, Audino T, Peletto S, CE Di Francesco, Caramelli M, Sierra E, Di Nocera F, Lucifora G, Petrella A, Puleio R, Mazzariol S, Di Guardo G, Casalone C, Grattarola C. "Neuropathological characterization of dolphin morbillivirus infection in cetaceans stranded in Italy". EAVLD Congress Siviglia 24-26 october 2022.

Antonio Fernandez; 30th Conference of the Regional Commission for Europe Catania, Sicily, Italy, 3-7 October 2022. Seminar "Impact of environmental and climate changes on Marine Mammals health" Title Veterinary Pathology and Cetacean Health and Conservation

Cristina Casalone; 30th Conference of the Regional Commission for Europe Catania, Sicily, Italy, 3-7 October 2022. Seminar "Impact of environmental and climate changes on Marine Mammals health", Title of presentation: Emerging biological threats for cetaceans in the Mediterranean Sea

c) National conferences:

8

Cristina Casalone. Nuove opportunità di collaborazioni trans-frontaliere nel Mediterraneo. Annual Congress of C.Re.Di.Ma. May 4-5th,

2022

*Federica Giorda. Update sull'attività diagnostica degli IZZSS sui cetacei spiaggiati in Italia (2021-2022). Annual Congress of C.Re.Di.Ma. May 4-5th, 2022*

*Nicola Pussini. "Il Mare in Rete". Annual Congress of C.Re.Di.Ma. May 4-5th, 2022.*

*Carla Grattarola. Infezione da Brucella ceti nei cetacei dei mari italiani: quadri patologici associati e dati epidemiologici. Annual Congress of C.Re.Di.Ma. May 4-5th, 2022*

*Nicola Pussini, "Infectious diseases: The Management and Medical Care of Pinnipeds and aquatic flightless birds" e "First aid techniques and clinical/surgical procedures in Pinnipeds and Penguins", Animal Care Course – Padua University – Novembre 11st – December 2nd 2022 dell'Università degli Studi di Padova, 11 nov e 2 dic, 2022.*

*Tania Audino, IZSPLVA - C.Re.Di.Ma. Sars-CoV2: Risultati della sorveglianza nazionale e prospettive di ricerca Annual Congress of C.Re.Di.Ma. May 4-5th, 2022*

*Grattarola C, Mattioda V, Garofolo G, Petrella A, Lucifora G, Di Francesco G, Di Guardo G, Pautasso A, Iulini B, Varello K, Giorda F, Garibaldi F, Gorla M, Dondo A, Zoppi S et al. "Infezione da Brucella ceti in Italia". 51° Congresso SIBM online, 14-17 giugno 2022*

*Audino T. Results of Research Project 16C05 funded by the Italian health Ministry "I mammiferi marini, sentinelle di un ambiente marino in mutazione: noxae patogene e contaminanti immunotossici in un'area del Mar Mediterraneo e dell'Oceano Atlantico" Convegno Ricerche Correnti 2022, Cuneo, December 14th 2022*

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

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

12. Additional comments regarding your report: