



# NEWSLETTER

January 2020

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## Meet the New “Shepherd of our Flock” – Peri Wolff

This month, Dr. Peregrine “Peri” L. Wolff, DVM, will take over as WDA’s Executive Manager.

Peregrine Wolff has worked with captive and free-ranging wildlife throughout her 30-year veterinary career. After receiving her DVM from Cornell University’s College of Veterinary Medicine in 1984 she spent 4 years as an associate veterinarian at the Lincoln Park Zoo in Chicago, IL. In 1988 she accepted the head veterinarian position at the Minnesota Zoo in Apple Valley, MN. In 1996 she traded snow for sand and moved to Orlando, FL as the veterinarian for the opening team of Disney’s Animal Kingdom. From 2000 to 2004 Peregrine ran her own business and worked in Southern California with animals in the entertainment industry before moving into the state fish and wildlife agency world. She is retiring as the veterinarian for the Nevada Department of Wildlife to assume her role as the Executive Manager of WDA.

As Nevada’s wildlife veterinarian, Peregrine was involved in mountain ungulate disease research and conservation programs. She worked with agency biologists, managers and veterinarians across western states and provinces to develop standardized handling and welfare and disease testing protocols as well as conduct hands-on trainings for capture,



handling, translocation and disease investigation not only in wild sheep but also in desert tortoises.

Passionate about sharing her knowledge and advancing the field of conservation, wildlife medicine and welfare she has taught students and colleagues around the globe and volunteered her leadership skills and experience for numerous

organizations and committees. She is a past president of the American Association of Wildlife Veterinarian and the American Association of Zoo Veterinarians. She chaired the Environmental Issues committee for the American Veterinary Medical Association and is past chair of the US Animal Health Associations Committee on Captive Wildlife and Alternative Livestock and current chair of the Committee on Wildlife. She has served as Secretary for the WDA and was on the host committee for the 2009 International meeting in Blaine, WA. In 2015 she was invited to serve on the Board of the Wild Sheep Foundation, an international conservation and hunting organization. She is the current vice-chair of the Board of Directors and serves on several committees including the 1 Campfire Initiative which works to bring hunters and non-hunters together to create one voice for the benefit of wildlife and wild places.

# “SHEPHERD OF OUR FLOCK”

To find out more about how she has accomplished all of this, and for us to all get to know her a bit more, I asked a few questions:

## ***How did you get into wildlife veterinary medicine?***

I was working in Los Angeles with movie and TV animal stars, riding the wave of the Alpaca craze and earning the title of second-best pot-belly pig veterinarian in the country (talk about prestige). This was fun, but I was missing a connection to conservation. Luckily, “Bird flu” was the disease du jour and the US government had a big budget to support surveillance efforts along the major waterfowl flyways. The state wildlife agencies had money, but no capacity and the Oregon Department of Fish and Wildlife was looking for someone to run their Avian Influenza Surveillance program. I guess they felt that if I could perform an ovariectomy on a pig, I could certainly swab a duck’s butt, so they hired me. When the Nevada Department of Wildlife job opened a few years later I decided I needed to move to the sunshine and the opportunity to build a wildlife health program.

## ***What made you make the switch from zoo medicine to wildlife medicine?***

I have always loved wildlife. Growing up my family always fed birds in the winter and I remember being amazed when we would have 50 + evening grosbeaks come to the feeders along with chickadees and nuthatches at the suet. Our house backed up to a wooded hill and that was my playground. When I was 10, we moved to Germany while my dad was on sabbatical and I went to my first zoo. I became infatuated with great apes, knew the life stories of all the chimps and orangutans at the Berlin zoo and told my parents I wanted to marry an orangutan (my ex-husband is a red head).

This sent me down the zoo road, but I was always in awe to see zoo animals in the wild, the beauty of their unconstrained movement, and that they had the option to disappear from site and how lucky I was to have seen them even for a moment. Once at the Oregon Department of Wildlife I knew that I wanted to stay in wildlife and wildlife medicine.

## ***What did you do to get where you are today?***

I took the standard path of college followed by vet school. I did a senior year externship at the Lincoln Park Zoo in Chicago, IL which turned into a 1-year informal post graduate internship and then my first job as their associate veterinarian. I think that all the jobs I have had I got by being in the right place at the right time, having colleagues and mentors that believed in me and that I am incredibly lucky.



I’m not brilliant, but I’m personable, willing to work hard and generally go with the flow.

## ***When did you become involved with WDA and what do you like most about it?***

I have been a WDA member throughout my career, but the first meeting I attended was at Estes Park in Colorado. I helped with the Semiahmoo meeting in Blaine Washington in

2009 and then served as secretary for three years. My favorite things about WDA are the three words I chose for the word cloud exercise that we did at the 2019 meeting, inclusivity, comradery and excellence. Anyone who is passionate about wildlife health and conservation is welcomed, we care about and help each other and the science that is generated is world class.



### ***What inspired you to become the Executive Manager of WDA?***

As usual I was in the right place at the right time. I have always wanted a job that I could do from anywhere and I was in the position where I could retire from the Nevada Department of Wildlife, and here was an opportunity to be part of this amazing organization, what job could possibly be better?

### ***What are you most looking forward to in your new position as Executive Manager of WDA?***

I'm excited to get to know more of the membership, especially in the Sections. I want to learn how WDA can help them become or continue to be successful at promoting engagement in wildlife health within their own regions or areas of professional expertise.

### ***What are your hopes for the future of WDA? Is there something specific you would like to see happen or a particular direction you would like the organization to move?***

Under Dave's tenure WDA achieved endowment of the Journal which is an amazing accomplishment. We are now embarking on strategic planning with identified areas of focus

from the Futures Committee. One such area is to explore whether our name conveys what we do. When I tell people I'm the wildlife vet for Nevada they usually reply "oh, I bet that's a cool job" when I let people know what my new job is, they sometimes look at me blankly. I want them to ask, "wow, what does that organization do?" and I want to share the stories of our members who are working globally for wildlife health and conservation. I would also love to have every member, especially young women, have the skills and confidence to convey the importance of the science they do to any audience. We need more voices in all arenas advocating for wildlife and wild places.

### ***Are you for or against animal puns using your name?***

When I worked at Lincoln Park Zoo, I called the Board of Veterinary Medicine to ask a question. The secretary routed me to the correct person who answered the phone with barks and howls. After I introduced myself, he sheepishly admitted that he thought it was my boss calling who had made up my name as a joke. April Fool's Day was always fun as when people called the zoo to speak to Mr. Wolf, naturally they were forwarded to me. So, I'm totally for animal puns using my name.



# CANADIAN WILDLIFE HEALTH COOPERATIVE

An In-depth Look at a Productive Wildlife Organization.



Sarah Sirica

Around the world, there are many individuals and organizations working to advance wildlife health and conservation, but it is particularly impressive when individuals join together to form an advanced network to combine efforts and objectively have a greater impact. The Canadian Wildlife Health Cooperative (CWHC) is an example of such an organization, and I recently spoke with Patrick Zimmer, CWHC's Chief Operations Officer, to learn more about the ins and out of the CWHC, and what they have been working on most recently.

Mr Zimmer started by saying that the cooperative was established not as a response to a request, but rather to fill a neglected need for Canada. The mission statement is "To promote and protect the health of wildlife and Canadians through leadership, partnership, investigation and action." Their [website](#) also wants you to know that "The CWHC is dedicated to generating knowledge needed to assess and manage wildlife health and working with others to ensure that knowledge gets put to use in a timely fashion."

The CWHC was founded in 1992; it can be described as a partnership which links Canada's five veterinary schools and the British Columbia Animal Health Centre. Think of this partnership as a core, with branches from it into both private and public sectors of wildlife health. Within this arrangement are various individuals with expertise in wildlife disease, population health, education, and policy advisement. The organization has expanded and evolved since it's beginning by

keeping the same central units and expanding into new nodes or networks, enabling the CWHC's Pan-Canadian approach to wildlife health; and, as their website explains, "allows us to access critical expertise needed to detect and assess wildlife health issues and make sure our results find their way to people who need to make decisions on wildlife management, wildlife use, public health and agriculture."

The CWHC National Office in Saskatchewan is the organization's headquarters, and the headwaters from which strategy development, facilitation of national plans, coordination of national and international programs, and general governance are produced. Mr Zimmer is the National Office Director of the CWHC and a Professional Associate at the Western College of Veterinary Medicine, University of Saskatchewan.

Branching off from the National Office are regional centers at British Columbia, Alberta, Western/Northern, Ontario/Nunavut, Quebec, and Atlantic. Each center serves a specific geographic territory and has its own goals and plans in addition to collaborating with the entire CWHC. You can learn more about the individual centers here: [http://www.cwhc-rcsf.ca/canadas\\_regional\\_centres.php](http://www.cwhc-rcsf.ca/canadas_regional_centres.php)

The CWHC has an extensive social media presence, and its outreach into the community of scientists and the general public is profound. They have a [Facebook](#) page, [Twitter](#), [Instagram](#), [YouTube](#) channel, and a [blog](#), in addition to having a beautifully formatted and accessible [website](#). There

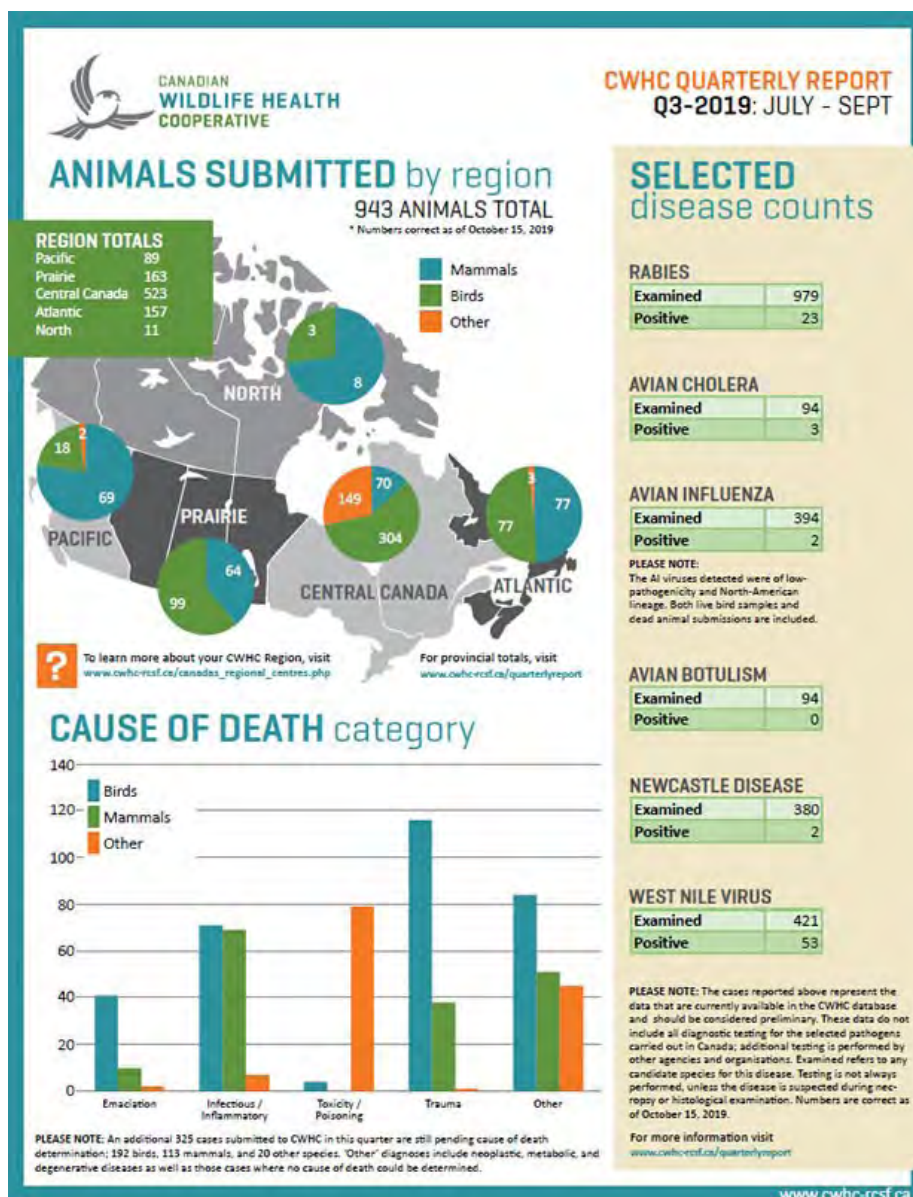
# CANADIAN WILDLIFE HEALTH COOPERATIVE

are videos, charts, and graphics to explain everything they are involved in, from their broad surveillance of wildlife disease, to current events, to fact sheets on a variety of topics. Much of their content is already available in both English and French, and the fact sheets are reviewed frequently. This not only educates the general public, but builds a relationship and trust between the public and the vast network of scientists who are a part of the CWHC. Currently the CWHC is working on a complete update of the website content, and

it will be launched within the next year.

On the website, you can also find annual and quarterly reports, which detail what the organization has been working on as well as management and policy details. The annual reports not only go over health data, but re-define their goals and how they are meeting them – financially, scientifically, etc. The most recently published annual report begins with introductions by CWHC's chief executive officer, Craig Stephen, and the

COO, Patrick Zimmer. Then there is a brief but informative section on disease surveillance across the country, including new reports of important wildlife diseases. This is followed by an in-depth evaluation of CWHC performance standards and how it has met the targets associated with those standards. There is a list of WHIP-enabled projects, a summary of several health assessment projects, relevant news, and some case study information on hot topics like CWD. Throughout the report, it is obvious that they take a holistic approach to their reporting – with concerns about human health and culture as seriously as the diseases that are being studied and managed. To read more and access the annual reports in particular, see the web page: [http://www.cwhc-rcsf.ca/annual\\_reports.php](http://www.cwhc-rcsf.ca/annual_reports.php)



One of the most valuable program features at CWHC is WHIP. WHIP stands for Wildlife Health Intelligence Platform, and it is a centralized national database where wildlife health professionals store and access their own data, and are able to view similar data across Canada. The data processed in WHIP includes diagnostic and testing data as well as incorporating observational data, such as that from citizen science sources. This means the program can process both lists of diagnostic results, climate data, and even twitter data all on the same platform. WHIP was designed in-house at CWHC with their own programmers. The input comes from various regions in Canada, and it is used in house and by partners such as provincial and territorial government entities. WHIP is also used internationally by groups who pay for the platform and use it on their own data sets. It is paid for through their own CWHC operations, with much of the funding derived from partners, primarily government, then with grants, such as Agriculture Canada and Agri-food Canada, who helped fund the development of the latest iteration. According to Mr Zimmer, this new WHIP will allow the CWHC to grow its reputation as the international standard for national wildlife health programs.

The CWHC is known widely for its work on citizen science with trichomoniasis and large surveillance programs for CWD and being a go-to place for hunters to find updated information on this rapidly spreading disease. These are just two of many, many projects being undertaken. Additionally, the Vancouver Rat Project started as a graduate project out of the CWHC and has developed into a prolific research group, from which one of the PhD students, Kaylee Byers, was



granted two student awards at the recent WDA International Conference.

I asked Mr Zimmer about other projects that are less well-known, and he mentioned several. There is a habitat stewardship project involving bats which is set to be a “good news story” focusing on success and recovery; it will involve four provinces, and include broad input from pest control officers and government officials. There is also a new project on wild boar which is a contracted project from the federal government about what to do with pockets of unowned pig populations, they are in the first year of a three year undertaking. Lastly, there is another federal project in the works on plastic contamination in the environment, and how to develop capacity to monitor concentrations of plastic in various places in the environment.

There are surely many ways to operate a wildlife health research organization, but the Canadian Wildlife Health Cooperative appears to be doing a great job of balancing everything that we must consider as we enter the second decade of the 21st century. For more information, please visit one of their many busy social media pages, or the main website at <http://www.cwhc-rcsf.ca/index.php>.

# American College of Zoological Medicine (ACZM) Seeks Increased Participation by Veterinarians Working in Wildlife Population Health Management



An *ad hoc* committee that includes many of ACZM's wildlife veterinarians was established in late 2018 by Kay Backues, ACZM President, and charged with providing a comprehensive review of what the College needs to do to be more relevant to veterinarians and organizations focused on the health, management and conservation of free-ranging wildlife. The *ad hoc* Committee's report (<https://www.wildlifedisease.org/wda/OUTREACH.aspx>) was presented to, and discussed by, ACZM members who attended the annual business meeting held in St. Louis, MO in late September, 2019. The members of the ACZM *ad hoc* Wildlife Committee are: Sharon Deem, Mark Drew, Kirsten Gilardi, Sonia Hernandez, Dave Jessup, Stephane Lair, Kay Mehren, Dan Mulcahy, Robin Radcliffe, and Jonathan Sleeman, with Doug Whiteside, ACZM Secretary, serving as an ex-officio member.

Significant findings in the report include:

1) The mission of the ACZM, which includes emphasis on the "principles of ecology, conservation and veterinary medicine" for "free-ranging wildlife populations," is not well served without significantly increased wildlife participation. There are a number of ways ACZM could further its mission and the original vision for the College with regard to emphasis on, and inclusion of, wildlife population health management (see full report for details)

2) The College has expanded significantly over the last 2 decades, largely in the General Zoo and Zoological Companion Animal areas,

but an increase in members focused on free-ranging wildlife population health management has not occurred. Consequently, there are very few College members focused on free-ranging wildlife.

3) The committee recommends that addressing the lack of candidates sitting for the wildlife specialty should be a priority for the college and, that if ACZM board certification is not made more attractive and relevant to veterinarians working in free-ranging wildlife population health management, this discipline will likely disappear from the College.

4) Major impediments to wildlife candidates are the lack of formal training (residency) programs focused on free-ranging wildlife populations, lack of wildlife organizations that recognize the specialty, and some cumbersome challenges that wildlife veterinarians face trying to credential via the 'experiential pathway' for ACZM certification.

5) It is apparent that a large number of veterinarians who work on free-ranging wildlife population health management are unaware of the ACZM, its scope, mission and purpose. Addressing this will require increased ACZM outreach and cooperation with veterinarians working in this field, and the state and federal wildlife agencies that employ many of them. In the future the ACZM *ad hoc* Wildlife Committee will work with WDA, AAWV, TWS and other organizations to mentor and encourage veterinarians who wish to be recognized by ACZM for expertise in wildlife zoological medicine.

The ACZM leadership has asked the *ad hoc* Wildlife Committee to continue its work and assist with implementing the recommendations of the report, recognizing some will be relatively easy to accomplish, others more difficult, and still others may require ACZM ByLaws changes or membership approval. The wildlife committee is active and now working on priority recommendations.

Wildlife veterinarians who might consider ACZM board certification a desirable means of furthering their knowledge base and professional advancement are encouraged to follow ACZM's progress. To learn more, visit the ACZM website (<https://www.aczm.org/>) or contact one of the *ad hoc* Wildlife Committee members.

## APPLICATIONS WELCOME FOR WDA STUDENTS AWARD COMPETITION 2020

(<http://www.wildlifedisease.org/wda/STUDENTS/StudentAwards.aspx>)

The WDA offers a research recognition award, and two scholarship awards in addition to a number of presentation and poster awards at the annual international WDA conference.

The aim of these awards is to recognize outstanding student research and scholarship in the field of wildlife health, and to encourage student participation in the Association and attendance at our annual international conference.

**Applications for the WDA Student** research recognition award and two scholarship awards are **due Friday, February 28th, 2020**. Applicants for all WDA Student Awards must be [eligible students](#) AND [members of the WDA](#).

Questions? Contact Tiggy Grillo, Co-Chair of the WDA Student Awards Committee:  
[tgrillo@wildlifehealthaustralia.com.au](mailto:tgrillo@wildlifehealthaustralia.com.au)



# WILDLIFE DISEASE ASSOCIATION ENDOWS JOURNAL



## JOURNAL OF WILDLIFE DISEASES

Joe Gaydos and Mike Ziccardi

After eight years of hard work, the Wildlife Disease Association has reached our endowment goal of \$3 million. In a time where science is moving towards open access, library fees for journal subscriptions are dropping, and the inequity preventing scientists and managers in developing countries from accessing information and publishing data that are important for wildlife health, endowing the Journal of Wildlife Diseases might be one of the biggest WDA accomplishments ever.

Without ever touching the \$3 million endowment principal, the WDA will use the 4-6% annual interest from the fund to help ensure, in perpetuity, the publication of the Journal of Wildlife Diseases. The 4-6% return from the endowment will help by offsetting some of the editorial costs, it will help us continue to provide free access to the journal for colleagues, and could help free up funds to reduce page charges for scientists in the 2/3rds of nations with lower per capita GDP – the places where conservation and health challenges are most severe but the ability to pay for access to science the most challenging.

At the 2019 WDA meeting, it was announced that the Endowment of the Journal of Wildlife Diseases and its world-wide distribution in lower income countries will be named in honor of David A. Jessup. Dave was the visionary that not only helped convince the WDA that this endowment was needed, but he also was the person that really kept progress on the endowment moving over the last eight years. Thank you Dave! Other important people who invested heavily include past and present WDA Endowment Committee Members (Joe Gaydos and Anne Fairbrother - current and past Chairs, Patti Bright, Bieneke Bron, Tom DeLiberto, Colin Gillin, Julie Langenberg, Jonna Mazet, Mike Miller, Torsten Morner, and Tom Yuill). We also thank the sponsoring organizations that invested (American Association of Wildlife Veterinarians, International Wildlife Veterinary Services, United States Department of Agriculture, and the Wildlife Conservation Society), as well as the 221 WDA members and one very special anonymous donor who contributed to the endowment. Please look over the honor roll below and next time you see these folks, thank them for their wisdom in making an investment in wildlife health that will last in perpetuity – the David Jessup *Journal of Wildlife Diseases* Endowment Fund.

### Thank you for investing in the

**David Jessup *Journal of Wildlife Diseases* Endowment Fund** Donors giving cumulative gifts totaling...

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# WILDLIFE DISEASE ASSOCIATION ENDOWS JOURNAL

American Association of Wildlife Veterinarians,  
International Wildlife Veterinary Services,  
United States Department of Agriculture,  
and the Wildlife Conservation Society

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# AWARDS COMMITTEE CALL FOR NOMINATIONS 2020

**The WDA Awards Committee is seeking nominations for recipients for two WDA awards to be presented at the 2020 annual meeting. The names and purposes of these awards are:**

- a) The Ed Addison Distinguished Service Award is the highest award of the Wildlife Disease Association. Its purpose is to honor a WDA member of long standing who, by his/her outstanding accomplishments in research, teaching, and other activities, including participation in WDA affairs, has made a noteworthy contribution furthering the aims of the WDA.
- b) The Emeritus Award: Emeritus status is an honorary category of membership awarded by Council to members of the WDA who have retired from their profession and who, in the opinion of Council, have contributed significantly to the study of wildlife diseases. Emeritus Award recipients are full voting members who receive the Journal of Wildlife Diseases without further payment of dues.

These awards are the way the membership recognizes and encourages those WDA members who have “gone the extra mile” to support and contribute to WDA and its goals. Although the award need not be presented every year, we strongly encourage you to consider nominating potential recipients that you believe are deserving. The closing date for receipt of nominations by the Awards Committee is March 15th, 2020. But please don’t wait until the last minute.

## **Documentation should include the following for each nomination:**

- a) Letter of nomination that will specifically address the selection criteria for the specific award that are not otherwise represented in the candidate’s CV. Criteria will include:
  - 1. Ed Addison Award:
    - a. Long-standing member of WDA.
    - b. Demonstrated significant contributions to the field of wildlife disease research or management.
    - c. Significant contributions to WDA
  - 2. Emeritus Award:
    - a. Candidate must be retired.
    - b. Demonstrated significant contributions to the field of wildlife disease research or management throughout career.
- b) Curriculum vitae or equivalent.

Please email nominations and documentation to the Chair of the WDA Awards Committee, Jim Mills ([WildlifeDisease@gmail.com](mailto:WildlifeDisease@gmail.com)).

# AWARDS COMMITTEE CALL FOR NOMINATIONS 2020

## **Additionally, Nominations are being taken for the Tom Thorne and Beth Williams Memorial Award:**

Tom Thorne and Beth Williams were highly influential and revered members of the WDA. Their dedication to wildlife health and conservation, many contributions to WDA, mentorship, scientific acumen, and friendship and love of life were an inspiration to all. Their tragic death in 2004 left a huge void in the WDA. To help commemorate their lives and contributions to WDA and AAWV, an award was created in their name. The award is presented in acknowledgement of either an exemplary contribution or achievement combining wildlife disease research with wildlife management policy implementation or elucidating particularly significant problems in wildlife health.

Nominations are due March 1 2020.

Please include:

- a) Nominee's name
- b) Affiliation
- c) Brief biographical history or a copy of their curriculum vitae (not to exceed 3 pages)
- d) A description which specifically addresses/describes the nominee's contribution to the following criteria:
  - a. Has provided an exemplary contribution or achievement to wildlife disease research which has resulted in the implementation of, or a significant change to, wildlife management policy
  - b. Has elucidated or substantively increased our knowledge of a particularly significant problem in wildlife health

Please email nominations and documentation to the WDA and AAWV Presidents: Carlos das Neves [president@wildlifedisease.org](mailto:president@wildlifedisease.org), and Tom DeLiberto [tjdeliberto@aawv.net](mailto:tjdeliberto@aawv.net)

*[Editors Note- The following is a transcript from the 2019 WDA Conference in Lake Tahoe, CA, where Dr Pete Morkel was invited to give the Al Franzman Memorial Presentation.]*

Good Morning Everyone,

It's a great honour to have been asked to give Al Franzmann Memorial Lecture. Al was a friend. He was also a gentleman, a pioneer and an inspiration to many of us in the wildlife veterinary field.

I qualified in 1984 and I've spent the last 30 odd years catching Africa's larger wildlife species and I have worked in 25 countries across the continent.

Much as I would enjoy telling you some stories about catching animals, I'm going to give you my thoughts on how I think us wildlife veterinarians can potentially make the most difference in saving Africa's magnificent wildlife and biodiversity in these desperate times. Many of you will have much better ideas than I have to offer but what I do know is that we will need to act now and with vigour if we want to make a worthwhile difference. It really is the eleventh hour and if we don't get the world's environment back on the right trajectory in the next ten years things will start to unravel rapidly and humanity's future might even be at stake.

My work in Africa and all the travelling that goes with it has given me an excellent opportunity to see the pressures on its environment - and the situation is a lot more dire than most people realize - and it's fast getting worse. There is a myriad of reasons for this sad state of affairs but three things stand out for me:



poor governance, Africa's exploding human population and climate change

I'm going to go off at a bit of a tangent here

to mention some work I did earlier in the year that got me fired up on the subject of trying to make a difference. In April we drove around a large part of southern Chad collaring elephant in remnant groups. And it was a picture of desperate poverty, a ramshackle infrastructure, a severely degraded environment and harassed elephants running from pillar to post in a sea of people. And then in May I was in Texas getting up to speed

on translocating dama gazelle (which once numbered in the millions across a huge swath of the Sahara from the Atlantic to the Nile and are now almost extinct in the wild – all that remains are a small number of inbred, captive animals, mostly in the US). Coming from Africa, Texas was a picture of wealth, awesome infrastructure, good governance - and the world's natural resources being wasted on monumental scale – and I'm still not sure if what I saw in Chad or what I saw in Texas frightened me the most.

Anyway, back to poor governance. All I will say is it does not have to be as bad as it is and Africa can be a success as countries like Rwanda have shown. We have the people, and Africa has the resources, but what we sorely lack is strong, selfless leadership. And on leadership it needs to be said that Africa

# THE FUTURE IS NOW

should be making much better use of its women. Where they have had the good luck to be educated and empowered and brought into government, the results have inevitably been good.

And on population, Africa's demographic explosion is a crisis of global concern. The continent currently has more than 1.3 billion people and this will double by 2050 and almost double again by the end of this century to more than 4 billion. The implications for Africa and its people and environment are terrifying if one considers the current challenges it already faces with poverty, hunger, poor health, lack of education and infrastructure, unemployment, crime, corruption, urban squalor, pollution, civil unrest and war.

Putting the brake on population growth is not a priority for most African governments, and providing women with the means to control their fertility is sorely neglected, and frequently they are even under pressure not to use contraception. President John Magufuli of Tanzania last year told his people there is no need for birth control and outsiders who promote it are giving bad advice and those who use birth control do so because they don't want to work hard and feed a large family. Tanzania has places like the Serengeti, Kilimanjaro, Ngorongoro, Lake Manyara, Tarangire, Mahale, Selous, Ruaha and much more and it has the most stunning wildlife on our continent and probably in the world. 25% of the country's GDP is generated from tourism which is the country's leading foreign currency earner and the industry employs about 1.2 million people. Tanzania currently has a population of 60 million people and with a 3.1% growth rate and an average of more than 5 children per woman this is projected to increase to almost

300 million people by the end of this century and it will be the 9th most populous country on the planet. It is frankly inconceivable that there will be place for so many people in Tanzania, let alone place for wildlife – and this scenario applies to most countries in sub-Saharan Africa.

And on climate change, Africa's been dealt a particularly cruel hand. She generates only 4% of the world's CO2 emissions as compared to 25% from the USA and yet Africa is experiencing some of its worst effects. It is estimated that by 2100 climate change could result in Africa losing more than half of its bird and mammal species. We are currently feeling climate change particularly hard in Namibia where we live. The country is on its knees from a lack of rain and it's terrible to see the harm done to the environment and people's livelihoods being destroyed.

Africa's environment as a whole is being devastated. It's losing its forests faster than anywhere else, its bushlands are being cleared for agriculture and charcoal, its grasslands are being overgrazed and degraded by livestock, its soils are being impoverished and eroded by poor agricultural practices and its deserts are growing rapidly. Its rivers are being polluted and are drying up, it's more prone to droughts and floods and it is fast losing its incomparable wildlife and the habitat it needs to survive. Numbers of large mammals have plummeted over the last few decades and numerous species and subspecies are on the edge of extinction or have already gone and I've seen some of this happen.

In 1997 in Cameroon we immobilized what was probably the last West African black rhinoceros, and four months later it was poached.

In the 1990's we put VHF transmitters and collars on sixteen northern white rhinos in Garamba National Park in the Democratic Republic of Congo and by 2006 that last remaining wild population had been wiped out. A year ago, the very last northern white rhino male, Sudan, who we had moved to Kenya from a zoo in the Czech Republic in 2009, died and now, only two northern white rhino females, a mother and daughter remain.

There used to be millions of forest elephant in Africa but they have been hunted relentlessly by man for their ivory and there are now less than 60 000 left and their numbers continue to drop at about 10% a year. I have spent much of my time over the last few years collaring forest elephant in Gabon, Republic of Congo and the Central African Republic and many of those have been poached, often within weeks of us collaring them. It's an enormous wildlife disaster that's happening out of sight and almost ignored by the media.

And I have just come from Angola where we were collaring giant sable. Before the civil war there were a few thousand but much of the fighting between the UNITA guerrilla movement and the MPLA government took place in the prime habitat of the sable and in those desperate times this magnificent animal was just meat for hungry soldiers and by the time Jonas Savimbi was killed and the war stopped it was feared extinct. Incredibly a handful



survived, and although poaching remains a big challenge, the national animal of Angola with adequate protection might still survive into the future.

So, the bottom-line is: Africa's not in great shape and what can us wildlife veterinarians can do about it? How can we make a real difference? Before we get to that we need to remind ourselves that we are all in this together and that our beautiful little planet belongs to us all and we breathe the same air and use the same water and Africa's problems as much need your help as some of the environmental

challenges in the United States deserve our attention.

I feel wildlife veterinarians are well positioned to make a big difference in the trying times which lie ahead. Our qualification gives us a broad biological understanding, we

work in places few other professionals get to and we interact with a remarkable diversity of people and livelihoods. To succeed we will need to be inclusive with whom we work with and pragmatic in making the best of a fast changing and less than perfect world and be prepared to think big and work out outside our traditional roles as veterinarians. We will also need to expand our expertise beyond the biological field to economic, political, social and cultural domains and it will require us to collaborate with people from other disciplines.

So, what can we actually do to improve

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the situation? To a large extent us wildlife veterinarians in Africa must keep on doing what we are already doing but in addition we need to become more active outside our traditional roles and become powerful advocates for change. Of course, to have an impact outside our traditional roles we will need to broaden our skills – to know things like ecology, wildlife management and protection, hydrology, human wildlife conflict, conservation education, soil science, waste management, financing and perhaps even things like human family planning? Formal training is great but

otherwise one can pick some of these skills on the trot and the internet is awesome for this. Thinking of my own career, for six years I ran a black rhino project for a conservation NGO at Ngorongoro



Crater in Tanzania and besides wildlife veterinary work I was involved in things like ecological support, wildlife monitoring and protection, pasture and water management, removal of alien vegetation, livestock health, roads and infrastructure development and vehicle maintenance. Much of what I did was not veterinary science but all of it helped care for a wonderful wildlife area under great pressure.

The other day I was talking to a British woman working for an NGO which tries to alleviate poverty and environmental degradation in various countries. They wanted to help a community adjacent to a national park but

instead of assuming that a clinic or school is what the community needed they asked the people and somewhat to their surprise veterinary support for their livestock was requested. One of the women in the community said if she loses a child it's not the end of the world as she can produce another in nine months but should her family lose the cow that provides them with milk it would be an absolute disaster. On the back of this the NGO provided veterinary support and the community thrived and it was hugely positive for the national park it surrounded.

This well illustrates the importance of livestock; but of course livestock is also one of the main causes of environmental degradation across Africa and fewer animals which are healthier, more fertile and more

productive is what's needed and if we want to make a big difference for the environment we would be wise to be competent in livestock medicine and management and get more involved in this work. The goodwill engendered from helping communities with their livestock is invaluable in gaining support for protecting wildlife areas and for mitigating human wildlife conflict. And it's not just livestock which needs our attention. Vaccinating domestic dogs belonging to communities for diseases like rabies and distemper can be essential in preventing devastating outbreaks in wild carnivores. Neutering dogs and cats is equally important. Feral dogs and cats transmit



diseases, kill wildlife and dogs can hybridize with the Ethiopian wolf and cats with the African wild cat. Of course, in supporting communities and farmers we should always look for the most environmentally sensitive intervention. For example, oxpecker friendly acaricides should be used if chemical control of ticks is indeed necessary.

I mentioned earlier that to a large extent it's all about people. What's new?! Clearly much of what is needed to turn things around for Africa's wildlife and environment happens in the socio-political arena. This is not a space most of us wildlife veterinarians spend much time in but we'd better get comfortable and be prepared to work on some mind-sets and cultural norms. Dangerous ground of course and we will have to proceed with caution but we don't have an alternative. With sensitivity we must educate, influence and motivate people to do the right thing, particularly those in power and we should identify and assist exceptional individuals and champion causes that deserve support.

Before I go any further in the socio-political front, I think special mention needs to be made of Human Wildlife Conflict. Many of us are already involved in Human Wildlife Conflict in some way or other, and with the demographic explosion happening in Africa and the rapid loss of wildlife habitat, human wildlife conflict is going to greatly increase, as will our involvement, and we will have to come up with clever practical solutions using our veterinary, biological, technical and human skills. It's going to be a tough one and we'd better come up with some innovative solutions!

A few veterinarians have felt so strongly about the need for change that they've got involved in politics and one of our top wildlife veterinarians in Africa even became a government minister.

Influence like that is rare but we must still try to get the ear of people at the top. Our wildlife work attracts the media and we frequently rub shoulders with the wealthy and influential and we shouldn't hesitate to interact with them. Too often they are not well informed or are only fed one side of the story and we can give them the true picture and direct their enthusiasm in the right direction. A few years back I was asked to show Prince Harry around Namibia for two weeks and I took the opportunity to introduce him to the CEO of [African Parks](#) and three years later [Prince Harry](#) is the president of this exceptional NGO and he is now helping them to move things briskly forward for conservation across the continent.

So, let's try to get the ear of the wealthy and influential but we must not forget the ordinary people and we should use every opportunity to inspire them to care for the environment. Time and again it's been passionate ordinary people who have turned things around for species and wildlife areas. And those of us who speak eloquently please stand up and spread the message and those who can write please get to work. We have colleagues like [Mike Kock](#) and [Billy Karesh](#) who have written wonderful inspiring books explaining who us wildlife veterinarians are and what we do and the pressing need to save our planet's wildlife and biodiversity.

And in getting the message out let's cultivate many more passionate conservationists. People prepared to go to the end of the earth to save our beautiful, beleaguered planet. We desperately need more in Africa and let's start with the young folk and fire them up. The other day I spoke to Ian Parsons, a wildlife veterinarian in Zambia, and every year he puts time aside to take a group of kids on a field trip

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to do just that and he's been doing it for twenty-five years now. What a splendid example and we should all do the same.

It was Gandhi who said "be the change you want to see" and in our daily activities we should be role models of how to do it right and we should live simply and sensitively in our environment. I love the phrase "touch the earth lightly". It's just not good enough to say you are passionate about saving the rhino but then drive a great big gas-guzzling pickup or fill your shopping trolley with non-reusable plastic. Our western consumptive philosophy is destroying the planet and it is time for a radical change in mindset. We just cannot continue to rape the earth for natural resources at the current level and much of the damage done to the environment in Africa is because of this insatiable demand for resources from outside the continent.

And while on people let's not forget the pressing need to train, mentor and inspire wildlife veterinarians across Africa. And let me repeat mentor and inspire. Training alone is inadequate. Wildlife veterinarians who are not zealous, almost fanatical, are, in my opinion, doomed. There are some keen young veterinarians out there chomping at the bit and with the right help and resources they can become most productive. A good example of the sort of training that's needed



is the excellent [wildlife capture course](#) held in Zimbabwe which has been going for many years now and it's been invaluable for veterinarians starting a career in wildlife. And on mentoring young veterinarians in Africa I can't speak too highly of people like Michele Miller and Mike Cranfield. These remarkable Americans have done awesome job and we could do with more like them. And not only can us veterinarians help and mentor our younger

veterinary colleagues but frequently in Africa we are well positioned to help people in other occupations who are caring for the environment - ecologists, wildlife managers, rangers and the like, and where we can't help them directly, it is usually little trouble to put them in contact with the right people and sometimes even help them find funding.

Let's move onto the holistic concept of one health. It's not new but over the last twenty odd years the importance of viewing human health as integral with the health of domestic and wild animals and the health of environment as a whole has really come to the fore and veterinarians have been taking the lead. This collaborative, transdisciplinary approach is essential as most human diseases have a zoonotic origin and many of the most feared emerging diseases originate from Africa, especially the forests of the Congo Basin.

As Africa's population rockets and there is closer contact between people, and between people and domestic and wild animals, the risks of major, and possibly uncontrollable, disease epidemics soar. The current Ebola Crisis in the eastern Congo is a good case in point. And here I must add Africa has the fastest urbanization rate in the world and by 2030 more than fifty percent of its people will be living in cities. Increasingly people are also encroaching into Africa's wildlife habitat and it is being destroyed and fragmented and biodiversity is rapidly being lost. There is also greater potential for human and domestic animal contact with wildlife pathogens and for pathogens to jump species and to evolve and to be easily transported to new areas. Besides using our veterinary knowledge to understand, prevent and control the diseases of people, domestic and wild animals we must use our strong position on the One Health platform, and the money and political clout that comes with it, to achieve things that might otherwise be impossible. Let us use the opportunity to push for greater environmental integrity and the need to maintain large functional ecosystems and minimize biodiversity loss.

Our broad foundation in general biology gives us the potential to think systematically about conservation problems and we should stand back and identify underlying causes and effects rather than just focusing on solutions to obvious symptoms. Ecology, like physiology, is a complex system that changes over time but relies heavily on some degree of homeostasis. The One Health approach is "systems thinking" and it's not surprising veterinarians are the ones promoting this philosophy and if we want to make a significant difference in conserving

African wildlife and biodiversity, we must become better systems thinkers.

27 of the world's 28 poorest countries in the world are found in sub-Saharan Africa and more than 60% of its rural population is directly dependent on the natural environment and its services for survival – the most of any continent - and environmental degradation is one of the major reasons for this poverty. For human wellbeing alone it's essential we try to maintain functional, healthy ecosystems and where they've been damaged, to restore them and us wildlife veterinarians can play a big part in this. Most of my career has been spent doing just that, reintroducing wildlife to areas where they have been wiped out. In addition, us wildlife veterinarians need to support ways to create employment, generate money and provide other benefits from the environment in a sensitive and sustainable way. And as importantly, we must also try to ensure that a fair share of the income generated reaches the poorer section of society and that it's not just enjoyed by the elite few. Considering 25% of Tanzania's GDP comes from tourism and more than a million people are employed in this sector of the economy one realizes just how valuable environmental tourism can be and of course there are numerous other ways to generate good money from a healthy environment. Take for example the \$240 million (USD) generated annually in Ethiopia from the harvest of naturally occurring forest coffee.

We can clearly play a big role in helping save Africa's biodiversity. The work we do is often very focused on saving individuals and species and we need to make sure we take a holistic approach and in saving the rhino or whatever we must also save the parasites and other organisms that have evolved with that animal

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and are in some manner dependent on it. They also need to exist and we must use acaricides, insecticides, anthelmintics, antibiotics etc with caution and only when there is not a better alternative and this should be our advice to farmers and others who manage wildlife and sometimes fail to see the bigger picture.

Wildlife veterinarians, especially in South Africa, are often under pressure to introduce species and subspecies into areas where they did not historically occur and this needs to be strongly opposed. Alien species, which often become invasive, are one of the major causes of biodiversity loss and a pet concern of mine is the introduction of exotic wild sheep and goat species to South Africa and the potential for them to get into the Cape Fold Mountains which hold remarkable biodiversity and endemism, particularly plants. It's a potential "Darwin's Nightmare" type situation like where Nile perch were introduced to Lake Victoria in the 1960's and wiped out a host of unique endemic fish in the process. Let's be brighter than that! And let's also steer clear of breeding so called "colour variants", another evil which popped up in the South African wildlife industry and became hugely lucrative and which wildlife veterinarians were sucked into. It tough when money and principles clash but let's be strong enough to stick to the high road. I asked a well known ecologist who is the chair of a IUCN specialist group what he thought veterinarians should and should not be doing in the wildlife industry he started off by saying "When I think of veterinarians in the wildlife industry I don't know whether I should laugh or cry" and that's embarrassing! We can do better!



And finally, while on biodiversity, we will need to find pragmatic and innovative ways of maintaining biodiversity within rapidly changing and fragmented habitats and landscapes rather than just insisting on pristine environments. The role of the wildlife veterinarian will become increasingly important for metapopulation management to maintain genetic diversity and for other reasons. The Cheetah Metapopulation Project in South Africa is a good example of this. Cheetahs are doing very well in small reserves across the country, but they need to be captured and translocated from time to time.

And those of you who never get to Africa, we still need your help. Many of you manage some very valuable captive African species and please keep them robust and healthy. The day will come when we will ask you if we can take some back to Africa. We have done this before and a month ago we took five black rhino from the Czech Republic back to Akagera National Park in Rwanda. I mentioned earlier the dama gazelle which we hope to catch in Chad and there is a good chance in 2020 that a group of them will be taken from the USA to a safe area in Chad. I must also say that sharing knowledge on a wide range of issues with zoo and wildlife veterinarians working in the USA with African and non-African species is of great value to us.

Thank you and apologies if I have waffled on, but we have a problem and I feel very strongly we can all, in some way, be part of the solution.

Dear WDA Students,

First of all, the Student Activities Committee wish you all a Wild Happy New Year 2020!

For this upcoming year, two new projects are starting:

- 1) The student chapter grants will be back soon! The SAC worked on a new application process in order to improve it. From 2020, two different grants will be available to help you in the organization of your events. The first one is called the Seed Grant and will help smaller projects or smaller student chapters and the second one will be the Blossom Grant which was created to help you in bigger events requiring more organization and financial support. All the information will follow, stay tuned!
- 2) A new grant opportunity will be available in collaboration with BioOne in order to nominate one early-career researcher who has authored an influential scientific article published in our journal in 2019. Early-career researchers include graduate students or researchers who received a PhD or Master's degree within the last five years. BioOne will invite nominees to submit a 250-word, plain-language summary explaining their work's relevance to the public at large. Five winners will each receive an award of \$1,000 (USD) along with the broadest possible promotion of their work and the journal in which they published. Here are the future deadlines:
  - January 21, 2020 – February 21, 2020: Nominations from WDA open
  - February 25, 2020 – March 23, 2020: Nominee essay submissions open
  - April 24, 2020 – Winners publicly announced

You will hear back from us very soon!



- 3) Applications for the 2020 WDA Student Awards Competition are now officially open! The WDA offers a research recognition award, and two scholarship awards in addition to a number of presentation and poster awards at the annual international WDA conference. The aim of these awards is to recognize outstanding student research and scholarship in the field of wildlife health and to encourage student participation in the WDA. Find out more, including how to apply, here:

[https://www.wildlifedisease.org/wda/STUDENTS/StudentAwards.aspx?fbclid=IwAR1Gh7o\\_cqIMxKHIZsThTDiauLt304wetDNXJZRghEM4Hn16H4LluxSo\\_so](https://www.wildlifedisease.org/wda/STUDENTS/StudentAwards.aspx?fbclid=IwAR1Gh7o_cqIMxKHIZsThTDiauLt304wetDNXJZRghEM4Hn16H4LluxSo_so)

Regarding the WDA student chapter community:

## Europe:

The Scandinavian country representatives (Norway, Sweden, Denmark) organized their first joint symposium “Traversing Tracks” which was a great success! We invite you to read more about it right here:



## Traversing Tracks: Nordic Wildlife Student Symposium

In the first weekend of December, students from all over Europe gathered in Copenhagen to participate in the Nordic Wildlife Student Symposium to learn about Nordic wildlife and to discuss the importance and challenges of interdisciplinary work. The symposium took place at the University of Copenhagen and was initiated by the EWDA student country representatives from Denmark, Norway and Sweden. It was also the first of its kind within the Nordic section!

During the three days, lectures were mixed with interactive group work where the students were encouraged to work on real life cases from the field. Some of the subjects highlighted during the symposium were human wildlife conflicts, the role of zoos in wildlife conservation, ecosystem health, climate change and emerging diseases in the North. Since one of the main themes of the symposium was interdisciplinary work, the goal was to gather students from different disciplines.

In the end, we were happy and proud to be joined by students from fields such as veterinary medicine, ecology, forest management, conservation biology and landscape architecture, to mention a few. In other words, both old and new friends from the EWDA family traversed tracks!

Everyone involved in planning the symposium worked hard to make it happen the last few months. Therefore, the organizing committee would like to send out



a huge thanks to all our amazing speakers, sponsors, attendants and volunteers! Without your support and commitment this wouldn't have been possible to begin with.

As for the future, we would like to continue this as a tradition to keep on bringing students and professionals together in order to ensure the next generation of wildlife researchers tackling the challenges within our field. We hope to see you next time around!

Kind regards,

Johanna Johnsson

*EWDA Student Section*

*Country representative Sweden*

And the Through the Nordic Wildlife Student Symposium Organizing Committee



**Nordic Wildlife Student Symposium Organizing Committee:**  
Miriam Dibbern (KU), Hans Kristian Mjelde (NMBU), Jennifer Høy-Petersen (NMBU) and Johanna Johnsson (SLU)

## Africa Middle East:

Another successful event was the avian workshop organized in September bringing together 50 students at the University of Pretoria with great speakers:

## Avian Workshop

*Janine Meuffels*

The Southern Africa WDA Student Chapter (SAWDASC) is the first student chapter in the Africa and Middle East section of the WDA. It was approved by the WDA council in December 2017 with the aim to enhance the skills of Southern African students interested in wildlife health and disease by organizing lectures and workshops and to connect these students with each other and with mentors.

We held our first annual student workshop in February 2018, focusing on wildlife pathology and one-health. We are excited to share that, on the evening of the 5th of September 2019, we held our second annual student workshop. This workshop was organised by the newly elected 2019-2020 SAWDASC board and focused on avian medicine.

Fifty students joined the lecture event at the Faculty of Veterinary Medicine, University of Pretoria, South Africa. The lectures were followed by a practical session which was open to 30 of these students and allowed for a hands-on experience.

The lecture event was started by an introduction to the SAWDASC by Dr Janine Meuffels. Dr Katja Koeppel gave an outline of the Lesser Flamingo Rescue Project, a large effort to save hundreds of flamingo chicks that were left by their parents after the dam started to dry out following human intervention. The lectures





were continued with Dr Jess Briner, who discussed some wildlife emergency cases and common diseases and Dr Kresen Pillay, who presented commonly used procedures (e.g. fluid therapy, blood sampling) and anaesthesia. Dr Richard Burroughs ended the lecture event with a session on surgical sexing of birds. Practical hand-out sheets were prepared for all students.

For the workshop, the students were split into three groups of ten people each. Dr Jess Briner, Dr Kresen Pillay and Dr Robert Campbell each supervised one of these groups. By making use of bird carcasses, common procedures such as s.c./i.m./i.v./i.o. injections, blood sampling, examination of hydration status and body condition, crop feeding, etc. were practiced. We were overwhelmed by the enthusiasm and active participation of the students in the workshop. We would also like to thank all of our speakers for their support and motivation in making this event possible.

To stay posted and sign up with the SAWDASC, please follow us on [Facebook](#) (Southern Africa Wildlife Disease Association Student Chapter - UP) or visit our website (<https://wdaamesc.wixsite.com/southernafricaup>).

Cheers,

Your Southern Africa WDA Student Chapter

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**Congratulations** to those Student Chapters for their great work!

Don't forget to join our WDA Student Facebook group to learn more:

[https://www.facebook.com/groups/17921725877710/?epa=SEARCH\\_BOX](https://www.facebook.com/groups/17921725877710/?epa=SEARCH_BOX)

*-Marianthi Ioannidis, for the Student Activities Committee*



# QUARTERLY WILDLIFE MORTALITY REPORT

*Written and compiled by members of the U.S. Geological Survey's National Wildlife Health Center - Wildlife Epidemiology & Emerging Diseases Branch.*

## **Mortality and Heavy Parasite Infestation in Larval California Tiger and Santa Cruz Long-toed Salamanders**

In early September 2019, U.S. Fish and Wildlife Service (FWS) biologists began observing mortality of larval and metamorphic California tiger salamanders (*Ambystoma californiense*) and Santa Cruz long-toed salamanders (*A. macrodactylum croceum*) in multiple breeding ponds at Ellicott National Wildlife Refuge (NWR) near Santa Cruz, California. This event was particularly significant because Ellicott NWR has one of the last remaining breeding populations of federally-endangered Santa Cruz long-toed salamanders. Fortunately, the mortality occurred late in the season and refuge biologists estimated that most of the year's metamorphosis and recruitment to terrestrial life-stages had already occurred. Although breeding ponds at Elliott NWR do not typically remain inundated late into the summer, 2019 represented the second consecutive year where this occurred. Biologists also observed a high abundance of snails (Class Gastropoda) in the ponds.

Necropsies and histological exams of the salamander specimens submitted to the U.S. Geological Survey (USGS) National Wildlife Health Center (NWHC) found abundant trematode parasite metacercaria in the skin and gills, with associated severe inflammatory response, in both salamander species. In the most severely affected specimen, there was evident skin necrosis associated with the trematodes and the gill tissue was greatly thickened because of the high number of trematodes and associated inflammatory cells. Some specimens also had

evidence of septicemic bacterial infections, likely secondary to the insult caused by the trematode metacercaria.

The leading hypothesis for the cause of this mortality event is that the long seasonal hydroperiod combined with the high abundance of aquatic snails resulted in high trematode production that affected the remaining salamander larva and metamorphs in the ponds. The trematode life-stage (metacercaria) that infected the salamanders is part of a complex life-cycle where the reproductive adult parasites live in the gastrointestinal tract of birds or other aquatic vertebrates and shed eggs into the environment with the hosts feces. Those eggs hatch into a free-living larva (miracidium) that infect their first intermediate host, usually aquatic snails. The parasites develop within the host snails into the next development stage (cercaria) and are released into the environment where they are mobile and seek a second intermediate host. This host may be a different snail, another aquatic invertebrate, amphibian, or fish. The life-cycle is completed when a bird (definitive host) ingests the second intermediate host. We hypothesize that the snail abundance (first intermediate hosts) and bird use (definitive host) increased during the consecutive wet years at Elliott NWR allowing the parasites to amplify. For additional information contact: Dr. Dan Gear ([dkgear@usgs.gov](mailto:dkgear@usgs.gov)).

## Wildlife Disease Case Definition Project

The U.S. Geological Survey (USGS) National Wildlife Health Center (NWHC) and the Canadian Wildlife Health Cooperative (CWHC) provide national perspectives on wildlife health and share similar goals and challenges in providing wildlife diagnostic services. To ensure consistency in reporting “cases” of a disease NWHC and CWHC will be developing case definitions for common and emerging wildlife diseases in North America. Establishing a set of criteria for diagnosing these diseases will provide consistency in diagnoses over time and among institutions, and thereby increase the ability to examine trends and causal factors associated with disease outbreaks. A collaborative NWHC-CWHC working group has developed a shared case definition template and glossary and has started drafting joint case definitions for 15 infectious and non-infectious avian, mammalian, reptilian, and amphibian wildlife diseases. Finalized case definitions will be implemented by the CWHC Regional Centres and NWHC diagnostic laboratories and made publicly available to increase the ability to share data among organizations and facilitate an international understanding of wildlife disease issues. Case definitions will periodically be reviewed and updated as our understanding of wildlife diseases develops and new diagnostic techniques are implemented. For additional information on the case definition project, contact: Dr. Kim Miller ([kjmillier@usgs.gov](mailto:kjmillier@usgs.gov)).

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

- Main website: [www.usgs.gov/nwhc](http://www.usgs.gov/nwhc)
- Disease Investigation Services: [www.usgs.gov/nwhc/services](http://www.usgs.gov/nwhc/services).
- Report Mortality Events and Submit Specimens: [www.usgs.gov/NWHC/submit](http://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 (WHISPers) online database: <http://whispers.usgs.gov/>