



OCTOBER 2021

NEWSLETTER

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An Ig Nobel Prize for a Very Noble Wildlife Conservation Research Team



*A desert-adapted black rhinoceros (*Diceros bicornis bicornis*) being airlifted into the remote Damaraland and Kaokoveld regions of Northwestern Namibia. Photo Credit: Namibian Ministry of the Environment, Forestry, and Tourism.*

Wildlife Disease Association member and wildlife veterinarian Dr. Robin Radcliffe received an interesting invitation recently—for a virtual awards ceremony, a ceremony which annually takes place at Harvard University's Sanders Theatre. The coveted Prize was awarded to Robin and his team by none other than Nobel Laureate and pioneer of physiology and medicine, Sir Richard Roberts. But what kind of prestige were they offering? Would it be added to his and his colleague's CV's? That last part is yet to be determined, but the excitement

will continue—Robin and his team were thrilled to be the recipients of this year's Ig Nobel Transportation Prize for their work in hanging rhinoceroses upside down. That's right, hanging rhinos upside down!

This parody-version of the world-famous Nobel Prizes is put on by the science humor magazine [Annals of Improbable Research](#). The prize is meant to "first make you *laugh*, then make you *think*" according to the editors and staff of the magazine and blog. They chose the

research done in Namibia on rhino transportation that was published in our own Journal of Wildlife Diseases in [April of 2021](#). The journal article was titled “The Pulmonary and Metabolic Effects of Suspension by the Feet compared with Lateral Recumbency in Immobilized Black Rhinoceroses (*Diceros bicornis*) Captured by Aerial Darting.” The Ig Nobel committee described the research as “determining by experiment whether it is safer to transport an airborne rhinoceros upside down.”

Of course, this doesn’t seem at all to be an improbable research question to WDA members, or those involved in wildlife conservation of megafauna. Aerial movement of rhinoceroses and



Caption: One of the Ig Nobel team’s black rhino subjects hanging from a crane as part of experiments to study the effects of aerial suspension on respiratory physiology. Photo Credit: Robin Radcliffe



Caption: A rhinoceros subject in Waterburg National Park, Namibia suspended under a crane to mimic helicopter slinging. Photo Credit: Robin Radcliffe

other large creatures has become a critical aspect of conservation over the last few decades and ensuring that the animals are safe during and after transport is vital to the long-term success of these operations. The Namibian Ministry of Environment, Forestry, and Tourism has been using aerial transportation since 2010 and has adopted the practice of suspending the rhino from their feet for periods of up to 30 minutes to accomplish these translocations. Although Namibia was not the first country to move rhinoceroses by aerial transport under a helicopter, they pioneered the use of slings to move rhinos upside down. The rhino slinging technique is now standard practice across Africa and is even being used to move elephants!

Recently, Robin and his colleagues conducted research into the physiology of this translocation technique. The research team, many of whom are WDA members, was multinational, with representation from Namibia, South Africa, Tanzania, Zimbabwe, Brazil, UK, and the US. Members included Robin Radcliffe, Mark Jago, [Peter Morkel](#), Estelle Morkel, Pierre du Preez, Piet Beytell, Birgit Kotting, Bakker Manuel, Jan Hendrik du Preez, [Michele Miller](#), Julia Felipe, Stephen Parry, and Robin Gleed. This project is a great example of international partnerships that bring the best science to wildlife health to support conservation.

The team used a crossover design to trial 12 anesthetized black rhinoceroses in two conditions—suspension by the feet versus suspension in lateral recumbency, and sampled various physiologic parameters to determine what was the safer method. In this species it was determined that the current method of suspension of the animals by the feet was the most physiologically stable and safe practice. The full impact of the Namibia Team's research on hanging rhinos remains to be seen. It took nearly 30 years for Rich Roberts Nobel Prize winning research on introns to make a splash, but today it has made possible the messenger-RNA COVID vaccines we all are thankful for. Time will tell how hanging rhinos upside down may change the world, but one thing is for sure, this team will continue thinking outside the box!

It turns out that this ground-breaking research is not only lifting feet, but turning lots of heads.



*Black rhinos transported by aerial slinging are given a soft landing on a mattress, carefully placed beneath the swinging animal by field rangers.
Credit: Namibian Ministry of the Environment, Forestry, and Tourism.*



An important goal of the Namibian Government rhino operations is to return black rhinos back to the people for poverty alleviation and realization of their own cultural heritage. Credit: Namibian Ministry of the Environment, Forestry, and Tourism.

The work was reported by [BBC Science News](#), CNN [Call to Earth](#), National Geographic in Russian, Atlas Obscura, Italian Science magazine [Focus](#), and a German [radio science show](#). All this attention has been exciting not just for the research team and Namibian conservation, but also for a much larger audience. The team's work has moved endangered species to the forefront of our conversation by capturing the interest to all kinds of people, which will elevate the causes of conservation and wildlife health as a priority for everyone.

In this season of award presentations for WDA, this one is certainly an exciting one. When asked about the Ig Nobel Prize by the BBC, Robin stated "When I first

heard about the Ig Nobel, I wasn't sure if this was good or bad. But I think the message of the Ig Nobel—that 'it makes you laugh and then think'—this is what it's all about for us. More and more people should understand the exceptional efforts going on to try to help save these amazing animals that live here on Planet Earth with us."

The excitement does not end here- stay tuned for an upcoming podcast from Cornell University in the coming months!

In Memoriam: Sophie Rossi

*Karin Lemberger, DVM, Dipl ACVP
Chair of the European Wildlife Disease Association*

It is with great sadness that we inform you of the passing of our friend and colleague, Sophie Rossi.

The EWDA and WDA mourn the loss of one of their most prominent members. Sophie was a formidable scientist, with a natural talent for combining field work, research projects and transmitting her knowledge to younger generations. But she was also an amazing friend and person, with a contagious smile that lit up the room and who often put her own wellbeing after that of others.

Our deepest condolences to her family, friends, and colleagues. May she rest in peace.

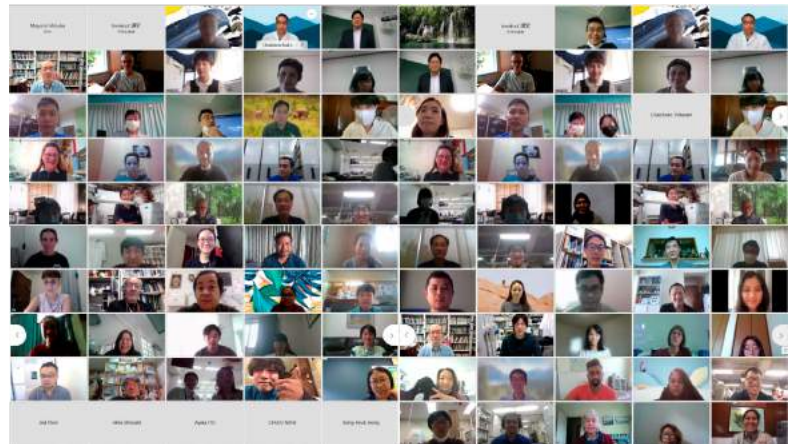


Recent pictures of Sophie from the EWDA meeting in Larissa, Greece. Sophie is pictured with colleagues and friends Marie Pierre Ryser and Francisco Ruiz Fons

Report on the 14th Asian Society of Conservation Medicine / 27th Japanese Society of Wildlife Medicine 2021 Joint Meeting

Toshio Tsubota, Chair of the conference Hokkaido University

The 14th Asian Society of Conservation Medicine and the 27th Japanese Society of Wildlife Medicine 2021 Joint Conference was held in the lecture building of the School of Veterinary Medicine, Hokkaido University (HU) for 3 days from September 22 to 24, 2021. In addition to the two societies, the HU WISE program for One Health Frontier was the host of this conference. The Asia-Pacific Section of Wildlife Disease Association (WDA-AP) supported this joint conference. This year's conference was held in a hybrid style of online and on-site (face-to-face) due to the impact of the novel coronavirus infection. Despite the small number of on-site participants, I was able to feel the atmosphere of the conference for the first time in a long time through discussions in front of posters and the sale of goods by the student section. On the other hand, about 320 people, including foreigners, participated online and actively asked questions using the chat function. The Asian Society of Conservation Medicine has been held in Thailand, Taiwan, Korea, Singapore, Myanmar, Vietnam, Indonesia, Malaysia, Cambodia, and Nepal, and this was the first time for the conference to be held in Japan. About 360 participants from 21 countries, mainly in Asia, gave a total of 139 oral and poster presentations. The theme of the conference was "Front Line of One Health in Asia". Researchers, veterinarians, government officials, NGO staff, and students who are working on the front line of wildlife health and conservation medicine which are leading to One Health, gathered in one place to introduce the front line of their research and activities. The pandemic of novel-type coronavirus infection, which had a huge impact this time, is one of the zoonotic diseases that have appeared on the earth due to new human-animal exposure, with wild animals as natural hosts. If this style of organizing a conference has been of any interest to you in organizing future conferences, I think it was worth the effort to hold it in a hybrid fashion. Finally, I would like to express my gratitude to all the participants and presenters, as well as to the faculty and students who supported the conference behind the scenes.





The 14th Asian Society of Conservation Medicine The 27th Japanese Society of Zoo and Wildlife Medicine 2021 Joint Conference

Front Line of One Health in Asia

Hosted by
Asian Society of Conservation Medicine
Japanese Society of Zoo and Wildlife Medicine
Hokkaido University WISE Program for One Health
Frontier Graduate School of Excellence



Keynote Speakers

A. Akana Aguirre, PhD, MS, PhD
Rishi K. Singh, PhD, PhD
Linda Wang, PhD, PhD
Paula Haydel, PhD, PhD

Date : September 21 (Tue)–September 24 (Fri), 2021
Venue : Lecture Building, Faculty of Veterinary Medicine,
Hokkaido University
Kita18, Nishi9, Kita-ku, Sapporo, JAPAN



14th ASCM / 27th JSZWM 2021 Secretariat
ascm-jszwm2021@ascm.info.org
<https://confil.atlas.jp/ascmjszwm2021/tang-en>



Tolfenamic Acid – A Safe Option in Vulture Habitat

In September, some wonderful news came to WDA out of India. A second non-steroidal anti-inflammatory drug (NSAID) has been approved for use in vultures. This may seem like a minor accomplishment to those unfamiliar with the toll that drugs in the NSAID category have had on vultures in South Asia. However, there were catastrophic mortality events beginning in the early 2000's, after members of this essential species were exposed to diclofenac, which has traditionally been used to aid in inflammation and pain in cattle. This catastrophe was studied extensively, including articles published in the [JWD](#).

This is a multi-dimensional issue, as are many that our members must address. There are considerations from a livestock perspective, as the cattle do require treatment that is safe for them, a wildlife perspective, with considerations for those species which consume carrion, and an ecological perspective, in that as there is decline in vultures, there can be severe impact to local ecology, beginning with changes in the waste cycle.

According to Chris Bowden, Globally Threatened Species Officer & Saving Asia's Vultures from Extinction (SAVE) Programme Manager and Co-chair IUCN Vulture Specialist Group, "Since the 2006 national ban of veterinary diclofenac, until now we could only recommend one safe alternative drug for use on cattle. Having tolfenamic acid as a second safe alternative is a huge boost and we hope this helps vets and farmers to avoid using deadly alternatives, including aceclofenac, nimesulide, and ketoprofen."

Tolfenamic acid is already licensed and produced by various manufacturers, and is priced competitively with other NSAID products. When tested in a cohort of the near-threatened Himalayan Griffon Vultures, as well as a single captive white-rumped vulture and a single long-billed vulture (both of whom are critically endangered), the drug proved very safe at maximum-expected doses for exposure



Short-billed Vultures and White-rumped Vultures in Cambodia Photo Credit: Chris Bowden/RSPB



Photo: Vulture safety-testing in Action: Photo Credit Chris Bowden/RSPB

to scavenger species. None of the individuals at those doses experienced clinical signs or changes to uric acid level, which would indicate subclinical renal damage. There was a small subset in a group of individual Himalayan Griffons who experienced mortality, but this was when given a very



White-rumped Vulture Photo Credit: Chris Bowden/RSPB

large dose via gavage, indicating that if the level of exposure is very extreme, clinical signs and death are possible.

Dr Chandra Mohan, scientist at the Indian Veterinary Research Institute and the lead investigator, touched on why there is likely to be success with this new safe alternative, “Every painkiller available has slightly different properties, and the vets often complained of not having a second choice of NSAIDs. But tolfenamic acid has been found as a second safe NSAID.”

This welcome news has been bringing a smile to the faces of many scientists and conservationists, as Chris Bowden explains, “It is a pleasant change to have some good news for once. Over 97% of all vultures have already gone, so unless news like this can make a real difference for decision-makers, India’s vultures may be condemned to the history books.”

For more information on ongoing research and efforts to restore the populations of cultures in South Asia, please see <https://save-vultures.org/> and perhaps listen to the sweet sound of musical inspiration at this [YouTube link](#).



Three leading brands of Tolfenamic Acid manufactured and used in India



WDA Section Roundup

Prior to the annual business meeting at the International Conference earlier this year, each section submitted an annual update on how their individual membership was doing, information on finances, and an overview on section activity and leadership. For those not in attendance at the meeting, please see the below summary of those reports.



African Middle East

Membership is increasing for the AME chapter, with current membership at 42 for 2021. This is an increase from 27 in 2020, but still down from 2019 when there were 66 members. Two students received memberships as part of the

Students in Need Sponsorships that were made available to the WDA-AME.

The student chapters are doing well, including the South African SC, though there were limitations in the number of activities due to COVID-19. Additionally, the application process is under way with the Student chapter in West Africa. It is hopeful that it will be setup before the end of 2021. This

push is being led by students from the University of Ibadan in Nigeria, with support from Veronica Adetunji, and a student survey in Kenya was done by the Shaleen Angwenyi.

Communication is going well in this section, with several initiatives ongoing:

1. The WDA-AME website is active with regular blog post about work being done in the region.
2. Newsletter articles – Online submission platform is being tested to collate this year's newsletter articles.
3. Social Media: Plan to become more active on the Twitter front, to engage with younger section members.
4. Regular email communication that gets sent to section members with relevant information.



Asia Pacific

There are currently members in 28 different countries in this geographic section, and this newest section continues to work on the goals set up when it was founded in 2019.

The specific targets of this section include:

- 1) Promotion of Wildlife health in Asia Pacific area
- 2) Networking for wildlife diseases surveillance and conservation medicine in Asia Pacific area
- 3) Establishment of special expert groups on wildlife health related topics in Asia Pacific area such as:
Rabies, Avian Influenza, Mycobacteriosis and forensic pathology and others
- 4) Join ASCM or WDA Australasian section annual meeting
- 5) Hosting workshops for wildlife conservation
- 6) Hosting WDA International Meeting in Asia
- 7) Publication of textbooks of Diseases of Asian Mammals, Birds, etc

Current Disease Expert Groups that have been established include: Rabies, Mycobacteriosis, Avian Influenza, Forensic Pathology, Marine Mammals, Asian Wildcat Conservation, Asian Bat/Small Mammal Conservation, Raptor, Non-human Primate, and Zoo Vet Networking, with individuals representing each group outlined annually.



Australasia

The Australasian section announced the formation of a new subcommittee in 2017, the WDA Australasia History Subcommittee. This was after a recognition of appreciation of the members who established the section 47 years prior, and for the values which they had es-

tablished. The objectives of this subcommittee are to record the section's history, preserving and improving access to WDA-A memorabilia (including photographs) and overseeing the production of material celebrating WDAA's history and communicating our organisational culture to future members. The subcommittee was

provided with a budget and is undertaking the ongoing process of capturing, preserving and sharing our organisational culture.

The section continues to be an advocate for wildlife health in Australasia, most notably in Australia, through high-level involvement with Wildlife Health Australia, participation in biannual Australian Government Environmental Biosecurity Roundtables, participation in the development of a National Biosecurity Statement, and participation in the wildlife diseases working group (by invitation) on an Australian National Priority Exotic Environmental Pests and Diseases List. The section has contributed to National Guidelines for Veterinary Triage of Wildlife Affected by Bushfires and Wildlife in Care Workshop, following the 2020 Australian bushfire emergency. The section has also interacted closely with Australia's first Chief Environmental Biosecurity Officer and Australia's Chief Veterinary Officer. The advocacy activities have helped to mature an understanding of advocacy for the WDA-A section and grow relationships at high levels of federal government. An important development has been the involvement of WDAA members in an initiative to form an Australian Wildlife Health Institute dedicated to solving priority wildlife health issues. While this initiative is still in the formative stages, WDA Australasia has had an active role in shaping the direction.

WDA Australasia has focused on supporting students through improved organisation, funding and functioning of the Australasian Student Chapter and the result of this has been the reinvigoration and expansion of the WDA Australasian Student Chapter to over 330 student chapter members. Thanks to generous donations from members, including notably the Schultz Foundation and the annual conference auction, this chapter is funded and can support activities that make a real difference to student development and engagement in wildlife health.

The student chapter has made several initiatives, and also helped identify potential barriers to student chapter members to become WDA members. Among their initiatives, they have established a mentorship program, pairing academics and professionals with student chapter members for general mentoring support. They have also established an occasional 'Q and A with an Expert' online webinar. WDA Australasia is extremely proud and supportive of the student chapter.



European

As of July 2021, there were 368 EWDA members, and there are many initiatives which were updated in the annual report. Additionally, there were updates on the future conference plan,

to keep a steady “business rhythm” to the section’s plans. The next stand-alone conference will be in 2024, and the Business Meeting and Board Change will occur remotely in 2022.

Currently, the EWDA Student Chapter counts 103 members with an increase of 54% since the previous year (67), with representation of 15 different countries. The Student Chapter is coordinated by a board that consists of five students elected for 2 years, thus an election is held every other year. The biennial EWDA Student Workshop-“communicating science in wildlife conservation” was held for the first time online. The event was divided in three phases over March and April 2021 and comprised the participation of 23 international speakers working in different non-governmental and governmental organizations. A total of 81 participants attended the workshop, from across Europe and other continents.

Two Newsletters for this section are in production. One was published in December 2020 and July 2021. Articles considered of potential interest beyond our EWDA Membership were provided to the WDA Newsletter editor for reproduction.

The EWDA decided to work on the renovation of the website to give it a fresher look, make it easier to use and update it for future website coordinators. A Website Working Group was created in September 2020. This group has been working very hard on identifying any problems in the current website and implementing solutions.

The [EWDA Network for Wildlife Health Surveillance in Europe](#) was originally set up in 2009. The Network committee has worked to support development of wildlife health surveillance tools and communication networks over the past decade.

The [EWDA Google Group](#) is a tool to facilitate rapid communication of recent findings and discussion of emerging topics with peers. At the end of June 2021, the EWDA

Google Group had 240 members from at least 33 countries. During the past 12 months, circa 33 threads were shared on topics including emerging and re-emerging wildlife health issues, meeting and position announcements, calls for publications and funding proposals related to wildlife health and information on a variety of wildlife health resources.

The [EWDA WildList](#) is a communication tool which allows users to search for people active in the field of wildlife health with their specific expertise and organizational affiliation. Users can send emails to scientists identified on the list, although their email addresses are not disclosed. Whilst most wildlife health professionals registered on the WildList are from Europe, the list is not limited in geographic scope to ensure maximum international networking benefit. At the end of June 2021, there are 307 WildList members from 47 countries. The WildList can be used to share regular messages on topics of general interest on wildlife health to the registered members. During 2020-2021, Paul Tavernier, as the WildList moderator, circulated a digest of news, forthcoming events and job adverts on a regular (typically monthly) basis.

There has also been growth in the development of EWDA reference material, including [Diagnosis Cards](#), under leadership from Antonia Lavazza and [Species Cards](#) led by Jorge Ramon López Olvera.

This year EWDA was pleased to offer an extra grant for wildlife research projects after the EWDA received a generous donation from the estate of Amanda Hawkswood (insert link from EWDA Newsletter). You can learn more about all of the EWDA grants here: <http://ewda.org/ewda-small-grants/>.

Lastly, an update from the EWDA’s Sustainability Committee: The goal of this Committee is to reduce the environmental impact of the EWDA as far as possible, while maintaining EWDA's overall mission, and so to contribute to the transition to a more sustainable human society. In agreement with this goal, planned activities include: (1) the estimation of the environmental impact (i.e. ecological and carbon footprints) of the EWDA every two years, and making these reports publicly available; (2) the exchange of information with EWDA members about the level of environmental impact of different EWDA activities, and about possible actions to reduce them; (3) proposing to the EWDA Board targets for the reduction of EWDA's environmental impact and actions to reach these targets (accounting for personal and cultural differences.)

Latin America

Figure 4. Current WDA-LA logo and Student chapter logo



In 2020, there were 47 members accounted from Latin America. This chapter has been busy with a variety of activities and growth over the last year.

The activities began with two successful webinars:

1. Biodiversity, Health, and Diseases of wildlife in Latin America: During November 16-20, 2020, to spread the values and message of our section in Latin America, WDA-LA held a webinar where a member representing each one of the 8 countries comprising this geographic section gave a talk. For the opening of the event, there were speeches from former presidents Dr. Marcela Uhart and Dr. Catao-Dias. This event was free and open so that the community in general could participate, leaving guaranteed places to all current members. The webinar was held live and was not recorded, the lectures were held in Portuguese and/or Spanish, and there was simultaneous translation. There were 628 registrations from 28 different countries during the event, and there was an average participation of 180 attendees during the 5 days.
2. WDA-LA Students: During April 05-09, 2021, the second edition of the webinar was held in which the thematic axis was the students. For this, the main conference was presented by the chair of our association, Dr. das Neves, and later during the week of the event, 10 scientific projects were presented by students from our region. The six best abstracts (3 undergraduate and 3 graduate) were awarded with membership to our section. Additionally, during the closing of the event, a virtual mentorship session was held, in which they invited five professionals from WDA-LA to talk about their career with the students attending the event. This event had the participation of 267 registrants from 18 different countries.

The V Biennial Conference will be held in Valdivia, Chile in November of 2022, with a postponement due to logistical problems resulting from COVID-19.

In 2021, WDA-LA celebrate the section's 10th anniversary. Among the celebrations, the decision was made to revis-

it the section's logo. They hired a graphic designer that presented proposals based on their requests, and were pleased to present the outcome. The student section also benefited, as they were gifted with a complementary logo from the same designer. This update was included as Figure 4 in the section update.

WDA-LA Newsletter: The 9th WDA-LA Section Newsletter was produced in February 2021. This edition was celebratory for our 10th anniversary and consisted of multiple interviews with Latin American members and their research groups.

During the second semester of 2020 until April 2021, with the support of WDA ex-man Peri Wolf, a donation campaign was carried out to fight the fires in the Pantanal (which in 2020 were catastrophic). During this period thanks to the generosity of our members we managed to raise \$4,042 USD that will be used this year to fight the fires that are unfortunately starting again in the Brazilian Pantanal. This resource will be essential to support local initiatives to assist and rescue wildlife victims of forest fires.



Nordic

Membership in the Nordic section of the Wildlife Disease Association continues to be relatively stable around the 50-member mark, with 56 members in July 2021 (11 from Denmark, 3 from Finland, 1 from Iceland, 14 from Norway and 27 from Sweden).

The Nordic section holds a meeting every two years and the location rotates among the Nordic countries. The 2019 meeting was hosted by Finland June 3-6, in Luvia, Finland. The meeting had 11 participants representing all the Nordic countries except Iceland. A smaller annual meeting in virtual form was held September 15-16 2021. In March 2022, for the first time, the NWDA meeting will be a cross-disciplinary congress together with the Nordic Board for Wildlife Research bringing together researchers on wildlife diseases, ecology, and game biology.

The Nordic section has provided contributions on regional wildlife health issues to the WDA newsletter. In summer 2021, NWDA was able to offer to student members grants from Morris Animal Foundation for attending the WDA virtual congress in 2021.

A quick surveillance update was also provided in this

section's annual report, detailing that CWD surveillance mandated by the European Commission has been carried out in Sweden and Finland since 2018. By 2021, four positive cases have been found in Sweden and two in Finland, but these have been typed as atypical CWD/ cervid TSE of old moose. A notable wildlife disease event was the emergence of highly pathogenic avian influenza (types H5N8 and H5N1) particularly in geese and swans, first in November 2020 in Denmark, Sweden and Norway, and finally in January 2021 in Finland.

The Nordic section receives \$15 USD annually from our parent organization, WDA, for every section member. Usually, funds are used to support student travel to a WDA meeting (the Nordic section meeting in odd years or the WDA or EWDA meeting in even years). Travel grants have not been issued in 2020-2021 due to the pandemic.



Wildlife Veterinary

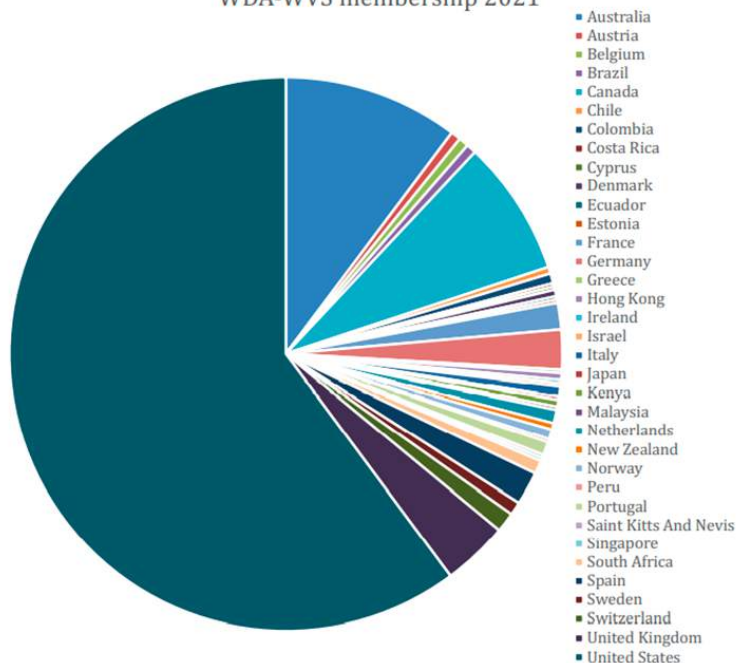
There are a total of 517 active members from 35 countries in the WDA WVS, which is an increase from 377 the previous year. Below is a pie chart detailing country representation of the section members.

Activities: Rather than provide travel awards this year, the WVS contributed to the registration of student members to the annual conference, as part of the Morris Animal Foundation support. Jointly with other sections they supported 11 students and WVS contributed \$452 towards that effort. Travel Grants are expected to resume for international members for the 2022 annual conference.

This was the second year that the WDA WVS offered a research award independently of the Small Grants Committee. To diversify expertise, the section solicited additional members to help with the scoring of the awards. The officers of the WVS and other members met to score and discuss the awards. We received 35 qualified applications. The top 5 applications required additional review and scoring as they were within 0.5 points of each other, exemplifying the quality of the proposals. We elected to only award one award this year. The winner selected was Dr. Michele Miller for a proposal entitled "Improving antemortem diagnosis of *Mycobacterium bovis* in free-ranging African rhinoceros (*Diceros bicornis*, *Ceratotherium simum*) using the Xpert MTB/RIF Ultra assay."

The section also gave an update on the excellent Trilateral Webinar series that has been ongoing. In the fall of 2020, the officers of WDA WVS reached out to the officers of American Association of Wildlife Veterinarians (AAWV) and The Wildlife Society Wildlife Disease Working Group (TWS WDWG) and decided to offer a bimonthly webinar series for the memberships. This is an added-value benefit and (at times) offers CE for veterinarians. It is announced through the WDA, AAWV and TWS WDWG and listservs, features a speaker whose work has broad appeal for all 3 organizations and takes place mid-month during the noon hour (EST). Thus far they have hosted 4 speakers with the highest attendance of 104 and the lowest of 57 members. The section feels this is a great way to keep the WDA family connected year-round and continue to strengthen the relationship with our sister organizations. WVS needed a student member to help with organization/logistics and agreed to provide free membership to WDA for that member. The current person in that role is Julia Silva Seixas. They will search for a new student organizer in the fall of 2021, to begin in January 2022.

WDA-WVS membership 2021



The Student Award Winners from the 69th Annual WDA Conference have a Bright Future:

We would like to congratulate the student winners, and let them speak for themselves about where they have been, why they were drawn to their research, and what their plans are for the future. WDA has a promising future with these individuals as future leaders.

STUDENT ORAL PRESENTATION WINNERS:



Winner of the Terry Amundson Best Student Presentation Award:

Michelle Waligora based at the Wildlife Epidemiology Lab, College of Veterinary Medicine, University of Illinois Urbana-Champaign, USA for her presentation entitled: "Evaluating associations between environmental parameters and *Ophidiomyces ophidiicola*, the causative agent of ophidiomycosis (snake fungal disease)."

Michelle:

I did my undergrad at Virginia Tech and majored in Biology. I am currently a fourth-year veterinary student at the University of Illinois College of Veterinary Medicine.

I started working in a lab when I was 15 and had to do a research project for my AP biology class in my sophomore year of high school. I worked for Dr. Chris Rose at James Madison University doing a project on the morphology of salamander skulls. That sparked my initial interest in research and I have been hooked ever since. I was a part of 2 different labs throughout undergrad and now I am part of the Wildlife Epidemiology Lab (WEL) here in Illinois. Since starting vet school, (and before that honestly) I have been passionate about epidemiology and conservation medicine. The WEL has done incredible work with Ophidiomycosis research, and I was drawn to that specific area of interest when I first joined the lab. I also happen to really enjoy cartography so when I was offered the opportunity to use mapping platforms to help contribute to our knowledge of Ophidiomycosis I had to say yes.

As far as what is next for me, I am working towards publishing manuscripts of three projects I have with the WEL, one of which is the one I presented at WDA, and another was a poster at WDA. I'm sure the future holds more map-based research for me and meta-data analysis projects.

I'll be graduating in May 2022 with my DVM and I'll be starting a small animal rotating internship next year with plans to pursue a residency in Zoological Medicine. Ultimately, I envision my career to be a healthy balance between being a researcher and clinician while promoting the One Health Initiative in all aspects of my profession.



Terry Amundson Best Student Presentation Honourable mention:

Patrick Scherrer from the University of Bern, Vetsuisse Faculty, Department of Infectious Diseases and Pathobiology, Centre for Fish and Wildlife Health, Switzerland for his presentation entitled: "*Toxoplasma gondii* infection in the protected Eurasian lynx (*Lynx lynx*) in Switzerland"

Patrick:

I studied veterinary medicine at the Vetsuisse Faculty, University of Bern, from 2014 until 2019. During my studies I underwent several externships in wildlife medicine which took me to Belize and South Africa amongst others. After graduation I completed a wildlife pathology internship at the Centre for Fish and Wildlife Health (FIWI) and started with my doctoral thesis project about *Toxoplasma gondii* infection in protected wildlife in Switzerland in February 2021.

After my internship year I knew I wanted to stay in wildlife research and lynx research has always been one of the main focus areas in the wildlife group at the FIWI. The project was then defined in collaboration with the Institute of Parasitology (IPA), Vetsuisse Faculty, University of Bern, after confirmation of the first finding of *T. gondii* oocysts in a routine faecal examination of a Swiss lynx. The interdisciplinary work environment and diverse range of tasks were some of the driving factors for taking on this position.

After finishing the first part about toxoplasmosis infection in Eurasian lynx we will focus on the second part of my doctoral thesis. This will include another protected species in Switzerland, which can be an innocent victim of this parasitic disease: the Eurasian beaver (*Castor fiber*). We will roughly conduct similar lab work as we did with the lynx samples and hope to shed more light on the disease in this big rodent.

I am looking forward to continuing my research at the FIWI and successfully completing my doctoral thesis eventually. Afterwards I will work to incorporate what I learned during my years at the FIWI into the field of wildlife medicine. I wish to gain more valuable experience with continued education in the realm of wildlife health.

STUDENT POSTER PRESENTATIONS WINNERS



Best Student Poster

Kayla Buhler based at University of Saskatchewan, Canada for her poster entitled: *"California sero-group viruses: Revealing the reservoir potential of cervids in Arctic and Subarctic ecosystems."*

Kayla:

I completed my undergraduate studies (biological sciences) at the University of Northern British Columbia and Simon Fraser University (Canada). After becoming interested in emerging diseases during a parasitology course, I went on to complete a MSc in infectious diseases at the University of London (UK). I am currently finishing my PhD in veterinary microbiology at the University of Saskatchewan (Western College of Veterinary Medicine, Canada).

My research focuses on zoonotic vector-borne pathogens. Our knowledge of these pathogens in northern Canada is extremely limited, and the data that we have in the literature dates back to the 1970's and 80's. Canada's Arctic is experiencing 3 times the rate of warming when compared to the global average, which sets the stage for rapid emergence of diseases that are influenced by temperature. Warming temperatures change insect activity, breeding and the rate at which they can transmit diseases. My research reveals the prevalence of these pathogens in wildlife across the Canadian Arctic and identifies how they are transmitted in their environment, two key factors that can be used in the future to monitor how climate change may influence disease transmission in the Arctic.

I am excited to start looking at how changes in biodiversity impacts disease transmission. Migration during the summer months significantly increases biodiversity in the Arctic and may have some interesting seasonal effects on the transmission of endemic pathogens.

I have no doubt that I will continue working in the field of wildlife health. Ideally, I hope to continue working with northern wildlife as a researcher in an academic or government position.



Student Poster - Honourable mention:

Laia Casades Martí is a PhD student based at Spanish Game & Wildlife Research Institute-IREC CSIC-UCLM-JCCM, Spain for her poster entitled *"Flavivirus infection of wild birds in a wildlife-livestock interaction gradient in continental Iberia."*

Laia:

I graduated with a bachelor's degree in Veterinary Medicine at the CEU-Cardenal Herrera University in Valencia (Spain) in 2016. The following year I did the master's degree in Basic and Applied Research in Hunting Resources at IREC (Instituto de Investigación en Recursos Cinegéticos, Universidad de Castilla-La Mancha) in Ciudad Real, Spain, where I am currently doing my PhD.

The main reason for choosing my job was my love for the countryside. We have carried out a large number of field days with a lot of work involving the interaction and management of wild species, as well as being surrounded by nature. In addition, among the different areas of veterinary medicine, emerging zoonoses are one of the topics that interest me the most, as well as the advancement of knowledge and the implementation of new control tools.

West Nile fever has been showing its face in Spain for years. We, the researchers, are aware of how silent this virus can be in terms of its expansion. For this reason, studies are being carried out that go hand in hand with the one we are presenting at the congress, involving all the species that participate in the transmission and development of this disease.

Much remains to be done in this field of research, not only with West Nile fever, but with mosquito-borne vector-borne diseases. So, right now, pursuing this line would be ideal for me.

Honestly, I don't know what the future will hold. I always say that I once heard a researcher in a thesis examining board say that "mosquitoes are one of man's worst future enemies", and I think so too. I do not rule out continuing in the world of vectors and their diseases, where I believe there is always work to be done, but I am not closed to new options and fields either.

Quarterly Wildlife Mortality Report *October 2021*

Written and compiled by members of the U.S. Geological Survey's National Wildlife Health Center.

Widespread mortality, illness, and eye-lesions in eastern songbirds, summer 2021

In May 2021, wildlife managers in Washington D.C., Maryland, Virginia, West Virginia, and Kentucky began receiving reports of sick, dying, and dead birds with eye swelling and crusty discharge, some of which also reportedly exhibited neurological behaviors. Initial reports were from the public and licensed wildlife rehabilitators. Additional reports were received in Delaware, New Jersey, Pennsylvania, Ohio, Indiana, Tennessee, and Connecticut. The majority of the initial reports involved fledgling common grackles (*Quiscalus quiscula*), blue jays (*Cyanocitta cristata*), European starlings (*Sturnus vulgaris*), and American robins (*Turdus migratorius*). Reports were also received in other states but it remains uncertain whether these were related or whether they represented typical mortality of common songbirds. Substantial media coverage of the event likely encouraged additional public reporting of sick and dead birds, but after additional investigation many jurisdictions found that only a subset of the reports were associated with the event. To date, no human health or domestic animal (livestock, poultry, or companion animal) issues have been documented.

Multiple diagnostic laboratories responded with investigations including the U.S. Geological Survey National Wildlife Health Center (NWHC), the University of Georgia [Southeastern Cooperative Wildlife Disease Study](#) (SCWDS), the University of Pennsylvania (UPenn) [Wildlife Futures Program](#), and the [Indiana Animal Disease Diagnostic Laboratory](#) (IADDL). The laboratories examined numerous carcasses, tissues, and forage items via necropsy, histopathology, virology, microbiology, parasitology, and toxicology. In addition to traditional techniques, transmitting electron microscopy (TEM) and metagenomics analyses were performed. Despite the exhaustive collective effort of the laboratories, no definitive cause(s) of illness or death have been determined at this time. However, the labs have collectively been able to rule out important diseases and pathogens including salmonellosis, chlamydiosis, avian influenza, West Nile virus, coronaviruses, Newcastle disease, herpesviruses, poxviruses, and Trichomonas parasites.

By mid-August, reports received in many of the affected jurisdictions decreased, likely signaling cessation of the event. In response, management agencies began modifying, and in many cases completely lifting, their previous guidance to the public to cease feeding backyard birds, but vigilance for any indication of songbird illness continued to be encouraged.

In addition to the co-operating laboratories, the following partner agencies were instrumental in compiling reports, sharing information, and collaborating to develop guidance for the public: : [Connecticut Department of Energy and Environmental Protection](#), [Delaware Department of Natural Resources and Environmental Control](#), [District of Columbia Department of Energy & Environment](#), [Indiana Department of Natural Resources](#), [Kentucky Department of Natural Resources](#), [Maryland Department of Natural Resources](#), [New Jersey Department of Environmental Protection](#), [Ohio Department of Natural Resources](#), [Pennsylvania Game Commission](#), [Tennessee Wildlife Resources Agency](#), [Virginia Department of Wildlife Resources](#), [West Virginia Division of Natural Resources](#), [National Park Service](#), [U.S. Fish and Wildlife Service](#), and the [Smithsonian Institution](#).



*A fledgling common grackle (*Quiscalus quiscula*) found in the Washington, D.C. metro region with swollen eyes and crusty discharge, a sign observed in many birds affected by the 2021 morbidity/mortality event in the area. (Credit: Leslie Frattaroli, National Park Service.)*

Coronavirus and bats: early susceptibility trials and low risk of spillover from biologists to bats

In spring of 2020, the U.S. Geological Survey (USGS) National Wildlife Health Center (NWHC) conducted an infection trial in big brown bats (*Eptesicus fuscus*) to assess the potential for this species to become infected with SARS-CoV-2. Study results indicated that this species is resistant to infection ([Hall et al. 2020](#)). To determine the potential susceptibility of other North American bat species, NWHC researchers continue to take a risk-based approach to designing additional experimental challenge studies, including examining the susceptibility of Mexican free-tailed bats (*Tadarida brasiliensis*) to SARS-CoV-2 in research that is currently underway. This species was selected because it resides in large colonies, often in urban settings, thereby increasing potential risk of exposure to the virus from infected humans. The reservoir potential of free-tailed bats for the virus is currently unknown.

Another study conducted by the USGS, in partnership with the U.S. Fish and Wildlife Service, indicates that the risk for scientists and wildlife managers to pass coronavirus to North American bats during winter research field activities is low ([Cook et al. 2021](#)). This study estimated transmission risk to at least one bat during a typical winter survey, which included a team of five scientists spending one hour in a cave colonized by 1,000 bats. Cook et al. took the current uncertainty surrounding the reservoir potential in North American bat species into account and estimated the overall risk to be 1 in 1,000 if no protective measures are taken. The risk falls, to 1 in 3,333 or less, with proper use of personal protective equipment or if scientists test negative for COVID-19 before beginning research.

Cook et al. focused on the winter season, when wildlife managers or scientists conduct field work that may require close contact with or direct handling of animals. This includes research on white-nose syndrome and population studies that support [Endangered Species Act](#) decisions. Three bat species were included in the analysis: Mexican free-tailed bats, big brown bats, and little brown bats (*Myotis lucifugus*). They were chosen because they have physical and behavioral differences and are typical of the types of bats studied in winter. Scientists considered different ways the virus could be transmitted between humans and bats, with airborne transmission as the main pathway. The authors did not examine potential transmission from bats to people.

This research builds on a USGS-led study published in 2020 that examined the likelihood of researchers transmitting SARS-CoV-2 of bats during summer research ([Runge et al. 2020](#)), which can involve different settings and activities than bat research conducted in the winter. The current assessments represent the best available information and additional research is needed to assess the susceptibility of North American bats, and other species, to new variants of the virus.

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Photo: Mexican Free-tailed Bat



Photo: California Newt

Mysterious illness and mortality in California newts in the years following the Woolsey fire

In May 2021, sick and dead adult California newts (*Taricha torosa*) were observed in the [Santa Monica Mountains National Recreation Area](#) with clinical signs including cloudy eyes and tail lesions. This is the second consecutive year that monitoring led by Pepperdine University and the U.S. Geological Survey (USGS) Western Ecological Research Center (WERC) has found newts in this condition. Some tail lesions were so severe that portions of the tail appeared to be rotting and falling off. When examined at the USGS National Wildlife Health Center (NWHC), the newts were consistently found to be emaciated. Unfortunately, the

cause of the cloudy eyes, tail lesions, and death remains undetermined. The NWHC recently highlighted the pathology and ongoing diagnostic investigation as a pathology case of the month.

The location where these newts occurred was affected by the [Woolsey Fire](#) in November of 2018 and is also subject to ongoing drought. Understanding disease dynamics possibly tied to consequences of the changing climate (fire and drought) in this landscape is important. Amphibians are among the most threatened taxa in the world, and North American Urodela (salamanders, newts, and related taxa) are also facing a severe risk from the exotic pathogen [Batrachochytrium salamandrivorans](#) (Bsal), with the Pacific coast representing one of the global hotspots for Urodela biodiversity. Neither Bsal nor any other chytridiomycosis was detected in these newts.

The NWHC performs expanded monitoring for amphibian diseases through a partnership with the USGS [Amphibian Research and Monitoring Initiative](#) (ARMI), and has done so for more than 20 years. This diagnostic investigation is funded by ARMI, and work done by the WERC and Pepperdine University is key to this ongoing investigation. Monitoring amphibians in the Santa Monica Mountains National Recre-

ation Area is part of the National Park Service Inventory and Monitoring Program and has taken place for 20 years. This program builds on monitoring of newts in southern California by Pepperdine University initiated in the 1990's. Amphibian monitoring on this landscape includes additional state and non-governmental partners. The detection of sick and dead newts in 2020 and 2021 via this collaborative monitoring program emphasizes the importance of long-term data in understanding health consequences potentially connected to the changing landscape that these species experience.

For additional information on the USGS National Wildlife Health Center see the following links:

- Main website: www.usgs.gov/nwhc.
- Disease Investigation Services: www.usgs.gov/nwhc/services.
- Report Mortality Events and Submit Specimens: www.usgs.gov/NWHC/submit.

To view, search, and download historic and ongoing wildlife morbidity and mortality event records nationwide visit the Wildlife Health Information Sharing Partnership event reporting system (WHISPer) online database: <http://whispers.usgs.gov/>



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