



Society for Wildlife Forensic Science, Edinburgh 2017 - the full-week delegates who survived til Thursday photo: Guy Shorrocks

The newsletter of the Society for Wildlife Forensic Science

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# SWFS NEWS

Inside this edition: SWFS Edinburgh 2017 | Russian Wildlife Forensics | Meet our Proficiency Director

## 4th International meeting of the Society for Wildlife Forensic Science

*by Dee Dee Hawk and Brandt Cassidy, Ph.D.*

With another successful SWFS meeting in the rear-view mirror, the board would like to thank everyone who attended the conference in Edinburgh, Scotland from June 5-9, 2017; including participants, speakers/presenters and sponsors. It takes a village to put on a successful meeting and there are too many folk involved to mention everyone in the planning process, but we would like to shout out a very special thank you to Lucy Webster and Sherryn Ciavaglia as they took care of all the heavy lifting in planning and executing the meeting. The Board of Directors took on the role of the planning committee: Rob Ogden, Mary Burnham-Curtis, Tasha Bauman, Dee Dee Hawk, Dianne Gleeson, Ed Espinoza, Kim Frazier, Brandt Cassidy, Christina Lindquist, Rebecca Johnson, Dyan Straughan and Kathy Moore. Symposium and workshop organizers included Trey Knott, Rebecca Johnson, Ed Espinoza, Jon Wetton, Wayne Lord, Kathy Moore, Kyle Ewart, Jamie Sells and Adrian Linacre.

Kim Frazier was in charge of making the decisions about the Bob Anderson Memorial Scholarship. The Board of Directors would also like to say thanks to SASA and all the volunteers they had at the meeting that ran IT, the front desk and just about anything you asked of them. And last but certainly not least, we had a very impressive list of sponsors and vendors that allowed the Board to make this meeting very inexpensive to participants, but still be at an outstanding location with many extras allowing people to experience Scotland's hospitality and history.

The city of Edinburgh was a great venue for the Society's first non-USA based meeting and boasted an impressive 245 people including the day delegates. These attendees arrived from around the globe with a record breaking 36 countries represented. The scope and breadth of wildlife forensics affects numerous organizations and

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# Welcome from the SWFS President

Dear SWFS Members

My last six months as President has been largely focused on guiding the organization of Edinburgh2017, the fourth of our biennial meetings, the first outside of the USA and the largest meeting to date. Inside this edition you'll see plenty of reviews and photos from the week, which should either bring back happy memories or give you some insight into what you missed (or can't remember!). For me, the meeting whizzed past in a blur of old friends, new colleagues, great science, flash talks, rain, sunshine, wine and whisky. I hope those of you who managed to attend Edinburgh2017 enjoyed it as much as me and have had a chance to recover from the experience. If you weren't able to make it, try to get to our next meeting, Colorado2019.

Prior to the Edinburgh meeting, in April, I was fortunate enough to be invited to Russia, to represent the Society at an East-West partnership meeting on wildlife forensic science; you can read more about this on page 12. This visit was reciprocated when delegates from Russia attended Edinburgh2017 and announced their decision to join SWFS, extending the Society's engagement to an entirely new region of the world. Between Missoula2015 and Edinburgh2017 we have also seen the development of wildlife forensic capacity in Africa, with the creation this year of an African network that hopefully will establish a platform for coordination of the wildlife forensic science community across the continent.

Overall, the wildlife forensic science community appears to be healthy and growing, with plenty of young talented researchers coming through and, in the first half of the year, an impressive stream of publications (see page 16). It's clear that our discipline is moving up the agenda and gaining recognition not only within the scientific community but also among international law enforcement agencies that are increasingly keen to engage with the Society.

Where should SWFS go from here? As a member-based Society with a growing international base, I believe our primary aim should be to support the development of new laboratories and individual scientists in as many countries as possible. The Society is best placed to achieve this at a practical level through coordination activities, such as certification, proficiency and assessment schemes, but we can also use our reputation and status to influence how wildlife forensics is supported and utilized. To maximize the impact of such initiatives around the world, we also need to increase international representation on the Society's Board and we are committed to addressing this issue in time for the next Board transition in 2019.

In the meantime, stay in touch, let us know what you are doing and carry on the good work!

Regards

Rob Ogden



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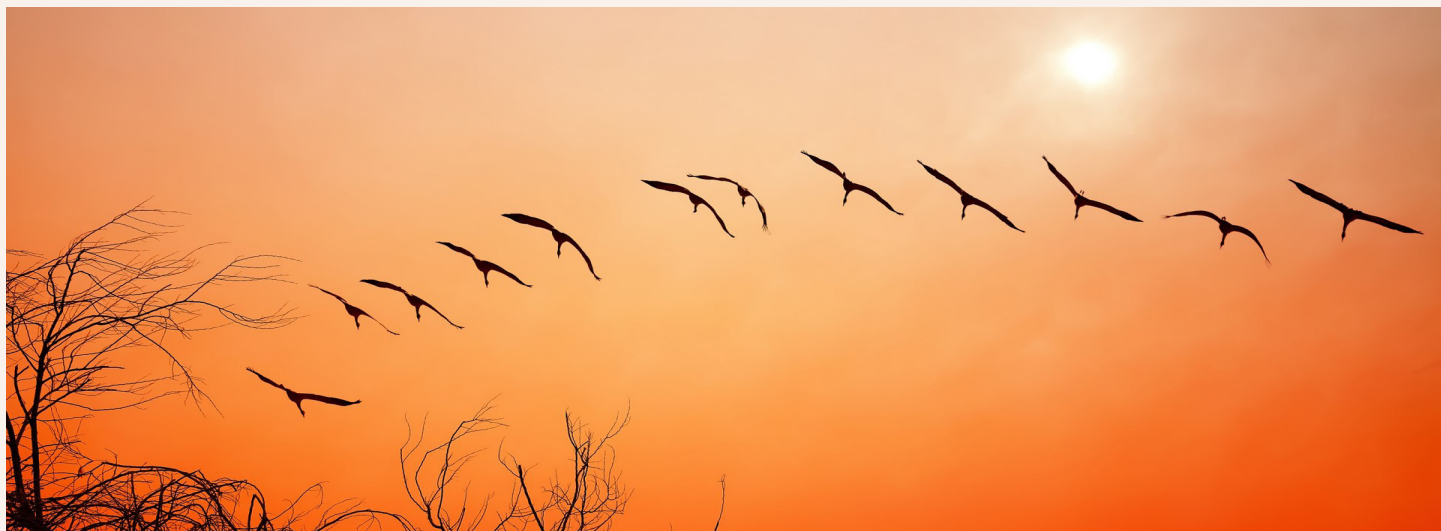
## From the desk of the Communications Director

Hello, Hola, Ahoj, Hej, Bonjour, Hallo, Ciao, Zdravo, Xin Chao, Merhaba, G'day; no matter what language you speak I hope this finds you well. Unfortunately, I cannot translate this message into the other languages represented above but I hope you will be able to understand my message. Communication of the message from the Society for Wildlife Forensic Science was never more evident than at the International meeting in Edinburgh in June this year. Representatives from 36 different countries around the globe communicated their successes and challenges associated with how they combat the criminals responsible for the crimes against their counties' wildlife.

Successful prosecution of wildlife crimes covering multiple jurisdictions on separate continents requires precision coordination and communication. Scientists, together with a wide range of government agencies, non-government organizations (NGOs) and industry stakeholders came together to build and strengthen their lines of communication. The list of collaborators fighting wildlife crime is long and includes organizations such as TRACE Wildlife Forensics Network, TRAFFIC, Interpol, UNODC (United Nations Office on Drugs and Crime), CITES, SWFS (The Society for Wildlife Forensic Science, USFWS (US Fish and Wildlife Service), NOAA (National Oceanic and Atmospheric Administration), and government crime labs across the globe. Building relationships with clear lines of communication produces the successful results reported on a regular basis from agencies around the world. For the latest news stories, follow Ross McEwing's twitter feed (@wildforensics).

I am thankful for the opportunity to be a part of the lines of communication between all the other individuals involved in wildlife forensics through the Society for Wildlife Forensics Science, it's website, and this newsletter. It is our goal to provide a window into the world in which we work and provide resources to those who need them. Finally, there's going to be a change in the production team of SWFS News. I'd like to take the opportunity to thank Patty Bliss, who has been our SWFS News production designer for the past two years, volunteering her time to help put together our Society's newsletter. Patty remains a strong supporter of SWFS but is having to step down after this issue due to other work commitments. I'm pleased to announce that we have an able replacement in the form of Sherryn Ciavaglia at SASA who will help to pull together two annual SWFS News editions from 2018 onwards. If you have information that you think needs to be communicated, do not hesitate to send it to us for inclusion on the website or in this newsletter. The more information you can send us the better. I thank you for your previous contributions and I look forward to what you can provide in the future. Brandt Cassidy, Ph.D. e-mail - [bcassidy@dnasolutionsusa.com](mailto:bcassidy@dnasolutionsusa.com).

As always – Keep it Wild!





# Case Report: Probable Cocaine Lethality in African Grey Parrot (*Psittacus erithacus*)

By Meghan Fogerty<sup>1</sup>, Robert Powers<sup>1</sup>, Nick Sitinas<sup>2</sup> and Chris O'Brien<sup>1</sup>

1 – University of New Haven, Connecticut, USA

2 – South Wilton Veterinarian Group, Wilton, Connecticut, USA

## Background to the case

The Center for Wildlife Forensic Research (CWFR) at the University of New Haven was contacted by a local veterinarian regarding an unexplained death of an African Grey Parrot (*Psittacus erithacus*). The parrot had been brought to the veterinarian with vomiting, lethargy, and aphagia. No specific illness or injury was noted upon examination, and the bird was given antibiotics (Enrofloxacin and Amikacin) and returned to its owners. Several days later the bird's symptoms remained unresolved and the owner chose to bring the bird back to the veterinarian. During the return, the bird regurgitated several apparent small green "seeds" or pellets. The bird was re-examined, including an X-ray, but again nothing of diagnostic significance was noted. A barium scan was then performed, showing the muscular crop was essentially full of the pellets. The pellets were flushed from the gizzard under general anesthesia, collected and preserved, with some frozen and the remainder fixed in formalin. After the procedure, the bird apparently recovered, to the extent of eating out of the veterinarian's hand. However, several hours after surgery the bird suffered several seizures, and despite resuscitative efforts, became comatose and died.

## Forensic analysis

Sample pellets removed from the gizzard were brought to the CWFR laboratories at the University of New Haven. Preliminary toxicological screening showed unexpected results that led the CWFR group to ask for further samples for additional and confirmatory testing. The veterinarian then collected the digestive tract, liver, and heart for further analysis. The digestive tract of the parrot was examined. From the stomach, one hundred and ninety-one pellets were recovered. Three of these pellets were reserved

for analysis on gas chromatograph mass spectrometry (GC/MS). Three additional pellets were recovered from the intestines. Tissue samples were taken from the stomach lining and the liver was also removed and stored for analysis.

An initial microscopic analysis of the pellets was conducted to determine morphological characteristics that could be used for identification. Several of the pellets were cut in half and examined under a stereomicroscope. The

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## Probable Cocaine Lethality in African Grey Parrot (*Psittacus erithacus*)

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pellets were soft and pear-shaped with an average length of 5.2mm and average width of 3.1mm. The surface of the pellets was found to be irregular and varying in color but without other distinguishing features. The color of each of the pellets ranged from a light green through an almost florescent green to a brown. The color was present and uniform throughout the entire pellet, rather than just representing a surface staining. The pellets were subsequently examined using Raman spectroscopy which indicated that the pellets were composed of polyvinyl stearate plastic.

Lastly, three pellets collected from the gizzard were extracted by soaking the pellets in methanol for twenty-four hours. The methanol phase was then qualitatively analyzed by GC/MS. Pentobarbital, lidocaine, and cocaine were identified in the methanolic extract from the pellets recovered from the stomach. The corresponding blank sample showed no identifiable compounds.

Next we analysed the parrot liver, alongside control liver from a parakeet (Order: Psittaciformes). Based on the preliminary findings from the pellets, samples were prepared to test for the suspected presence of cocaine and submitted for analysis by GC/MS. Cocaine, lidocaine, and pentobarbital were identified in the liver extraction from the parrot. The corresponding blank sample showed only the presence of the internal standard

(dextromethorphan), and cocaine was readily identified in the positive control sample.

### Conclusions

The laboratory findings in this case were quite unexpected, in the sense that while the presence of a drug, toxin or poison was recognized as a possibility in this case, there was no expectation that a drug of abuse would be detected. Obviously, the final seizure and death of the bird could be understood in terms of the seizure-inducing capability of cocaine<sup>1</sup>. The cocaine could also explain the vomiting observed by the veterinarian and owner<sup>2,3</sup>. The lethargy could be explained by the central nervous system depressant, pentobarbital. However, in the absence of blood samples for quantitative analysis there is not a definitive basis for linking the death to cocaine. No source, or mechanism of exposure for either the cocaine or the pentobarbital was identified. Lidocaine was expected in the case as it was used as the endoscopy anesthetic.

The possibility of our findings reflecting laboratory contamination was a concern. However, samples from the case were processed by themselves with blank control materials, and none of the blank samples demonstrated the presence of cocaine, lidocaine or pentobarbital. Cocaine is not a routine analyte in any of our academic laboratories, nor are we regularly analyzing samples potentially containing scheduled drugs.

### References

1. Ookawa, T. Behavioral and Electroencephalographic Manifestations of Avian Epilepsy: A Review of the Literature. *Poultry Science* 1976; 56(3): 773-792.
2. Geary, E. H., & Atkins, C. K. Cocaine sensitization in male quail: temporal, conditioning, and dose-dependent characteristics. *Physiology & Behavior* 2007; 90: 818-824.
3. Pinkston, J. W., & Branch, M. N. Acute and Chronic Effects of Cocaine on the Spontaneous Behavior of Pigeons. *Journal of the Experimental Analysis of Behavior* 2010; 94: 25-36.

For a more detailed description of the laboratory methods and findings, please contact Chris O'Brien: [rcobrien@newhaven.edu](mailto:rcobrien@newhaven.edu)

# SWFS 4th International meeting

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this was evident in the numerous national and international NGOs, state and provincial wildlife agencies, and federal organizations represented by the 145 different institutions present at the meeting! It was a wonderful mix of scientists, policy people and administrators, law enforcement and wildlife forensic groupies. The meeting also brought in 25 students who are working on wildlife forensics in a variety of institutions around the world. The diversity and mixture of this group allowed for some very good conversations about building capacity and issues that are involved with the discipline. Four days of presentations highlighted their successes and struggles in the field of Wildlife Forensic Science.

While the science end of the meeting was nothing short of spectacular, the social side of the meeting was also one for the books. The opening night was at Edinburgh City Chambers with drinks and nibbles and a very inspiring bagpipes accompaniment. It was a great introduction to Scotland's traditions. The poster session the next evening allowed for another Scottish tradition....whisky! Thanks to Tomatin Distillery and Top Out Brewery for the tastings and an introduction to one of the things that makes Scotland famous. The Wednesday evening saw a fascinating barbeque and drinks event at the Royal Botanic Garden. The 70 acres of beautifully landscaped gardens are world renowned for their horticulture and they did not disappoint; and Mother Nature was smiling on SWFS, bringing

sunshine to the event and making this excursion one of the highlights of the meeting. The final evening of the meeting was a ceilidh and dinner. The "ceilidh" is another Scottish tradition that participants were exposed to, to get the full experience of Scotland. Many a participant was out on the floor learning the traditional Scottish dance steps. A raffle of items donated by the Board members and various participants, vendors and sponsors brought in £400+ (US\$515+) that will be used for the 2019 Bob Anderson Memorial Scholarship.

One question remained central to our discussions, "Are we making a difference?" Despite being spread thinly across the globe, limited by a lack of funding and working through complex bureaucratic systems, wildlife forensic practitioners, working in concert with governments and international organizations, are having a positive impact on the survival of the world's most iconic and endangered species. The Society for Wildlife Forensic Science is making a name for itself around the world as the go-to organization for advancing the discipline. Our members are regularly invited to international meetings on wildlife trafficking to discuss enforcement challenges with end users as well as talk about and work on capacity building around the world. We came away from this meeting with a definite impression that the Society is contributing to global conservation law enforcement.

We hope you all stay involved in



The Piper's welcome

SWFS and we would really like to see some new faces on the Board of Directors. We will be sending out a request for volunteers in the very near future. Please consider joining the Board and determining the direction SWFS goes in the future. And of course, join us in 2019, in Denver, Colorado, for the 5th International meeting of the Society for Wildlife Forensic Science.

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# Icebreaker & Scottish Tipple Tasting Poster Session

## SWFS 4th International meeting

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# Botanics evening

## SWFS 4th International meeting

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Photos: Guy Shorrock



# Conference Ceilidh

## SWFS 4th International meeting

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# Speakers

## SWFS 4th International meeting

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**Roseanna Cunningham, MSP**

**Subject:** Opening address

**Role:** Scottish Parliament Cabinet Secretary for Environment, Climate Change and Land Reform



**Steven Broad**

**Subject:** Tackling the illegal trade in wildlife, timber and fish – challenges for law enforcement and compliance

**Role:** Executive Director, TRAFFIC



**Irene Kuiper**

**Subject:** Wildlife forensics in the modern forensic era

**Role:** Team Leader, non-human forensics, Netherlands Forensic Institute



**Trey Knott**

**Subject:** Marine Forensics in the US - Capabilities, Case Histories and Challenges

**Role:** Forensic Scientist, NOAA Marine Forensic Laboratory



**Pieter Baas**

**Subject:** The roles of Wood Science in combatting Illegal Timber Harvest and Trade

**Role:** Naturalis Biodiversity Center, The Netherlands



**Kanita Ouitavon**

**Subject:** DNP-WIFOS Laboratory: Lessons learned from wildlife forensic developments in Thailand

**Role:** Chief of DNP-WIFOS Laboratory, Department of National Parks, Wildlife and Plant Conservation, Thailand



**Nick Ahlers**

**Subject:** Developing forensic capacity within international wildlife law enforcement programmes

**Role:** Project Leader, Wildlife TRAPS, TRAFFIC, UK



**Ben Van Rensburg**

**Subject:** The International Consortium for Combatting Wildlife Crime and the role of forensic science

**Role:** Chief of Enforcement Support, CITES



**Eleanor Dormontt**

**Subject:** The use of DNA forensics to investigate illegal logging

**Role:** Research Scientist, Centre for Conservation Science and Technology, University of Adelaide

Photos: Guy Shorrock



# Speakers continued

## SWFS 4th International meeting

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**Ed Espinoza**

**Subject:** Timber forensics

**Role:** Deputy Director, USFWS National Forensics Laboratory



**David Squarre**

**Subject:** The role of raptor persecution in poaching

**Role:** Principle Veterinarian, Zambia Department of National Parks and Wildlife



**Rebecca Johnson**

**Subject:** Wildlife DNA Forensics

**Role:** Director, Australian Museum Research Institute



**Guy Shorrock**

**Subject:** Feather, felons and forensics

**Role:** Senior Investigator, Royal Society for the Protection of Birds



**Sergey Kuzmin**

**Subject:** Wildlife forensics in Russia

**Role:** Associate Professor, Russian Peoples' Friendship University

# 2017 Bob Anderson Memorial Scholarship

The Society for Wildlife Forensic Science lost one of our own in 2016. Bob Anderson was Senior Counsel for the Environmental Crimes Section of the Department of Justice and was stationed in Missoula MT, USA. Bob dedicated his energy, time and skills to travel the world to prosecute traffickers of illegal fauna and flora. Due to his drive and dedication, Bob was recognized numerous times for excellence and achievement and was a great supporter of the Society for Wildlife Forensic Science from its inception.

With the support of his family, SWFS started a Bob Anderson Memorial Scholarship last year. This scholarship consists of a US\$500 contribution towards travel to the meeting as well as free registration and conference dinner ticket. For this meeting, a record thirteen applicants applied for this award. A committee of four SWFS members/board members reviewed all the applications and while there were some great applicants, two students rose to the top. These students, Erin Hill and Kristen Finch, were chosen as the recipients of the first ever Bob Anderson Memorial Scholarship. Their impressive work shows that wildlife forensic science is in good hands for the next generation.

## Scholarship presentations:

### Erin Hill:

- Use of a DNA profiling system for the genetic assignment of Hog Deer in Victoria
- La Trobe University, Melbourne, Australia.
- [Erin.Hill@latrobe.edu.au](mailto:Erin.Hill@latrobe.edu.au)

### Kristen Finch:

- Intraspecific source identification of western Oregon Douglas-fir wood cores using Mass Spectrometry and random forest classification
- Department of Botany and Plant Pathology, Oregon State University, USA.
- [Finchkri@oregonstate.edu](mailto:Finchkri@oregonstate.edu)



Photo: Guy Shorrock

Kristen Finch (left) and Erin Hill (right) receive the 2017 Bob Anderson Memorial Scholarship awards from Rob Ogden.



# Certification Call

It's time to start thinking about becoming a certified wildlife forensic scientist. The deadline for the next round of applications for certification is January 2018. For first-time applicants, the US\$250 application fee includes your proficiency test fee for either the Mammal or Fish Genetics Proficiency Test, if enrolled in the SWFS Proficiency Testing Program. If applications are incomplete, the application fee will be refunded less a US\$50 processing fee.

## Requirements include:

- Minimum requirement of a bachelor degree (or equivalent degree) in any related field such as biology, chemistry, environmental science, forensic science or equivalent as evidenced by transcripts or diploma.
- Proficiency Test Requirements: An annual proficiency test as applied to wildlife forensic science. Submit a letter of satisfactory completion of the most current external test. If external proficiency tests are not available, an internal wildlife proficiency test may be substituted. Submit a summary of the test including design, implementation, whether it was blind or not, and whether the analyst completed the test satisfactorily with the signature of the supervisor.
- Experience Requirements: One year of casework experience. If extensive casework training is completed prior to conducting actual casework, mock casework may be used for a portion of the one-year requirement.
- Assessment of competent performance in forensic practice: The assessment will be conducted primarily by review of recent casework of your choosing.
- Agreement to follow the Ethics and Standards & Guidelines of SWFS.
- Reference: A satisfactory Letter of Recommendation from supervisor or professional familiar with the applicant and his/her abilities and experience subsequent to being declared competent to undertake casework.

Applying is simple, visit the SWFS website for applications and more information.

# Establishing links with Russia and her neighbours

*By Rob Ogden*

In early 2017, the Society was honoured to be invited to participate as a co-organiser of an annual forensics meeting in Russia, the 'East-West Partnership in Forensic Science'. This year's meeting, held at the People's Friendship University of Russia (RUDN University), Moscow, had the theme of "Improving forensic science as a factor in supporting ecological security and maintenance of biodiversity". As SWFS president, I was welcomed on behalf of the Society as an invited speaker to discuss the subject of wildlife forensics and to introduce SWFS.

So it was that I took a three-day round trip from Edinburgh to

Moscow in the middle of April. Having only previously been to Moscow once before in 1993, I was curious to see what had changed, as well as to meet forensic scientists from a region not previously represented within the Society's membership. I was enthusiastically and warmly hosted by the scientific organizing committee from both RUDN University and the Russian Federal Center of Forensic Science (RFCFS), from which all forensic science services across the country are coordinated.

The first thing I learned was that in the East-West partnership, Moscow represented the western, European end of the region,

along with representatives from Belarus, Bosnia-Herzegovina and Montenegro. The East stretched across multiple central Asian states including Tajikistan, Azerbaijan and Kazakhstan, as far as Mongolia. The partnership effectively represents a network across the Eurasian continent that functions to support the development of forensic science in the region. In this situation, as a visiting Brit, I was generally viewed as an extreme westerner from somewhere on the outer fringes of this massive continent!

The meeting had a plenary morning session, co-chaired by Prof Svetlana Smirnova, director of the RFCFS, and Prof Oleg

## Establishing links with Russia and her neighbours continued

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Delegates at the 2017 East-West Partnership in Forensic Science, RUDN University, Moscow

Yastrebov of RUDN University. The afternoon featured parallel sessions of talks and posters on the topics of environmental forensics and wildlife forensics, and included a range of presentations addressing investigative challenges familiar to most of us at SWFS. The breadth of topics, techniques and nationalities was impressive, as was the professionalism of the forensic scientists attending. The working language was largely Russian and I am indebted to the tireless simultaneous translation and interpretation provided by Dr Sergey Zinkovskiy during my stay. There was widespread interest in the Society for Wildlife Forensic Science and a strong mutual recognition of each other's work.

The meeting ended, as all good meetings do, with a group dinner. And, being in Russia, this included a staggering amount of vodka, a number of increasingly enthusiastic speeches, good humour, the joy of re-acquaintances, the forging of new friendships, an invitation to Edinburgh 2017... and more vodka. I awoke the next morning

somewhere outside of Moscow city limits, a good 40 minutes' drive from my hotel, the restaurant or the conference centre. This I took to be an indication of a successful networking event, and as Sergey drove me back to Domodedovo airport I was already looking forward to seeing our new Russian colleagues at the SWFS meeting in June.

Fast forward seven weeks to Edinburgh and I found myself, as many of you witnessed, being

awarded, on behalf of SWFS, the Order of the Russian Federal Centre of Forensic Science. This award, presented by Prof Smirnova, was followed by a presentation by Dr Sergey Kuzmin, of RUDN University, describing the Russian approach to wildlife and ecological forensics. I am pleased to say that the RFCFS is now a member of the SWFS and hopefully these few months in 2017 mark the start of a productive long-term relationship from East to West and North to South!



Photo: Guy Shorrocks

SWFS president Dr Rob Ogden receives the Order of the Russian Federal Centre for Forensic Science from Director, Prof Svetlana Smirnova



# SWFS Student Outreach Program

Hello all! I hope that everyone is having a productive year to date. It was great to see many of you at the Scotland conference and for those who could not make it, you were missed. We are still working on promoting the Student Outreach Program.

As an update for you all, the Student Outreach Program has already engaged students in active research projects. The involvement has ranged from literature searches all the way to hands on work. With that said, to make this program a success we need everyone's help. Anyone who is involved in research, labs needing research conducted or students looking to do work in wildlife forensics, please contact me so we can continue to move forward.

The program is designed to connect labs, academics and students on meaningful work that will benefit us all in the field. If you have research ideas and are wondering if they are applicable, we can help with that as well. This field is so expansive that this program is designed to help ensure that duplication of research is not occurring and the research that is being done is answering the right questions. We are here to help!

More information about the program is available on the SWFS website or you can contact me directly at [SWFSStudentOutreach@gmail.com](mailto:SWFSStudentOutreach@gmail.com)

Thank you  
R. Christopher O'Brien  
Coordinator - SWFS Student Outreach

## Dyan Straughan

**Forensic Scientist**  
**US Fish and Wildlife Service**

I grew up in Gold Hill, Oregon. It's a small town (population of 730) in Southern Oregon, about 30 miles from the US Fish and Wildlife Service Forensics Lab in Ashland. When I was a kid, I loved it. It sits right along the Rogue River, which starts at Crater Lake in the Cascade Mountains and cuts through the Coast Range, creating some spectacularly rugged terrain. My father has always had a profound love of nature and as the favorite (only) child, I grew up hunting elk and mule deer, fishing salmon and steelhead, and of course, my favorite, white-water rafting. Once when I was 12, we were camping along the river and came across a black bear that had been shot multiple times by a .22 and died a slow, painful death. It was one of the few times I have seen my father so sad, yet so livid at the same time. He reported it to the Ranger station and even though they had an idea of

the people responsible, they couldn't do much about it. It was 1984; there were no forensics laboratories that worked on animals.

By the time I graduated from high school, I was a rebellious teenager and couldn't wait to leave the Rogue Valley, so I went to the University of Oregon in Eugene where I majored in Biology. Following graduation I started working in a molecular evolution laboratory and became good friends with a post-doc by the name of Niles Lehman whose Ph.D. research was focused on wolves and coyotes in Bob Wayne's laboratory at UCLA. Niles convinced me to move with him and his family to L.A. and get my Master's degree at California State University, Long Beach. It was difficult for me, living in such a high population density area, but having a



year pass to Disneyland made it much more enjoyable, and the corn dogs in Disneyland are really just the best ever.

After graduating, I got a job working for the Burns Paiute Tribe in the tiny town of Burns, Oregon writing grants for habitat improvement on the reservation. After about a year, I moved back to the Rogue Valley to be closer to my boyfriend, who needed a heart transplant and the medical facilities



## Dyan Straughan continued

in Burns made it unsafe for him to even visit, but mostly I wanted to be home. I had no job when I moved back, but my father was still convinced that I needed to “check out that lab down in Ashland”. So I did. I turned in a volunteer application in the summer of 1998. Steve Fain was the genetics supervisor at the time and was deeply involved in wolf species identification. Steve saw that my thesis advisor was Niles and had grand hopes that I could be of some help with that. Niles and I only worked on the phylogenetics of *Daphnia*, a genus of small planktonic crustaceans. I didn’t know anything about canids. Since being officially hired in January of 2000 as a Wildlife Forensic Scientist, I have done species identification work on a diverse amount of genera from all around the world: alligator, sturgeon, duikers, cane rats, bats, snakes, turtles and primates. The bulk of my work here at the lab, however, is on canids, specifically, species identification, geographic origin, and individual matching of wolf, coyote and wolf-dog hybrids.

One of the first things that struck me about Wildlife Forensics was the diversity of the types of crimes and types of people that perpetrate them. Growing up, I was well aware of the yahoos (meaning crude, coarse person, not the internet search engine) who illegally kill wildlife for fun, like the bear I saw when I was 12 or the 40 plus antelope that were run down on ATVs until they could run no further and then shot where they stood, gasping for breath. I did not realize the level of organized crime and the amount of money that is involved in the illegal wildlife trade,

and to this day I’m still a bit shocked by it all. Some of the things that have surprised me the most however are the high quality fakes that I have seen. Whoever these people are, some of them are very creative and quite talented, and it’s actually a shame that their abilities fuel such a horrific industry. The challenging cases are the cases that I enjoy the most. Bushmeat cases, with little to no morphological characteristics, can be a complete unknown and can end up originating from something straightforward like a duiker or a domestic animal, or something more unusual like a Binturong (also known as bearcat) or a flying squirrel. I’ve spent over a decade working on canids, but now that many North American wolf populations are off the Endangered Species list, I am moving on to bats. I expect this to be very challenging and exciting, as bats are extremely diverse and the populations of so many species are at risk.

Over the last 17 years I have met many people who share an interest in wildlife and wildlife forensics, many who are passionate members of SWFS! The most famous person I have ever met while working was Steve Irwin, the ‘Crocodile Hunter’. Steve was working on an episode of a show called New Breed Vets where the Ashland lab was highlighted. He was kind, unassuming and more than happy to take silly photographs of all of us here at the lab. I think one of the reasons that the interest in Wildlife Forensics is growing is because of things like what Steve Irwin was doing, raising awareness in the media. In the last 8 years or so I have seen television shows like CSI, Castle, and even the cartoon

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Batman feature some aspect of Wildlife Crime and I think that awareness is an important tool for slowing wildlife trafficking. I think we are making huge strides in highlighting the seriousness of wildlife trafficking, and in the next 5 years we are going to be increasingly busy as forensic scientists as there is more public outcry, but also as the criminals become progressively smarter. Sharing information, data management, and cheaper, better, faster new technology is going to be of the utmost importance. I would encourage people who are interested in getting into Wildlife Forensics to be focused on the science, whether it is morphology, computers, chemistry or genetics. It’s hard core science that is going to ‘get the bad guy’!

These days when I am not working, I spend my time being a mom and a house handyman. My husband died in October of 2015, while waiting for a second heart transplant. We had bought a ‘fixer-upper’ house, and now I am trying to figure out how to use carpentry equipment and fix house appliances, thank you Google!! I do still try to hunt, raft and fish as much as I can with my dad, but I also still make time to watch anything Star Wars, Disney, Marvel movies, Ancient Aliens and Finding Bigfoot. I also make time to have very proper afternoon tea with my mother at least once a month. My family motivates me in my job. My father instilled in me a love of the outdoors, and I want to help protect that, and preserve it for my children and future generations.

# Scientists agree to establish an African Wildlife Forensics Network

*By Stephanie Pietsch*

The past two years have seen interest in developing wildlife forensic capacity rise rapidly in Africa. With increasing penalties for poaching and trafficking offences being handed down in court under revised national wildlife acts, one unintended consequence appears to have been fewer guilty pleas by defendants and a greater requirement for definitive evidence to secure convictions. The need for forensic analysis to categorically identify species in wildlife law enforcement investigations is now widely recognised and efforts are underway to deliver a range of techniques and training throughout the continent.

One such initiative, the African Wildlife Forensics Network project, supported by the UK IWT

Challenge Fund, ran from 2015-17 with the aim of conducting assessments of existing capacity, emerging needs and possible options for wildlife forensic laboratory development in southern and central western Africa. Partnering with Gabon and Botswana and focusing on a further six countries that had not yet established wildlife forensic services, the project worked with law enforcement and scientific staff in the Republic of Congo, Namibia, Angola, Malawi, Zambia and Zimbabwe, to develop access to wildlife forensic analysis. Led by the United Nations Office on Drugs and Crime, and supported by TRACE Wildlife Forensics Network as the primary implementing partner, the project delivered laboratory training and equipment and brought together a range of wildlife law

enforcement stakeholders across the region to discuss opportunities and challenges for the development of wildlife forensics in Africa.

The project ended with a final meeting in Edinburgh in June, to which wildlife forensic scientists from across Africa were invited, along with the UNODC, TRACE and the Netherlands Forensic Institute. A key outcome of the meeting was unanimous agreement among the participants to launch an African Wildlife Forensics Network to help support and coordinate the development of national and regional wildlife forensic services. It is hoped that the activities to date represent an initial but significant step towards delivering forensic analysis to support wildlife law enforcement in the region.

## Recent publications:

In this section we provide a list of recent wildlife forensic publications pulled from the online database, Web of Science. This list covers the period from January 2017 to July 2017. We aren't commenting on their quality or advocating their application, hopefully you will have your own opinions on this. If you know we've missed something, particularly one of your papers (!), please let us know and we'll include it in the next edition.

### Wildlife Forensics:

Coetzer, Willem G.; Downs, Colleen T.; Perrin, Mike R.; et al. (2017)

Testing of microsatellite multiplexes for individual identification of Cape Parrots (*Poicephalus robustus*): paternity testing and monitoring trade. PEERJ Volume: 5 Article Number: e2900

Dicks, K. L.; Webster, L. M. I.; McDowall, I.; et al. (2017)

Validation studies on dinucleotide STRs for forensic identification of black rhinoceros *Diceros bicornis*. FORENSIC SCIENCE INTERNATIONAL-GENETICS Volume: 26 Pages: E25-E27



# Recent publications:

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## Wildlife Forensics continued:

Janjua, Safia; Fakhar-I-Abbas; William, Kaina; et al. (2017)

DNA Mini-barcoding for wildlife trade control: a case study on identification of highly processed animal materials. MITOCHONDRIAL DNA PART A Volume: 28 Issue: 4-5 Pages: 544-546

Kitpipit, Thitika; Thongjue, Kantima; Penchart, Kitichaya; et al. (2017)

Mini-SNaPshot multiplex assays authenticate elephant ivory and simultaneously identify the species origin. FORENSIC SCIENCE INTERNATIONAL-GENETICS Volume: 27 Pages: 106-115

Mwale, Monica; Dalton, Desire L.; Jansen, Raymond; et al. (2017)

Forensic application of DNA barcoding for identification of illegally traded African pangolin scales. GENOME Volume: 60 Issue: 3 Pages: 272-284

Natusch, Daniel J. D.; Carter, James F.; Aust, Patrick W.; et al. (2017)

Serpent's source: Determining the source and geographic origin of traded python skins using isotopic and elemental markers. BIOLOGICAL CONSERVATION Volume: 209 Pages: 406-414.

Soto, David X.; Koehler, Geoff; Wassenaar, Leonard I.; et al. (2017)

Re-evaluation of the hydrogen stable isotopic composition of keratin calibration standards for wildlife and forensic science applications. RAPID COMMUNICATIONS IN MASS SPECTROMETRY Volume: 31 Issue: 14 Pages: 1193-1203

Tadeus de Carvalho, Vinicius; Gregorio Martinez, Jose; Hernandez-Rangel, Sandra M.; et al. (2017)

Giving IDs to turtles: SNP markers for assignment of individuals to lineages of the geographically structured Phrynosoma geoffroanus (Chelidae: Testudines). CONSERVATION GENETICS RESOURCES Volume: 9 Issue: 1 Pages: 157-163

Veldman, Sarina; Gravendeel, Barbara; Otieno, Joseph N.; et al. (2017)

High-throughput sequencing of African chikanda cake highlights conservation challenges in orchids. BIODIVERSITY AND CONSERVATION Volume: 26 Issue: 9 Pages: 2029-2046

## Fish Forensics:

Carvalho, Daniel Cardoso; Guedes, Danusa; Gloria Trindade, Maria da; et al. (2017)

Nationwide Brazilian governmental forensic programme reveals seafood mislabelling trends and rates using DNA barcoding FISHERIES RESEARCH Volume: 191 Pages: 30-35

Horreo, J. L.; Machado-Schiaffino, G.; Garcia-Vazquez, E. (2017)

Forensic assignment to geographic origin, a useful tool in seafood fraud control. FORENSIC SCIENCE INTERNATIONAL Volume: 272 Pages: 37-40

Nachtigall, Pedro G.; Rodrigues-Filho, Luis F. S.; Sodre, Davidson C. A.; et al. (2017)

A multiplex PCR approach for the molecular identification and conservation of the Critically Endangered daggnose shark. ENDANGERED SPECIES RESEARCH Volume: 32 Pages: 169-175

O'Bryhim, Jason R.; Parsons, E. C. M.; Lance, Stacey L. (2017) Forensic species identification of elasmobranch products sold in Costa Rican markets. FISHERIES RESEARCH Volume: 186 Pages: 144-150

# Recent publications:

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## Timber Forensics:

Degen, Bernd; Blanc-Jolivet, Celine; Stierand, Katrin; et al. (2017) A nearest neighbour approach by genetic distance to the assignment of individual trees to geographic origin. FORENSIC SCIENCE INTERNATIONAL-GENETICS Volume: 27 Pages: 132-141

Evans, Philip D.; Mundo, Ignacio A.; Wiemann, Michael C.; et al. (2017) Identification of selected CITES-protected Araucariaceae using DART TOFMS. IAWA JOURNAL Volume: 38 Issue: 2 Pages: 266

Ng, Chin Hong; Lee, Soon Leong; Tnah, Lee Hong; et al. (2017)  
Geographic origin and individual assignment of Shorea platyclados (Dipterocarpaceae) for forensic identification. PLOS ONE Volume: 12 Issue: 4 Article Number: e0176158