EWDA
European
Wildlife Disease Association

NEWSLETTER // SUMMER 2024

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ON THE COVER
European brown hare (*Lepus europaeus)*
Cover photo by **Josh Jaggard**, wildlife photographer.
Website, twitter, Vimeo

Editorial

"Final thoughts from your editor"

You are now reading my last EWDA Newsletter issue, as I am stepping down as newsletter editor. But expect to remain on (the EWDA) board, a while yet.

I was fortunate to see a brood of peregrine falcon nestlings last week, only 5 meters below me on a cliff ledge, next to a popular hike and climbing spot! First you are a nestling, then fledgling learning to fly and perform. We are all beginners to new to tasks, get experience with time, and then later teach the next generation.

The WDA is very focused on students, the next generation of wildlife disease and health researchers. And we hope they will excel and surpass us, to learn and teach us all more than we have had time or possibility to do. And with all the present challenges involving biodiversity, climate, extreme weather, war and conflicts, we do need to have transformative change in mind and action. How to do it? You need to think out of the traditional box and do better than previous generations, our hope is with you!

Peregrine falcon nestling. Photo: Therese Rosén

Midsummer time. Raising the Swedish flower- & leaves-decorated Midsummer-pole on Midsummers Eve for a pagan celebration, needs collaboration from many, as seen in the image to the left. Then the children can dance around the pole, singing "Little frogs", "The priest´s little crow" and other traditional song-and-dances.

The EWDA Newsletter is also a collaborative effort, with many of you making that extra effort to send contributions, to reach out and inform the whole membership. Great! We do not meet very often. This issue has articles concerning the upcoming EWDA conference, and we hope to meet many of you there. If not, please read, then contribute to the Newsletter to make your voice heard, just as your EWDA board is doing, and members working with research projects, some on EWDA grants, thanks to you and your involvement in Your Association! Enjoy reading this latest issue! And now I hand over to my long-time editor-buddy Anne-Fleur and the new Newsletter editor, Beatrize Rubio Alonso, welcome! New challenges await us all within EWDA - we hope to learn to fly quickly!

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Newsletter editor, stepping down, but still on Board...

Chair's Corner

"An understanding of the natural world is a source of not only great curiosity, but great fulfilment."

Sir David Attenborough

This year seems to travel under a bright star. In May, somebody with whom we all grew up and who is sharing our passion for wildlife and biodiversity celebrated his 98th birthday: Sir David Attenborough !

And the closer summer approaches the more expectantly we all look towards September, when EWDA member will finally meet each other again in person and celebrate after a seemingly endless six years since the conference in Larissa, Greece. This year's organization team around Sascha Knauf is buzzing with remaining tasks, while the maximum limit of 300 seats was just breached – for all who would still like to listen to the lectures registration for online participation is still open... Please dial in and join !

This year also stands out because the ***EWDA Marie-Pierre Ryser-Degiorgis Award for Excellence in Wildlife Health*** is being awarded for the first time. In memory of Marie-Pierre Ryser-Degiorgis, it is designated to honour EWDA members who have made an outstanding contribution to the field of wildlife health through inspirational, innovative and/or impactful practice.

And further happy things! Preceded by tremendous workload for the members of the **EWDA Small Grant Committee**, 13 applications were reviewed last year, and this year the winners of five grants received the award with funding for their projects.

The award winners from the previous application round from 2021 will give a brief presentation of their projects at the EWDA business meeting taking place during the conference, and here in the Newsletter.

But all other EWDA committees were likewise busy: The **Network Committee** fixed the plans for the next Network meeting before the conference and invited four remarkable keynote speakers for the event. Also, for this registration for online participation is still possible.

For those EWDA members who might not be aware, the Network committee is continuously taking care of keeping the "Diagnosis cards" up to date – please take the time to visit the EWDA website to have look.

The **Sustainability Committee** just organized another inspiring webinar given by Chris Walzer titled "Making peace with nature: a role for wildlife health to bring society within planetary boundaries." In case you unfortunately were not able to listen at the time a recording will be made available.

And last, but not least, the **Nomination Committee** was very active and found a fine group of EWDA members to be elected for the upcoming board positions. Now that the election period is over, I am very happy to know that all these great people will take care of the coming years of EWDA.

Before September, when the new board will start the new term, it now remains for me to cordially thank all those who, with their enthusiasm, great ideas, and commitment over the past two years, have helped EWDA to continue the good path that has always characterised this association:
THANK YOU!!

And for those who always wondered if joining EWDA committees or the EWDA board would be fun – it is! Let the next nomination committee find you !!

Gudrun Wibbelt,
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EWDA Chair

Notes from the Board

"Let's give all new members a warm welcome at the EWDA conference"

A conference year

is always a special year. Not only for the people who have the huge task of organizing the conference - and they are doing a great job!!- but also for the participants.

When the date of the conference draws closer, more and more conversations turn to:

"Are you going? Oh nice, me too!"

"Which activity did you sign up for?"

"Which workshop are you joining?"

"Where are you staying? How do you travel, and can we maybe share a ride?"

Video meetings end with a nice –

"See you in real life next time!"

And although many of us have seen each other in between at other occasions, there are also a lot of people that I haven't seen since **our last on-site meeting in 2018**.

It will be so nice to see each other again, catch up with friends about work and life and enjoy that special EWDA conference vibe again!

I hope that we can share this experience, also with all the participants for whom this will be the first EWDA Conference, and that you all help **giving them a warm welcome!**

Because, we have a number of new EWDA Members this year! Membership offers a discount on the Conference Registration fee, and membership numbers are always higher in conference years. But we also want to keep them as members for many years!

Our EWDA section has grown with 136 members to a total of 328 members. This also includes our colleagues from Fennoscandia and three new members from Pakistan, who chose to be part of the EWDA.

The summer holiday is coming closer or has probably started by the time this newsletter comes out. I wish you a great, relaxing holiday, or a quiet workspace if you don't take holidays and I hope to see all of you in Stralsund and share a drink (again) together!

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EWDA secretary

15th EWDA Conference
Stralsund/Greifswald, Germany
9-13 September 2024

"Meet like-minded people and discuss One Health Challenges and Opportunities for the Surveillance and Management of Wildlife"

Secure the last tickets to attend the conference in person or join us online

The European Wildlife Disease Association (EWDA) Conference is reaching its capacity limit, with more than 286 registered participants from more than 27 countries worldwide.

The event will take place in the beautiful coastal city of Stralsund, Germany, from 09 to 13 September 2024. Hurry up to secure the last spots for on-site participation!

The conference is dedicated to fostering scientific excellence and addressing state-of-the-art and up-to-date topics in wildlife health. The conference will emphasise a transdisciplinary and intersectoral approach, uniting stakeholders from diverse fields to promote communication and scientific exchange.

The conference aims to stimulate a system-based transformative process to incorporate wildlife health into the broader *One Health framework*.

By engaging in the *Quadripartite One Health Joint Plan for Action* initiative, we strive to ensure our efforts contribute to a system-based, more integrated approach to wildlife health. Join us at EWDA 2024 to be part of this critical dialogue and transformative process.

What you can expect

- Six high-level international keynotes
- State-of-the-art and current topics in transdisciplinary research
- Four workshops
- EWDA Wildlife Health Surveillance Network Meeting
- Numerous networking and social events
- Famous EWDA Auction in support of our student chapter
- World-leading research and education institutions in a unique setting
- Research-to-policy
- Exhibition booths
- Sustainability

SCAN ME

SCAN AND JOIN US!

The organisers welcome you!

Friedrich-Loeffler-Institut
and
Deutsches Meeresmuseum

EWDA2024@fli.de

Deutsches Meeresmuseum Stralsund

FRIEDRICH-LOEFFLER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Sponsors

JOACHIM HERZ STIFTUNG

One Health Platform

International Alliance against Health Risks in Wildlife Trade

The EWDA Conference Auction


Marc Artois, our favourite EWDA auctioneer!

"A famous evening as a fundraiser for the Student Chapter"

One of the recurring highlights of the EWDA Conferences is the auction. A famous evening to buy the special wildlife item you-were-never-aware-of-you-always-wanted, and with that, support the EWDA Student Chapter activities.

A number of new members will join the EWDA Conference for the first time, so we want to explain a bit about **the Auction!** This is always a memorable evening, often in a special location, with a lot of laughter, joy, and drinks. And it is crucial to raise funds to support the EWDA Student Chapter (SC) activities such as the multiday SC workshops – well-known for their quality and interesting topics.

Please bring an item!

Participants of the EWDA Conference are kindly requested to bring one or more item(s) for the auction. Any item related to wildlife is welcome, of a size which can fit in a suitcase: baseball caps, T-shirts, books, pictures, jewelry, etc. Items with a background history/story are highly appreciated! Also, items related to your country/region (not necessarily wildlife related) are always very popular. Upon arrival at the conference, you can hand your item to the auction team at the registration desk.

Auction evening

The evening of the auction usually starts with **the silent auction** where items are on display together with a list at each item for bidder name and bid. Keep an eye on your darlings, as bidding goes fast when the bidding deadline approaches! The silent auction is followed by the live auction.

The live auction is hosted by our own great EWDA Master Auctioneers who go the extra mile to get the best bids for all these irresistible auction items. They know how to promote golden oldies, new releases, and a lot of one-of-a-kind items as well as once-in-a-life-time opportunities!

When?

The EWDA Auction will take place at the EWDA conference on **Wednesday 11th of September**. It is a great opportunity to show students our support (by donating ridiculous amounts of money), while having a fun and lively evening to remember!

So, do not forget to bring with you a relevant and good quality item with a wildlife theme, suitable for the auction.

With your contribution, you promote education and inspiration of students from all over Europe who will move a step closer to a career in wildlife health research. **Thank you!!**

Miriam Maas
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EWDA secretary

EWDA auction with fabulous auctioneer duo; former EWDA chair Paul Duff and former WDA executive manager Dave Jessup

Membership response
on the poll on choosing EWDA conference locations

What should EWDA's priorities be?

The EWDA sustainability committee (SustComm) was founded in 2018 to reduce the environmental impact of the EWDA as far as possible, while maintaining EWDA's overall mission, and so contribute to the transition to a more sustainable human society.

The biggest environmental impact of EWDA comes from the biennial EWDA conferences (EWDA Summer Newsletter 2019). Location choice of the conference was identified as the main opportunity to reduce the carbon footprint, as especially the conference location influences participants' choice for air travel.

To assess whether the membership would support prioritizing the choice for conference location based on carbon footprint, a survey developed by the EWDA board and the SustComm was delivered to the membership.

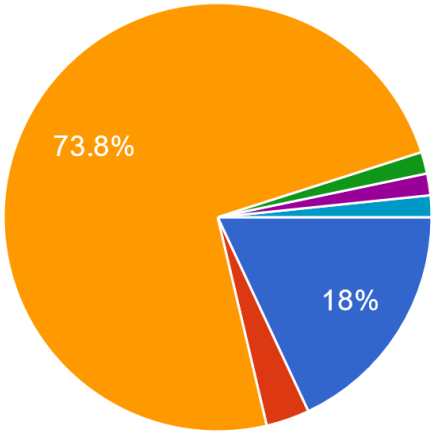
The Survey

There was a choice of 4 options

- **Sustainability**: The key priority should always be to have the least CO_2 emissions from participants' travels.
- **Variety of location**: The conference locations need to change as much as possible within European regions / countries with EWDA members, giving everyone opportunity to attend the conference relatively close to their home on a regular basis.
- **Mix of the above**: The majority of conference locations will be selected based on sustainability (aka central location for most EWDA members) and the minority for variety of location. At least one out of five conferences should be held in an Eastern European country to give colleagues there a better opportunity to attend and to encourage EWDA membership from Eastern European countries.
- ✓ **Other**

Results

The poll yielded **61** responses out of 221 members, with a majority (45/73.8%) choosing the "mix of the above".



Membership seemed to be relatively undivided as the vast majority (two thirds of the respondents), indicated they would prefer the choice of the conference location be primarily guided by sustainability but with geographical variety to allow for diversity and engagement.

A considerable proportion (almost one fifth of respondents) indicated that sustainability was their key priority.

Several suggestions were made by members that chose 'other'. Some of them have already been applied, other's might be feasible in the future (ie adding travel days to the programme, benefits for coming by train etc).

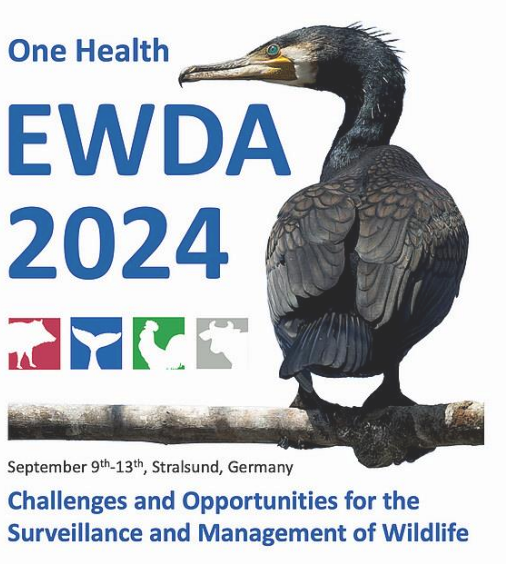
On behalf of the EWDA Sustainability Committee

Karin Lemberger, *DVM, DACVP*
Faunapath, Lyon, France
ewda.sustainability@gmail.com

How green can we go?

"What are the conference organizers doing to help the EWDA conference be as sustainable as possible?"

Both host institutions, the Friedrich-Loeffler-Institut and the Stiftung Deutsches Meeresmuseum, are fully committed to sustainability principles. See below what was implemented, including suggestions by the EWDA Sustainability Committee!



Travel

Due to the geographical location in the northeast of Germany, travelling to the conference will have a substantial impact on your ecological footprint. If you would like to determine and compare the impact of different means of transport, we recommend the following CO_2-Calculator. The calculator allows you to directly contribute to local and/or global climate projects.

Additional carbon offset projects are available on the United Nations Carbon Offset Platform. https://offset.climateneutralnow.org/AllProjects

Ready to challenge yourself and colleagues on how to have the lowest carbon footprint ? Find out about the EDWART Responsible Travel Challenge.

Hybrid concept

As conference hosts, they recognize and welcome colleagues from different disciplines and countries who wish to meet and network in person, especially after the most recent pandemic. At the same time, the organizers fully appreciate the need to reduce carbon emissions. Therefore, the conference offers a hybrid form to meet both requests.

Conference material

All conference documentation and materials will be provided for download as electronic documents to avoid paper waste. In addition, we will use recyclable name badges, which will be recollected at the end of the conference

Accommodation

A list of hotels and campgrounds have have been provided by conference organizers and can be found here.

In case you would like to share accommodation with other conference participants, please write to roomshare.ewda@gmail.com and you will receive a link to a document, where you can enter your offer/request.

It is an opportunity to get to know other participants better, it can reduce financial costs, and it strongly reduces the environmental costs related to accommodation during the conference.

Catering

The conference catering will include **vegan meals per default**. The main venue in Stralsund is renowned for its "green concept", including seasonal, regional, and organic products. You may opt for the meat option as an alternative. The latter includes regional-raised organic farmed meat products.

If you have more specific dietary requirements, please indicate your requests when registering. Throughout the conference, we will use reusable crockery and cutlery.

Coming to the conference?
Help the EWDA Sustainability Committee assess your carbon footprint by answering this survey

New Memorandum of Understanding signed MoU

This MoU is a clear sign of the EWDA and the ECZM sharing many common interests

Memorandum of Understanding (MoU) between the European Wildlife Disease Association (EWDA) and the European College of Zoological Medicine (ECZM)

The work with an MoU between the EWDA and the ECZM that started years ago has now finished, and on 22 May 2024 the MoU was signed by the EWDA Chairperson Gudrun Wibbelt and the ECZM President Andrei Mihalca.

The European College of Zoological Medicine
The ECZM is a college of the European Board of Veterinary Specialisation. The European Board of Veterinary Specialisation's mission is to ensure the highest quality of veterinary medicine in Europe by specialisation for better quality of life of animals and people. The ECZM's mission is to promote excellence in zoological medicine internationally through education, science, and the certification of veterinary specialists.

ECZM consists of five specialties:
- Avian Medicine and Surgery
- Herpetological Medicine and Surgery
- Small Mammal Medicine and Surgery
- Wildlife Population Health
- Zoo Health Management

Especially the Wildlife Population Health specialty of ECZM, which consists of 72 veterinarian (diplomates) throughout Europe and beyond working on wildlife health and One Health, share many common interests with the EWDA membership.. And many are members of both EWDA and ECZM.

The MoU is available on the EWDA and ECZM websites and is to be re-signed every 3 years by the EWDA Chairperson and the ECZM President.

Helle Bernstorf Hydeskov
EWDA Student Activities Coordinator
ECZM Wildlife Population Health Specialty Chair
hbhvet@gmail.com

EWDA Grant Committee news

The Vic Simpson

Conference Attendance Fund

2024 is an EWDA conference year, and we have awarded two **Vic Simpson travel grants.**

This year the grants were awarded to:

Sébastien Lambert who is intending to give a poster presentation about a project focusing on brucellosis transmission in a multi-host system including chamois (*Rupicapra rupicapra*), Alpine ibex, cattle and small ruminants

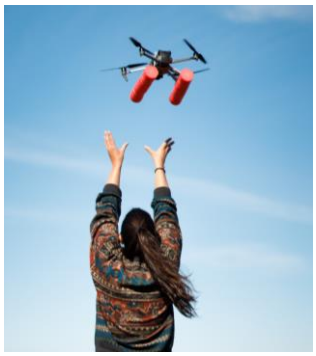
Helle Bernstorf Hydeskov who will be presenting on "Lead (Pb) concentrations and associated pathology in tissues of Scandinavian brown bears (*Ursus arctos*) and One Health concerns".

The Vic Simpson Conference Attendance Fund was initiated and made possible thanks to a generous donation by Dr. Vic Simpson in 2017, who also defined the purpose and guidelines for the attribution of corresponding grant(s).

The fund and grant were named after Vic after he sadly passed away early August 2018. Vic Simpson EWDA Fund – European Wildlife Disease Association

EWDA Grant winner reports

Read the reports of the 2021 winners of EWDA Grants on the following pages below.



Call for two new members to join the Grants committee!

We are looking for two new members to join Gábor, Ignasi, Emmanuelle, Djuro and myself.

Helle and Alessandra have retired from the group, and we thank them for all their contributions.

Please consider joining us and help assess the fascinating range of research project grant applications that we receive every two years.

Please email Paul, and speak to us in Stralsund.

Paul Holmes
Animal and Plant Health Agency, UK.
paul.holmes@apha.gov.uk

On behalf of the EWDA Small Grants Committee:
Gábor Czirják, Emmanuelle Gilot-Fromont, Ignasi Marco, and Djuro Huber

EWDA grant winner reports

Launching the drone with petri discs attached

Reports from two 2021 grant winners

EWDA Wildlife Conservation Research Grant - 2021

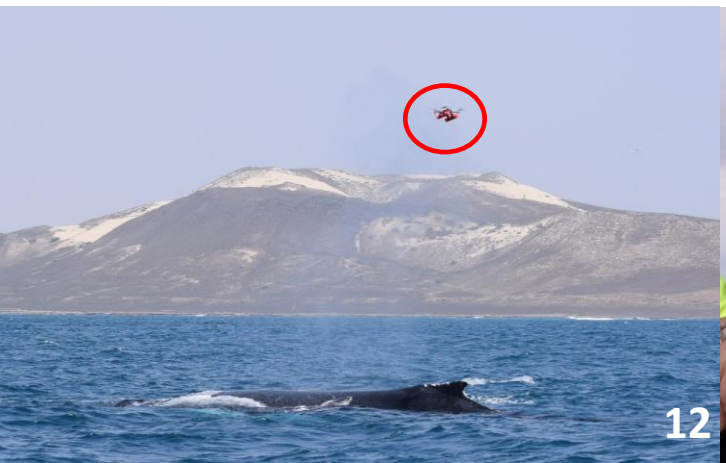
Awarded to: **Helena Costa**, Nord University

Non-invasive respiratory pathogen screening of free-swimming North Atlantic humpback whale (*Megaptera novaeangliae*) and sperm whales (*Physeter macrocephalus*)

Pathogen surveillance programs are vital to monitor wildlife health and to enable the early detection of novel pathogens. Despite this, baseline data is lacking regarding the pathogens that live free-ranging cetaceans are exposed to in the North Atlantic, and how their combined effects with other stressors, such as pollutants, may impact their health. In our study, we explored the use of non-invasive techniques to sample two of the most charismatic species occurring in northern Norway seas - the humpback whale (*Megaptera novaeangliae*) and the sperm whale (*Physeter macrocephalus*)- with the aim of establishing the basis for the creation of a long-term non-invasive health surveillance program in cetaceans in this region

First, we worked on testing and describing a **drone method** that could be used to collect blow samples non-invasively in a wide range of meteorological conditions, while also being user friendly and cost-effective (Costa et al. 2021).

We successfully used this method in all locations and seasons we tested it on - in the sunny breeding grounds of Cape Verde during spring, in the cold and dark feeding grounds in Arctic Norway during winter, and in the Icelandic feeding grounds during summer. We were successful in collecting samples from humpback whales (n=60) and sperm whales (n=15), and, occasionally, from blue whales (*Balaenoptera musculus*) and fin whales (*Balaenoptera physalus*).



These samples were then screened for Cetacean Morbillivirus (CeMV), Avian Influenza Virus (AIV) and herpesvirus (HV). CeMV, important pathogens that have been linked with cases of debilitating disease, mortality and mass strandings in cetaceans.

While all samples were negative to AIV, our results indicate that CeMV and HV are circulating in humpback whales in the North Atlantic and was recently present in the feeding grounds of Skjervøy, in winter 2023, where hundreds of humpbacks, orcas (*Orcinus orca*), fin and sperm whales gather to feed.

Further, in December 2023, in the same area, three orcas were sighted with severe respiratory and neurological symptoms, and work is on-going to investigate the involvement of these pathogens in these cases (unpublished, work on-going).

These results stress the need to continue the monitoring of these and other viruses in live and deceased cetaceans in the North Atlantic and, for that, we hope that our drone method can be of use for research teams working in the North Atlantic and other locations in the world.

Further information

https://twitter.com/WhaleExhale
https://www.instagram.com/whale_exhale/
https://www.facebook.com/whale.exhale/

Drones 2023, 7(1), 15; https://doi.org/10.3390/drones7010015

Drone collecting blow samples

Sperm whale photographed from the drone

EWDA Grant for Wildlife Health and Education in Eastern Europe – 2021

Awarded to: **Tamara Szentiványi**
University of Veterinary Medicine, Budapest

Exploring host blood meal presence and pathogen diversity in bat-associated ticks

Tamara Szentiványi, Nóra Takács, Attila D. Sándor, Áron Péter, Sándor A. Boldogh, Dávid Kováts, Jeffrey T. Foster, Péter Estók, Sándor Hornok

Over the past decades, tick bites and tick-borne diseases seem to be on the rise in humans and in animals. Tick populations are growing in many areas and extending their geographical ranges due to various ecological and environmental reasons. Several zoonotic and potentially zoonotic pathogens have been identified in ticks associated with bats in the past; however, the role of bat ticks in disease transmission and their feeding ecology remain poorly understood.

During this work, which was supported by the EWDA Grant for Wildlife Health Activities in Eastern Europe in 2022, we aimed to answer the following questions:
1. Which species of vertebrate hosts do bat-associated ticks feed on?
2. What is the diversity of potentially zoonotic bacterial pathogens in these bat ticks?

We collected three species of hard ticks: *Ixodes ariadnae*, *I. simplex* and *I. vespertilionis* in bat roosting sites, like caves, located in Hungary and Romania. We used molecular blood meal analysis, and we targeted common bacterial pathogens using PCR to reveal feeding patterns and pathogen diversity of these ticks.

Overall, vertebrate DNA, primarily from bats, was detected in about 60% of the samples, but we also detected non-chiropteran host DNA in these ticks, from such animals as domestic dog, wild boar, *Sus scrofa*, and horse.

Long-legged bat ticks are often found near roosting sites on the walls: Ixodes vespertilionis *in Hungary. Photo: Nikola Rahme*

Two long-legged bat ticks Ixodes vespertilionis *on a cave wall, approaching their host in Pilis Mts., Hungary. Photo: Sándor Hornok*

These results suggest that bat-associated ticks may exhibit a much broader host range than previously thought, including domestic and wild mammals. Interestingly, non-chiropteran host DNA were mostly located in sites where human activity is also present nearby, associated with the presence of shepherd dogs and agricultural animal husbandry.

We found a low number of samples with bacterial pathogen presence. We detected the zoonotic bacteria *Neoehrlichia mikurensis* in bat ticks for the first time. Other bacteria found were Bartonella and Wolbachia. Interestingly, *N. mikurensis* presence was associated with a tick that previously fed on a domestic dog, which may indicate a previously unexplored pathogen spillover route between dogs and bats.

Our results indicate that the role of bat ticks as disease vectors should be re-evaluated within more complex host systems, as they may contribute to pathogen transmission between bats and non-bat hosts.

News from the

EWDA Network

for wildlife health surveillance committee

The EWDA Network Google Group is a forum for rapid sharing of information on wildlife health surveillance. This important resource is possible thanks to the active participation of EWDA members and other experts. You can help support wildlife health surveillance in Europe by joining and contributing with your knowledge and surveillance experience!

The EWDA Network Google Group* was initiated almost 15 years ago, and with over 270 members from at least 34 countries, it is still going strong. This friendly and informal platform is a place for those involved with wildlife health surveillance to share and discuss relevant issues. Members have communicated the emergence of numerous wildlife diseases in real-time, asked for advice on possible diagnoses and diagnostic methods, and shared resources and opportunities regarding wildlife health. In other words - if you work with or plan to set up a wildlife health surveillance programme, this group is for you! Membership is open to EWDA members, but you must actively apply. Information on how to do so can be found on the EWDA Google group webpage.

Posting to the Google Group

The success of the platform as a resource is dependent upon the posts shared by members. There are multiple ways to post to the group:

1. Post a message via the Google Groups webpage. This is the best way to start a new topic discussion and can be done by clicking on the **+ New Conversation** button at the top left. You can also reply to ongoing conversations through the webpage by opening existing conversations and replying.

2. Respond to an email that you received from the Google Group. This is an excellent way to reply to an ongoing discussion, but if you would like to discuss a new topic, options 1 or 3 allow you to create a new conversation.

3. Send an email with your message to the Google Group Coordinator (contact details below) who will then post it on your behalf.

If you have any questions or suggestions, please contact the Google Group Coordinator!

*Not to be confused with the WildList

Join our 2024 EWDA Network meeting on Monday September 9th at the Friedrich-Loeffler-Institute in Germany!

Through presentations and group discussions, we will explore this year's meeting topic:

How do we translate wildlife health surveillance into conservation action?

Come and share your experiences and find inspiration in person or attend online!

Successful examples will guide our discussion on how we can apply wildlife health surveillance data to promote conservation, biodiversity and resilient ecosystems.

Programme and registration details are available on the EWDA conference website.

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Pikka Jokelainen
Incoming Google Group Coordinator
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Updates from the
EWDA Student Chapter

Let's meet our Stralsund Conference travel grant donor - discover some of the projects financed by the Ceva Wildlife Research Fund.

Launched by Ceva Santé Animale, the Ceva Wildlife Research Fund is a one-of-a-kind endowment fund whose objective is to finance applied research projects to protect the health of wild animals.

Six travel grants of 750 euros each have been awarded to students attending the EWDA conference in Stralsund, partially made possible thanks to a generous donation from the *Ceva Wildlife Research Fund*.

Let's get to know them!

The Ceva Wildlife Research Fund has been launched to preserve wild animal health, a field of animal health that is underinvested for not being economically viable. This endowment fund finances applied research projects, the results of which will be quickly observable, with deadlines of three to five years maximum. Thus, we lend our support to programs led by universities or renowned research centres.

The Ceva Wildlife Research Fund is a legal entity separate from Ceva, and is chaired by Dr. Marc Prikazsky. Its director is Dr. Pierre-Marie Borne.
A scientific committee made up of seven members meet at least once a year and is responsible for providing scientific opinions on the various projects (selection, assessment and monitoring).

Devastated by Chlamydia, Australia's koalas are no longer able to ensure the preservation of their species.

The protection of the Australian koala is an iconic example, and the *first project financed by the fund*. According to the Australian Koala Foundation, koala populations declined by 30% between 2018 and 2021. Among several reasons is the circulation of Chlamydia, which affects the vast majority of koalas in eastern Australia.

This lethal disease is endemic in these sharply declining populations and severely impacts their reproduction and survival. That is why the Ceva Wildlife Research Fund provides support to the University of the Sunshine Coast in Brisbane (Australia), financing the final stages of vaccine development against chlamydia and the associated testing activities. Work to finalize a formulation of this vaccine candidate for local production is now underway.

Ceva Wildlife Research Fund finances a vaccination program against Highly Pathogenic Avian Influenza (HPAI).

HPAI virus, once limited to Asia, has now become a global concern, affecting Europe, North America and even previously untouched regions like South America and Antarctica.

When Pairi Daiza wildlife park was hit by a case of HPAI in 2022, its veterinarian began looking for new solutions, taking as an absolute priority the protection and well-being of the most at risk birds in the park, such as spectacled pelicans and wild peacocks. The zoo team then approached the Belgian reference laboratory, Sciensano, and together opted to develop an innovative and risk-free vaccine for their animals.

This program to protect the pelicans and peacocks at the Pairi Daiza is a great example of concrete collaboration with a positive impact. Each party brought real added value to the protection of these rare animals: the Ceva Wildlife Research Fund supported this project by financing the vaccination campaign and contributing skills and equipment. The Sciensano Institute, contributed by ensuring the necessary serological and virological monitoring, as required by the Belgian authorities.

Ceva Wildlife Research Fund commits to working with CNRS for Northern Gannets conservation.

In 2022, France's lone colony of Northern Gannets witnessed a significant setback due to HPAI, with more than half of the original population decimated. The Centre for Functional and Evolutionary Ecology (CEFE), a research unit from the National Centre for Scientific Research (CNRS), collaborates with diverse partners to investigate the eco-epidemiology of Northern Gannets in France.

The project's primary goal is to elucidate the transmission processes of HPAI viruses within and between colonies, as well as to understand the impact on populations. CEFE will oversee fieldwork and conduct analyses in collaboration with the French Agency for Food, Environmental and Occupational Health & Safety (ANSES) national reference laboratory in Ploufragan, France.

Opportunities for students

The Ceva Wildlife Research Fund provides numerous opportunities for students, including partial funding for research and career development in wildlife health. These opportunities may range from PhD project funding to, for instance, their contribution to the Student Travel Grants for the Stralsund Conference. To inquire for opportunities, as an individual student or a student organization involved with wildlife health, the Ceva Wildlife Research Fund contact is **Dr. Pierre-Marie BORNE,** pmborne@cevawildlife.org

What else to expect from the student chapter at the Stralsund conference

The first day of the conference will feature a **workshop on science communication** specifically designed for students. This session aims to equip young researchers with the skills to effectively convey their findings to diverse audiences. Additionally, the student-mentor mixer has generated significant interest, with many registrations reflecting the excitement and eagerness for networking opportunities on both sides. This event promises to foster valuable connections and mentorship, further enriching the conference experience. If you are still willing to take part to the **couch-surfing accommodation**, either offering or seeking a place, please email the Student Chapter!

EWDA Student Chapter

ewdastudent@gmail.com

Stay informed about upcoming scientific endeavors.
Follow our latest updates on:

www.ceva.com/wildlife-research-fund/

Tackling drivers of ill health – informing policy makers

CONVENTION ON MIGRATORY SPECIES
COP 14
SAMARKAND
UZBEKISTAN 12-17 FEBRUARY 2024

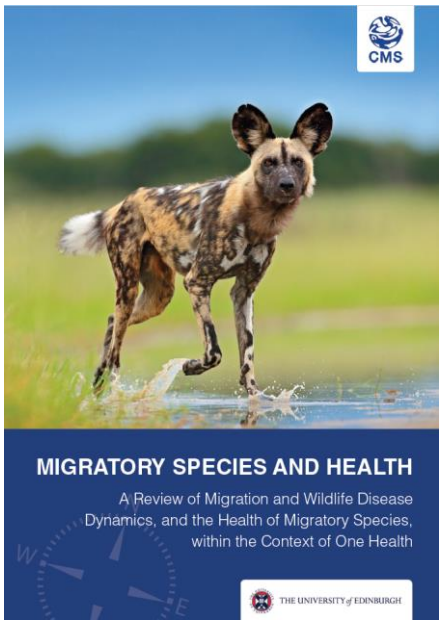
"We need decision makers to really understand what One Health means in principle and practice and how to take appropriate actions. Wildlife health cannot remain the poor relation in One Health thinking."

A new substantive Review of Migratory Species and Health and resolution was adopted at February's Convention on Migratory Species Conference of Parties (COP) in February 2024. The resolution requests the 133 signatory Parties (countries) to this international treaty to act on the drivers of ill health and implement the recommendations from the Review.

The COVID-19 pandemic and impacts of highly pathogenic avian influenza created a renewed focus on health for the UNEP-Convention on Migratory Species (CMS) and involved the creation of a new CMS Migratory Species and Health Working Group. A review of the issues surrounding the health of wildlife was needed to inform both the work of the Group and the Parties to the Convention. Moreover, a resolution was needed to help implementation of actions. Work on the Review began in earnest at the beginning of 2023.

The team

With funding from the German and UK governments, an expert or team of experts was needed to undertake the Review. After some false starts I was delighted to be able to help contract the work to a fabulous team at the University of Edinburgh (UoE) ably led by Dr. Katie Beckmann as both expert and project manager.



The Migratory Species and Health Review and QR code. The cover image helps to illustrate that the Convention covers a wide range of taxa that may not seem obviously migratory but do in fact move over national boundaries thus requiring cooperation between jurisdations for consevation action. Photo: CMS

Dr. Marja Kipperman provided the main graft in bringing the Review together with expert inputs from Prof. Anna Meredith and Dr. Neil Anderson. Brian Mather brought some life to the text with great graphics. A highly experienced panel of reviewers, Catherine Machalaba (EcoHealth Alliance), Richard Kock (Royal Veterinary College), David Stroud (international policy expert), Fiona Greco (UoE) and Marco Barbieri (CMS), helped to ensure the quality of the product.

An ambitious, time-limited, global expert consultation resulted in 55 additional contributions to health issues of specific taxa – a veritable who's who of wildlife health including EWDA members. We are extremely grateful to you all!

The Review

The opportunity to provide a good grounding in the issues influencing wildlife health and its conservation impacts to an audience of policy and decision makers was too good to miss. As a consequence, I think it's fair to say we gave the Parties to CMS a much more substantial and robust report than perhaps the funders might have originally imagined… So what's in the Review?

Key messages

A set of key messages designed for 'busy people' highlight context and both the problems and solutions for addressing wildlife health issues.

Introduction

An introductory chapter sets the scene with key concepts and explores the interdependence of health making it quite clear that health of all sectors is dependent on resilient ecosystems. The importance of interfaces with livestock, and emergence of zoonoses is highlighted along with indigenous concepts of health.

Migration and disease dynamics

Migration is often viewed from the perspective of wildlife acting as long-distance vectors of infectious agents. The chapter reviews more broadly disease dynamics in relation to migration. It explores the complex outcomes where migration can act as a strategy for improving health of individuals and populations through various mechanisms by, for example, moving away from infection, removing diseased individuals (and their genes) during arduous migration or improving immunity. There is a clear message from the chapter on the role of anthropogenic pressures on migratory species which can exacerbate the negative consequences for infection dynamics and disease occurrence.

Key health issues affect migratory species and their underlying causes

The global expert consultation drew out the main health threats to the 100s of species in dozens of CMS-listed taxa be they invertebrates, mammals, fish, reptiles or birds. Despite the diversity of species considered, there was convergent agreement on the importance of infectious, toxic and traumatic disease as important conservation issues with a commonality of underlying drivers.

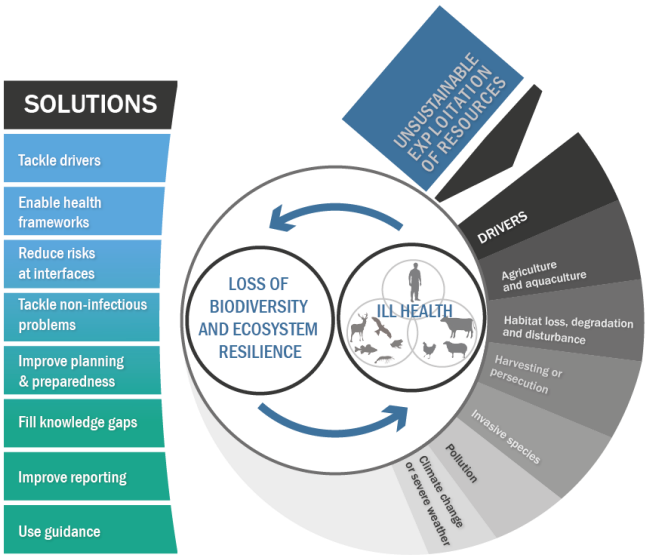
Case studies

The Review is peppered with easy-to-understand case studies which neatly illustrate the themes or details of the Review.

Conclusions and recommendations

The findings from preceding chapters serve to highlight the underlying drivers of ill health, namely unsustainable exploitation of resources in the form of threats from agriculture, habitat degradation, pollution, invasive species, climate change etc. The recommendations seek to tackle these but also address high risk practices, and for countries to build wildlife health systems to be able to facilitate preparedness and responses.

Government delegations from scores of countries at CMS COP14, Samarkand, Uzbekistan, February 2024. Photo: CMS



The Review's overview of the problem and recommendations. The environment is the 'setting' for health: unsustainable exploitation of natural resources drives loss of biodiversity and ecosystem resilience, as well as disease emergence. Disease emergence, in turn, drives loss of biodiversity and ecosystem resilience, further compounding problems.
Image: Brian Mather/Ruth Cromie

The Resolution and the COP

It was sad not to have Marja with us at the COP in Uzbekistan in February, but Katie and I kept in touch with her throughout as the Review was introduced to the Parties both in plenary and via our valuable side event entitled 'Disrupted Planet, Disrupted Health'. Katie's fresh eyes could attest to the procedurally impenetrable nature of COPs but was rightly wholly uplifted by the nations of the world coming together to commit to tackling loss of biodiversity.

The text of the Resolution was negotiated during the week and then adopted with relatively few changes (CMS Resolution 12.6(Rev.COP14)). The Resolution requests Parties to implement the recommendations of the Review, as well as a range of other actions including real engagement of ministries of environment. This international treaty represents 'soft law' so there are few penalties for non-compliance. That said, the EU and all of Europe (other than Turkey) are Parties to the Convention so as EWDA members we should, as necessary, remind our respective governments of the mandates they have committed to when it comes to addressing wildlife health and we should help them support real One Health approaches.

Dr. Ruth Cromie
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Hedgehog mortality

A literature study of causes of admission and mortality in European hedgehogs (Erinaceus europaeus)

Studies of admission cause and mortality in hedgehogs are vital to understand factors influencing populations, identifying key threats, and understanding population dynamics.

The European hedgehog, *Erinaceus europaeus*, a key indicator species for health ecosystems, faces various threats that impact the survival of this species. Most factors that threaten this species are associated with human activity.

Causes of admission to wildlife rehabilitation centres

In a total of 10 papers regarding the causes of admission of *E. europaeus* in wildlife rehabilitation centres (WRC), from 2016 to 2024, a total of 23,249 animals were admitted to WRC in 9 different European countries.

The main causes of admission were hoglets (n=11,903), starvation and exhaustion (n=1,897), and accidentally found (n=1,612). Most of the animals were male (n=7,480) and juveniles (n=10,725). Spring (n=8,247) and Autumn (n=7,743) where the seasons when most animals have been admitted.

Causes of mortality

A total of 90,708 hedgehogs were analysed in 18 papers from 1981 to 2024. The major causes of mortality were roadkill (80%), attack from other animals (8%), and other causes (6%).

European hedgehog released in the wild after rehabilitation. Photo: Andreia Garcês

The number of animals admitted to WRC all around Europe is probably much higher, as many centres do not document extensively or report this information as they are too busy caring for the hedgehogs, whose welfare comes before documentation.

The data suggest that the admission of animals to sanctuaries and WRC has been increasing in the last years all over Europe. This phenomenon can be associated with an increase in awareness and willingness of people to deliver injured animals to WRC or be the result of anthropogenic activities (*e.g.* increase in urbanization, road construction, climate change).

Understanding hedgehog mortality and the causes of admission to WRC is crucial for effective conservation efforts and the preservation of hedgehog populations. By analyzing mortality patterns and admission data, conservationists can identify the primary threats facing hedgehogs, such as road traffic accidents, habitat loss, predation, and disease.

This information enables targeted conservation strategies, including the implementation of wildlife corridors, road signage, habitat restoration, and public education campaigns aimed at reducing human-induced threats and promoting hedgehog welfare.

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TuroCat
Polecat Reintroduction Program in Catalonia

"At WildCoM we are working to ensure a healthy and successful comeback of the European polecat to Catalonia"

Once widespread across Catalonia (NE Spain), the European polecat (*Mustela putorius*) is now facing local extinction. Only a few isolated populations persist, with low connectivity and genetic variability. The causes of the polecat decline are multifaceted, including loss of agricultural habitats, vehicle collisions, rodenticide exposure, reduced availability of essential prey and competition with introduced and domestic species.

TuroCat Project

Founded in 2020, the TuroCat Project has been fostering conservation efforts to reverse the fate of the polecat in Catalonia. Project objectives are to:

- Monitor the remaining populations and improve our knowledge of the species.
- Protect and restore agricultural landscapes.
- Promote European rabbit (*Oryctolagus cuniculus*) and amphibian populations.
- Eradicate the invasive American mink (*Neogale vison*) in strategic areas.
- Create an insurance captive breeding program.
- Translocate polecats to reinforce existing and reintroduce populations in suitable areas.

A captive breeding program was established in 2022, incorporating new partners in the project, such as recognized breeding centres and wildlife veterinary specialists.

Two anesthetized polecats receive a full health check by WildCoM vets. Photo: Ignasi Marco

Polecat Health Monitoring

As coordinators of TuroCat's health program in **WildCoM**, we conducted a Disease Risk Analysis to anticipate and mitigate the risks arising from the translocation plan. Prior to translocation, all captive-bred individuals undergo a thorough clinical exam and screening of priority pathogens.

We have investigated any mortality in both free-living and captive polecats, carrying out full post-mortem exams and diagnostic testing. We have also built a database of pathological diagnoses and a sample archive for future studies.

Post-release monitoring has been possible through a network of camera traps, radio-tracking and field surveys. This is crucial for understanding how the animals adapt to the new environment, tackling disease threats promptly and making adjustments to the program.

By working together, our multidisciplinary team has successfully reintroduced 25 polecats into two Catalan counties. Five animals have been found dead, with vehicle collision being the main cause of mortality. Currently, the program is improving post-release monitoring methods and ensuring that captive breeding continues to produce healthy offspring to supplement wild populations. We hope that the polecat makes a successful comeback to Catalonia shortly!

On behalf of TuroCat: Santiago Palazón, Jordi Ruíz-Olmo, Salvador Salvador (Generalitat de Catalunya); Josep Xarles, Pablo Cermeño (Barcelona Zoo Foundation); Oscar Cabezón, Ignasi Marco, Johan Espunyes, Xavier Fernández-Aguilar, Laura Carrera, Carlotta Pasetto, Laura Canós, Alessandra Kalantonis (WildCoM, UAB); Roser Velarde (SEFaS, UAB).

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Course: Interventions in Wild Animal Health

Maintenance of anaesthesia in a chital (Axis axis). Photo: author

"Learning skills to investigate wildlife disease"

The Interventions in Wild Animal Health (IWAH) course is run jointly by The Zoological Society of London (ZSL), the Wildlife Institute of India (WII), the University of Edinburgh (UoE), the Royal Veterinary College (RVC), the University of Melbourne (UoM) and Toronto Zoo (TZ) and is a component of the Wildlife Health Bridge (WHB) initiative.

The IWAH course is also an integral component of the online MVetSci course in Conservation Medicine awarded by UoE, providing practical knowledge to complement theoretical understanding.

IWAH brings together wildlife vets from around the world, with most of our past participants being from South Asia, to learn the various skills required for investigating the impact of wildlife diseases on biodiversity. The course is located in countries with high levels of biodiversity as a response to the urgent need for more wildlife health professionals in these regions.

During the three-week course, participants take part in practical sessions covering ecological survey techniques (such as sign surveys, camera traps, radio telemetry and distance sampling), disease outbreak investigation, pathological examination in situ, human-wildlife interface, wildlife forensics, and best practice wild animal restraint and anaesthesia techniques in the field. Sessions are led by tutors from the collaborating organisations involved in the course, providing a wealth of expertise and sharing their knowledge and skills.

The IWAH course 2024

This year, 24 veterinarians from seven countries: India, the Philippines, Australia, Spain, Portugal, Germany, and the UK, attended. Fifteen of these were from India, many of whom are working in some of the country's National Parks or are involved in various conservation breeding programmes of endangered native species.

Image below: Conducting a line transect survey in Sariska Tiger Reserve. Photo: author.

Changing venue 2025

Since its inception in 2016, the IWAH course has trained 227 wildlife veterinarians from 33 different countries in disease outbreak investigation and capture and restraint techniques. The previous courses have all taken place at Sariska Tiger Reserve in India, but next year sees an exciting development as the course will be relocating to Naivasha in Kenya and gaining a new partner institution, the Wildlife Research and Training Institute (WRTI).

The course will continue in Sariska, returning in 2026, with future courses predicted to alternate between the two locations from year to year. We are incredibly excited to be able to run the course in East Africa, with the hopes of being able to welcome more veterinarians from the African continent as we explore wildlife health and conservation topics in Kenya.

To find out more about next year's IWAH course, please visit iwah.org

Participants being taught how to use remote delivery systems for the anaesthesia of animals in the field by Dr Nic Masters (Toronto Zoo). Photo: author

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COST Action for wildlife malaria investigation

WIMANET, a global initiative to study vector-borne malaria parasites in wildlife

Created by a group of passionate and enthusiastic scientists interested in wildlife and malaria parasites, the WIMANET has already gathered almost 200 researchers from 41 countries.

Wildlife Malaria Research Network (WIMANET) is a collaborative initiative aiming to bring together resources, expertise, and data of various scientific groups to investigate haemosporidian parasites in wildlife on a global scale.

Why investigate malaria parasites in wildlife

Vector-borne diseases, and emerging infectious diseases of wildlife, are major contributors to the global disease burden and of increasing concern globally. Haemosporidian parasites are ubiquitous in nature, hugely diverse, and associated with morbidity and mortality across taxa, including humans, livestock, and wildlife. Many research groups globally focus on these parasites as model systems for addressing a broad range of ecological and evolutionary questions with economic and health implications.

Group discussion during the 1st WIMANET on-site workshop in Romania, 2024. Photo: Vaidas Palinauskas.

Over the years, scientists from various fields such as parasitology, ecology, ornithology, mammalogy, and herpetology, as well as specialists in molecular biology, have extensively researched haemosporidian parasites. These studies have provided valuable insights into host-parasite interactions, diseases transmitted by parasites, geographic distribution, and host adaptation during the evolution of the parasite.

The research has also uncovered the pathogenic impact of haemosporidian infections and their significance in the conservation of wild animals. Presently, there is growing focus on their vectors, and advanced genetic research methods are being employed to elucidate the intricate aspects of gene expression in both parasites and their hosts.

The beginning of an idea

Everything started in October 2018, during the IV International Conference on Malaria and Other Blood Parasites of Wildlife, when some colleagues decided to make an effort to form a group of researchers and write a proposal to create a network using the European Cooperation in Science and Technology (COST) grant.

Several researchers from different countries around the world were involved along the process. However, despite the effort, the idea was not funded at first. We still believed in our ideas and tried not one, but a few more times. In October 2022 we finally received the good news, our network was funded.

Nowadays, WIMANET already gathers, from students to professors, almost 200 scientists from 41 countries. And we believe that it will continue to grow.

Researchers that attented to the 1st WIMANET on-site workshop held in Romania, 2024. Photo: WIMANET.

WIMANET objectives

One of the main objectives of the WIMANET is to promote collaboration and knowledge sharing between scientists. This will be done by addressing critical issues related to vector-borne parasites through global collaboration.

We are also interested in promoting an interdisciplinary approach by bringing together experts from different fields. This multifaceted collaboration is expected to contribute to a better understanding of the host-vector-haemosporidian parasite system.

It is worth mentioning that as other COST funded initiatives, WIMANET supports early-career researchers from a variety of fields by providing opportunities for learning (during Summer Schools) and research collaboration (through Short-term Scientific Missions).

Last, but not least, we also want to be actively engaged with stakeholders, policy makers, and the general public. We expect to increase public involvement in the conduct of scientific research.

For that, six working groups were created and focused on different topics, such as:

- Genomics, transcriptomics, and molecular markers;
- Integration of molecular markers and morphological analysis of the parasites;
- Vector transmission success;
- Impact of anthropogenic activities and wildlife malaria on host haematology;
- Drivers of spatiotemporal variation in multi-host-parasite communities; and
- Communication and dissemination of the Action.

What was done until now

Even though WIMANET is still a young network, we already had a few online and on-site events. The first meeting was in December 2022, during which participants were introduced to the COST rules and elected the working group leader.

In February 2024, an on-site workshop was held in Romania. The discussions revolved around the collaborative effort of the working groups and deciding the next steps to reach the proposed objectives.

Now we are looking forward for the 1st Summer School, that will be held in the Czech Republic, and for the Short-term Scientific Missions that will happen in the second semester of 2024.

Joining forces with us

The good news is that you can be part of WIMANET as well. All you have to do is to visit the COST Action website and select Apply in the "How can I participate" area. After that, you will need to create a login in the e-COST platform, and follow the steps proposed.

If you prefer, you can also "Inform the Main Proposer/Chair of your interest (email)"

After submitting your application, our Core Group members will review it.

You can also keep up with what is going on in WIMANET by following us on Instagram, X, or subscribing to our newsletter.

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Funded by the European Union

NWDA
Nordic section news

NWDA, the Nordic and Scandinavian members of WDA

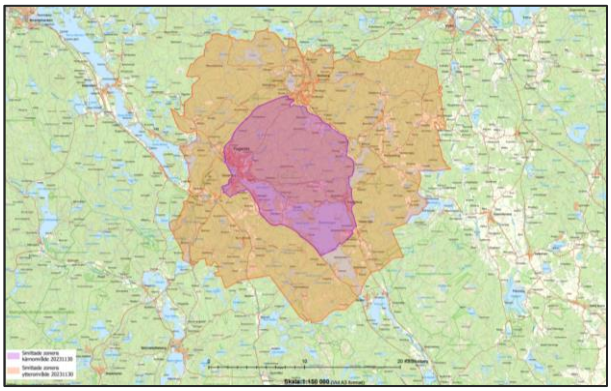
Sweden

Update on the African swine fever outbreak.
In September 2023, the first outbreak of ASF was confirmed in Sweden. Reports of six dead wild boar within one week and within a 3 km area raised a red flag. The positive ASF analysis result led to zoning, access restrictions and intensive searches for more wild boar carcasses.

Presently, 68 positive cases have been found, all within Zone II (purple area in map below), the fenced-in core area of the infected zone (yellow and purple area). After culling of all remaining wild boar in zone II during the past winter, a third search of the zone II was done in May this year, with findings of a few skeletal remains that were PCR-positive for ASF virus.

As the last infected wild boar is estimated to have died in September 2023, the Swedish authorities plan to apply to the EU for ASF-free status from October this year, if no new fresh cases are found. This would mean that this ASF outbreak could be resolved in just over one year!

The number of reported found dead wild boar from other parts of the country, to be screened for ASF, has increased more than tenfold after finding ASF last year! Follow the ASF surveillance and eradication work on SVA ASF map.



The Swedish wildlife disease surveillance reports in English, now also for 2023, and other reports in English from the Swedish Veterinary Agency are found at Publications in English – SVA

Norway

Wildlife surveillance reports
The spring is time for release of surveillance reports, also from the Norwegian Veterinary Institute (NVI).

For terrestrial wildlife, NVI runs programs in:

- Red fox and *Echinococcus multilocularis*
  Revens dvergbendelmark (Echinococcus) hos vilt * (vetinst.no)
- Cervids and CWD
  Chronic wasting disease (CWD) hos vilt * (vetinst.no)
- Birds and HPAI
  Aviær influensa hos villfugl (vetinst.no)
- Multiple species & agents – ViltHOP
  Helseovervåkingsprogrammet for vilt (ViltHOP) * (vetinst.no)
- Wild boar and multiple agents
  Helseovervåkning villsvin (vetinst.no)
- Raptors (protected spp.) & cause of death
  Fallviltundersøkelser – fredede fuglearter
  Rapport over undersøkt fallvilt og fallviltets dødsårsak i 2023 (vetinst.no)

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Book review

"A must-have in your wildlife book collection"

Handbook of Wildlife Chemical Immobilization, 6th edition (2023)

By Terry J. Kreeger, Jon M. Arnemo, Nigel A. Caulkett, Jordan O. Hampton, Leith C. R. Meyer

There are some books wildlife veterinarians just have to own. If you talk about wildlife immobilisation, the Handbook of Wildlife Chemical Immobilization, is a must-have, and the 6th edition has just been published.

Since the book was first published in 1996, it has been the world leader when it comes to being a phenomenal body of knowledge on the immobilisation of every non-domestic animal species imaginable.

Parts of the book

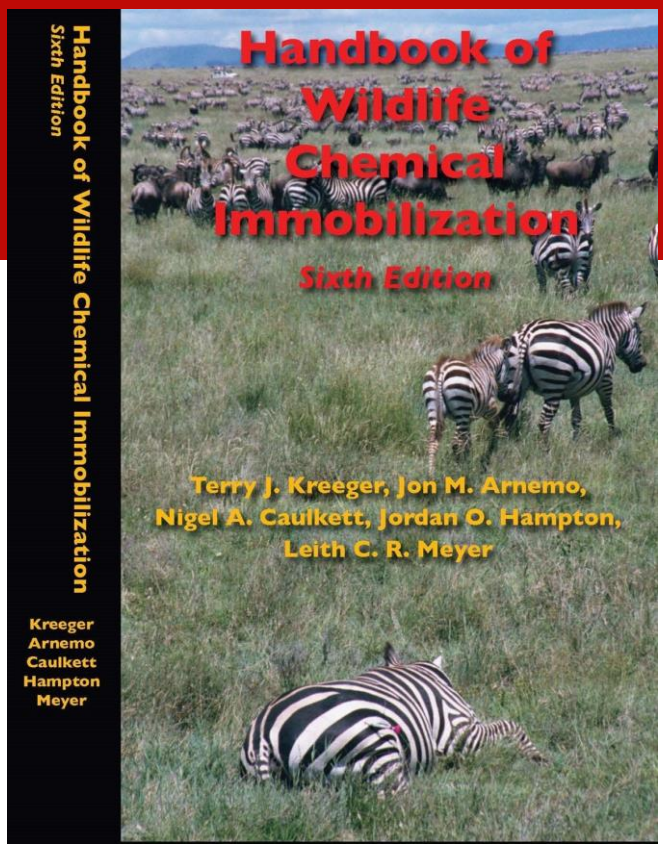
The book is divided into seven main sections:

1) Acquisition, storage and use of drugs
2) Classes of drugs used for sedating and anaesthetising animals, including the effects and side effects
3) Equipment used for capturing and anesthetising animals
4) Capture of animals from A to Z
5) Treatment of symptoms during immobilisation
6) Prevention of accidents and treatment of personnel
7) Drugs and dosing of over 500 species.

The last main section contains for each species; the English and scientific name of the species, the expected weight of the species, recommended drug(s), supplementary drug(s), antagonist, alternative drug(s), comments and literature references. This part of the book makes the book extremely suitable in the field and in the clinic as a quick reference.

Although you may not be immobilising wildlife on a daily basis, the book is an extremely good reference to have on hand when you encounter an unusual species. The book provides a quick overview of which preparations can be used in a particular species, and which method is preferable.

I think the book will be on the must-have list of many wildlife colleagues.



Front cover and spine of book. Photo: Jon M. Arnemo.

Order information

The book will be sold in-person at the EWDA Conference 2024 in Stralsund!

Pre-order your copy to make sure you get one by emailing Jon Arnemo: jmarnemo@online.no

A limited number of books without pre-orders will be available for sale during the conference.

Conference price: EUR 70.00

Regular price: EUR 80.00/NOK 900.00

If you can't make it to Stralsund, email Jon Arnemo to have your copy shipped to you.

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