

SUPPLEMENT TO THE JOURNAL OF WILDLIFE DISEASES

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Wildlife Diseases Newsletter

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President's Corner

Bugs also travel! We live in a physically shrinking world where different countries and continents come closer. It is easy to travel nowadays and millions of people travel throughout the world every year. Not only do people travel, but animals are also moved around the world. Domestic animals are transported to new continents for breeding or for slaughter. Wildlife are translocated to new areas in restoration programs or sold to wildlife farms.

Not only large animals travel – small creatures do it as well. Snails and other invertebrates travel with fruits, vegetables, logs and other organic matter and escape in ‘new’ ecosystems changing the ecology. Fish are introduced into new waters and also cause ecological problems. The smallest animals may be the ones that cause the most serious problems. Small animals like microbes and parasites. Embedded in hosts (humans, animals) or vectors, they are moved around the world in increasing numbers. This leads to new diseases in new areas, and in new animal species causing serious problems and sometimes also ecological disasters. And when these diseases are introduced into wildlife there is almost never a possibility to eradicate them. One example of this is the introduction of malaria into native birds on Hawaii. Another is the introduction of bovine tuberculosis into wildlife in Africa. Diseases seem of considerable interest to the media today. Every day we read about new and emerging diseases, like SARS and Influenza. But the media concentrate on the news - the unknown disaster, the risk for humans, and most of all the fear of pandemic disease. The role of wildlife as reservoirs for several diseases is sometimes also highlighted. However, that profile is mainly from the view that wildlife are a reservoir of disease and a risk for humans. Little is discussed about these diseases from the wildlife perspective.

I do not think it is possible or maybe even desirable to stop people from travel. Animal movements will also continue. We therefore have to accept that the risk for introduction of new diseases in new areas will persist. But it is more than necessary to reduce this risk for humans and wildlife. A basis for this is the knowledge about which microbes and diseases are found in different species worldwide. The solution for that is of course a disease monitoring program in every country. This is, unfortunately, not the present situation. Most disease monitoring programs exist only in Europe, North America and Australia. Disease monitoring programs are urgently needed in other parts of the world. Perhaps the WDA, with the expertise of our membership, can play a role here by encouraging countries worldwide to start monitoring programs. We are knowledgeable about wildlife diseases. It is therefore important for us members of the WDA to spread our awareness to authorities and organizations worldwide that a wildlife disease monitoring program is as important as programs monitoring diseases in livestock. We may need to have closer cooperation with organizations like OIE (Office Internationale des Epizooties) and also with local and regional authorities in countries throughout the world. I think this is something we as a Wildlife Disease organization must work more with in the future.

-Torsten Mörner, President

Executive Manager's Report

A Grasp for History of the WDA: Jobs are numerous and diverse in my position as a part time executive manager for the WDA. However, none seem to have the same urgency as the impacts of retirement of WDA members like myself from our 'permanent' jobs! When downsizing from office to home upon retirement, I discarded quite a bit of material about the WDA! Many of us don't have to make these personal decisions for quite some time. Nevertheless, the decisions made by myself and other WDA members like me are affecting us as an Association! **I request your help in collecting information about history of the WDA for archives.** The history of our Association is important to us in understanding our origins and also in understanding who we are! This project has a greater than usual sense of urgency because there are many members now retiring who may still have material that could enrich our archives. I have started approaching members individually and now make this appeal to you collectively. We are particularly interested in newsletters, photos, programs and abstracts of annual meetings, minutes of Council meetings and other material prior to 1970. However, we are missing more recent material, so learning of your willingness to donate more recent material will also be important.

Beginning in 1959 and continuing until the late 1970s, we published on microfiche cards at least 70 papers in our publication *Wildlife Diseases*. We no longer had any copies of these publications as an Association. Thank you very much to Rick Botzler who has recently donated an incomplete but extensive set of the publications in *Wildlife Diseases* in addition to programs and abstracts of many meetings since 1971. This is a huge start! Thank you also to Charlotte Quist who has donated her collection of Supplements/Newsletters. I will appreciate hearing from anyone willing to assist with donation of material for the archives. Many thanks!

-Ed Addison, Executive Manager. (email: ecolink@aci.on.ca or phone: 905-727-4476)

WDA ACTIVITIES

53rd Annual Meeting of the Wildlife Disease Association. August 27-September 3, 2004; San Diego, California, USA. The WDA will hold its annual conference jointly with the American Association of Zoo Veterinarians and the American Association of Wildlife Veterinarians on August 27th to September 3rd, 2004, in San Diego, CA. The meeting will be organized into joint sessions and a general WDA session, which includes the Student Competition. Joint Sessions are as follows: Captive and Free-Ranging Wildlife; Health and Conservation; Emerging Diseases; Pathology; Wildlife Law, Ethics, and Policy; Management of Introduced Exotics, Invasive Species and Pests; Health Issues of Captive Propagation and Translocation Projects; New Technology and Conservation Applications; Conservation Efforts of Marine Species; Animal Health and Applied Conservation for the California Ecoregion; Disease Ecology and Epidemiology; Anesthesia and Immobilization; In Situ Conservation; and Wildlife-Livestock Disease Interface. All information regarding the meeting can be found at both <http://www.aazv.org> and at <http://www.wildlifedisease.org>. **Please note that the deadline for submission of abstracts has already passed.**

Editor's note:

Due to unexpected delays, the January issue of the Supplement containing conference information was not mailed in time for the March 16 abstract submission deadline. Please accept our apologies and we hope that this has not caused any inconvenience for our readers.

WDA STUDENT ACTIVITIES

ATTENTION MENTORS AND ADVISORS! Please encourage your students to apply for WDA's student awards. The deadline for 2004 is past; however, it is never too early to start preparing for next

year's competition, which will take place in Cairns, Australia!! Each year, the WDA sponsors a competition for three student awards. The WDA Student Awards Committee (comprising 11 members from US, Africa, Australia, and Europe) will judge the research and scholarship awards. Members of the annual meeting's attending audience judge the Terry Amundsen Award. Details and criteria upon which each award is judged are available on the WDA website at the following URL:
http://www.wildlifedisease.org/Student/Student_Awards.htm

HAPPENINGS IN THE FIELD

***Parmelia* Causes Death of Hundreds of Wyoming Elk.** Since February 8, 2004 nearly 300 Wyoming elk have died due to consumption of lichen of the genus *Parmelia*. *Parmelia* spp., abundant in the desert soils of the state, produce an acid that causes severe muscle weakness, the pathophysiology of which remains unknown. The deaths occurred along the southern edge of the Red Desert and west of the continental divide, in and around the Daley Ranch state wildlife area. Sick animals were reported as starving, dehydrated, and unable to stand, although fully alert and vocalizing.

Veterinarians and biologists with the Wyoming Game and Fish Department and the Wyoming State Veterinary Laboratory ruled out many other potential causes of the elk's affliction, including CWD, brucellosis, parasites, and non plant-related toxins, before narrowing it down to *Parmelia*. Scientists found *Parmelia* in the stomachs of necropsied elk, and captive elk placed on a diet of *Parmelia* exhibited the same clinical signs as seen in the wild elk.

Further research will be needed in order to learn more about the ecology of this lichen, its toxin, why this type of mortality had not been observed before. South central Wyoming has been in a severe drought for approximately five years. Consequently, the lichen may have been one the few foods available to the elk. No other animals including horses, cattle, antelope, deer or scavengers in the area were afflicted. Answers to scientists' questions will hopefully lead to management approaches that will reduce the risk of another occurrence of *Parmelia* toxicity in wildlife.

-Adapted from ProMED-AHEAD March 22, 2004

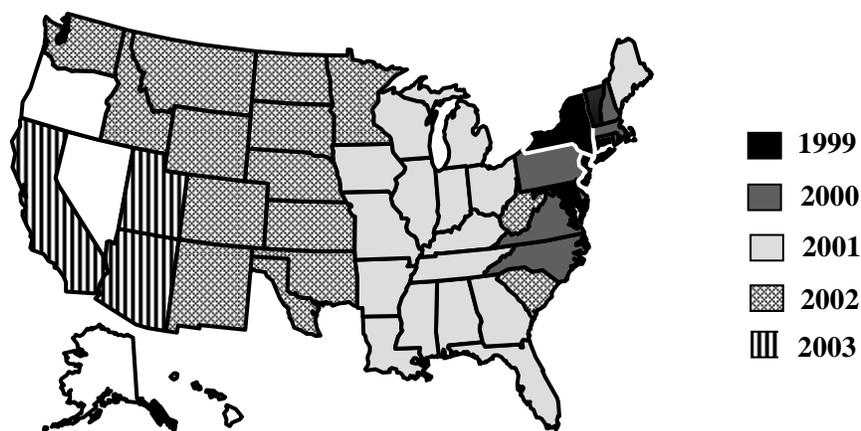
National Wildlife Health Center Quarterly Mortality Report

Mass Mortality of Northern Fulmars along the Pacific Coast. In early November 2003 the NWHC was contacted by the USFWS in Oregon regarding reports of large numbers of dead northern fulmars found along the Washington and Oregon coastlines. Several days later SeaWorld of San Diego reported morbidity and mortality of northern fulmars along the southern California coast. Northern fulmars are the only seabird species reported to be suffering significantly increased mortality. Mortality began in mid-October and continued at some level through late December in California. Mortality continued to be reported in Oregon through late January, where biologists report that mortality this year is more than double the highest levels reported since monitoring of beached pelagic bird carcasses began in 1978. Examination of dead fulmars by pathologists and biologists from the California Department of Fish and Game, Moss Landing Marine Laboratories, Marine Wildlife Veterinary Care and Research Center in Santa Cruz, and SeaWorld of San Diego demonstrated that all birds were in poor to emaciated body condition, the majority were hatch year birds, and none of the bird's upper GI tracts contained fresh prey. Dead birds from Oregon examined by the NWHC were emaciated juveniles with moderate to heavy lice and gastrointestinal nematode infestations. One bird had a large quantity of plastic foreign bodies in its proventriculus and gizzard, but there was no evidence of blockage of the GI tract.

Avian Cholera in Western and Central United States. Avian cholera die-offs have continued over the last five years with a significantly lower number of dead birds and reduced geographic extent when compared with epizootics of the late 1980's and mid 1990's. Waterfowl mortality began at National

Wildlife Refuges in the Central Valley of California in early December 2003 and continued into early January, 2004. The mortality in the Central Valley involved Aleutian Canada geese, snow geese, Ross' geese, and several species of dabbling ducks. Avian cholera was reported during December, for the first time in five years, in snow geese as they flew south in along the Mississippi River migratory pathway in Iowa and Missouri. Snow geese also died in Arkansas and Texas within the same time period but there was no confirmed cause of death. The diagnosis of avian cholera was confirmed in all cases by identification of gross and histologic lesions consistent with avian cholera and the isolation of *Pasteurella multocida* from tissues of birds.

West Nile Virus Continued Spread across North American Continent in 2003. By the end of 2003, West Nile virus (WNV) activity was detected in 45 continental states and the District of Columbia, 7 Canadian provinces, and in several Mexican states. Interestingly, although WNV was detected in the state of Washington in 2002, WNV activity was not detected there in 2003. As of January 2004, over 13,000 dead birds have tested positive for WNV. The list of species found positive for WNV continues to grow longer, currently with over 220 avian, 22 mammalian and 1 reptilian species. In addition to the wildlife species, almost 6000 horses and over 11,000 human cases (including 231 deaths) in 2003 were reported by public health agencies in the United States and Canada. Although the number of reported human cases was significantly greater in 2003, the actual number of the severe form of disease (meningitis/encephalitis) is similar to that reported in 2002. At this time, there is direct evidence for any significant change in the virulence of the WNV strain in North America. The Midwestern states were the primary foci of activity in 2002, while in 2003 the Rocky Mountain states of CO, WY, and MT were the major foci of virus activity in 2003. Based on observed trends of WNV activity in North America, public health and wildlife officials in the western United States are anticipating high WNV activity in their states in 2004. It remains unknown if and when WNV will arrive in Hawaii and Alaska, and the impact WNV will have on the avifauna of these states.



Progression of West Nile Virus in the United States (1999-2003)

Quarterly Wildlife Mortality Report
October 2003 to December 2003

State	Location	Dates	Species	Mortality	Diagnosis	Reported by
AR	Arkansas County	12/15/03-12/16/03	Snow Goose	28(e)	Open	AR, NW
CA	Delevan NWR	09/25/03-10/29/03	Mallard American Coot Ruddy Duck Northern Shoveler	43	Botulism type C Open	C NW

CA	San Joaquin River NWR	12/01/03-ongoing	Aleutian Canada Goose American Coot Ross' Goose American White Pelican White-Fronted Goose	100 (e)	Avian cholera Aspergillosis	NW
CA	Butte Sink NWR	12/09/03-12/17/03	Snow Goose Mallard Gadwall American Widgeon	350(e)	Avian cholera Lead poisoning	NW
FL	Marion County	11/15/03-ongoing	Cattle Egret Great Egret	200 (e)	Salmonellosis	FL, NW
IA	Fremont County	12/02/03-12/09/03	Snow Goose	200 (e)	Avian cholera	NW
ID	Ada County	11/01/03-11/17/03	Mallard	45 (e)	Open	NW
LA	Lafourche Parish	12/08/03-12/10/03	Unidentified Gull American White Pelican Unidentified Sandpiper Dunlin	5(e)	Toxicosis: petroleum suspect	NON
ME	Hancock County	10/06/03-10/06/03	Common Eider	50 (e)	Pulmonary edema	NW
MN	Dakota County	11/05/03-11/06/03	Unidentified Gull	134 (e)	Open	MNS, NW
MO	Saline County	11/01/03-ongoing	Snow Goose Mallard	23	Avian cholera	NW
MO	Buchanan County	12/02/03-12/05/03	Unidentified Duck Gadwall Snow Goose	205 (e)	Avian cholera	NW
MO	Bob Brown WMA	12/09/03-12/12/03	Snow Goose Mallard	50 (e)	Avian cholera	NW
MS	Harrison County	10/01/03-10/31/03	Mississippi Gopher Frog	100 (e)	Parasitism: Perkinsus-like organism	NW
NC	Watauga County	10/14/03-10/14/03	Eastern Hellbender Unidentified Fish Unidentified Salamander	40,000 (e)	Toxicosis: sodium hydroxide	NCA
OK	Salt Plains NWR	11/10/03-11/12/03	Canada Goose	3	Aspergillosis	NW
ONT	Lake Huron	10/01/03-11/30/03	Common Loon Unidentified Grebe Unidentified Fish Double-Crested Cormorant Unidentified Gull	25 (e)	Botulism suspect	CCW
TX	Aransas NWR	12/01/03-12/05/03	Snow Goose	80 (e)	Open	NON
UT	Wasatch County	03/03/03-09/03/03	Columbia Spotted Frog	30	Open	NW
WA	King County	10/10/03-10/31/03	American Crow	13	Avian Pox Airsacculitis	NW
WA	Skagit, Snohomish and Whatcom County	12/01/03-ongoing	Trumpeter Swan	323	Open	BC, WAS
WA	Ridgefield NWR	12/03/03-12/04/03	European Starling	450 (e)	Toxicosis suspect	NW
WA, OR, CA	Multiple Counties	10/20/03-ongoing	Northern Fulmar	10,000 (e)	Emaciation Parasitism Plastic ingestion	NW, SWD
WI	Trempealeau County	10/03/03-10/05/03	Cedar Waxwing	20(e)	Open	NW
WI	Kenosha County	12/07/02-12/17/02	Canada Goose	30	Lead	WI
Updates/Corrections						
CA	Sacramento NWR Complex	07/08/03-09/20/03	Mallard Northern Pintail Northern Shoveler American Coot Gadwall	236	Botulism type C	NW
FL, GA, SC	Multiple Counties	03/12/03-11/30/03	Unidentified Bird	47 (e)	Eastern equine encephalitis	FL, SC, SCW
FL	Seminole County	08/01/03-11/10/03	Black Vulture	4 (e)	Arthritis: septic Bacterial Infection suspect Viral Infection: West Nile	NW, UFL

ONT, NY	Lake Ontario	08/01/03-12/31/03	Unidentified Fish Great Black-Backed Gull Unidentified Gull Common Loon Common Goldeneye	24	Aspergillosis Botulism type E NY, CCW
PA, NY, ONT	Lake Erie	07/15/03-12/15/03	Unidentified Fish Common Loon Ring-Billed Gull Unidentified Gull Herring Gull	9,200 (e)	Botulism type E CCW, Botulism NW, suspect NY
TX	Multiple Counties	08/01/03-08/31/03	Unidentified Raptor	200 (e)	Viral Infection: TX West Nile suspect
US	All continental states except ID, OR, NV, WA	01/08/03-12/31/03	American Crow Blue Jay Black-Billed Magpie Unidentified Sparrow House Sparrow	11,597 (e)	Viral Infection: CDC, West Nile NW, SCW, ST
VA	James City	09/01/03-09/05/03	Muscovy	10 (e)	Open NW Salpingitis
WI	Upper Mississippi NWR	09/18/03-12/01/03	American Coot Lesser Scaup Mallard Northern Pintail Ruddy Duck	3,000	Parasitism: NW Sphaeridiotrema globulus Parasitism: Cyathocotyle bushiensis Parasitism: Coccidiosis
WY, MT, CAN	Multiple Counties	08/01/03-08/31/03	Sage Grouse	22	Viral Infection: WY West Nile
WY	Campbell County	05/20/01-05/24/01	Tiger Salamander	80 (e)	Viral Infection: NW Iridovirus
WY	Carbon County	05/30/01-05/30/01	Tiger Salamander	33	Viral Infection: NW Iridovirus

(e) = estimate; Ψ = morbidity, not mortality

Arkansas Livestock and Poultry Laboratory (AR), B.C. Ministry of Environment (BC), Canadian Cooperative Wildlife Health Center (CCW), Center for Disease Control (CDC), Florida Game and Fish (FL), Minnesota Department of Natural Resources (MNS), New York State Dept. of Environmental Conservation (NY), Southeastern Cooperative Wildlife Disease Study (SCW), North Carolina State Laboratory (NCA), Sea World of San Diego (SWD), South Carolina Department of Health and Environmental Control (SC), Various states lab sites (ST), Texas Parks and Wildlife Commission (TX), University of Florida (UFL), Washington Department of Fish and Wildlife (WAS), USGS National Wildlife Health Center (NW), Wyoming State Laboratory (WY), Wisconsin Dept. of Natural Resources (WI), No diagnostics pursued (NON).

Written and compiled by Kathryn Converse/Rex Sohn - Western US, Grace McLaughlin - Eastern US, NWHC. The Quarterly Wildlife Mortality Report is available at <http://www.nwhc.usgs.gov>. To report mortality or receive information about this report, contact the above NWHC staff, or for Hawaiian Islands contact Thierry Work. Phone: (608) 270-2400, FAX: (608) 270-2415 or e-mail: kathy_converse@usgs.gov. USGS National Wildlife Health Center, 6006 Schroeder Road, Madison, WI 53711.

WDA SECTION NEWS

News from the European Section

Please visit the EWDA web-site at www.ewda.org

The Sixth EWDA conference, Uppsala, Sweden, 9-12 September 2004. See Meeting Announcements. **Keynote speaker:** Dr Roy Bengis, Kruger N.P., will be talking about anthrax and tuberculosis. Themes – Disease interactions between predators and prey animals, Emerging diseases of European Wildlife. Free papers. More at the web site – www.sva.se/ewda/.

Workshop on Transmissible Spongiform Encephalopathies (TSEs) and Chronic Wasting Disease (CWD), Uppsala, Sweden, 8 September 2004. Experts on TSE and CWD will be presenting overviews and updates on TSEs with special focus on wildlife. The workshop includes a microscopy session on interpretation of histopathology and immunohistochemistry of BSE, CWD, FSE, Nor98, and other TSEs. More at the web site – www.sva.se/ewda/

West Nile Virus Surveillance in Europe The global importance of West Nile Virus infection is increasing. In the News from Europe section we hope to include short articles from several European countries, giving an indication of the surveillance carried out in that country for WNV. The first article is from France. Please contact Paul Duff if you are involved in national WNV surveillance in Europe.

West Nile virus in France in 2003

Hars, Jean¹, Zeller, Hervé², Zientara, Stéphan³; ¹Unité sanitaire de la faune, Office National de la Chasse et de la Faune Sauvage, Gières, France; ²Centre National de Référence des Arbovirus, Institut Pasteur, Lyon, France; ³Agence Française de Sécurité Sanitaire des Aliments, Maisons-Alfort, France

Background-In France, West Nile virus (WNV) was first recognised in 1962-65 when it caused infections in humans (19 clinical cases, no deaths) and horses (500 clinical cases, 50 deaths) living in the Camargue area, a wetland located in Southern France. After an epidemiological silence of thirty-five years, the disease emerged in 2000 in the same area, where an outbreak was observed concerning only horses (76 clinical cases, 21 deaths). In 2003, a WNV outbreak in the Var district was detected through the surveillance system.

Methods-The national surveillance of WNV in humans, horses and birds which was initiated in 2001 was based on surveillance of encephalitis cases both in humans and horses all over France, but particularly focused in the Camargue area, viral detection in mosquito samples collected in the Camargue from July to October 2001, surveillance of abnormal mortalities in wild birds in the Camargue, and serological monitoring of sentinel birds on a monthly basis from June to November, including 150 mallards and 150 chicken located in 30 sites distributed all over the Camargue area.

Results-In 2001, the detection of WNV in mosquito pools was negative (997 pools tested).

In 2001 and 2002, there were no confirmed clinical cases in humans or horses and no abnormal mortality was observed in the avifauna. Only two seroconversions were detected in sentinel birds, one in October 2001 in a mallard and one in August 2002 in a chicken indicating a very low circulation of WNV in the Camargue region.

In 2003, WN monitoring in sentinel birds from the Camargue was negative. Meanwhile a cluster of WN encephalitis cases was detected in humans and horses in the Var district, located more than 100 km east from the Camargue, in a drier area. A total of 3 encephalitis and 4 mild illness cases were identified in humans, all living or having stayed in the vicinity of the city of Fréjus. Four equine cases were identified, living within 25 km distance west from the human cases. Symptoms had first occurred during the last 2 weeks of August in the human cases and between the 17th and 23rd September in the horses.

A serological study was carried out among horses and (human) blood donors in the area where cases had occurred. Preliminary results show that out of 906 horses, 306 (34 %) were tested positive for anti

WNV IgG and 10 to 30% out of them, positive for IgM. Concerning blood donors, final data aren't available, but it seems that only a few positive results were revealed. Among the mosquitoes captured in October around the homes of the human cases, *Culex pipiens* was the predominant species. None of the mosquito pools were tested positive for WNV. Moreover, no abnormal mortality was observed in the avifauna.

Conclusion-This outbreak of West Nile Virus infection in the Var caused a limited number of cases in humans and horses, highly clustered in time and place. Seroprevalence studies suggest a low level of circulation of the virus in humans and an important circulation in horses in the Var district. These events confirm the fact that WNV seems to be able to appear in France in other locations, in addition to the known areas. The national surveillance program must be adapted in 2004 to incorporate this epidemiological finding.

Acknowledgments-Institut de Veille Sanitaire; Direction générale de l'Alimentation; Direction Générale de la Santé; Centre Hospitalier Universitaire de Nice; Direction Départementale des Services Vétérinaires du Var; Entente Interdépartementale de Démoustication Méditerranée
-Jean Hars, Email: j.hars@oncfs.gouv.fr

Submission to the European Section. Material for publication in News from Europe can include recent wildlife disease outbreaks and new diseases in Europe, short case and meeting reports; job and scholarship announcements. We encourage submissions, and will help with the English language, if required. The deadline for the next issue is February 2004. Please mail, fax or e-mail submissions to, Paul Duff, VLA Penrith, Merrythought, Calthwaite, PENRITH, Cumbria, CA11 9RR, United Kingdom, e-mail p.duff@vla.maff.gsi.gov.uk Fax: ++44(0)-1768-885314 /phone: ++44(0)-1768-885295.

News from the Nordic Section. Erik Ågren: email: Erik.Agren@sva.se

The Nordic sections' homepage has moved to a new address, has been updated, and will hopefully continue to expand with news and information from the Nordic countries. Follow the link from the WDA homepage, or go directly to <http://www.sva.se/nwda/index.htm>

Red Fox Survey. In Sweden, at the department of wildlife at the National Veterinary Institute, the annual collection of samples from 400 hunted red fox (*Vulpes vulpes*) to screen for *Echinococcus multilocularis* and *Angiostrongylus vasorum* has been completed. So far, the past 3 years testing has been negative for echinococcosis, and no new cases of angiostrongylosis have been found. A few outbreaks of salmonellosis (*Salmonella typhimurium*) have been observed in Eurasian Bullfinches (*Pyrrhula pyrrhula*) found dead around feeders, a not unusual occurrence in the late winter season. An incident of mortality in Crows (*Corvus corone*) and Jackdaws (*Corvus monedula*) occurred in a city park in Helsingborg, in the south of Sweden, with more than 50 birds dropping dead from the resting trees one single night. Acute poisoning was suspected at necropsy and histopathology, but so far no specific substance has been identified. A rather unique case this winter, was a yearling lynx (*Lynx lynx*) found dead beside a killed roe deer (*Capreolus capreolus*). The lynx had died from a localised acute traumatic injury to the neck vertebrae. By reading the traces in the surrounding snow, it was deduced that the roe deer, when being killed by a female lynx accompanied by two yearling lynx, had thrashed about and landed a blow squarely on the neck of one of the younger lynx, killing it instantly!

-Erik Ågren, DVM

Leporid salmonellosis in Finland. Every winter a varying number of passerine birds die of salmonellosis in Finland. Large-scale mortality due to salmonella has never been reported, and usually individual samples submitted to autopsy consist of 1-2 birds. Samples have come from practically all parts of the country. Salmonella isolates from wild birds in Finland have been *Salmonella enterica* serovar Typhimurium, phage type 40.

In this winter the same Salmonella serovar has caused deaths in hares, which is regarded as fairly exceptional in Finland. During January and February, the National Food and Veterinary Institute found salmonellosis in a mountain hare (*Lepus timidus*) from Northern Finland and in a brown hare (*L. europaeus*) from Eastern Finland. Both animals had a generalised bacterial infection, necrotizing, multifocal hepatitis being the most prominent finding. In addition to hepatitis, the mountain hare had lymphadenitis, typhlitis, and necroses in bone marrow and the brown hare suffered from severe pericarditis and pleuritis. The latter was in moderately good condition, which suggests a relatively rapid course of disease.

Despite the wildlife cases, there have not been any unusual outbreaks of *Salmonella typhimurium* in humans or domestic animals in Finland this winter. Mountain hare populations have been slightly increasing in North Finland, and brown hare populations have increased in the eastern part of the country.

-Marja Isomursu, DVM

News from the African Section

The 2nd Annual meeting of the African Section of the WDA was held at the University of Pretoria on November 6 and 7, 2003. The meeting was a resounding success, and a special appreciation goes to the sponsors, Professor Banie Penzhorn, the organising committee, our guest speaker Dr. Richard Stroud, our hosts the South African Veterinary Association–Wildlife Group, and all those who contributed papers. We were fortunate to have Mr. Hector Magome, Director of Conservation Services-South Africa give an opening address that was very insightful on the conservation challenges in South Africa and conservation in general. He highlighted the need to view wildlife as an asset and the need to partner with communities. Our second highlight was an address by the President of the WDA, Dr. Torsten Morner, who was very encouraged by the Africa & Middle East Section's growth and pledged to attend the next annual meeting. Dr. Richard Stroud, of the United States Fish & Wildlife Service, delivered the plenary address on Wildlife law enforcement and forensic medicine in the US, and conducted a half-day seminar on the same. Other topics covered by various speakers ranged from bovine tuberculosis in wildlife in South Africa to the use of probiotics in cheetahs. The meeting ended with the 2nd Annual General Meeting in which a draft constitution for the section was presented to the members and adopted, pending a few minor corrections. The meeting proposed to have the 2004 Annual Meeting in November in the United Arab Emirates to encourage more networking among veterinarians in the Middle East region.

Since the second annual general meeting, we have been able to prepare CD – Rom proceedings of the 2nd Annual meeting. This CD includes the keynote address by Dr. Stroud, the notes of the forensic medicine lectures, and the PowerPoint presentations from various presenters. Also included on the CD are the amended WDA Africa & Middle East constitution, the minutes of the 2nd AGM, and the accounts for the year 2003. Please note that the proceedings will be mailed out to paid-up members only. I would therefore encourage those who would like to receive copies of the proceedings but have not paid up to do so as soon as possible through their regional representative, or by contacting

the treasurer—Richard Kock at richard.kock@oau-ibar.org. It may be more convenient for you to pay for 2 or more years at a time, to avoid incurring costs sending \$10.

Secondly, I wish to inform the members that through the efforts of Dr. Jacob Mwanzia, our regional representative in the Middle East, he has identified a possible host for the 3rd Annual General Meeting, which we hope to hold in November this year in Abu Dhabi, UAE. They have agreed in principle to host us pending some clarification on some of our section details, which we are hastening to provide. If agreed upon, we will have our first announcement out by April 2004. We will seek submission of presentations on wildlife disease concerns of importance in the Africa & Middle East region, but seek to highlight the emerging and re-emerging wildlife health issues in the Middle East region.

Finally, I hope that some of our members will be attending the main WDA meeting to be held in San Diego, USA in September this year.

With regards,

--Elizabeth Wambwa Chairperson: .email: ewambwa@yahoo.com

WDA SECTION CHAIRS AND CONTACT INFORMATION

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Australasian Section. For information regarding the Australasian Section, contact Tim Portas, Western Plains Zoo, P.O. Box 831, Dubbo, NSW 2830, Australia. Phone: 61 2 6881 1460; Fax: 61 2 6884 1496; email: tportas@zoo.nsw.gov.au.

European Section. For information regarding the European Section, contact Marc Artois, ENVL, Unite Pathologie Infectieuse, BP83, 69280 Marcy l'Etoile, France, Telephone: 33-487-87-27-74, email: m.artois@fvvet-lyon.fr

Nordic Section. For information regarding the Nordic Section, contact Eric Agren, Department of Wildlife, National Veterinary Institute, SE-751 89 Uppsala, SWEDEN, Phone +46 18 67 40 00 Fax +46 18 30 91 62 or E-mail: Erik.Agren@sva.se

Wildlife Veterinarian Section. For information regarding the Wildlife Veterinarian Section, contact Dave Jessup, California Department of Fish and Game, 1451 Shaffer Rd., Santa Cruz, CA 95060, USA. Telephone: 831-469-1726, email: djessup@ospr.dfg.ca.gov.

BOOK REVIEWS

Zoo Animal Nutrition Tables and Guidelines by Walter L. Jansen and Joeke Nijboer, EZNC Amsterdam. Since its establishment in January 2002 the European Zoo Nutrition Centre (EZNC) showed already many worthwhile activities. The most visible result of all this is the recent publication of "Zoo Animal Nutrition and Guidelines". This handy, cheap, pocket size booklet contains a wealth of information on the subject. Especially the chapters and tables on energy requirements, recommended nutrient levels and foodstuff analysis contain indispensable information for everybody who regularly

or even irregularly is involved in design and evaluation of zoo diets. With additional material it can also be very useful in course work or similar educational activities.

Rapid developments in zoo nutrition will make regular new editions necessary, if the zoo community acknowledges the importance of this publication and starts making extensive use of this booklet, this will facilitate future editions with every time the newest figures and insights incorporated.

Ordering information: Price: € 8, 95 (excluding postage and package)

Order forms: see www.EZNC.org or email: info@eznc.org

-*Tjalling Huisman*, Lecturer Animal Nutrition, Dept. of Animal Management, Van Hall Instituut, Leeuwarden, NL

JOB ANNOUNCEMENTS

Visit the JWD website at <http://www.wildlifedisease.org> for up to date job listings.

TRAINING/EDUCATIONAL OPPORTUNITIES

ACZM Ultra-Short Course. Saturday August 28, 2004 in San Diego, California. The American College of Zoological Medicine (ACZM) will offer a one-day examination prep course on Saturday, August 28, 2004 in conjunction with the 2004 joint annual meeting of the American Association of Zoo Veterinarians, the Wildlife Disease Association, and the American Association of Wildlife Veterinarians, in San Diego, California. The purpose of the course is to introduce participants to the ACZM board certification examination. Information will be presented on requirements and strategies for credentialing, studying, and taking the examination, and didactic lectures will be given on topics covered in the examination (diseases of waterfowl, carnivores, and emerging diseases and zoonoses of wildlife). Registration is \$125 if received by 5 pm August 2, 2004, \$150 if received after August 2, 2004, including the day of the course. Minimum enrollment: 10. Maximum enrollment: 25. Enrollment determined on a first come, first served basis. More information and registration forms will be included with conference registration materials, and are available on the ACZM website (www.aczm.net). Send your registration form and a check (in US dollars, payable to ACZM) to: ACZM Education Committee, c/o Kirsten Gilardi, Wildlife Health Center, UC Davis School of Veterinary Medicine, 1 Shields Ave, Davis, CA 95616. Questions may be directed to kvgilardi@ucdavis.edu.

Training Available in Fish Diagnostics, Inspections, and Laboratory Methods. The US Fish and Wildlife Service Fish Health Centers provide laboratory and field examination services to the National Fish Hatcheries. Our main emphasis is to assist the hatcheries in producing quality fish that will contribute to the enhancement and restoration of aquatic ecosystems. At the Olympia and Idaho Fish Health Centers, the work may involve travel to field sites to perform diagnostic examinations and collect samples that are then evaluated in our laboratories. Routine testing procedures include bacteriology (biochemical, ELISA, and PCR methods), virology (cell culture, serological, and PCR methods), parasitology (microscopic and PCR methods), histology, and clinical chemistry. Training may be arranged for one day or several weeks at one or both of these laboratories depending on the interests and availability of the individual. In general, most broodstock inspections are performed from September through November, juvenile inspections are performed from January through April, and wild fish surveys are conducted from March through September. Routine diagnostic examinations are performed year round and special projects are conducted as time and necessity permit. For more information, please contact Joy Evered DVM, at the Olympia Fish Health Center; email

joy_evered@fws.gov or Marilyn Blair DVM, at the Idaho Fish Health Center; email marilyn_j_blair@fws.gov.

Sr. Veterinary Student Preceptorship in Avian and Conservation Medicine. A four to six-week preceptorship in Avian and Conservation Medicine is being offered to a senior-year veterinary student by the International Crane Foundation (ICF) in Baraboo, Wisconsin. The preceptor will train with the Veterinary Services Unit of the Conservation Services Department in all phases of the clinical practice, but have opportunities for interaction with the Crane Conservation Department to learn captive propagation, husbandry and management of this unique family of birds. The preceptor can expect to gain practical experience in crane capture, transport, anesthesia, preventive medicine, disease surveillance, and the contribution of veterinary medicine to crane conservation including field project support and professional consultations. Preceptors are encouraged to complete and report on a research or laboratory project during their stay. Opportunities for visiting the University of Wisconsin School of Veterinary Medicine and the National Wildlife Health Center in Madison, WI will be made available to interested preceptors. No stipend is available for this position; however, on-site housing in the ICF Guesthouse will be provided depending on availability at the time the preceptorship is scheduled. Applicants should send a cover letter, curriculum vitae, or resume and one letter of recommendation from a faculty member of their home institution to: Barry Hartup, Director of Veterinary Services, International Crane Foundation, E-11376 Shady Lane Road, Baraboo, WI 53913, email hartup@savingcranes.org. Please view our website at www.savingcranes.org.

Directory of Post-Graduate Educational Opportunities in Zoo and Wildlife Medicine. The World Association of Wildlife Veterinarians has recently produced a Directory of Post-Graduate Educational Opportunities in Zoo and Wildlife Medicine. The Directory covers opportunities in over fifty countries and is a must for veterinary students or graduates interested in furthering their careers in the field of wildlife medicine. For further information, please contact the Secretary of the WAWV at: F.Scullion@zoo.co.uk.

PUBLISHING OPPORTUNITIES

Veterinary Clinical Pathology invites the submission of high quality research articles, research communications and reviews on all aspects of veterinary clinical pathology and clinicopathologic mechanisms of disease. The journal features PubMed/MEDLINE indexing, no submission fees or page charges (minimal charges for color plates), rapid turnaround time, and e-mail manuscript submission (send to: asvcp@vetclinpathjournal.org). See online instructions for authors at <http://www.vetclinpathjournal.org/authorinfo.html>. You also are invited to visit the Veterinary Clinical Pathology website at <http://www.vetclinpathjournal.org> for browsable archives. For articles on aquatic, exotic, and wildlife see <http://www.vetclinpathjournal.org/archive/exotic&wildlife.html>. For a table of Contents see <http://www.vetclinpathjournal.org/currentissue.html>. To receive an e-mail table of contents for each issue, please send a request to asvcp@vetclinpathjournal.org.

Mary Christopher, DVM, PhD, Dipl ACVP, Dipl ECVCP

Karen Young, VMD, PhD

Co-Editors-in-Chief

MEETING ANNOUNCEMENTS

18th annual meeting of the Society for Conservation Biology. July 30-August 2, 2004. The 18th annual meeting of the Society for Conservation Biology will be held 30 July through 2 August 2004 in New York City. The scientific program will cover a wide variety of topics and will include plenary sessions, invited symposia, workshops, organized discussions, poster sessions, and concurrent sessions of contributed oral presentations. Deadline to submit abstracts: January 31, 2004. For more information please go to the SCB website at: <http://www.conbio.org>

Sixth Conference of the European section of WDA. September 8-12, 2004. The sixth European Conference of the European Section of Wildlife Disease Association will be held in, Sweden on September 8th – 12th, 2004. The Conference will consist of presentations and posters on all aspects of wildlife diseases worldwide. Special sessions will be arranged covering “Disease interactions between prey animals and their predators” and “Emerging diseases of European Wildlife”. Free papers are also welcome. In addition, a full day workshop on Chronic Wasting Disease will take place on the 8th of September, which will include a histology wet lab examining various TSE’s. Requests to contribute a paper or a poster, as well as accompanying abstracts, should be received no later than June 15, 2004. The deadline for submission of abstracts for the Student Presentation Award to the Student Activities Committee is May 15th, 2004. Submit abstracts to the Program Chair, Dr Dolores Gavier-Widén, Department of Wildlife, National Veterinary Institute, SE-751 89 Uppsala, SWEDEN, Phone +46 18 67 4XXX, FAX +46 18 67 42 96, E-mail: Dolores@sva.se. For full information on registration, housing, costs and more visit the EWDA website: www.sva.se/ewda.

11th Annual Conference of The Wildlife Society, Calgary, Alberta, Canada. September 18-22, 2004. The Wildlife Society will hold its 11th Annual Conference in Calgary, Alberta, Canada, September 18-22, 2004. The meeting will include symposia, workshops, contributed papers (oral presentations), and posters. We invite submission of technical papers and posters on topics of wildlife science, management, education, or policy within the broad theme of *Excellence in Wildlife Stewardship through Science and Education*. Presentations will not be published, so we encourage reports from the author's most recent scientific investigations and management experiences. Papers and posters should present results from completed studies or completed phases of long-term projects. Deadline for submissions is February 16, 2004. Please visit the TWS website at www.wildlife.org for more information. Questions about abstract preparation and submission may be directed to Program Committee Chair Rick Baydack at baydack@ms.umanitoba.ca. For all other conference questions, please contact The Wildlife Society office at (301) 897-9770 or lisa@wildlife.org.

The 5th International Symposium on Physiology, Behaviour and Conservation of Wildlife. September 26-29, 2004. The 5th International symposium on Physiology, Behavior and Conservation of Wildlife will be held in Berlin, Germany, from 26th to 29th of September 2004. The main topics of this year’s symposium will be management of captive and small populations, stress and disturbance, behaviour, reproduction biology and wildlife conservation. The symposium also includes several workshops (e.g. animal welfare and conservation, olfactory communication in mammals, chronoecology-chronoethology, and ultrasonography in conservation biology). Further information is available from Dr. Christian C. Voigt, Institute for Zoo and Wildlife Research, Alfred-Kowalke-Str. 17, 10315 Berlin, Germany, symposium@izw-berlin.de and the web: <http://www.izw-berlin.de>.

Annual Fall Meeting of the Northwest Association of Forensic Scientists. October 25-29, 2004.

The Northwest Association of Forensic Scientists will present "Wildlife Forensics: The missing Link in Conservation" as the main theme of the Annual Fall Meeting October 25 - 29, 2004. The National Fish and Wildlife Forensics Laboratory will host the meeting in Ashland, Oregon. Two days of workshops and three days of technical paper presentations are planned. Lodging and other meeting information can be found on the web site nwafs@fws.gov. Abstracts of papers and preregistration deadline is August 31, 2004. Instructions for submitting abstracts are available on the website. Early registration is strongly encouraged as the available housing and meeting facilities are limited.

54th Annual Meeting of the Wildlife Disease Association. July 2005. The 54th Annual Meeting of the WDA will take place in Cairns, Queensland, Australia, in July, 2005 (dates yet to be determined). The theme for the 2005 conference will be "Wildlife Disease in a Shrinking World". This meeting will include a symposium on the ecology of introduced diseases, as well as special sessions devoted to tropical and marine ecosystem health. Cairns is located in beautiful, tropical northern Australia, where participants will have the opportunity to visit the rainforest and the Great Barrier Reef. Stay tuned for more details in the Supplement to JWD and on the WDA website at: <http://www.wildlifedisease.org>. You may also contact: Lee Skerratt, School of Biomedical Sciences, James Cook University, Townsville, Queensland, Australia, 4811 Ph: 61 7 4781 4838, Email: lee.skerratt@jcu.edu.au.

The 5th World Congress of Herpetology. November 2005. The 5th World Congress of Herpetology will be held in Cape Town, South Africa, in November 2005. More information at: <http://www.adobe.com/products/acrobat/readstep2.html>. If for some reason you can't open the file then visit the Herpetological Association of Africa site (www.wits.ac.za/haa). It has a link to where you can down-load the file and will also be updating information on the conference as it becomes available. We will also be setting up links to all of the above on the SRARNZ website soon (<http://www.vuw.ac.nz/srarnz/>).

Note from the Editor:

Please make note that my contact address has changed as of November 3, 2003. Send any items such as reports, meeting announcements, diagnostic riddles, position and grant announcements, or anything else deemed appropriate for the Supplement to the Journal of Wildlife Diseases, to Pauline Nol at USDA/APHIS, National Wildlife Research Center, 4101 LaPorte Avenue, Fort Collins, CO 80521, Email: pauline.nol@aphis.usda.gov. Files in Microsoft Word sent electronically or via disk are preferred, though submissions in any form are welcome!! The deadline for submission of articles for the next issue (July 2004, JWD Vol. 40, No. 3) is May 31, 2004.