

XIII EVPMC 2023



European Vertebrate Pest Management Conference

28th August - 1st September 2023

FLORENCE - ITALY

Preliminary Programme

Dear Friends and Colleagues,

We invite you to join the 13th EVPMC 2023 meeting in Florence, Novoli Campus, on 28 August - 1 September, 2023.

The meeting will focus on the newest and most exciting topics covering a wide range of disciplines and taxa, including symposia on Conservation; Crop Systems; Ecology, physiology and behavior; Fertility control; Human-animal social conflict; Invasive vertebrates; Island conservation; New tools and methods; Pathogens and parasites; Taxonomy and genetics.

The international community of experts in vertebrate management and conservation will share their experience and expertise, the latest advances, renew friendships and increase worldwide collaboration.

We send our warm greetings and hope to make the EVPMC 2023 Congress in Florence a memorable experience for you!

Marco Zaccaroni

on behalf of the local organizing committee

COMMITTEES

LOCAL ORGANIZING COMMITTEE

CHIARA AQUILANI (Italy)
EMILIANO MORI (Italy)
SILVIA PARRINI (Italy)
CAROLINA PUGLIESE (Italy)
FRANCESCO SIRTORI (Italy)
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GRAHAM SMITH (United Kingdom)
EMIL TKADLEC (Czech Republic)

CONTACTS



Scientific Information: evpmc2023@gmail.com
General information: infoevpmc2023@oic.it
www.evpmc2023.com

GENERAL INFORMATION

CONGRESS VENUE

NOVOLI CAMPUS

Department of Economics and Management (DISEI)

University of Florence UNIFI

POLO SCIENZE SOCIALI NOVOLI

BUILDING D6

Via delle Pandette, 9 – 50127 Florence (Italy)

The Novoli Pole project is part of a wider urban redevelopment of the city. From 1940 to 1984, the area was home to the FIAT factories and had a predominantly industrial vocation. According to the project guide of Leon Krier and the recovery plan of Roberto Gabetti and Aimaro Isola, the Polo is divided into seven buildings, characterized by a simple volume and lined up on internal streets like a small town. Thus, since 2002, the Novoli Campus has contributed to giving the area an urban centrality and enhancing important functions: in addition to teaching, it is also a point of socialization for students and citizens.

HOW TO REACH THE VENUE

You can easily reach the Conference venue by Florence public tramway: the University Campus is located on the T2 line of the tramway, at the stop "San Donato Università". The T2 line connects directly also the Florence Airport with the Florence Railway Station (and the Florence city center). Tramway is open everyday from 05.00 AM to 12.30 AM and there is a ride each 4-10 minutes maximum. You can buy tickets at any tramway stop (at the automatic vending machines) at € 1,50 for a 90 minutes ride. For any further info about Florence Tramway please click [HERE](#).

ACCOMMODATION

Here below some suggested hotels with preferential rates for congress participants. The hotels listed are all located near the Congress Venue.

NIL HOTEL

<https://www.nilhotel.it/>

For reservations write to the following address: booking@nilhotel.it.

STARHOTELS TUSCANY FLORENCE

<https://www.starhotels.com/en/our-hotels/tuscany-florence/>

HOTEL PAGANINI

<http://www.hotelnicolle.com/listing/hotel-paganini/>

GENERAL INFORMATION

REGISTRATION

REGULAR REGISTRATION until 1 st July, 2023	LATE REGISTRATION from 2 nd July, 2023
DELEGATE € 450,00	DELEGATE € 500,00
STUDENT / PhD STUDENT € 250,00	STUDENT / PhD STUDENT € 300,00
ONE DAY (Delegate and Student) € 210,00	ONE DAY (Delegate and Student) € 250,00

SOCIAL EVENTS

Learning experience San Rossore Natural Park

Wednesday, 30th August 2023

A visit to the beautiful natural reserve "Parco di San Rossore" will be organized.

Up to 150 participants (maximum) will be accepted for this.

The participants will have the great opportunity to visit this unique protected area, famous for its large lagoons interspersed with wood and Mediterranean brushwood.

The excursion includes:

- traveling with a private bus
- a guide during the visit in the park
- lunch inside the park
- access to the beach.
- Price per person **€ 70,00**.

EVPMC Social Dinner

Thursday, 3rd August 2023 - 8:00 pm

Join the EVPMC Social Dinner in an exceptional location downtown Florence!

Good wine and typical Tuscan food in a fun and relaxing environment, with old and new friends.

DON'T MISS IT! LIMITED SEATS AVAILABLE

Price per person **€ 55,00**.



SCIENTIFIC PROGRAMME

PLENARY SPEAKERS



Silke Bauer

Swiss Ornithological Institute, Department of Bird Migration, Sempach, Switzerland

Global movements of migratory birds – enigmatic phenomena with implications for pest and disease management

Dr. Silke Bauer is a senior researcher at the Swiss Ornithological Institute in Sempach, Switzerland. Her main scientific interest are animal – mainly bird – migrations, especially their large-scale patterns and timing. Although much of her research has been devoted to migrants and migrations themselves, it increasingly also recognizes that migrants can have a multitude of effects and interact with the resident communities visited during their journeys. Silke is involved in international projects such as GloBAM and KappaFlu that investigate aerial biodiversity patterns and the role of bird migrations in the spread of diseases.



Frauke Ecke

University of Helsinki, Organismal and Evolutionary Biology Research Program, Helsinki, Finland

The role of nature conservation in pest and disease control

Frauke Ecke is Professor of Ecology at University of Helsinki, Finland and she is also working as a Senior Lecturer at the Swedish University of Agricultural Sciences. For more than 20 years, she has been working on rodent ecology incl. population dynamics and landscape responses in Fennoscandia. The focus of her more recent research is on disease ecology aiming to understand especially environmental drivers of pathogen transmission. She is the coordinator of the Horizon Europe project BEPREP (Identification of best practices for biodiversity recovery and public health interventions to prevent future epidemics and pandemics) that is running 2022-2027.



Stefano Grignolio

Department of Life Sciences and Biotechnology, University of Ferrara, Italy

The importance of behavioural ecology knowledge in reducing human-wildlife conflicts

I am a behavioural ecologist of large mammals and focused my studies on investigating activity rhythms in wildlife. I developed studies that, by using behavioural metrics, aim to understand human-wildlife interactions and reduce conflicts.

PLENARY SPEAKERS



Giovanna Massei

European Director of the Botstiber Institute for Wildlife Fertility Control, York, UK

Too many? Eight reasons for Europe to invest in wildlife fertility control

Giovanna Massei serves as Europe Director of the Botstiber Institute for Wildlife Fertility Control, based at the University of York (UK). For 24 years Giovanna has led research in the UK and overseas on non-lethal methods to manage wildlife.

Giovanna received her BsC in Natural Sciences from the University of Florence (Italy) and her PhD in zoology from the University of Aberdeen (UK). Her research interests focus on fertility control to manage wildlife and free-roaming livestock and on the ecology and population control of wild boar and feral pigs. She published two books on the natural history and management of wild boar and circa 150 scientific papers and popular articles on wildlife management and behavioural ecology. Giovanna is an Associate Editor for the peer-reviewed journal Human-Wildlife Interactions.



Valeria Mazza

University of Potsdam, Animal Ecology, Potsdam, Germany

Mousy minds: intra-specific variation in behaviour and cognition in small mammals

Valeria Mazza is a behavioural biologist interested in understanding how individual behavioural and cognitive traits help animals cope with environmental challenges in the context of current human-induced rapid environmental change. She conducted her undergraduate studies in Turin (Italy), and obtained her PhD at the University of Florence (Italy). Since 2020, Valeria is the Research Associate in the Animal Ecology Group at the University of Potsdam (Germany). Her current research focuses on the role within-specie variation in cognition and innovative problem-solving in mediating the successful establishment and permanence in human-altered and/or non-native environments in several mammal species.



Frank Zachos

Natural History Museum Vienna, Vienna, Austria; Department of Genetics, University of the Free State, Bloemfontein, South Africa

Genetics of a common species – diversity, phylogeography and conservation of the European red deer (Cervus elaphus)

Frank E. Zachos is Head of the Mammal Collection at the Natural History Museum in Vienna and an affiliated professor at the Department of Genetics at the University of the Free State in Bloemfontein, South Africa. His zoological research interests include the biodiversity, systematics, evolution and conservation of mammals and birds, particularly deer and antelope, but also birds of prey. His main theoretical interests are the species problem in biology, the theoretical foundations of systematics and the history and philosophy of biology.

MONDAY, 28th AUGUST 2023

PLENARY ROOM | 10:00-11:00

PLENARY SPEECH - 1

Mousy minds: intra-specific variation in behaviour and cognition in small mammals

Valeria Mazza (Potsdam - D)

11:00 Coffee break

PLENARY ROOM | 11:30-12:50

ECOLOGY PHYSIOLOGY AND BEHAVIOUR - 1

Chairs: **Valeria Mazza** (Postdam - D), **Emiliano Mori** (Sesto Fiorentino - I)

11:30 Bird crop depredation in Switzerland: Feeding behaviors and the influence of local and landscape habitat attributes

Amal Chantoufi^{1,2}, **Klervie Bourgoin**¹, **Eve-Anne Laurent**¹, **Frédéric Jiguet**², **Alice Baux**¹ (¹Nyon - CH, ²Paris - F)

11:50 Goose accommodation field concept may alleviate human-wildlife conflict in agricultural areas

Jukka Forsman¹, **Martin Seltmann**², **Anna-Kaisa Ylitalo**¹, **Antti Piironen**², **Wieland Heim**², **Tuomas Seimola**³, **Markus Piha**³, **Juha Heikkinen**³, **Ron Store**¹, **Toni Laaksonen**² (¹Oulu - FI, ²Turku - FI, ³Helsinki - FI)

12:10 Do badgers eat lamb? Using DNA and post-mortem analysis to investigate lamb predation on Scottish farms

Sheila George, **Steve Campbell**, **Jennifer Kaden**, **Catherine Hale**, **Lucy Webster** (Edinburgh - UK)

12:30 The magpie and the grapes: increasing ozone exposure impacts fruit consumption by a common corvid in a suburban environment

Andrea Viviano¹, **Emiliano Mori**^{1,2}, **Jacopo Manzini**¹, **Elena Paoletti**^{1,2}, **Yasutomo Hoshika**^{1,2}, **Barbara Baesso Moura**^{1,2} (¹Sesto Fiorentino - I, ²Palermo - I)

12:50 Lunch

MONDAY, 28th AUGUST 2023

PARALLEL ROOM | 11:30-12:50

INVASIVE VERTEBRATES - I

Chairs: **Tim Adriaens** (Brussels - B), **Paolo Sposimo** (Florence - I)

- 11:30** The Mammalnet citizen science contribution to improve knowledge of invasive mammal species in Europe
Joaquin Vicente¹, **Rachele Vada**², **José Antonio Blanco-Aguilar**¹, **Graham Smith**³, **Massimo Scandura**⁴, **Kamila Plis**⁵, **Oliver Keuling**⁶, **Nera Fabijanić**⁷, **Philip A. Stephens**⁸, **David Roy**⁹, **Patrick Jansen**¹⁰, **Stefania Zanet**², **Nikica Sprem**⁷, **Dragan Gacic**¹¹, **Simon Croft**³, **Jim Casaer**¹², **Yorick Liefing**¹⁰, **Pablo Palencia**², **Carmen Ruiz**¹, **Majlind Sulce**¹³, **Sonia Illanas**¹, **Ternyik Bálint**⁸, **Javier Fernandez**¹, **Joanna Stojak**⁵, **Belma Šestović**¹⁴, **Igor Trbojević**¹⁵, **Marina Radonjic**¹⁴, **Vlatko Aleksovski**¹⁶, **Tancredi Guerrasio**⁴, **Ezio Ferroglio**², **Marco Apollonio**⁴
(¹Ciudad Real - E, ²Turin - I, ³York - UK, ⁴Sassari - I, ⁵Białowieża - PL, ⁶Hannover - D, ⁷Zagreb - HR, ⁸Durham - UK, ⁹Wallingford - UK, ¹⁰Wageningen - NL, ¹¹Belgrade - SRB, ¹²Brussels - B, ¹³Tirana - AL, ¹⁴Kotor - ME, ¹⁵Banja Luka - BiH, ¹⁶Skopje - MK)
- 11:50** Mainland eradication of the invasive raccoon dog (*Nyctereutes procyonoides*) and the evolution of a national task force for invasive alien species
P-A Åhlén (Ånäset - S)
- 12:10** Alien parakeets as a potential threat to the common noctule *Nyctalus noctula*
Silvia Giuntini¹, **Leonardo Ancillotto**², **Mattia Falaschi**³, **Andrea Viviano**⁴, **Elisabetta Palagi**⁵, **Emiliano Mori**⁴ (¹Varese - I, ²Portici - I, ³Milan - I, ⁴Sesto Fiorentino - I, ⁵Pisa - I)
- 12:30** Kaput feral hog bait with 0.005% warfarin: product development, efficacy, non-target, human safety and politics
Richard Poche, **David Poche** (Wellington - USA)
- 12:50** Lunch

MONDAY, 28th AUGUST 2023

PLENARY ROOM | 14:30-15:30

ECOLOGY PHYSIOLOGY AND BEHAVIOUR - 2

Chairs: **Valeria Mazza** (Postdam - D), **Emiliano Mori** (Sesto Fiorentino - I)

- 14:30** Population dynamics of rodents in Asia and Europe: patterns and processes
Nyo Me Htwe¹, **Sudarmaji Sudarmaji**², **Arlyna Budi**², **Peter R Brown**³, **Marcus Schmidt**⁴, **Anita Plenge-Bönig**⁵, **Christian Imholt**¹, **Jens Jacob**¹ (¹Münster - D, ²Yogyakarta - IDN, ³Canberra - AUS, ⁴Zurich - CH, ⁵Humburg - D)
- 14:50** European rabbit In North-Central Chile: outbreak causes
Paola Correa, **Mauricio Lima**, **Martina Schmidt**, **Sergio Henriquez**, **Fabian Jaksic** (Santiago - CHL)
- 15:10** Towards the influence of climatic covariates in the spatio-temporal differential expression of common vole abundance in Castilla-y-León Region (Spain)
Constantino Caminero-Saldaña¹, **Ana Baños-Herrero**¹, **Yesica de los Ángeles Pallavicini-Fernández**¹, **Javier Plaza**², **Rodrigo Pérez-Sánchez**², **Mercedes Fernández-Villán**¹, **Elena Fuertes-Marcos**¹, **Alberto Rodríguez-Martínez**¹, **Nilda Sánchez**², **Juan José Luque-Larena**³, **María Carmen García-Ariza**¹ (¹Valladolid - E, ²Salamanca - E, ³Palencia - E)
- 15:30** Coffee break

MONDAY, 28th AUGUST 2023

PARALLEL ROOM | 14:30-15:30

INVASIVE VERTEBRATES - 2

Chairs: **Tim Adriaens** (*Brussels - B*), **Paolo Sposimo** (*Florence - I*)

- 14:30** A new invasive mammal in Britain? The greater white-toothed shrew
Graham Smith¹, **Ian Bond**², **Philip A. Stephens**², **Frazer Coomber**³,
Emily Gilford³, **Sophie Webb**³, **Allan McDevitt**⁴ (¹York - UK, ²Durham - UK, ³Dorset - UK, ⁴Galway - IRL)
- 14:50** Twenty years of muntjac: monitoring and management of an emerging deer species in Flanders (Belgium)
Bram D'Hondt, **Io Deflem**, **Tim Adriaens**, **Joachim Mergeay**, **Jim Casaer** (*Brussels - B*)
- 15:10** Feral American mink (*Neogale vison*) expanding in Europe: time to harmonize population monitoring
Rachele Vada¹, **Sonia Illanas**², **Pelayo Acevedo**², **Tim Adriaens**³,
Marco Apollonio⁴, **Olgirda Belova**⁵, **José Antonio Blanco-Aguilar**²,
Sandor Csanyi⁶, **Guillaume Body**⁷, **Isabel Garcia Fernandez-De-Mera**²,
Ezio Ferroglio¹, **Patrick Jansen**⁸, **Jonathan Jeschke**⁹, **Oliver Keuling**¹⁰,
Santiago Palazon¹¹, **Kamila Plis**¹², **Tomasz Podgorski**^{12,13}, **Fiona Rickowski**⁹,
Massimo Scandura⁴, **Vasilij Shakun**¹⁴, **Graham Smith**^{15,16}, **Philip A. Stephens**¹⁶,
Koen Van Den Berge³, **Rauno Veeroja**¹⁷, **Stefania Zanet**¹, **Ilgvars Zihmanis**¹⁸, **Joaquin Vicente**²
(¹Turin - I, ²Ciudad Real - E, ³Brussels - B, ⁴Sassari - I, ⁵Kėdainių - LT, ⁶Gödöllő - H, ⁷Vincennes - F, ⁸Wageningen - NL, ⁹Berlin - D, ¹⁰Hannover - D, ¹¹Barcelona - E, ¹²Białowieża - PL, ¹³Prague - CZ, ¹⁴Minsk - BLR, ¹⁵Sand Hutton - UK, ¹⁶Durham - UK, ¹⁷Tallin - EE, ¹⁸Riga - LT)
- 15:30** Coffee break

MONDAY, 28th AUGUST 2023

PLENARY ROOM | 16:00-17:20

ECOLOGY PHYSIOLOGY AND BEHAVIOUR - 3

Chairs: **Valeria Mazza** (Postdam - D), **Emiliano Mori** (Sesto Fiorentino - I)

- 16:00** Chromosomal diversity and evolution of *Nannospalax*, Palmer 1903 (*Mammalia: Rodentia*) in Anatolia
Şakir Önder Özkurt¹, **Ferhat Matur**² (¹Kirsehir - TR, ²İzmir - TR)
- 16:20** Is mowing an effective method to reduce rodent damage in forest plantations?
Zbigniew Borowski¹, **Kamil Barton**², **Jarosław Staniszewski**³ (¹Raszyn - PL, ²Kraków - PL, ³Gościno - PL)
- 16:40** Applying science to increase trapping efficiency
Marta López-Darias, **Julien Piquet**, **Borja Maestresalas** (San Cristóbal de La Laguna - E)
- 17:00** Bluetooth loggers to study spatial behaviour and contact among small rodents
Florian Huels¹, **Lucinda Kirkpatrick**², **Ivan Herrera Olivares**², **Bram VandenBroecke**², **Vincent Sluydts**², **Jens Jacob**¹ (¹Münster - D, ²Antwerp - B)

MONDAY, 28th AUGUST 2023

PARALLEL ROOM | 16:00-17:20 INVASIVE VERTEBRATES - 3

Chairs: **Tim Adriaens** (*Brussels - B*), **Paolo Sposimo** (*Florence - I*)

- 16:00** Trapping of vertebrate IAS coypu (*Myocastor coypus*) and raccoon (*Procyon lotor*) in live traps – preliminary results and conclusions on animal welfare
Friederike Gethöffer, **Franziska Maria Schöttes**, **Ursula Siebert** (*Hannover - D*)
- 16:20** Towards an evidence-based spatial prioritization of management efforts to counter a widespread invader
Teun Everts^{1,2}, **Charlotte Van Driessche**^{1,3}, **Sabrina Neyrinck**¹, **David Halfmaerten**¹, **Hans Jacquemyn**², **Rein Brys**¹ (¹*Geraardsbergen - B*, ²*Heverlee - B*, ³*Ghent - B*)
- 16:40** Spatial and temporal patterns of bait uptake by grey squirrels in woodlands
Cristiano Tiberi¹, **Sarah Beatham**², **Rebecca Pinkham**², **Riccardo Primi**¹, **Giovanna Massei**² (¹*Viterbo - I*, ²*York - UK*)
- 17:00** From invasion to eradication: success story of removing grey squirrels from an urban area in Central Italy
Valentina La Morgia¹, **Daniele Paoloni**², **Paola Aragno**³, **Piero Genovesi**³ (¹*Ozzano Emilia - I*, ²*Milan - I*, ³*Rome - I*)

TUESDAY, 29th AUGUST 2023

PLENARY ROOM | 09:00-10:00 PLENARY SPEECH - 2

The role of nature conservation in pest and disease control
Frauke Ecke (*Helsinki - FIN*)

10:00 *Coffee break*

PLENARY ROOM | 10:30-12:30 HUMAN-ANIMAL SOCIAL CONFLICT - 1

Chairs: **Stefano Grignolio** (*Ferrara - I*), **Andrea Viviano** (*Sesto Fiorentino - I*)

10:30 Habitat recording and habitat design in forests - key for modern monitoring and management of vertebrates
Claudia Jordan-Fragstein (*Tharandt - D*)

10:50 Ungulates, voles, insects – Why do we have such different management systems in German forests?
Michael Müller (*Tharandt - D*)

11:10 Bird pests: how do farmers deal with bird damage to spring crops in Switzerland?
Amal Chantoufi^{1,2}, **Juliette Craplet**¹, **Eve-Anne Laurent**¹, **Klervie Bourgoin**¹, **Frédéric Jiguet**², **Alice Baux**¹ (¹Nyon - CH, ²Paris - F)

11:30 New solutions to old problems: can humane non-lethal control be an effective alternative to manage charismatic invasive vertebrates? The case of invasive parakeets in Europe
José Luis Postigo Sánchez (*Málaga - E*)

11:50 Effective installation of deer fences in Tsushima island
Daisuke Waku, **Mahiro Ito** (*Tokyo - J*)

12:10 Agricultural damage following the recent expansion of wild boar in Finland – farmer perceptions and preconditions
Otso Huitu, **Mervi Kunnasranta**, **Jani Pellikka**, **Elmo Miettinen** (*Helsinki - FIN*)

12:30 *Lunch*

TUESDAY, 29th AUGUST 2023

PARALLEL ROOM | 10:30-12:30

NEW TOOLS AND METHODS: A BRIDGE FROM RESEARCH TO PEST CONTROL - 1

Chairs: **Dario Capizzi** (Rome - I), **Marco Zaccaroni** (Sesto Fiorentino - I)

- 10:30** The European Observatory of Wildlife: a harmonized approach to estimate wildlife densities
Tancredi Guerrasio¹, **Pelayo Acevedo²**, **Marco Apollonio¹**, **José Antonio Blanco-Aguiar²**, **Jim Casaer³**, **Ezio Ferroglio⁴**, **Patrick Jansen⁵**, **Alain Licoppe⁶**, **Yorick Liefting⁵**, **Pablo Palencia Mayordomo²**, **Tomasz Podgorski⁷**, **Marcus Rowcliffe⁸**, **Massimo Scandura¹**, **Stefania Zanet⁴**, **Joaquin Vicente²**
(¹Sassari - I, ²Ciudad Real - E, ³Brussels - B, ⁴Turin - I, ⁵Wageningen - NL, ⁶Gembloux - B, ⁷Bialoweza - PL, ⁸London - UK)
- 10:50** Recommendations for reducing environmental impact of pest mammal monitoring in New Zealand
Katie Pitt, **James Ross**, **Adrian Paterson**, **Tim Curran**, **Alison Bailey** (Christchurch - NZ)
- 11:10** The pathway to precision pest control: using genomics data for species-specific toxin development
Brian Hopkins¹, **Andrew Veale¹**, **Kat Trought¹**, **Erica Hendrikse²** (¹Lincoln - NZ, ²Auckland - NZ)
- 11:30** How to control what is unseen? Analysing capture methods effectiveness and efficiency for an invasive snake
Julien Piquet¹, **Marta López-Darias¹**, **Ramón Gallo-Barneto²**, **Miguel Ángel Cabrera-Pérez²** (¹La Laguna - E, ²Las Palmas de Gran Canaria - E)
- 11:50** Novel audio lures to improve interaction and encounter rates of possums (*Trichosurus vulpecula*) with control methods in New Zealand
Brittany Graham, **James Ross**, **Elaine Murphy** (Christchurch - NZ)
- 12:10** Development of a coyote toxicant: PAPP and an antidote
Katherine Horak, **Hayden Hamby** (Fort Collins - USA)
- 12:30** Lunch

TUESDAY, 29th AUGUST 2023

PLENARY ROOM | 14:00-15:00

PLENARY SPEECH - 3

Global movements of migratory birds – enigmatic phenomena with implications for pest and disease management

Silke Bauer (*Sempach - CH*)

15:00 *Coffee break*

PLENARY ROOM | 15:30-17:30

HUMAN-ANIMAL SOCIAL CONFLICT - 2

Chairs: **Stefano Grignolio** (*Ferrara - I*), **Andrea Viviano** (*Sesto Fiorentino - I*)

15:30 Exposure of red fox (*Vulpes vulpes*) in Scotland, before and after the introduction of an industry stewardship scheme

Steve Campbell, **Sheila George**, **Elizabeth Sharp** (*Edinburgh - UK*)

15:50 Practical implications of following the non-chemical rodent control guidance for controlling a *Rattus norvegicus* infestation

Sharon Hughes (*Cheshire - UK*)

16:10 Released beavers in Central Italy: story of a recent reintroduction and assessment of human perception

Emiliano Mori^{1,2}, **Leonardo Ancillotto**^{1,2}, **Giuseppe Mazza**³, **Chiara Pucci**¹, **Davide Senserini**¹, **Tiziana Di Lorenzo**^{1,2}, **Giovanni Trentanovi**¹, **Lorenzo Lazzeri**⁴, **Marco Zaccaroni**¹, **Andrea Viviano**¹
(¹Sesto Fiorentino - I, ²Palermo - I, ³Florence - I, ⁴Siena - I)

16:30 Perspectives on rodent-human interactions in Nepali communities

Anna Durrance-Bagale^{1,2}, **Hari Basnet**³, **James Rudge**^{1,4}, **Steven Belmain**⁵, **Natasha Howard**^{1,2} (¹London - UK, ²Singapore - SG, ³Kathmandu - NP, ⁴Kent - UK)

TUESDAY, 29th AUGUST 2023

PARALLEL ROOM | 15:30-17:50

NEW TOOLS AND METHODS: A BRIDGE FROM RESEARCH TO PEST CONTROL - 2

Chairs: **Dario Capizzi** (Rome - I), **Marco Zaccaroni** (Sesto Fiorentino - I)

- 15:30** Continuing the development, registration and efficacy testing of norbormide against both *Rattus rattus* (Ship rats) and *Rattus norvegicus* (Norway rats).
Charles Eason¹, **Duncan MacMorran**², **Lee Shapiro**², **Dave Rennison**², **Margaret Brimble**² (¹Lincoln, NZ, ²Auckland - NZ)
- 15:50** Rodent hole detection in a typical steppe ecosystem using unmanned aircraft systems and deep learning
Mingzhu Du^{1,2}, **Dawei Wang**¹, **Shengping Liu**¹ (¹Beijing - CHN, ²Wageningen - NL)
- 16:10** Evaluation of the Ekomille CO2[®] device as an animal welfare suppression system for rodent pests management
Giuseppe Spina, **Matteo Boccamazzo** (Atessa - I)
- 16:30** Estimating risk to prevent damage: proposals for management actions to prevent coypu damage to transport infrastructure
Olivia Dondina, **Valerio Orioli**, **Luciano Bani** (Milan - I)
- 16:50** Controlling *Apodemus sylvaticus* and *Microtus arvalis* that have moved from the field to infesting 'in and around buildings' with a cholecalciferol bait
Sharon Hughes (Cheshire - UK)
- 17:10** Strong phenotype variation as an early warning signal of abundance outbreaks in cyclical common vole (*Microtus arvalis*) populations
Juancho Luque_Larena (Palencia - E)
- 17:30** Urban fauna management through habitat modification: preliminary report of a pest management project on *Rattus norvegicus* in Genoa (NW Italy)
Stefano Ferretti, **Giorgio Chiaranz**, **Annalisa D'Agostino**, **Marta Rosciano** (Genoa - I)

THURSDAY, 31st AUGUST 2023

PLENARY ROOM | 09:00-10:00 PLENARY SPEECH - 4

Too many? Eight reasons for Europe to invest in wildlife fertility control
Giovanna Massei (York - UK)

10:00 *Coffee break*

PLENARY ROOM | 10:30-12:30 FERTILITY CONTROL

Chairs: **Giovanna Massei** (York - UK), **Jens Jacob** (Münster - D)

10:30 Insights from a 20 years' research on free-roaming cats
Idit Gunther, Eyal Klement (Rehovot - IL)

10:50 Fertility control in common voles – sperm analysis and residues of an anti-fertility compound
Kyra Jacoblinnert^{1,2}, Raul daCosta¹, Detlef Schenke³, Christian Imholt¹, Jens Jacob¹ (¹Münster - D, ²Osnabrück - D, ³Berlin - D)

11:10 Collaboration, communications and fertility control to effectively manage a well-established, invasive non-native squirrel
Kay Haw^{1,2} (¹London - UK, ²Bristol - UK)

11:30 An effective contraceptive bait delivery system for small mammals
Sarah Beatham^{1,2}, Philip A. Stephens², Julia Coats¹, Giovanna Massei¹ (¹York - UK, ²Durham - UK)

11:50 African lessons for Europe in developing contraceptives for rodent management
Steven Belmain¹, Rhodes Makundi², Apia Massawe², Christopher Imakando³, Mwajabu Selemani², Ginethon Mhamphi², Liu Ming⁴, Hong Jun Li⁴, Wenhua Xiong⁴, Zhibin Zhang⁴ (¹Chatham Maritime - UK, ²Morogoro - TZ, ³Kitwe - ZM, ⁴Beijing - CHN)

12:10 Controlling urban pigeon (*Columba livia*) population humanely
Marco Pellizzari (London - UK)

12:30 *Lunch*

THURSDAY, 31st AUGUST 2023

PARALLEL ROOM | 10:30-12:30

CROPS AND URBAN SYSTEMS - 1

Chairs: **Grant Singleton** (Kent - UK, Los Baños - PHLS),
Ann-Charlotte Heiberg (Braunschweig - D)

- 10:30** Humane management of rodents
Emma Cartuyvels¹, Ciska De Ruyver², Frank Huysentruyt¹, Herwig Leirs³, Christel Moons², Koen Van Den Berge¹, Kristof Baert¹
(¹Brussels - B, ²Ghent - B, ³Antwerp - B)
- 10:50** Zinc phosphide for phytosanitary use against common voles (*Microtus arvalis*) population outbreaks: literature review and environmental perspective on the risks and impacts derived from its use
Carlos Cuéllar Basterrechea, Adany Sanz Miranda, Juan Pablo Díaz Fernandez, Miriam Bascones Reina, Lorena Hernandez Garavis, Paula Gonzalez Simon (Majadahonda - E)
- 11:10** Biological control as a tool for integrated management of common vole (*Microtus arvalis*) pests in agricultural environments in Spain: evolution of the project
Lorena Hernandez Garavis, Carlos Cuéllar Basterrechea, Miriam Bascones Reina, Beatriz Rodriguez Moreno, Lourdes del Horno Semper, Jose Fernando Garcés Toledano (Majadahonda - E)
- 11:30** Common vole biological control in agricultural ecosystems of Castilla-y-León (Spain): reproductive productivity of raptors in artificial nest-boxes in relation to abundance fluctuations of the pest species
Miriam Bascones Reina¹, Jose Fernando Garcés Toledano¹, Carlos Cuéllar Basterrechea¹, Beatriz Rodriguez Moreno¹, Lourdes del Horno Semper¹, Lorena Hernandez Garavis¹, María Carmen García-Ariza², Mercedes Fernández-Villán², Ana Baños-Herrero², Yesica de los Angeles Pallavicini-Fernández², Constantino Caminero-Saldaña² (¹Majadahonda - E, ²Valladolid - E)
- 11:50** Field size as a determinant of common vole population densities
Emil Tkadlec (Olomouc - CZ)
- 12:10** Rodent management and rice production in Southeast Asia – balancing food security and biodiversity goals
Grant Singleton^{1,2}, Alexander Stuart^{2,3}, Nyo Me Htwe⁴ (¹Kent - UK, ²Los Baños - PH, ³Brighton - UK, ⁴Münster - D)
- 12:30** Lunch

THURSDAY, 31st AUGUST 2023

PLENARY ROOM | 14:00-15:00 PLENARY SPEECH - 5

Genetics of a common species – diversity, phylogeography and conservation of the European red deer (*Cervus elaphus*)
Frank Zachos (Vienna - A, Bloemfontein - ZA)

15:00 Coffee break

PLENARY ROOM | 15:30-16:30 PANEL DISCUSSION - FERTILITY CONTROL

Chairs: **Giovanna Massei** (York - UK), **Jens Jacob** (Münster - D)

PARALLEL ROOM | 15:30-16:30 CROPS AND URBAN SYSTEMS - 2

Chairs: **Grant Singleton** (Kent - UK, Los Baños - PHLS),
Ann-Charlotte Heiberg (Braunschweig - D)

15:30 Collection of pest management data used to improve rat control in Denmark
Kirsten Søndergaard¹, **Ann-Charlotte Heiberg**² (¹Odense C - DK, ²Mørkøv - DK)

15:50 Rat (*Rattus norvegicus*) management in the city of Zurich, Switzerland
Marcus Schmidt, **Müller Gabi**, **Landau Lüscher Isabelle**, **Tischhauser Werner** (Zurich - CH)

16:10 For birds and humans: unforeseen challenges and additional benefits of rat eradications on inhabited islands
Dario Capizzi¹, **Paolo Sposimo**², **Nicola Baccetti**³, **Filippo Dell'Agnello**², **Fabrizio Petrassi**¹ (¹Rome - I, ²Florence - I, ³Ozzano Emilia - I)

FRIDAY, 1st SEPTEMBER 2023

PLENARY ROOM | 09:00-10:00 PLENARY SPEECH - 6

The importance of behavioural ecology knowledge in reducing human-wildlife conflicts

Stefano Grignolio (Ferrara - I)

10:00 Coffee break

PLENARY ROOM | 10:30-13:10 RODENTICIDE RESISTANCE

Chairs: **Andrew Brigham** (Crawley - UK),
Virginie Lattard (Marcy l'Étoile - F)

10:30 Structural mechanism of anticoagulant rodenticides resistances: Identification of a hydrophobic cluster responsible for the affinity between inhibitors and the target protein

Nolan Chatron, Etienne Benoit, Virginie Lattard (Marcy l'Étoile - F)

10:50 Vkorc1 polymorphisms in the Norway rats from the ancestrally distributed area indicate independent evolution of anticoagulant resistance

Ying Song, Xiuhui Wang, Dawei Wang, Ning Li, Xiao-Hui Liu (Beijing - CHN)

11:10 Investigating invasive roof rat resistance by screening for genetic mutations

Katherine Horak¹, Niamh Quinn², Toni Piaggio¹, Roger Bladwin³, Katie Swift⁴ (¹Fort Collins - USA, ²Irvine - USA, ³Davis - USA, ⁴Milwaukee - USA)

11:30 Rodenticide resistance in Norway rats and house mice in Ireland

Anthony Murphy (Waterford - IRL)

11:50 A brief overview of the Vkorc1 gene mutations related to anticoagulant rodenticide resistance in Turkish Populations of *Rattus rattus* and *Rattus norvegicus*

Derya Çetintürk¹, Nuri Yiğit¹, Mustafa Türker Duman¹, Fulya Saygılı-Yiğit², Ercüment Çolak¹, Reyhan Çolak¹ (¹Ankara - TR, ²Niğde - TR)

FRIDAY, 1st SEPTEMBER 2023

PLENARY ROOM | 10:30-13:10 RODENTICIDE RESISTANCE (cont.)

- 12:10** Widespread distribution of resistance-conferring mutations in the *Vkorc1* gene among populations of invasive house mice in the oceanic archipelagos of Azores and Madeira
Sofia Gabriel^{1,2}, **Ana Carromeu-Santos**², **Maria da Luz Mathias**²
(¹Aveiro - P, ²Lisbon - P)
- 12:30** Widespread resistance to anticoagulant rodenticides in *Mus musculus domesticus* in the city of Barcelona
Jordi Figuerola¹, **María José Ruiz-López**¹, **Laura Barahona**², **Josué Martínez-de la Puente**³, **Marta Pepio**², **Andrea Valsecchi**², **Victor Peracho**², **Tomas Montalvo**² (¹Sevilla - E, ²Barcelona - E, ³Granada - E)
- 12:50** Management of resistant Norway rats: measures to minimize rodenticide applications
Alexandra Esther¹, **Doreen Gabriel**¹, **Ann-Charlotte Heiberg**², **Nicole Klemann**³ (¹Braunschweig - D, ²Mørkøv - DK, ³Warendorf - D)

PARALLEL ROOM | 10:30-13:10 ZOOBOTIC PATHOGENS AND PARASITES

Chairs: **Frauke Ecke** (Helsinki - FIN),
Rainer Ulrich (Greifswald-Insel Riems - D)

- 10:30** RodentGate: future rodent management for pig and poultry health
Herwig Leirs¹, **Bram Vanden Broecke**¹, **Vincent Sluydts**¹, **Hayley Thompson**², **Steve Belmain**², **Judy Bettridge**², **Sophie Bouvaine**², **Daniel Bray**², **Hope Cletus Okon**², **Goncalo Ramalho E. Silva**², **Inge Krijger**³, **Florian Huels**⁴, **Jens Jacob**⁴, **Anna Szczotka-Bochniarz**⁵, **Katarzyna Domanska-Blicharz**⁵, **Malgorzata Juskiewicz**⁵, **Maciej Frant**⁵, **Marek Walczak**⁵ (¹Antwerp - B, ²Chatham Maritime - UK, ³Wageningen - NL, ⁴Munster - D, ⁵Pulawy - PL)
- 10:50** Changes in forest management intensity predict the presence of *Puumala-orthohantavirus* (PUUV) in bank voles (*Clethrionomys glareolus*)
Christian Imholt¹, **Stephan Drewes**², **Anna Obiegala**³, **Nina Krol**³, **Martin Pfeffer**³, **Anne Mayer-Scholl**⁴, **Rainer Ulrich**², **Jens Jacob**¹
(¹Münster - D, ²Greifswald-Insel Riems - D, ³Leipzig - D, ⁴Berlin - D)

FRIDAY, 1st SEPTEMBER 2023

PARALLEL ROOM | 10:30-13:10

ZOONOTIC PATHOGENS AND PARASITES (cont.)

- 11:10** Lymphocytic choriomeningitis virus, a neglected zoonotic pathogen in Europe?
Calvin Mehl¹, Claudia Wylezich², Olayide Abraham Adeyemi¹, Christina Geiger³, Nicole Schauerte³, Kerstin Mätz-Rensing⁴, Anne Nesseler⁵, Marieke P. de Cock⁶, Miriam Maas⁶, Dirk Höper², Miriam Linnenbrink⁷, Martin Beer², Gerald Heckel⁸, Rainer Ulrich¹ (¹Greifswald-Insel Riems - D, ²Greifswald-Insel Riems - D, ³Frankfurt/Main - D, ⁴Göttingen - D, ⁵Gießen - D, ⁶Bilthoven - NL, ⁷Plön - D, ⁸Bern - CH)
- 11:30** Rodent control by rodenticide and trapping to fight Lassa virus in Upper Guinea: a six years longitudinal study and possible pool table effect
Alicia Lamé¹, Mickael Sage¹, Umaru Bangura², Joachim Mariën³, Michel Koropogui⁴, Toni Rieger⁵, Barré Soropogui⁴, Moussa Douno⁴, N'Faly Magassouba⁴, Elisabeth Fichet-Calvet² (¹Besançon - F, ²Hamburg - D, ³Antwerp - B, ⁴Conakry - GI, ⁵Hamburg - D)
- 11:50** Pathogen risks posed by humans to urban rats: campylobacteria in Helsinki, Finland
Tuomas Aivelo (Helsinki - FIN)
- 12:10** Importance of Tick-Borne pathogens of zoonotic and veterinary in Jamshoro Sindh, Pakistan
Tahira Pechuho (Jamshoro - PK)
- 12:30** Why account for biodiversity for mitigating tick-borne disease risk? Insights and perspectives from Eastern Italian Alps
Giulia Ferrari^{1,2}, Valentina Tagliapietra¹, Francesca Dagostin¹, Daniele Arnoldi¹, Enrico Inama¹, Fausta Rosso¹, Giovanni Marini¹, Annapaola Rizzoli¹ (¹San Michele all'Adige - I, ²Palermo - I)
- 12:50** The combined effect of bromadiolone and ivermectin (iBr) in controlling both rodents and their fleas
Liu Ming¹, Xinrong Wan¹, Wei Liu¹, An Xing², Zhibin Zhang¹ (¹Beijing - CHF, ²Tongliao - CHF)

POSTER SESSION

CROPS AND URBAN SYSTEM

- P1** Influence of red deer (*Cervus elaphus L.*) grazing on yield reduction and changes in the chemical composition of grassland forage: experiences from three organic cattle farms in the southeastern Slovenia
Stanislav Trdan, Žiga Laznik, Tomaž Sinkovič, Breda Jakovac Strajn, Gabrijela Tavčar Kalcher, Andrej Udovč, Tanja Bohinc, Matej Vidrih (Ljubljana - SLO)
- P2** Efficacy of rodenticides in the sewer system of Berlin to manage Norway rats (*Rattus norvegicus*)
Annika Schlötelburg, Anke Geduhn, Edgar Elon Zeisler, Jacky Pulsfort, Dorina Meneghini, Jörns Fickel, Erik Schmolz (Berlin - D)
- P3** Study of the fixation of birds of prey populations in agricultural territories equipped with nest boxes for the promotion of biological control of common vole (*Microtus arvalis*) population outbreaks
Carlos Cuéllar Basterrechea, Juan Pablo Díaz Fernandez, Lorena Hernandez Garavis, Miriam Bascones Reina, Paula Gonzalez Simon, Adany's Sanz Miranda (Majadahonda - E)
- P4** Comparison of baiting strategies in common vole management
Kyra Jacoblinnert¹, Caspar Goedecker², Stefan Halle², Detlef Schenke³, Christian Imholt¹, Jens Jacob¹ (¹Münster - D, ²Jena - D, ³Berlin - D)
- P5** Wildboar management in urban areas: a challenge in the city of Perugia, Umbria (Central Italy)
Luca Convito, Daniele Paoloni, Giuseppina Lombardi (Perugia - I)

ECOLOGY, PHYSIOLOGY AND BEHAVIOUR

- P6** Analysis of bear-stripping behaviour using video images taken by automatic camera
Seiji Ishibashi, Tadashi Maehara (Nishitokyo-city - J, Tokyo - J)
- P7** Digital quantitative evaluation of rodent hair traps for activity indices
Joanna Dürger, Orestis Kazasidis, Jens Jacob (Münster - D)

POSTER SESSION

- P8** Red fox den sites' environmental characteristics
Paolo Bongio¹, Holly English², Laura Di Noia³, Mattia Bolognesi³, Laura Zironi⁴, Simone Ciuti² (¹Aulla - I, ²Dublin - IRL, ³Parma - I, ⁴Florence - I)
- P9** Effects of inhabit and life patterns on the UV spectral properties of small mammalian herbivores' urine
Dongmei Yang, Haichun Liu, Shuanglun Tao, Junnian Li (*Jishou - CHN*)
- P10** Voles - a hidden threat to forest regeneration in Germany
Franziska Höhn, Claudia Jordan-Fragstein (*Tharandt - D*)

HUMAN-ANIMAL SOCIAL CONFLICT

- P11** The role of training in the evolution of pest control companies in Italy
Dino Scaravelli¹, Licia Rosetti Betti² (¹Bologna - I, ²Rome - I)
- P12** MaxEnt as management tool of problematic species a: the case of the Fallow Deer (*Dama dama*) in the Oasis of Pixina Manna is Cannoneris
Giuseppe Vecchio¹, Daniele Scarselli¹, Chiara Mencarelli¹, Stefano Calamai¹, Michele Gasperini¹, Riccardo Petrini¹, Maria Chiara Segati¹, Samuele Baldanti¹, Maria Giuseppina Liggi² (¹Leghorn - I, ²Cagliari - I)

INVASIVE VERTEBRATES

- P13** Ungulate as pests: DNA analyses reveal a widespread occurrence of sika deer genes in North-Western Italy
Andrea Viviano¹, Mariella Baratti², Leonardo Ancillotto¹, Luca Ciuffardi³, Francesco Riga⁴, Emiliano Mori¹ (¹Florence - I, ²Sesto Fiorentino - I, ³Levante - I, ⁴Rome - I)
- P14** The Life MICA project: managing aquatic invasive species across borders
Emma Cartuyvels, Dimitri Brosens, Peter Desmet, Sander Devisscher, Heiko Fritz, Lilja Fromme, Friederike Gethöffer, Frank Huysentruyt, Claudia Maistrelli, Dolf Moerkens, Nicolas Noé, Dan Sloomackers, Tim Adriaens (*Brussels - B*)

POSTER SESSION

- P15** Patterns of activity of the invasive species *Myocastor coypus* through camera trapping in a Northern Italy Reserve
Dino Scaravelli¹, Elisa Padulosi² (¹Bologna - I, ²Forlì - I)
- P16** Will the expansion of *Callosciurus finlaysonii* in Basilicata and Calabria regions worsen the condition of the endemic *Sciurus meridionalis*?
Dino Scaravelli¹, Gaetano Aloise² (¹Bologna - I, ²Rende - I)
- P17** A successful rapid eradication of emerging African clawed frog (*Xenopus laevis*) in Flanders (northern Belgium)
Tim Adriaens¹, Marco Morbidelli², Rein Brys¹, Sander Devisscher¹, Teun Everts¹, Nicolas Pardon¹, Jeroen Speybroeck¹, Loïc van Doorn¹ (¹Brussel - B, ²Florence - I)
- P18** Estimating the size of a feral cat population prior to its removal from a long-inhabited Mediterranean island
Camilla Gotti¹, Nicola Baccetti¹, Iacopo Corsi², Francesca Giannini³, Massimo Sacchi¹, Giacomo Tavecchia⁴, Andreu Rotger⁴ (¹Ozzano Emilia - I, ²Florence - I, ³Portoferraio - I, ⁴Esporles - E)
- P19** A manual for the management of vertebrate invasive alien species of Union concern, incorporating animal welfare
Kevin Smith¹, Ana Nunes¹, Katie Costello¹, Riccardo Scalera², Tim Adriaens³ (¹Cambridge - UK, ²Rome - I, ³Brussels - B)
- P20** Successes and challenges for the conservation of one of the rarest birds in the world
Erwan Solier, François-Xavier Couzi (Saint Andre - FR-RE)

NEW TOOLS AND METHODS: A BRIDGE FROM RESEARCH TO PEST CONTROL

- P21** The Life-Biorepem Project, a new approach in ecological IPM
Andrea Fusari, Massimiliano Pietro Bianco, Micaela Solinas, Elisa Benco, Andrea Fabbri (Rome - I)
- P22** ProVeBirD – Protection of Vegetables from Bird Damages
Florian Göbel, Alexandra Esther (Braunschweig - D)

POSTER SESSION

- P23** Long-term spatial distribution of the common vole abundance in Castilla y León (Spain): a GIS-based analysis of hot-spots
Javier Plaza¹, Nilda Sánchez¹, María Carmen García-Ariza², Mercedes Fernández-Villán², Rodrigo Pérez-Sánchez¹, Constantino Caminero-Saldaña² (¹Salamanca - E, ²Valladolid - E)
- P24** Measuring mechanical and electrocution traps for non-chemical rodent control
Bernd Walther¹, André Bohot², Hendrik Ennen¹, Paul Beilmann¹, Valeska Gajewski¹, Oliver Schäper¹, Peter Hantschke², Heinz Walther³, Sven Werdin², Jens Jacob¹ (¹Münster - D, ²Dresden - D, ³Orlamünde - D)
- P25** DURBAN Project - Management of grass strips in cropland to increase common vole control by vertebrate predators
Michael Coeurdassier¹, Coralie Bertheau-Rossel², Fabien Borderie³, Patrick Giraudoux¹, Aurélien Levret¹, Patrick Longchamp⁴, Julie Montaz¹, Julie Petiteau⁵, Amélie Vaniscotte¹, Geoffroy Couval¹ (¹Besançon - F, ²Montbéliard - F, ³Mayotte - F, ⁴Arlay - F, ⁵Lons-le-Saunier - F)

RODENTICIDE RESISTANCE

- P26** Developments in control strategy and resistance in Norway rats in Denmark
Alexandra Esther¹, Ann-Charlotte Heiberg² (¹Braunschweig - D, ²Mørkøv - DK)
- P27** Development of a digital early warning system for resistant rat infestation on farms
Brit Anderle^{1,2}, Sascha Buchholz², Nicole Klemann³, Alexandra Esther¹ (¹Braunschweig - D, ²Münster - D, ³Warendorf - D)
- P28** Screening of anticoagulant resistance-related mutations in the Vkorc1 gene in *Mus domesticus* in four Italian islands
Francesco Gallozzi^{1,2}, Riccardo Castiglia^{1,3}, Paolo Colangelo^{2,3}, Davide Giuliani¹, Paolo Sposimo⁴, Filippo Dell'Agnello⁴, Dario Capizzi¹ (¹Rome - I, ²Montelibretti - I, ³Palermo - I, ⁴Florence - I)

POSTER SESSION

- P29** Bioaccumulation of rodenticide residues in two populations of susceptible rats as determined by Vkorc1 genotyping
Ana Carromeu-Santos¹, Maria Luz Mathias¹, Sofia I. Gabriel^{1,2}
(¹Lisbon - P, ²Aveiro - P)
- P30** Exposure and resistance to anticoagulant resistance in urban rodent pest in Chad
Virginie Lattard¹, Ali Barka Mahamat^{1,2}, Groud Karine¹, Soudy Imar Djibrine³, Nolan Chatron¹, Etienne Benoit¹ (¹Marcy l'Étoile - F, ²Abéché - CAF, ³N'Djaména - TCH)
- P31** Variation in the Vkorc1-gene and anticoagulant rodenticide resistance in brown rats on the Faroe Islands
Jana De Ridder¹, Herwig Leirs¹, Eyðfinn Magnussen², Sophie Gryseels^{1,3} (¹Antwerp - B, ²Tórshavn - FO, ³Brussels - B)

ZOONOTIC PATHOGENS AND PARASITES

- P32** Belgrade experience in control of contamination of public places with dogs parasites
Ivan Pavlovic (Belgrade - SRB)
- P33** Wild rodents as reservoir of (re)emerging tick-borne diseases in natural areas: a novel integrated wildlife monitoring approach
Flavia Occhibove¹, Rachele Vada¹, Patricia Barroso^{1,2}, Pablo Palencia^{1,2}, Amir Reza Varzandi¹, Ezio Ferroglia¹, Stefania Zanet¹
(¹Turin - Italy, ²Ciudad Real - E)
- P34** Leptospirosis of rodents in Miyakojima Island, Japan (progress)
Mika Uchida, Daisuke Waku (Tokyo - J)
- P35** Distribution of *Leptospira* spp. in Norway rat population in Belgrade, Serbia
Goran Jokić¹, Tanja Blažić¹, Milica Rajković¹, Olivera Radić Vukičević¹, Sara Savić², Vladimir Gajdov², Tamaš Petrović²
(¹Belgrade - SRB, ²Novi Sad - SRB)
- P36** Could rodent damage survey in forestry help in predicting possible zoonotic disease outbreaks?
Linda Bjedov, Marko Vucelja, Josip Margaletić (Zagreb - HR)

POSTER SESSION

- P37** Exploring natural variation in wild boar immunity and susceptibility to African swine fever virus
Niek Barentlo¹, Mirte Bosse¹, Jacintha Ellers¹, Timothy Smyser², Vienna Brown² (¹Amsterdam - NL, ²Fort Collins - USA)

Organizing Secretariat



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