



Fifth WDA Latin American Section Newsletter

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Latinvets – Coordinating and Supporting Wildlife Care in the Americas and Beyond

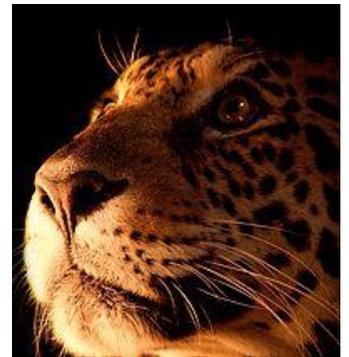
By Carlos Sanchez & Roberto Aguilar



In the Fall of 2001, seven zoo and wildlife veterinarians from Latin America got together during the annual conference of the American Association of Zoo Veterinarians. Their goal was to discuss a means of uniting and coordinating information flow and exchange with colleagues. There was a consensus that Latin American professionals needed to have access to information and resources that seemed to be readily accessible in the USA and Europe, but hard to find and utilize in the Spanish speaking world.

Typically, relevant papers and books had a ten to fifteen year lag from publication to the time they reached practitioners in the field and zoos abroad. A decision was made to start up an informal mail list of colleagues with the goal of breaching the gap. Latinvets was selected as a name, and the organization was run informally by two of the members who volunteered for the task.

At present, the list and its offshoots represent a group of professionals; biologists, ecologists, researchers, zoo administrators and veterinarians, who work and study wildlife both in free living conditions and in captivity. The shared resources are not limited to a single language or region. Exchanges occur in Spanish, English and Portuguese, primarily. The strength of the group lies in an egalitarian and respectful participation of all its members. Membership depends on the recommendation of an existing member.



The group has undergone several transformations and four “resurrections” to fit a workable, flexible and easily accessible format. At present, it has 1750 members in 28 countries, mostly in Latin America and Europe, but is expanding to North America and Asia. It also has a website that acts as a databank <http://www.latinvets.com/>, a Twitter account, and a Facebook page with 2000 followers. Two coordinators and a webmaster volunteer to ensure that the list’s rules are followed, but the resources belong, free of charge, to the members.

The main objective of the group has always been to promote communication, where members can freely circulate information and exchange ideas, concepts and protocols. An environment of serious

professional respect is constantly demanded and maintained. Each member is responsible for contributing their experiences in order to respond and/or enrich this virtual environment. The exchange ultimately benefits animal health and welfare. Information on financial support for pre- and post-graduate studies, funds for conservation projects, courses, workshops, symposia, and relevant meetings is also sent around and noted on an online calendar. Occasionally, volunteer and work opportunities associated with the field of wildlife are posted. The free flow of information would not be possible without the valuable participation of its members. The exchange over the years has had the added effect of creating and nurturing friendships based on mutual respect and collaboration. We are committed not only to important professional network, but also to promote



the well-being and conservation of all wildlife.

Associated References:

Aguilar, R. F. and C. Walzer. Zoo-Based Based International Conservation Extension: Two Separate but Equal Models. 2003. Proceedings of the 41st International Symposium on Diseases of Zoo and Wild Animals (Verhandlungsbericht des 41. Internationalen Symposiums über die Erkrankungen der Zoo-und Wiltiere). Rome, Italy. 28 May - 1 June. Pp. 321.

Aguilar, R.F. and C. Walzer. International Conservation Extension: How the rubber chicken circuit, training visiting professionals, and performing workshops abroad can help rob Peter to pay Paul. 2002 Proceedings of the American Association of Zoo Veterinarians. Milwaukee, WI. October 5 - 10. Pp. 260 - 263.

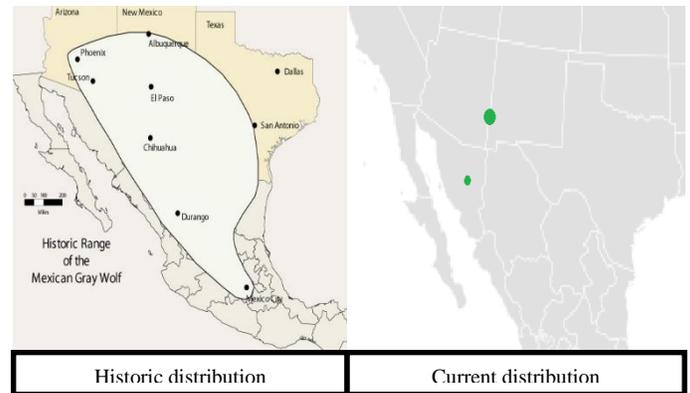
Aguilar, R.F., D. Hilliard, M.E. Martínez, E. Dierenfeld, and M. Garner. Veterinary Outreach: Coordinating Technology Transfer and Professional Training Programs in Latin America. 2000 Proceedings of the American Association of Zoo Veterinarians. New Orleans, LA. September 17-21. Pp. 407-411.

CONSERVATION SPACE

NASAL TUMORS IN THE MEXICAN GRAY WOLF (*CANIS LUPUS BAILEYI*)

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The Mexican Gray Wolf (*Canis lupus baileyi*), is the rarest, southernmost, and most genetically distinct subspecies of the North American gray wolves. It is also one of the most endangered canids in the world. Although once present in large portions of the Southwestern United States and Mexico, it was almost completely eliminated from the wild in the 70's. The Mexican and US government



collaborated to capture the last wild Mexican wolves in Mexico and with these individuals started a captive breeding program. The captive program has been successful and currently there are small free-ranging populations in Mexico and the US.

In 1995 the first case of nasal neoplasia was reported in Mexico; since then a total of 25 cases of nasal neoplasia have been described in the species in both populations in Mexico and the US. Of the 25 nasal tumors 10 occurred in Mexico and 15 in the USA. Of the total number, 10 were classified as nasal adenocarcinomas, 12 as nasal squamous cell carcinoma (SCC), 1 as an osteosarcoma, 1 fibrosarcoma and 1 as undifferentiated carcinoma. This correlates to findings on domestic dogs where 80-90% % of nasal tumors are of epithelial origin (adenocarcinomas, SCC), and the rest are of mesenchymal origin (osteosarcoma, chondrosarcoma, fibrosarcoma).

These tumors of epithelial origin are considered locally invasive with 2ndary extension into frontal and paranasal sinuses (Figure 1), Infrequent metastasize (0-12%). We have seen a number of neoplasms clustered around different family lines and a suspected genetic predisposition is currently being investigated. Like in dogs, we have not seen a sex predilection but the mean age of presentation in the Mexican wolf is 8 ½ y.o while in the domestic dog is 11 y.o. Mexican wolves affected by nasal neoplasia can present early signs such as sneezing, epistaxis, labored breathing, reverse sneezing and serous, mucoid or mucopurulent discharge.

More advanced cases will present with severe dyspnea, lethargy, weight loss and facial deformity including exophthalmia and even neurological signs if the cranial vault has been affected. At this time, we do not know what is the cause of this seemingly high prevalence of nasal tumors in this species; studies investigating the possibility of a viral component as the cause of this pathology is underway.

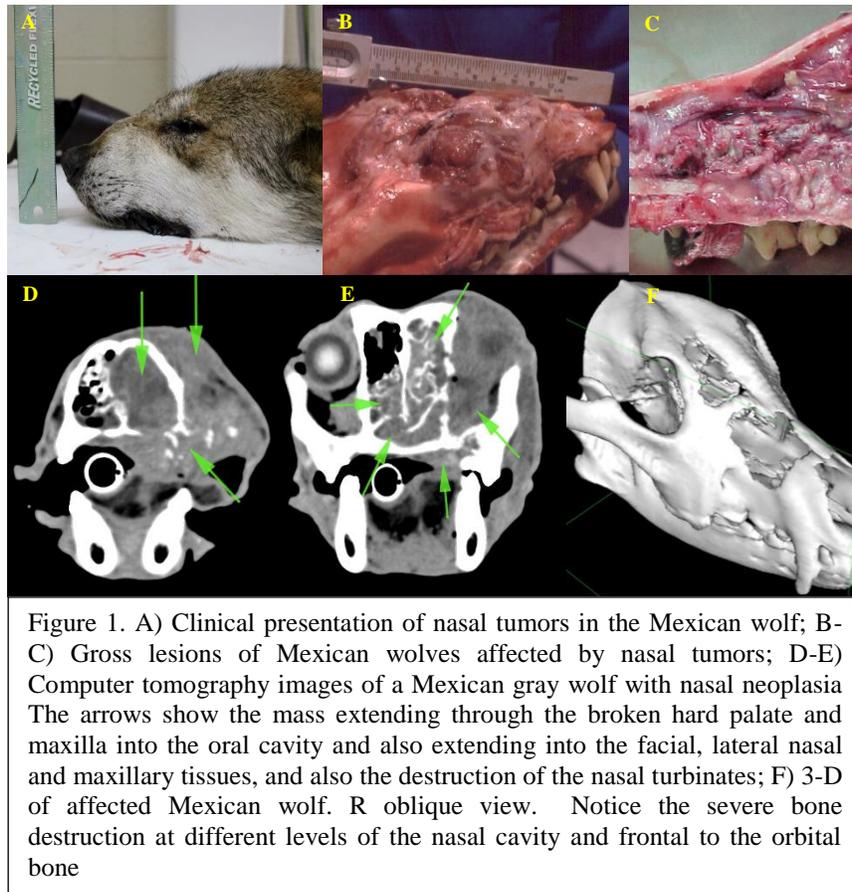


Figure 1. A) Clinical presentation of nasal tumors in the Mexican wolf; B-C) Gross lesions of Mexican wolves affected by nasal tumors; D-E) Computer tomography images of a Mexican gray wolf with nasal neoplasia The arrows show the mass extending through the broken hard palate and maxilla into the oral cavity and also extending into the facial, lateral nasal and maxillary tissues, and also the destruction of the nasal turbinates; F) 3-D of affected Mexican wolf. R oblique view. Notice the severe bone destruction at different levels of the nasal cavity and frontal to the orbital bone

Diagnosis is reached using a battery of tests and techniques including radiographs: fine needle aspirates or nasal flush for cytologic examination, biopsies of affected tissue, rhinoscopy and computer tomography scans (Figure 1). Histopathology is necessary to determine what type of tumor is present.

There is no effective treatment for this pathology; radiotherapy and chemotherapy have been attempted with limited results. At

this time, the recommendation for active cases is to monitor quality of life and to humanely euthanize the animal when progression of the tumor is advanced.

CURRENT MORTALITY EVENTS IN LATIN AMERICA

CURRENTLY OUTBREAKS OF YELLOW FEVER IN BRAZIL

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Brazil is currently facing the worst yellow fever outbreak (sylvatic cycle) of the last decades. From 2016 to the present moment, 107 human cases and 46 deaths have been confirmed in Southeastern Brazil, mostly in the state of Minas Gerais. Yellow fever is an acute infectious febrile and non-contagious disease caused by a RNA virus of the *Flavivirus* genus, affecting humans and primates, and considered endemic in parts of Africa and South America.

The yellow fever virus has three transmission cycles: jungle (sylvatic), inter-mediate (savannah – only present in Africa), and urban. In the urban cycle, *Aedes aegypti* is responsible for disseminating the disease, whereas *Haemagogus* and *Sabethes* genera, both important in Latin America, are involved in the sylvatic cycle. Viremic mosquitoes infect primarily non-human primates, but may also infect humans during their stay in the jungle. Prevention relies on vaccination (10 years term) of people living in endemic and surrounding areas; however, there is no vaccination available for non-human primates. To the present moment, 400 individuals of a variety of Atlantic Forest endemic primate species have been found dead in Espírito Santo state, next to Minas Gerais. All Neotropical primates are susceptible to the virus; some genera are more sensitive and present higher mortality rates (e.g. *Alouatta* (howler monkeys) and *Callithrix* (marmosets and tamarins)), whereas others seem more resistant and are able to easily acquire immunity (e.g., *Sapajus* (capuchin monkeys)). Certain species, however, are of concern, such as the



Northern muriqui (also known as Northern woolly spider monkey) (*Brachyteles hypoxanthus*), the biggest Neotropical primate together with the southern muriqui (*Brachyteles hypoxanthus*), and one of the 25 most endangered primate species worldwide. In addition, a very dangerous and worrisome fact, driven by lack of information, has been reported in the most affected areas of Minas Gerais and is currently undergoing investigation by the IBAMA

(Brazilian Institute of the Environment and Renewable Natural Resources of the Brazilian Ministry of the Environment). Local residents are allegedly killing primates in an attempt to stop disease transmission, which is not only a crime, but also a huge misconception. Primates are sentinels of yellow fever. In the Americas, deaths of susceptible non-human primates may indicate the presence of the yellow fever virus in a specific geographic location or environment and surveillance provides an early warning of human transmission risk, promoting a rapid implementation of vaccination and prevention strategies. The Minas Gerais Health Department is orienting people to immediately notify the local zoonosis department in case they find a dead primate. Other control measures currently in use include vaccination of residents of the affected and adjacent areas, and even of people planning on traveling to such regions, vector control and measures against further deforestation.

References:

Almeida, Marco AB, et al. "Surveillance for yellow fever virus in non-human primates in Southern Brazil, 2001–2011: A tool for prioritizing human populations for vaccination." *PLoS Negl Trop Dis* 8.3 (2014): e2741.

<http://g1.globo.com/jornal-nacional/noticia/2017/02/com-medo-da-febre-amarela-moradores-de-minas-matam-macacos.html>

<https://www.cdc.gov/yellowfever/transmission/index.html>

CURRENT MORTALITY EVENTS IN LATIN AMERICA

VEHICLE-COLLISION AND BIODIVERSITY CONSERVATION

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The Brazilian Center for Studies in Road Ecology (CBEE) estimates that over 15 animals per second die in Brazilian highways; about 475 million per year. Most of these animals are small vertebrates, small birds and snakes. The United States estimates the daily rate of one million vertebrate deaths by vehicle-collision. However, these rates are generally underestimated due to the number of animals that do not die at the moment of the collision, but later on, on the adjacent areas. Researchers indicate that wild animal-vehicle-collision in developed countries is the first direct anthropogenic cause of wildlife deaths, surpassing hunting.

The main questions on this process are:

- Could biodiversity loss due to vehicle-collision possibly become a conservation threat?
- Is vehicle-collision a random occurrence?
- Is there a connection between vehicle-collision and animals sustaining diseases?

Aiming to clarify these questions, Urubu ('vulture' in Portuguese), a Brazilian app developed by the Brazilian Center for Studies in Road Ecology, identifies road kill hotspots around the country based on information supplied by the general public. It allows Smartphone users to upload photographs of animals that have been hit by cars (road kill). A team of experts will then identify, classify and rank the species, providing a map of the high-risk areas for that respective species. Since October 2015, 251 individuals of threatened species were identified throughout Brazil. In January 2017 alone, 17 anteaters and 2 maned wolves (*Chrysocyon brachyurus*) were registered.



Giant Anteater (*Myrmecophaga tridactyla*) dead by vehicle-collision in Brazil.
Credits: www.revelacaoonline.uniube.br

Roadkill is a long-term issue in Brazil; yet, from an epidemiological point of view, there is still little information available on the impact of roadkill on biodiversity conversation. Studies performed in the last 20 years, have identified the following animal-vehicle collision-associated pathologies: cryptosporidiosis (United

States), tuberculosis (Europe), and rabies, paracoccidiosis, Rocky Mountain spotted fever and leishmaniosis (Brazil). Further studies are still needed to clarify the implicated factors in this new line of wildlife disease research.

More information:

Urubu System
<https://sway.com/hHqq2LMIjTRRPRAI>
http://cbee.ufla.br/portal/sistema_urubu/

Infographics:

BIENNIAL CONFERENCE, MEXICO, 2017.

Dear WDA-LA Members,

We invite you to register and submit your abstracts for the 66th WDA 2017 Congress, held along with the 5th KALAAN-KAB Disease Ecology Congress, and the 3rd WDA Latin American Section Congress, to be held from 23 to 28 July in San Cristobal de las Casas, Chiapas, Mexico.

The call for abstracts of oral and poster presentations for the 2017 scientific program ends on April 1 at 11:59:59 PM EST. An acceptance notification will be issued on May 2nd, 2017. Authors should provide the formatted presentation during the online submission process. Abstracts not included for oral presentations may be considered for poster presentations. We also ask presenters to include their affiliations and degrees for continuing education requirements, as requested in the online registration form. Abstracts submitted by students will be considered for the special student poster and oral presentation sessions. Students can also run for student awards.

Brief list of key speakers:

Jonna Mazet,

DVM, MPVM, PHD

Professor of Epidemiology and Disease Ecology
Executive Director, One Health Institute, UC Davis

Jonna Mazet earned her doctorate on veterinary medicine, masters on preventive medicine, and her PhD in epidemiology at UC Davis. Currently, she is the Executive Director of the UC Davis One Health Institute (OHI). Dr. Mazet specializes in emerging infectious diseases and wildlife epidemiology, and as the OHI director, focuses on global health problem solving.

Jean-François Guégan

French Institute for Research on Sustainable Development (IRD), France

Jean-François Guégan is a 56 years old theoretical ecologist interested in the ecology, evolution and policy-making of human infectious diseases, and their host vectors and reservoirs. He is the current Senior Research Director with the highest rank (“de classe exceptionnelle”) at the same Institute where he supervised a Dynamics of Systems and Infectious Diseases research group and the joint national team called UMR MIVEGEC.

Carol Meteyer

DVM, diplomate, American College of Veterinary Pathologists
Senior Science Advisor
Health and Environment
U.S. Geological Survey National Center, Reston VA

Carol Meteyer specializes in the ecology and comparative pathophysiology of disease in wild populations of birds, terrestrial and marine mammals, reptiles and amphibians. Prior to her work

with wild populations, she determined causes of morbidity and mortality in industrial and backyard poultry, zoological collections, laboratory animals, and companion animals.

For more information, please visit the website:
www.kalaankab.org, or write to:
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