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Newsletter



April 2015

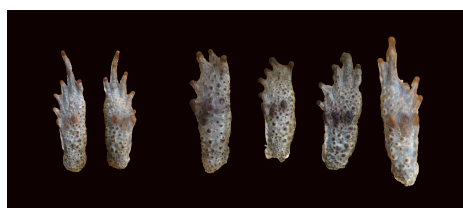
Current Field Research in Latin America**Malformations and disease in the Cururu Toad (*Rhinella jimi*) on the Archipelago of Fernando de Noronha, Brazil: a potential model for ecosystem health monitoring**

Catia Dejuste de Paula, DVM, MSc, PhD. Field Post-Doctoral Researcher, San Diego Zoo Global, Zoological Society of San Diego, in collaboration with the Laboratory of Wildlife Comparative Pathology, School of Veterinary Medicine and Animal Sciences, University of Sao Paulo, Brazil

The archipelago of Fernando de Noronha (FN) is located about 350km off the northeast coast of Brazil and is recognized as a UNESCO World Heritage site for the importance of its marine environment. Island environments are unique: with many endemic species, there is greater vulnerability of species and habitats to threats. For Brazilian oceanic islands, invasive species and habitat loss are leading short-term threats to biodiversity.

On FN, the current fauna of terrestrial vertebrates is mostly composed of introduced species including the Cururu Toad (*Rhinella jimi*). Previous work showed a high prevalence of toads on FN with limb and eye malformations; limited surveys demonstrated evidence of underlying disease problems (e.g. mycobacteriosis). To better define the extent of malformations and disease, we randomly collected and examined 100 adult toads. We collected samples for histopathology, microbiology, parasitology and radiology. We found that apparent anomalies are still occurring at the island. Radiology and histopathology suggest some anomalies are not developmental, but instead were caused by trauma (e.g. fractures) or infectious diseases (e.g. osteomyelitis or panophthalmitis). The animals also presented with infectious disease (mycobacteriosis with granulomas in the liver, spleen and kidney), and a small number of animals had a protozoan parasite in the brain which is being identified.

The health alterations presented by these toads, introduced in an altered habitat, suggest that they can become useful as a model for ecosystem health monitoring for endemic wildlife species on FN. Detailed information about the case will be presented at the upcoming 2015 WDA conference in Australia.



Pair of normal feet on the left, two pairs of abnormal feet on the right



A view of the island of Fernando de Noronha, Brazil

**Second biennial conference of the Wildlife Disease Association, Latin America
Section
September 24 – 27, 2015, Bogota, Colombia**

José Luiz Catão-Dias



We would like to invite you to submit your research abstracts to our Second Biennial Conference of the Wildlife Disease Association. Organized by the WDA -LA, the Association of Wildlife Veterinarians (VVS) and the University of La Salle, with the participation of national and international speakers:

Marcela Uhart, DVM, UC Davis, USA

Gerardo Suzán, DVM PhD, UNAM, México

José Luiz Catão-Dias, DVM PhD, USP, Brasil

Nicole Gottdenker, DVM PhD, UGA, USA

Fernando Nassar, DVM, ULS, Colombia

Diego Soler-Tovar, DVM MSc, ULS, Colombia

Salim Mattar, PhD, IIBT, Colombia

Nubia Matta, PhD; UNAL, Colombia

Claudia Rodríguez, Ministry of environment, Colombia

Register and participate: The first 80 registered: will have the opportunity to visit Chingaza National Park, home of spectacled bears, condors, Black-chested Buzzard-eagles and deer. Don't miss this opportunity! www.wda.veterinariosvs.org

Important dates:

Abstract Submission Deadline: April 30, 2015

Notifications: June 14, 2015 Pre-conference workshops: September 22th to 23th (more information in few weeks)

Tutorial for abstract submission:

<http://www.wda.veterinariosvs.org/como-presentar-un-resumen-a-la-conferencia-wda-la-2015/>

Payment available at:

<http://www.veterinariosvs.org/producto/2-encuentro-wda-la/>

2015 WDA Elections



Candidate for President: Marcela Uhart, current Vice-President of the Wildlife Disease Association

Candidates for Vice President: Debbie Miller and Margo Pybus

Candidates for Council Members-at-Large: Alonso Aguirre, Mark Drew, Terry Creekmore, and Jenny Powers (the two candidates with the highest number of votes are elected)



Marcela Uhart



Debbie Miller



Margo Pybus



Alonso Aguirre





Mark Drew

Terry Creekmore

Jenny Powers

The WDA President and Vice President serve two- year terms and are WDA's lead officers. The President presides over all meetings of Council and represents the organization in an official capacity. The Vice-President assists the President a) in the selection, guidance, and monitoring of committees, b) chairs the Time and Place Committee and c) serves on several other committees.

Council Members- at- Large are expected to be fairly experienced in WDA business and attend WDA Council meetings and/or provide review and comment of business items before Council. Members-at- Large are popularly elected and are expected to be available to WDA members when they have questions or input regarding issues before Council.

WDA connections survey

Kate Purple



Since WDA members live all around the world, we want to make sure you can connect with other members. Please participate in a brief survey that will help us better connect members and facilitate sharing of information with the entire WDA. We propose new and exciting ways to connect online, as well as evaluate our current Facebook presence. Please let us know how we're doing and how we can improve. Thank you, the Student Activities Committee. Link to survey: <https://www.surveymonkey.com/s/DMX9VJ3>

Upcoming international WDA conference update

Tim Portas



The 64th Annual international conference of the Wildlife Disease Association will be held at the Novotel Twin Waters Resort Maroochydore in Queensland Australia from the 26th to the 30th July this year. A fantastic line up of plenary and invited speakers will present in four symposia with additional scientific sessions encompassing submitted papers. This year's plenary speakers are Raina Plowright (Montana State University), William Karesh (Ecohealth Alliance), Rick Speare (Tropical Health Solutions) and Thierry Work (USGS, National Wildlife Health Centre). They will be supported by the following invited speakers Michael Kock (University of Pretoria), Robert

Poulin (University of Otago), Jonna Mazet (UC Davis), Peter Daszak (Ecohealth Alliance), Hume Field (Ecohealth Alliance), Tanja Strive (CSIRO), Craig Stephen (Canadian Wildlife Health Cooperative) and Michael Ziccardi (UC Davis). This sterling line up will present across a range of cutting edge One Health and wildlife health and disease topics. There are few opportunities to hear speakers of this calibre present in the one location.

If an exciting scientific program isn't enough to whet your appetite to attend this year's conference then perhaps you might be tempted by the possibility of viewing Australian wildlife in the local area? For those interested in Australia's unique monotremes short-beaked echidnas and platypus occur locally. Four species of macropod can be readily seen on the Sunshine Coast including eastern grey kangaroos, swamp wallabies, red-necked wallabies and red-legged pademelons (pictured). In addition long-nosed and northern brown bandicoots and three species of possum are locally abundant. Marine mammals include humpback whales, inshore bottlenose dolphins and dugongs. For keen bird watchers a long list of species can be found inhabiting the coastal wetlands, coastal heath and the subtropical rainforests of the Sunshine Coast hinterland. July falls during winter in the southern hemisphere and while winters are mild in South Eastern Queensland our herpetofauna are less likely to be seen at this time of the year. Nonetheless some amphibian species can still be observed during the cooler months. There is considerable amphibian species biodiversity on the Sunshine Coast and local species include the dainty tree frog (pictured), the green tree frog, Peron's tree frog, the red-eyed tree frog, the wallum sedge frog, the tusked frog, and the great and giant barred frogs.

This year's conference is in a readily accessible location. Delegates can fly directly into Brisbane International Airport and then catch a shuttle bus (see Con-x-ion Airport Transfers <http://www.con-x-ion.com>) to the conference venue (approximately 90 minutes). Alternatively delegates can fly into international airports in Sydney or Melbourne and catch a connecting flight to the Sunshine Coast Airport which is a five minute taxi ride from the conference venue.

For extensive information on all aspects of this year's conference and to register go to <http://www.wda2015.org>. And remember early bird registration closes on the 26th of April so book now to secure discounted registration to this fantastic conference.

The Wildlife Society and the American Association of Wildlife Veterinarians issued a joint statement on Domestic Sheep and Goats Disease Transmission Risk to Wild Sheep:

http://wildlife.org/wp-content/uploads/2015/03/WS-DS_DiseaseTransmission_TWS-AAWV_JointStatement_APPROVED.pdf

USGS National Wildlife Health Center Quarterly Mortality Report

Written and compiled by the U.S. Geological Survey National Wildlife Health Center Epidemiology Team members: Anne Ballmann, Barb Bodenstein, Bob Dusek, and Jenny Chipault

Highly pathogenic avian influenza in North America

Highly pathogenic avian influenza (HPAI) virus was detected in wild birds at a mortality event in Washington State (Pacific Flyway) in December 2014. Subsequent investigation of this event by the USGS National Wildlife Health Center (NWHC), the U.S. Department of Agriculture (USDA), Washington Department of Fish and Wildlife, and the Washington Animal Disease Diagnostic Laboratory identified three HPAI viruses (H5N8, H5N2, and H5N1) in wild birds in this region. All three viruses shared at least 50% of their genetic material; most notably the H5 in all three cases was highly similar in each virus. The H5N8 is of Eurasian origin and found to be highly similar to the HPAI H5N8 virus that was detected circulating in domestic poultry and wild birds in the Republic of Korea in January 2014. This virus had also been found in four European countries, as well as Japan and Russia, in autumn 2014. The other two HPAI viruses, H5N2 and H5N1, were found to be reassortants of the HPAI H5N8 virus and North American low pathogenic avian influenza viruses. The HPAI H5N2 virus was initially found in poultry farms in British Columbia, Canada, where it has been responsible for the direct mortality of, or euthanasia of, approximately 250,000 birds. Subsequent surveillance in January 2015 by the USDA, the NWHC, and other state and federal agencies has found the HPAI H5N8 and H5N2 viruses in hunter-killed wild waterfowl in five additional states (California, Idaho, Nevada, Oregon, and Utah), backyard poultry flocks in three of these states, captive wild raptors in two of these states, and two commercial poultry operations in California. As of mid-March 2015, HPAI was also detected in commercial turkey operations in Minnesota, Missouri, and Arkansas (Mississippi Flyway) and backyard poultry in Kansas (Central Flyway). It is important to note that although North American wild ducks have not been reported to exhibit signs of disease when infected with HPAI, a single Canada Goose (*Branta canadensis*) confirmed infected with HPAI exhibited neurologic signs. The HPAI virus is believed to be the cause of death (or a contributor to the cause of death) in various raptor species including two Red-tailed Hawks (*Buteo jamaicensis*), a Cooper's Hawk (*Accipiter cooperii*), captive Gyrfalcons (*Falco rusticolus*), a Peregrine Falcon (*F. peregrinus*), a captive Great-horned Owl (*Bubo virginianus*), and a Bald Eagle (*Haliaeetus leucocephalus*). The original finding of these first HPAI viruses in Washington during 2014 came as a result of testing wild waterfowl found dead during a mortality event that has primarily been attributed to aspergillosis.

It is possible that one or more of these HPAI viruses may continue to circulate in North America through 2015. To date, no humans or other mammals have shown signs of disease from these particular viruses but field personnel handling live or dead wild birds should take precautions. The NWHC is continuing to monitor for HPAI by testing sick and dead migratory birds, including screening all suitable raptor submissions. As we learn more about these HPAI viruses, submission and testing criteria may change; please consult with a Field Epidemiologist at the NWHC if you have any specific concerns. The NWHC will continue to provide updates via Wildlife Health Bulletins as more information becomes available. For an up-to-date summary of results from combined federal and state agency HPAI virus surveillance in wild birds, view this multiple agency table: Wild bird HPAI cases in the U.S. For surveillance results for HPAI in poultry and captive wild birds, view this USDA table: Update on Avian Influenza Findings.

Avian cholera 2014 national summary

During 2014, the USGS National Wildlife Health Center (NWHC) received carcasses from 15 wildlife mortality events and five additional reports from other laboratories that were confirmed or suspect avian cholera cases. These 20 events were spread over 12 states and three Flyways (Mississippi, Central, and Pacific). The total avian cholera mortality reported was ~18,500, which accounts for almost 40% of the total avian mortality reported in 2014.

Four events in 2014 involved 3,000 or more dead birds: Tule Lake NWR/Lower Klamath NWR in California (February to April; n = 3,500), Great Salt Lake in Utah (November and December; n = 6,000), Bosque del Apache NWR in New Mexico (November to January 2015; n = 3,850), and Walker Lake in Nevada (December to February 2015; n = 3,000). Of these events, three (New Mexico, Nevada, and California) involved primarily geese and ducks with Snow Goose (*Chen caerulescens*; n = 3,674), Ross's Goose (*C. rossii*; n = 647), and American Coot (*Fulica americana*; n = 750) being the most affected species during 2014 cholera outbreaks. This is the first detection of avian cholera mortality in the state of Nevada since 1999 when over 2,500 ducks were reported dead in Churchill County. The Great Salt Lake event involved Eared Grebes (*Podiceps nigricollis*; n = 6,000), which is similar to what has been reported in past years. More information about avian cholera can be found on the NWHC website.

Cassin's Auklet mortality

Beginning September 2014 and continuing into February 2015, surveyors conducting routine beached-bird surveys recorded unusually high numbers of dead and debilitated Cassin's Auklets (CAAU, *Ptychoramphus aleuticus*) on beaches from central California, up the Pacific coast through Oregon, Washington, and to Vancouver Island, British Columbia. Preliminary mortality estimates suggest that tens of thousands CAAU have died, at rates 10-100 times "normal."

A total of 153 carcasses were examined to document age, sex, and body condition, and to assess probable cause of death. Necropsies were performed by the USGS National Wildlife Health Center (NWHC; n = 12 from California, Oregon, and Washington in November and December), California Department of Fish and Wildlife (n = 32 from California in November), California Academy of Sciences (n = 23 from California in November and early December), Oregon State University (n = 5 from Oregon in December and January), and the British Columbia Ministry of Agriculture (n = 81 from British Columbia in December). Most of the birds necropsied from California, Oregon, and Washington were emaciated or in poor body condition and most were presumed to have died of starvation. A consistent finding in birds examined from all sites was gastrointestinal hemorrhage, interpreted as a sign of physiological stress. No pathogenic bacteria or viruses were isolated from birds submitted to the NWHC. We continue to investigate additional carcasses from this event to rule out disease and determine the cause of death.

At major CAAU breeding colonies in California (Farallon Islands) and British Columbia (Scott Islands; >80% of the world population of CAAU), breeding success in 2014 was very high, resulting in an exceptional number of hatch-year birds dispersing away from colonies after the 2014 breeding season. Ocean conditions in the North Pacific during summer and fall 2014 were unusually warm. This warm water remained offshore from the Gulf of Alaska south to the northern California current for much of 2014. With the relaxation of upwelling in late summer, the warm water moved inshore to the coast in approximately September 2014. The anomalously warm water seemed to affect zooplankton community composition; krill (*Euphausiidae*) were detected at normal abundance on trawl surveys off central California during July, but were absent during surveys in September. Winter storms began affecting the northern portion of the study area during late October 2014. These storms may have also affected both ocean conditions and CAAU energetics.

See Audubon Magazine's account of this event at

<http://www.audubon.org/magazine/march-april-2015/lost-sea-starving-birds-warming-world>

Wildlife Health Information Sharing Partnership – event reporting system (WHISPers)

The USGS National Wildlife Health Center (NWHC) is in the beta testing stage of a new online database for reporting wildlife health events that will be an easy and efficient way for wildlife professionals across North America to share disease event information, such as outbreak onset and ending date, general location, species involved, numbers involved, diagnoses, and laboratory and contact names. It is a partner-driven, web-based system for tracking basic information about historic and ongoing wildlife mortality and morbidity events. The primary goal of the system is to provide natural resource partners and the public with timely, accurate situational awareness regarding these events. The system also serves as a searchable archive of historic mortality and morbidity event data. Initially, the NWHC will populate this database with the wildlife mortality data the NWHC has maintained for several decades (see

http://www.nwhc.usgs.gov/publications/quarterly_reports/index.jsp); after the initial rollout, other wildlife professionals will be able to enter data that can be viewed by others. A "Frequently Asked Questions" handout is available at

http://www.nwhc.usgs.gov/publications/other/WHISPers_FAQ.pdf.

The complete Quarterly Wildlife Mortality Report is available at:

http://www.nwhc.usgs.gov/publications/quarterly_reports/index.jsp.

To view new and ongoing wildlife mortality events nationwide visit:

http://www.nwhc.usgs.gov/mortality_events/ongoing.jsp.



