SUPPLEMENT TO THE JOURNAL OF WILDLIFE DISEASES

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VICE PRESIDENT'S CORNER

Welcome Africa! In April of this year, Council approved the request from WDA members in Africa to establish an African section. Congratulations. The WDA now has the following geographic sections – Australasian, Nordic, European, Latin American and African, thus covering most parts of the world. We also have a Wildlife Veterinarian section. Wildlife diseases occur all over the world and affect wildlife and wildlife populations. It seems therefore natural to me that we are represented in all parts of the world. We need interested and devoted people in every part on our planet to work with wildlife diseases and their role in the ecology of animals. So a new section means, hopefully, more members and more activity within WDA. Our members are the most important resource within WDA, and we really encourage everyone to enroll more members in the different sections. When did you last enroll a new member? The Wildlife Disease Association was founded in North America 51 years ago and has, for many reasons, its strongest position in USA and Canada. The first section was the Australasian section, established in the early 1980s, followed by the Nordic section in 1983. The majority of WDA members are found in North America with around 700 full members and 275 subscribers. This can be compared with around 170 full members and 110 subscribers in Europe, Asia, Africa and Australia all together. So, only 20% of the members are from outside US and Canada. This is a figure that could be improved! One attempt the WDA used to attract more members was the establishment of the Associate membership, but up to now this category has only 10 members.

Wildlife diseases and the work with wildlife health are, of course, international, and it is for many reasons very important for WDA to increase the international membership. The two traditional major goals for WDA have been to publish the *Journal of Wildlife Diseases* and to arrange annual and international meetings, where scientists involved in the work with wildlife diseases can meet. However, only around 150 people, or 15% of the membership, attend the annual meeting that normally is held in North America.

There is an increasing trend for people from outside North America to attend the annual meetings of WDA, but we would like to see more do so. One possible reason why people do not go that they think a meeting in North America is dealing mainly with North American disease problems and would not be beneficial for scientists from other parts of the world. This is wrong. After 18 years in a row attending the WDA Annual meetings, it is my strong opinion that everyone involved in wildlife diseases would gain a lot from attending the annual meetings. The work and methodology with wildlife diseases are similar worldwide, although the bacterium, parasite or chemical compound might differ. Attending a meeting also gives you the opportunity to meet people within the same field. You make contacts and can get advice which may help in your daily work. Or you might get opportunities to work in another country. So think it over and plan to attend next year's meeting. It is important in this respect also to encourage North American members to go to the section meetings in Europe, Africa or Australasia. The representation of North American members in international meetings is, in general, low, and it would be good to see this change. The exchange of knowledge and increase in international cooperation should work in all directions. This is very important for the future, and it might be one of the most important issues that we should work on.

Traveling to meetings is always an economical problem. For many of us is it difficult to find money for expensive trips to other countries. This is probably the same situation for people inside as well as outside North America. Another problem in some countries is that economies are weak and the exchange rate against the dollar is not favorable. This makes the membership fee to join the WDA and the costs of publishing in the *JWD* extremely expensive. These are also important issues that we should address in the future.

There is a lot of work carried out within the different sections of WDA. Meetings, exchange of knowledge, cooperation, and joint meetings with other societies and organizations, newsletters, etc. But the conditions are different for each section, as well as the structure of the work performed. With the establishment of a new section in Africa it is important to keep in mind that all parts and sections of WDA must be kept active. These sections also need solid support from all our "old" members of WDA. So I urge everyone to expand your plans on meeting attendance. Think about going to Africa or Australia and attend their meetings in the future. Or why not plan for next year's meeting in Saskatoon in Canada? When you are reading this, some of us are attending the annual meeting at Humboldt State University in California. As always, this meeting will, of course, be loaded with new information and it will be well-organized and well worth a trip around the world to attend!

- Torsten Mörner, Vice President.

WDA ACTIVITIES

51st Annual Meeting of the Wildlife Disease Association. Theme: Preparing for Emerging Diseases. The 51st Annual Conference of the WDA will be held **28 July to 1 August 2002** at the Redwood Coast Conference Center, Humboldt State University (HSU), Arcata, California, USA. The Conference Center is situated at the north end of the HSU campus, lying adjacent to the City of Arcata's Redwood Park near Jolly Giant Creek.

The conference will be sponsored by HSU's College of Natural Resources and Sciences, and several other agencies and organizations. The Editorial Board and WDA Council will meet on Sunday, 28 July, prior to the start of the general sessions. On Sunday evening, the Wildlife Health Center (UC Davis) will host a special reception for students at 6 p.m. that is followed by a general welcoming reception for all members at 7 p.m. General sessions will begin on Monday, 29 July and continue through Thursday, 1 August. Social events will include the picnic on Monday, auction on Tuesday, and awards banquet on Wednesday. Please be sure to bring your auction items!

Details of the Conference will be forthcoming and regularly revised on the Conference website (www.humboldt.edu/~wda/); additional questions or concerns can be directed to local arrangements co-chairs, Rick Botzler (Tel. 707-826-3724; fax: 707-826-4060; e-mail: RGB2@humboldt.edu) and Rick Brown (Tel. 707-826-3320; fax 707-826-4060, e-mail: RNB2@humboldt.edu).

WDA Student Activities.

The WDA Student Awards.

[Editor's note: The WDA Student awards are listed here for information only. The deadline for the 2002 awards has passed, so watch future issues of the Supplement for the guidelines for the 2003 awards!]

Wildlife Disease Graduate Student Research Recognition Award: This award is given to the student judged to have the best research project in the field of wildlife disease, based on written communication and scientific achievement. The winner receives a plaque and up to $1000 US to cover travel, housing, registration, etc. related to the annual conference. The student will be the featured presenter during the Student Presentation Session at the conference.

Wildlife Disease Association Scholarship: This scholarship acknowledges outstanding academic and research accomplishment, commitment, and potential in pursuit of new knowledge in wildlife disease or health. The scholarship has a value of $2000 US and is awarded annually to an outstanding student who is pursuing a master's or doctoral degree specializing in research on wildlife disease.

Terry Amundsen Student Presentation Award: This award acknowledges outstanding oral presentation of research findings. Winner receives $250.00 and a plaque.

Reminder: WDA Web Site Now Password-Protected!! The WDA web site has been partially password-protected to reflect the WDA Council's desire to provide access to some information to WDA members only, as a member benefit. If you are a current member, and have not received the password, and want it, please contact the business office at WDA@allenpress.com. The password will be changed annually, and that information will be provided to members.

HAPPENINGS IN THE FIELD

New Zealand Sea Lion Epidemic 2002. New Zealand's only endemic pinniped, Hooker's or the New Zealand sea lion (*Phocarctos hookeri),* suffered another set back during the 2002 breeding season and just four years after the 1998 epidemic (see http://wildlife.massey.ac.nz). This year the population was dealt a double blow with the lowest ever figures for pup production followed by an epidemic which killed more than 30% of those born over the first two months, but in contrast to the 1998 event there were no mortalities among adult females.

During the 2001-2002 breeding season estimates of pup production were the lowest recorded since research activity commenced on this population. At the largest breeding colony on Dundas Island, pup production, estimated using mark-recapture methods, was 20% lower than in 2001, while at the Sandy Bay colony, production was down by almost 30%. Reduction in pup production could result either from lowered survival of adult females, or from a reduction in the reproductive rate of females. Comparisons of counts of adult females hauled out at Sandy Bay over the past four years indicate that the decline was not the result of fewer females coming ashore to give birth, but rather a reduction in reproductive rate. While it is unclear at this stage why the reproductive rate was lower in 2002, an adult female bycaught in February had a mummified foetus *in utero*. This has never before been recorded in five years of necropsies on bycatch sea lions and suggests an infectious agent may have caused foetal death in the females that failed to pup. It is noteworthy that *Campylobacter* sp. was identified in samples from the 1998 epidemic and this agent was also identified in samples collected in 2000. Further research on this agent is required.

In addition to the significant reduction in pup production pup mortality was unusually high this season. Daily pup deaths at Sandy Bay began to rise on 2nd January, prior to which there had been 20 deaths (0.6 deaths/day), and by 19th January a further 75 pups had died (4.4 deaths/day). The rate of mortality then slowed with 38 dying over the remaining 29 days (1.3 deaths/day). Pup mortality at both Dundas Island and Sandy Bay had reached 21% by mid-January 2002. This is almost three times the normal rate of mortality at these sites for this time of year. By 21st February, when the field party left Enderby Island, 133 of 403 (33%) pups had died at the Sandy Bay rookery.

Necropsies were conducted on 126 pups and for many the cause of death was multifactorial. Some of the primary diagnoses included stillbirth (5), trauma (41), malnutrition (10), and severe anemia caused by hookworm infection (17). However, the unusual disease syndrome that elevated mortality this season was characterized by systemic bacterial infection. This was often manifested in well-fed pups that developed septic polyarthritis that rapidly progressed to lameness, debility and death. By the time of death infection had often progressed to severe necrotizing fascitis, myositis and osteomyelitis. There was often suppurative peritonitis, pleuritis or meningitis. For 41 pups, this syndrome was the primary cause of death and for an additional 16 pups it was a contributing factor along with hookworm infection or trauma. Histologically the suppurative inflammation was associated with gram-negative bacteria. Bacteriology has been carried out on some samples to date and an interesting consistent isolate has been *Klebsiella pneumoniae* with frequent isolates of *Salmonella* sp. The *Campylobacter* organism from the 1998 epidemic has not yet been identified but PCR tests for this very fastidious organism have yet to be conducted. An update on progress will be presented at Mary River in July.

- *Pádraig Duignan. Taken from the Australasian Section Newsletter, May 2002.*

National Wildlife Health Center's Quarterly Mortality Report

Hemorrhagic enteritis in crows. The states of New York, Ohio, and Kentucky reported mortality in American crows at roost sites this winter. At necropsy, the primary findings were poor body condition and severe necrotic, hemorrhagic enteritis. *Clostridium perfringens* was isolated from several carcasses, and further diagnostic tests are underway.

Wisconsin River Bald Eagle Syndrome. Approximately 30 bald eagles were retrieved in Adams, Columbia, Dane, Iowa, Juneau, Marquette, Sauk, and Wood Counties of Wisconsin within several miles of the Wisconsin River this winter. About two-thirds of the birds were found dead or died shortly after being picked up: many birds were described as having seizures. Most of the eagles were in good physical condition and had no gross lesions indicative of infectious disease at necropsy. Microscopic examination of tissues indicated diffuse hepatocellular changes consistent with a toxic or metabolic insult; brain lesions were also observed. These findings are consistent with those of eagles collected in the same

area of Wisconsin in the winters of 1995-1996 and 2000-2001. The etiology of these lesions is still undetermined.

Vomiting gulls in Wicomico County, Maryland. Over the past six months, more than 200 gulls (species undetermined) have been repeatedly observed either sick or dead in Salisbury, Maryland. The gulls were reported as being lethargic, vomiting a white fluid, and dying within a few hours. Efforts are underway to determine the cause of the morbidity and mortality.

Aircraft strikes kill thousands of birds. The U.S. Federal Aviation Administration (FAA) collects data on wildlife and civil aircraft collisions. In January 2002, the FAA released a report covering the period 1990-2000 in the USA (http://wildlife-mitigation.tc.faa.gov/public_html/BASH90-00.pdf). They report a total of 34,370 strikes, the vast majority of which involve birds. Gulls, doves and pigeons, raptors, waterfowl, and sparrows accounted for the majority of the bird species that were identified, but bird species were unidentified in 56% of the strikes. Less than 10% of mammals were unidentified; ungulates were involved in 60% and carnivores in 22% of the remaining incidents. Reptiles accounted for 0.1% of the strikes. There were 93 strikes (2% mammals and less than 0.25% birds) that resulted in 6 fatalities and 100 injuries to humans.

Famphur mortality in Idaho. On January 30, 2001, the Idaho Department of Fish and Game (IDFG) was notified of a mass mortality of birds of mixed species along Indian Creek in Caldwell, Idaho. Approximately 150 carcasses were picked up initially, including 80% mallards, 15% pintails, 5% widgeons, 8 – 10 pigeons, and 1 red-tailed hawk. Initial investigations performed by the IDFG Wildlife Health Laboratory suggested the involvement of an organophosphate or carbamate pesticide as a cause of death. Subsequent testing by the University of Idaho Toxicology Laboratory identified the presence of famphur (Warbex) in specimens. The famphur poisoning resulted from an unintentional contamination of some grain. Frozen carcasses were submitted to the National Wildlife Health Center (NWHC) for diagnostic evaluation on February 21, 2002. All birds evaluated (2 mallards, 1 pintail and 1 red-tailed hawk) were in good body condition. The ducks had large quantities of corn in the upper GI tract, while the hawk had meat and black feathers in the proventriculus. Brain cholinesterase activity levels for the 4 birds were depressed from 73% to 83% below normal levels with no reversal after incubation suggesting the presence of an organophosphate pesticide. Additional testing will be done on upper gastrointestinal contents of birds submitted to NWHC.

Quarterly Wildlife Mortality Report

January 2002 to March 2002

State	Location	Dates	Species	Mortality	Diagnosis	Re ported by
AK	Chitina River, Cordova	01/01/02-01/09/02	Trumpeter Swan Tundra Swan	8	Open	NW
AL	Gulf Shores State Park	02/25/02-03/10/02	Unidentified Loon Brown Pelican Herring Gull Mallard Northern Gannet	20(e)	Aspergillosis	NW
AR	Stone Co., Stout Pond	01/24/02-02/05/02	Wood Frog	5	Exposure	NW
AR	Stone Co., Ozark NF	02/26/00-02/26/00	Wood Frog	140	Predation	NW
AR	Stone Co., Ozark NF	02/09/01-02/09/01	Wood Frog	35	Predation suspect	NW
CA	Salton Sea NWR	02/08/02-02/28/02	Ross' Goose	20	Open	NW
CA	Stanislaus Co., San Joaquin NWR	01/21/02-02/06/02	Ross' Goose Canada (Aleutian) Snow Goose American Coot Northern Shoveler	233	Avian cholera	NW
CA	Sutter Co., Sutter NWR	01/15/02-02/12/02	Snow Goose Northern Pintail	250(e)	Avian cholera	NW

			Ross' Goose American Coot White-fronted Goose			
FL	Okaloosa & Walton Co. Destin Harbor	02/01/02-ongoing	Brown Pelican Common Loon Osprey Herring Gull Unidentified Gull	55(e)	Open	NW
FL	Everglades NP	02/25/02-ongoing	Green Tree Frog Cuban Tree Frog	15(e)	Open	NW
GA	Richmond Co.	08/01/01-01/31/02	American Coot American Crow Red-winged Blackbird Brown-headed Cowbird Blue Jay	12(e)	Salmonellosis	NW
IA	Marion Co., Lake Red Rock	03/19/02-03/20/02	Red-breasted Merganser	38	Trauma: weather	NW
ID	Canyon Co., Caldwell	01/30/02-02/15/02	Mallard Northern Pintail American Wigeon Red-tailed Hawk Mute Swan	250(e)	Toxicosis: Famphur	ID, NW
IL	Great River NWR	01/11/02-01/13/02	Common Grackle Rusty Blackbird	30(e)	Trauma: gunshot	NW
IL	Winnebago Co., Rockford	12/26/01-ongoing	House Sparrow	100(e)	Salmonellosis	NW
KY	Corbin	01/06/02-01/10/02	American Crow	100(e)	*Clostridium perfringens* Viral infection	NW, SC
LA	Monroe	01/14/02-02/15/02	House Sparrow Northern Cardinal Red-bellied woodpecker	15 (e)	Salmonellosis	NW
LA	North Avoyelles Parish, Town of Vick	01/29/02-02/05/02	Snow Goose	30(e)	Starvation	NW
LA	Offshore Louisana	01/05/02-01/10/02	Brown Pelican	50(e)	Exposure: hypothermia	NW
LA	Port Fourchon	01/11/02-02/01/02	Brown Pelican	20(e)	Emaciation	NW
LA	Residential area	03/04/02-03/04/02	Brown-headed Cowbird	93	Open	NW
MD	Montgomery Co., Rockville	01/14/02-01/14/02	European Starling	130(e)	Trauma suspect	NW
MD	Montgomery Co., Silver Spring	12/28/01-12/28/01	European Starling	20(e)	Toxicosis: nitrate suspect	MD, NW
NC	Hyde Co., Mattamuskeet NWR	02/13/02-02/14/02	Tundra Swan	34	Gout: visceral	NW
NY	Albany Co., Albany	12/01/01-03/01/02	American Crow	1,000(e)	Enteritis: Hemorrhagic	NW, NY
OH	Mahoning Co., Boardman	01/14/02-01/15/02	American Crow	45	Enteritis: hemorrhagic	NW
OR	Tillamook Co.	11/02/01-11/08/02	California Gull	50	Toxicosis: organophosphorus cmpd. suspect	NW
PA	Erie Co., PA, Presque Isle State Park	06/23/01-12/01/01	Common Loon Double-crested Cormorant	2,500(e)	Botulism type C	CAN, NW

			Ring-billed Gull Oldsquaw Sanderling			
PA	Pike Co. Delaware Water Gap NRA	02/10/02-02/13/02	Eastern Spotted Newt	1,500(e)	Exposure suspect	NW
WA	Yakima Co.	03/07/02-03/07/02	American Crow	15	Toxicosis: organophosphorus cmpd. suspect	NW
WI	WI River area	11/27/01-04/09/02	Bald Eagle	30(e)	Open	NW

Updates and Corrections

AR	Garland Co., Lake Ouachita	12/13/01-12/31/01	Bald Eagle	1	Vacuolar myelinopathy	NW
CO	El Paso Co., Springs area	06/01/01-ongoing	Raccoon Red Fox	900(e)	Canine distemper	CO
FL	Lee Co., Gasparilla Is.	10/30/01-12/30/01	American White Pelican	20(e)	Toxicosis: brevetoxin	NW
GA	J Strom Thurmond Lake/Clarks Hill Lake	10/20/01-02/04/02	Canada Goose Bald Eagle	18	Vacuolar myelinopathy	SC
NC	Moore Co., Woodlake	10/24/01-12/31/01	American Coot	25(e)	Vacuolar myelinopathy	NW
VA	City of Richmond,	06/12/99-06/20/99	Bull Frog	19	Fungal Infection: chytrid	NW

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

Canadian Cooperative Wildlife Health Centre at University of Guelph (CC), Colorado Division of Wildlife (CO), Idaho Wildlife health Lab, Caldwell, ID (ID); Maryland Dept. of Natural Resources (MD), New York State Dept. of Environmental Conservation (NY), Southeastern Cooperative Wildlife Disease Study (SC), USGS National Wildlife Health Center (NW), Wisconsin Dept. of Natural Resources (WI).

Written and compiled by Kathryn Converse, Rex Sohn - Western US, and 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. 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 AUSTRALASIA

AWHN Endorsed by States and Territories. A national wildlife health network, to be known as the Australian Wildlife Health Network (AWHN), will commence operation on 1 July 2002. Core funding of $160,000 per year, endorsed by the Standing Committee on Agriculture and Resource Management (SCARM) has been secured from the federal government for three years to establish the network. This has been the culmination of many years of support and lobbying from people across Australia, recently gaining momentum through a national feasibility study and production of a business plan to guide investment in the network.

A national coordinator will be appointed to manage a dedicated web site and list server, as well as a national database of surveillance and diagnostic information and wildlife experts. A host agency is being sought to accommodate the network. Other activities of the network will include the development of protocols and coordination of research, surveillance, training and education.

Network's Aim: The aim is 'to promote and facilitate collaborative links in the investigation and management of wildlife health in support of human and animal health, biodiversity and trade'. This will better prepare Australia for serious disease outbreaks in its wild and feral animal populations.

A priority of the wildlife health network will be to critically assess the risks posed by wild animals, particularly feral

animals, in the advent of an exotic disease entering Australia.

Management Committee: A two tiered management committee will manage the network. This will involve State and Federal agriculture and pest animal management agencies forming an 'inner core' with conservation and health agencies, game meat industries, zoos, universities and community wildlife organizations forming an 'outer core'.

The inclusion of conservation agencies on the inner core of the managing committee has been discussed among the steering committee on several occasions. Attempts to enlist the involvement of Environment Australia in the development of the network will continue. Five of the states have combined agriculture/conservation departments, which should provide some level of conservation representation.

- Pam Whitely; taken from the Australasian Section Newsletter, May 2002.

Progress for the Australian Wildlife Health Network, May 2002. Chris Bunn, convenor of the Australian Wildlife Health Network (AWHN), announced on Monday 6th May that the successful applicant to host the AWHN was the Zoological Parks Board of NSW (Taronga) as the lead agency in collaboration with NSW Agriculture. Congratulations to Karrie and colleagues!

Selection of the host agency was through a rigorous and transparent evaluation process which consisted of five evaluators: Neil Tweddle, Product Integrity, AFFA; Dr Mary Bomford, Bureau of Rural Sciences; Peter Allen, Chairman Pest Animal CRC; Paul Ravenswood, Business Manager, Employment National, and Leesa Rawlings, Business Consultant, Employment National. A comprehensive evaluation-rating matrix was developed corresponding to the tender document criteria.

Chris Bunn said: 'Taronga's proposal was rated the highest, in an excellent field of applicants, because of their overall strength in the many areas under consideration - scientific integrity; ability to collaborate with other institutions; disease investigation and emergency response ability; education; and public relations. Their marketing experience and the resources offered will hopefully assist the network in obtaining financial support and resources from across Australia. We hope the AWHN will have a strong national profile and will unite all groups working in the area. We have currently sought nominations to the management committee of the network through the appropriate ministerial councils, organizations and agencies. We expect to have the committee selected by the end of June 2002.'

The WDA is one of sixteen organizations invited to have a representative on the Advisory Group. The Management Committee has eight members. For more information of the structure of the AWHN see 'Australian Wildlife Health Network Endorsed by States and Territories' document below which announced three years federal funding of $160,000 per year from 1st July 2002.

Advertisement for the position of National Coordinator of the AWHN will take place sometime after funding becomes available from 1st July 2002. Chris will be out of his office until June 2002, and asked if you wish to discuss any aspect of the selection or other aspects of the establishment of the Network please contact Hedy Bryant (contact details below). The network will be officially launched by ZPB (Taronga), NSW Agriculture and AFFA in the next couple of months.

- Taken from the Australasian Section Newsletter, May 2002.

Wildlife Disease Surveillance in New Zealand. Towards the latter part of 2001, a Technical Advisory Group was formed between the Ministry of Agriculture and Forestry's National Centre for Disease Investigation, the Department of Conservation, the Ministry of Health, and the Institute of Veterinary, Animal and Biomedical Sciences, Massey. Immediate outcomes were a memorandum of understanding between the groups and allocation of $200,000 in funding from the Green Party towards disease surveillance in native birds and fresh water fish. The former project is underway and coordinated by Dr Richard Jacob-Hoff, Auckland Zoo. The fresh water fish health survey is focusing largely on native species in a variety of habitats in the lower North Island. It is coordinated by Dr P Duignan, IVABS, Drs Mike Hine and Mark Bosson, NCDI, and Mike Joy, Massey Ecology Dept. These projects will be completed at the end of August so more on the results later.

Financial support for other wildlife health surveillance/research underway at Massey includes the following: The Department of Conservation awarded a Conservation Services Contract to Massey University in regard to Wildlife Health

Co-ordination, Database management, and Provision of technical Advice. Included in this contract is the ongoing provision of diagnostic pathology on threatened endemic species (Maurice Alley); In January/February the DOC Conservation Services Levy programme administrator contracted IVABS to provide veterinary support for the NZ sea lion field research programme on the Auckland Islands. Two contracts were also awarded to IVABS from the Conservation Services Levies Manager, DoC, for examination of pinnipeds and cetaceans by-caught by the fishing industry. A further contract was issued for investigations into stranded marine mammals (Padraig Duignan); a Medical Assurance Society student scholarship was awarded investigate salmonellosis in fur seals (P. Duignan, Jo Connolly); Epidemiology and pathogenesis of the emerging Salmonella Typhimurium DT160 outbreak strain in birds in New Zealand and the public health implications funded by the Ministry of Agriculture and Forestry, Palmerston North Medical Research Foundation and the McGeorge Research Fund. This ongoing work included a determination of faecal carriage rates of this organism by sparrows, investigation of bird mortality events and a future transmission study (Jo Connolly, M. Alley); the Whale and Dolphin Adoption Project awarded research funds for investigation of NZ sea lion foraging and diet through analysis of fatty acid signatures in prey and blubber (P. Duignan, Nadine Gibbs).

- Taken from the Australasian Section Newsletter, May 2002.

NEWS FROM EUROPE

5th Meeting of the EWDA, Heidelberg, Germany, 8-12 May 2002.

MINUTES OF THE 2002 ANNUAL GENERAL MEETING OF THE EUROPEAN SECTION, WILDLIFE DISEASE ASSOCIATION

General - Following an invitation from Dr. P. Dollinger, Secretary of the European Association of Zoo and Wildlife Veterinarians (EAZWV), the 5th EWDA meeting was held from 8 to 12 May 2002 together with the EAZWV at the German Cancer Research Center DKFZ in Heidelberg (Germany), with "Diseases in European Wildlife" as one of the subjects.

The business meeting of the European Section of the Wildlife Disease Association (EWDA) was called to order by the Secretary, Christian Gortázar at about 2 p.m. on Friday, 10 May 2002 at the DKFZ facilities. In attendance were the Board-members and the delegates that attended the 5th EWDA meeting at Heidelberg. C. Gortázar informed the members about the health of the Chairman, Torsten Mörner, and wished him a speedy recovery. He also explained the new position of Dr Mörner, as Vice-President of the Wildlife Disease Association. Finally, C. Gortázar gave a general explanation of the special nature of EWDA membership (without fees or other formal documents) and the relationship of the EWDA and the WDA.

EWDA Proceedings - The papers presented at Heidelberg are listed at the end of the *Supplement*. The EWDA Proceedings and abstracts at Heidelberg had to be purchased but these can now be obtained on the EWDA website at (http://www.ewda.org) .

Student Awards - As decided in Zaragoza 2000, three awards were given by the Treasurer, Marc Artois, to the best student presentations at Heidelberg 2002. All papers entered for the award are denoted below by the letter 'S', including the three prize winning entries. The first prize was given to Alex Caron, and two second awards were shared by Sophie Rossi and Nicole Latz. The high quality of all EWDA student presentations was emphasized.

EWDA Board - A proposal for a new EWDA Board and the establishment of an EWDA Advisory Board was discussed and accepted with general agreement. The following members were elected - M. Artois, Chairman; K. Frölich, Vice-Chair; U. Höfle, Treasurer; C. Gortazar, Secretary; P. Duff, Newsletter Editor; R. Delahay, Web-site responsibilities. The members of the EWDA Advisory Board are G. Boseret, D. Gavier-Widen, M. Giacometti, T. Kuiken, T. Mörner and R. Orusa.

EWDA activity proposals - Marc Artois suggested three particular areas where the EWDA might concentrate efforts in the future. (1) to improve wildlife disease surveillance in Europe in order to get a more formal way of reporting and surveying wildlife disease. (2) to develop European wildlife disease research, including possible topics such as tuberculosis, hares, wild boar, foxes, or migration and diseases. (3) to review the current teaching in wildlife diseases in European countries, in order to produce wildlife disease teaching support. M. Artois, K. Frölich and C. Gortázar, respectively, accepted positions to take the leads in these three fields.

Suggestions for Forthcoming Meetings - It was suggested to have the next meeting in a Scandinavian country, maybe in Uppsala, Sweden. After the Heidelberg meeting, which was fully organised by the EAZWV without any EWDA input, the members underlined their wish to have a pure EWDA meeting in order to focus on wildlife disease rather than on problems of animals in captivity.

Other Items:

EWDA website - **(http://www.ewda.org)** - Richard Delahay covered progress in setting up the EWDA website. This now had several items with more about to be introduced in the near future, and Richard will be helped by Marco Giacometti. Could all EWDA members who would like their details on the web-site please send Richard or Marc their name, institute and research interests; their conference abstract and any other item for the website.

Finally, M. Artois asked the EWDA membership to send any wildlife disease news, case reports and so on, to Paul Duff, the editor of the *Journal of Wildlife Disease Newsletter*.

- *EWDA Secretary, Christian Gortazar,* gortazar@irec.uclm.es

President's Address, 10 May 2002

Dear colleagues and EWDA fellows,

It is for me a great honor to become chairman of the WDA European Section board. I thank you all for your support. It is nevertheless a hard task to succeed Torsten Morner who has created this Section and led it for so many years with enthusiasm. It has been Torsten's honor to obtain recognition of our group both at the European level and overseas. When this story started in the early 90's, the few of us who were already involved in wildlife disease studies in Europe were persuaded to join the crew with enthusiasm. Since then many new people have been attracted to the organization and enrolled. They are now its rich resource and are prepared for the new challenges ahead.

In the name of all of us, I would thank Torsten for his dedication. I wish him further success in his new duties. We trust that Torsten will remain a supporter and a pre-eminent active member of our Section, mainly acting for the enforcement of our relationship with the main-section of the WDA in North America.

At the same time, the European Union is now increasing its partnership to new country members and one can expect that exciting new trails will be explored by our European Section. But, since on the one hand we are not yet formally organized and on the other, not so numerous, we have to be modest and remain realistic - although to be lucid does not impede creativity and innovation! It is my guess that the citizens of this continent, biologists and wildlife managers as well as our veterinary officers, would expect us, wildlife disease specialists, to organize ourselves in three main domains: - improving wildlife disease monitoring, developing sound science research projects and implementing specific education programs. During the coming years as EWDA chairman, I would like to spend my energy in approaching these three goals, with your help and with contributions from the new board members. I trust that our imagination and involvement shall soon allow our organization to find the necessary official support to achieve these goals. I am confident that our next meeting (possibly in Scandinavia) will give us an opportunity to measure our progress.

Thank you all again for coming to Heidelberg. Thanks to the organizers of this meeting, namely the chairman of our scientific committee, Christian Gortazar, to have offered us this nice opportunity to meet each other and share some interests with our zoo colleagues. Congratulations to all the students, who entered the student award, for their excellent presentations. I wish you all a safe trip back home and look forward to meeting you again soon.

- *Prof. Marc Artois*

European Section. Material suitable for publication includes news of recent wildlife disease outbreaks and new diseases in Europe, short case reports, announcements and reports of relevant meetings in Europe, and job and scholarship announcements. Submissions should be in English, but members for whom English is a second language, will be accommodated as far as possible. The deadline for the next issue is July 2002.

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.

WDA SECTION CHAIRS AND CONTACT INFORMATION

African Section. For information regarding the African Section, contact Elizabeth Wamba, Kenya Wildlife Service, P.O. Box 40241, Nairobi, Kenya. Telephone: 254-2-504180; Fax: 254-2-505866; email: ewamba@yahoo.com

Australasian Section. For information regarding the Australasian Section, contact Peter Holz, Healesville Sanctuary, P.O. Box 248, Healesville, Victoria 3777 Australia. Telephone: 61 3 5957 2864; fax: 61 3 5957 2870; email: pholz@zoo.org.au

European Section. For information regarding the European Section, contact Torsten Morner, The National Veterinary Institute, Department of Wildlife, Box 7073, S750 07, Uppsala, Sweden. Telephone: +46-1867-4214; fax: +46-1830-9162; email: Torsten.Morner@SVA.SE

Latin American Section. For information regarding the Latin American Section, contact Alonso Aguirre, TUSVM Wildlife Clinic, 200 Westboro Road, North Grafton, MA 01536, USA. Telephone: (508) 839-7918; fax: (508) 839-7930; email: aguirre@wpti.org

Nordic Section. For information regarding the Nordic Section, contact Hans-Henrik Dietz, Danish Veterinary Laboratory, Department of Fur Animal and Wildlife Diseases, 2 Hangovej, DK-8200 Aarhus N, Denmark. Telephone: 45-89-37-24-17; fax: 45-89-37-24-70; email: hhd@svs.dk

Wildlife Veterinarian Section. For information regarding the Wildlife Veterinarian Section, contact Dr. Terry Kreeger, Wyoming Game and Fish Department, 2362 Highway 34, Wheatland, Wyoming 82201 USA. Telephone: 307-322-2571; FAX 307-766-5630; email: tekreege@wyoming.com

JOB ANNOUNCEMENT

Field Research Interns (2 Positions) Needed from mid-June 2002 to mid-December 2002 to conduct field work on avian disease in Hawaii. Research interns will conduct field work at Kipahulu Valley and adjacent areas on the island of Maui to document prevalence and distribution of avian pox and malaria in native and non-native forest birds. Field sites are located in Kipahulu Valley and adjacent areas in Haleakala National Park. Field work will consist of: (1) mist netting and banding forest birds; (2) trapping mosquitoes; (3) collecting data on feral pig disturbance, and larval mosquito habitat. Work schedule and duties will vary during the course of the internship. Applicants must be in excellent physical condition, able to walk long distances over, uneven, steep, slippery terrain, work in remote locations (camping 7-10 days at a time will be required) and live and work in close proximity with other interns. QUALIFICATIONS: Undergraduate coursework in ecology, ornithology, wildlife biology, microbiology and/or parasitology. Prior experience mist netting, handling, and identifying forest birds is desirable. Food and laundry stipend of $400 per month, dormitory-style housing, field equipment, and field training are provided; interns must provide their own airfare to Hilo, Hawaii. Days are long and field work is demanding, but schedule provides ample time for relaxation and exploring Hawaii (snorkeling, swimming, surfing, diving, hiking, biking). Interns will live on a small rural community next to Haleakala National Park on the island of Maui. Please send cover letter, resume, and names and current telephone numbers of 3 references to: CARTER ATKINSON, P.O. BOX 218, HAWAII NATIONAL PARK, HI 96718, EMAIL: Carter_Atkinson@usgs.gov, FAX: 808-967-8545.

Field And Lab Research Interns (17 Positions) Needed from mid-May 2002 to mid-September 2002 conduct field and laboratory work on avian disease in Hawaii. The Biocomplexity of Avian Disease project is a 5-year NSF-funded research program. Research interns will conduct field work at 9 sites from sea level to 6,000 ft elevation on the eastern slope of Mauna Loa Volcano, Hawaii. Field sites range from extremely hot and dry to extremely wet, muddy, and rainy. Field work will consist of: (1) mist netting and banding forest birds; (2) trapping mosquitoes; (3) collecting data on plant phenology, vegetation structure, small mammal abundance, feral pig disturbance, and larval mosquito habitat. Work schedule and duties will vary during the course of the internship. Laboratory work will consist of: (1) caring for experimental birds in aviaries; (2) microscope work to assist with the diagnosis and quantification of malarial infections in wild and experimental birds; (3) bench work assisting with serological diagnosis of chronic malarial infections in wild birds. Applicants must be in excellent physical condition, able to walk long distances over rugged, uneven terrain, work

in remote locations (camping 4-8 days at a time may be required), live and work in close proximity with other volunteers, have full color vision and hearing, and be able to work for long periods at a compound microscope. QUALIFICATIONS: U.S. citizenship with undergraduate coursework in ecology, ornithology, wildlife biology, microbiology and/or parasitology. Prior experience mist netting, handling, and identifying forest birds is desirable. Food and laundry stipend of $400 per month, dormitory-style housing, field equipment, and field and laboratory training are provided; interns must provide their own airfare to Hilo, Hawaii. Days are long and field and lab work is demanding, but schedule provides ample time for relaxation and exploring Hawaii (snorkeling, swimming, surfing, diving, hiking, biking). Interns live in a small rural community next to Hawaii Volcanoes National Park, site of one of the world's most active volcanoes. Please specify whether you are interested in a field or lab position and send cover letter, resume, and names and current telephone numbers of 3 references to: CARTER ATKINSON, P.O. BOX 218, HAWAII NATIONAL PARK, HI 96718, EMAIL: Carter_Atkinson@usgs.gov, FAX: 808-967-8545.

Assistant/Associate Professor, Infectious Diseases of Wildlife, Division of Biological Sciences and Fish and Wildlife Biology Program, The University of Montana. The Division of Biological Sciences at the University of Montana invites applications for a tenure-track Assistant/Associate Professor studying wildlife diseases, with primary responsibility in the interdisciplinary Fish and Wildlife Biology Program (a joint program between the School of Forestry, the Division of Biological Sciences, and the Montana Cooperative Wildlife Research Unit); tenure is in the Division of Biological Sciences. This is the fifth of five new positions created to support our growing doctoral program in Fish and Wildlife Biology. The successful applicant will hold a PhD or PhD/DVM and will be expected to develop an interactive, extramurally funded research program in the ecology or pathogenesis of infectious disease in wildlife populations and to participate in both undergraduate and graduate education in wildlife biology. Individuals with research interests that complement those of existing faculty are strongly encouraged to apply. For more information see http://biology.dbs.umt.edu/ and www.forestry.umt.edu/academics/wildlife.

To apply, send a CV, a 1-2 page summary of research interests and future research plans, a statement of educational philosophy and experience and the names of 3 references to: Mary Poss, DVM, PhD, Search Committee Chair, HS104, Division of Biological Sciences, The University of Montana, Missoula, MT 59812; telephone: 406-243-5122; email: mposs@selway.umt.edu. Screening of applications will begin immediately and continue until the position is filled; starting date is negotiable but the position is available after January 1, 2003.

The University of Montana is an equal opportunity/affirmative action employer and encourages applications from minorities and women. Qualified applicants can request veterans' preference in accordance with State law. This position announcement can be made available in alternative formats upon request.

TRAINING/EDUCATIONAL OPPORTUNITIES

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.

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

MEETING ANNOUNCEMENTS

51st Annual Meeting of the Wildlife Disease Association. July 28-August 1, 2002; Humboldt State University, Arcata, California. Please see details of the meeting under "WDA Activities" in this issue.

Brucellosis in the Greater Yellowstone Area. September 17-18, 2002; Jackson, Wyoming. This two-day symposium will be held at the Snow King Resort on September 17-18 in Jackson, Wyoming. Symposium speakers will discuss all aspects of brucellosis in elk and bison including past, current, and future research and management activities. Government and non-government agencies will also present their perspectives on this issue. Registration before June 1, 2002 is $75, including proceedings. For further information and registration materials, contact Becky Russell, Wyoming Game and Fish Department (307-766-5616; rrussell@uwyo.edu).

27th World Veterinary Congress. September 25 to 29, 2002; Tunis, Tunisia. For more information contact 27th WVC Organizing Committee, PO Box 267 Tunis-Mahrajène - 1082 Tunisia, Fax (216-1) 566881, E-mail : conord.vet@planet.

American Association of Zoo Veterinarians Annual Conference. October 6-10, 2002; Milwaukee, Wisconsin. The American Association of Zoo Veterinarians will hold its' annual conference in Milwaukee, Wisconsin, October 6-10, 2002. Program sessions include Reptiles and Amphibians, Avian Medicine, Hoofstock, Carnivores, Primates, Case Reports, Aquatic Animals, Pathology, Conservation Medicine, Emerging Diseases, Reproduction and Contraception, Behavior, Enrichment and Conditioning, and Biomaterial Banking. There will also be a poster session, veterinary and graduate student paper competitions, and workshops/wetlabs. For additional conference information, visit our website www.aazv.org or contact Wilbur Amand, VMD, Executive Director/AAZV, 6 North Pennell Road, Media, PA 19063, USA. Phone (610) 892-4812. Fax (610) 892-4813. Email: AAZV@aol.com.

AAZV 9th Annual Zoo & Wildlife Pathology Workshop. Co-Sponsored by the Armed Forces Institute of Pathology & C.L. Davis, D.V.M. Foundation. October 6, 2002; Milwaukee, Wisconsin. *The deadline for case submissions – August 9, 2002*. This all day workshop will be held on Sunday, October 6, 2002 at the Hyatt Regency, Milwaukee, WI. Featured are case presentations of classic or new entities of zoo and wildlife species with emphasis on clinical/pathological correlation. It is open to zoo and wildlife clinicians, interns, residents and students – all are encouraged to attend. The format is interactive. Fifteen or more cases are presented (by participants submitting the cases) followed by questions and provocative discussion with the audience. This year will feature a part-day session on CNS diseases of zoo & wildlife species. The keynote speaker and facilitator for this special session will be Dr. Tom Van Winkle, Associate Professor of Pathology, University of Pennsylvania Veterinary School, and Philadelphia, PA.

For those submitting cases, 55 slides (50 H&E and 5 unstained) are required. Include the signalment and clinical history on a separate sheet, and gross and histologic findings, pathologic diagnosis with a brief discussion and pertinent references, names of contributor(s) and institution (with postal address) on continuing sheets.

Slides and written material should be sent to: Dr. Thomas P. Lipscomb, Department of Veterinary Pathology, Armed Forces Institute of Pathology, Rm G117, Bldg 54, 6825 16th St., NW, Washington, DC 20306-6000. Phone: 202-782-

2604. Slides and written material must be received by August 9, 2002.

CNS cases for this year's workshop are encouraged, but general zoo and wildlife cases will also be acceptable. A set of histoslides with signalment and clinical history will arrive several weeks before the Workshop. Case handouts with diagnoses and discussion will be available the day of the meeting.

Cost: $50.00 – full day includes case handouts and refreshments. All participants must register. If you are not a member of AAZV and wish to participate or attend this Workshop, please email Dr. Wilbur Amand, wbamand@aol.com for a meeting registration package. Remember, you are welcome to attend the Workshop even if you have not submitted a case. Histoslide sets mailed to presenters are at no additional cost. Histoslide can be purchased for $25 at the meeting by representatives of educational and training facilitities, and by individuals as sets remain available. Organizers, R. Montali (montalir@nzp.si.edu); L. Lowenstine (ljlowenstine@vmth.ucdavis.edu)

For further information contact Z&WPW co-ordinators Dick Montali (montalir@nzp.si.edu) or Linda Lowenstine (ljlowenstine@.ucdavis.edu).

Association of Reptilian and Amphibian Veterinarians Annual Conference. October 9-13, 2002; Reno, Nevada, USA. For more information contact Wilbur Amand, 6 North Pennell Rd., Media, PA 19063-5520, USA. Telephone: (610) 892-4812, Fax: (610) 892-4813. Email: arav@aol.com.

First International Zoo Keepers Conference. October 2-10, 2003; Avifauna, Alphen, Rijn, Netherlands. For updates on this conference, please visit http://es.geocities.com/jxarles20/.

11th Annual Mid-Western Exotic Animal Medicine Conference. November 2-3, 2002, Manhattan, Kansas. Topics include the surgery, medicine, and diagnostic techniques used in companion birds, reptiles, and small exotic mammals (9.5 CE hours). Drs. Michael Taylor and Rob Coke are among the speakers. Optional wet-labs, including avian endoscopic techniques, will be offered (3.5 CE hours). For more information, contact Dr. James W. Carpenter, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas 66506, USA. Telephone: (785) 532-5690; FAX (785) 532-4309. Email: caarpentr@vet.ksu.edu

Note from the Editor: Please send meeting announcements, diagnostic riddles, position and grant announcements, miscellaneous items, etc. for the Supplement to the Journal of Wildlife Diseases to Charlotte F. Quist, Wildlife Health Associates, P.O. Box 109, Dillon, MT 59725 USA. Telephone: (406) 835-2163. Email: cquist@3rivers.net Double spaced typewritten or electronic mail files in WordPerfect or Microsoft Word are preferred. The deadline for submission of articles for the next issue (October 2002, JWD Vol. 38, No. 4) is August 25, 2002.

Papers and posters, 5th EWDA Meeting, Heidelberg, Germany. Full details and abstracts will be given on the EWDA website, as listed under European News. The entrants for the student awards are denoted by the letter 'S'. Should anyone wish to contact an author, this may be possible by contacting Paul Duff by Email.

AUTHOR	Stud	TITLE
Alessandra Piccirillo		A re-emerging disease of hares (*Lepus europaeus*):hare fibromatosis
Alonso Aguirre	S	Fibro-sarcoma green turtle
Paolo Tizzani (Antonio Lavazza)		Presence of infectious agents and parasites in wild populations of Cottontails (*Sylvilagus floridanus*)
L. Belloy		Molecular epidemiology of *Mycoplasma conjunctivae* in Caprinae: transmission across species in

		natural outbreaks
Caron, A.	S	Relation between bovine TB prevalence and herd-level indicators in Buffalo in the Kruger National Park
Christian Gortázar		Rabbit viral diseases: recombinant vaccines or natural recovery?
Dolores Gavier-Widen		*Mycobacterium tuberculosis* infection in Asian Elephants
Elvira Schettler		Severe feather loss and abnormalities ('pinching off') in a juvenile white –tailed eagle from Northern Germany
Emanuelle Fromont		Spatio-temporal variations in seroprevalence of Chlamydiosis and Q fever in mountain ungulate populations: retrospective detection
Geraldine Boseret	S	Septicaemic infection in a harbour porpoise...
Ignasi Marco		Noninvasive monitoring of cortisol metabolites in captive and free-ranging roe deer (*Capreolus capreolus*).
Ignasi Marco		Haematologic and serum biochemistry values of the Southern Chamois (*Rupicapra pyrenaica pyrenaica*) captured by drive-net.
Ignasi Marco		Two cases of Pineal Meningioma in free-ranging Southern Chamois (*Rupicapra pyrenaica*).
Javier Millan	S	Marked differences in the nematode fauna between wild and farmed red-legged partridges
Javier Millan		First record of *Haemoproteus* sp. parasitising red-legged partridge (*Alectoris rufa*)
Jean Hars		The annual serological survey in wild boar populations in France 2000-2001 Report
Joaquín Vicente	S	TB pathology in the European wild boar
Joseph S. Masangkay		Tumours of the carapace of the Philippine Green Sea Turtle (*Chelonia mydas*)
Kai Frölich		First report of European Brown Hare Syndrome (EBHS) in brown hares from Switzerland and Argentina
Marc Artois		Puumala (Hantavirus) epizootiology in the Ardennes region (France)
Marc Artois		Surveillance and control of wildlife diseases in Europe
Marino García		Postmortem findings in wild bustards (*Otis tarda*) from Spain: a clinical approach
Martin Janovsky		*Mycoplasma conjunctivae* is maintained in domestic sheep but not in Alpine Chamois in the Swiss alps
Nicole Latz	S	Canine parvovirus infection in free-ranging carnivores from Germany
Oliver Krone		The liver fluke *Metorchis bilis* - A new threat for the White-tailed Sea Eagle in middle Europe?
Paul Duff		'wildlife disease in the UK - a short history'.
Richard Delahay		Bovine TB in British wild mammals.
Richard Delahay		Applications of GIS in the Research and Management of Wildlife diseases
Richard Delahay		The spatio-temporal distribution of *Mycobacterium bovis* in a badger population
Richard Delahay		Use of farm buildings by badgers and associated risks of bovine TB transmission to cattle
S. Rehbein		Endoparasites of Red Deer *(Cervus elaphus L.)* of Northrhine-Westfalia (Germany)
Sophie Rossi	S	Survey of brucellosis involving *Brucella suis* biotype 2 in wild boars,
Terrier Marie-Eve		Abnormal mortality in roe deer
Thijs Kuiken		Pathology of common eiders from the Dutch Wadden Sea in winter 1999-2000

Torsten Mörner	Diseases and mortality in free ranging lynx, brown bear, wolf and wolverine in Sweden
Ursula Höfle	Mycoplasma and Avian Polyoma virus infection in captive Spanish Imperial Eagles
Vic Simpson	Dental lesions and bite wounds in Eurasian Otters (*Lutra lutra*)
Vittorio Guberti	Pseudorabies in wild boar
Vittorio Guberti	Wolf mortality and demography in Italy
Walter Glawischnig	*Mycobacterium avium subsp. avium* infection in red deer (*Cervus elaphus hippelaphus*) from Austria

Late Posting! West Nile Virus Update - 2002!

West Nile Virus (WNV) has been confirmed in ten states and the District of Columbia in 2002 (*Ed. note: see the January 2002 Supplement for a Summary of WNV 2001*). The states with WNV confirmed in birds include Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Georgia, Florida, Louisiana, Michigan, Virginia and Illinois. No mosquito pools have been positive for WNV in 2002, and there are no confirmed human cases. In addition, a suspected West Nile virus-positive bird found in Ontario, Canada has been confirmed positive. There are confirmations of the virus this year of WNV in 3 horses in Louisiana and 7 horses in Florida. Collection and testing of crows and other birds are in progress by the 28 eastern states that have been positive for WNV as well most of the western states. Each state has appointed a coordinator for WNV bird surveillance for the State Departments of Health. If you need information on who to contact for testing birds check your state department of health or department of natural resources web site or contact kathy_converse@usgs.gov.

See also:

USGS/CINDI West Nile virus National and State Maps: http://cindi.usgs.gov/hazard/event/west_nile/west_nile.html

The updated CDC West Nile virus web-site includes a compiled list of State and Local Health Department West Nile virus web-sites: http://www.cdc.gov/ncidod/dvbid/westnile/city_states.htm

The CDC West Nile virus web-site also lists federal, academic, professional, nongovernmental, and international sites related to West Nile virus: http://www.cdc.gov/ncidod/dvbid/westnile/links.htm

MMWR Editorial Note – WNV 2001. The 2001 surveillance data indicate that the geographic area with WNV activity has increased and that dead WNV-infected birds were reported in western Arkansas, southern Maine, and southern Florida. There were 7 states that reported human cases for the first time. Canadian health authorities also detected WNV activity in dead birds from southwestern Ontario, a region of lower latitude than the northern limits of WNV detection in the United States.[2] In 2001, a case of WNV encephalitis was diagnosed serologically in a resident of the Cayman Islands who had no recent travel history (CDC, unpublished data, 2001), suggesting that WNV has entered the Caribbean region. Human illness onsets on 13 July 2001 and 7 December 2001 in persons in Florida and Georgia, respectively, mark the earliest and latest reported human cases since the introduction of WNV to the United States.

Extended seasonal activity in 2001 occurred in the northeast; 2 of 5 persons with illness onset on 15 October 2001 or later were from Massachusetts. The widespread occurrence of human cases and the occurrence of human cases outside of WNV's usual season (summer and early fall) suggest that: 1) State and local health departments in the contiguous 48 states should, at a minimum, establish enhanced passive hospital-based surveillance for human cases of encephalitis of unknown etiology, and that: 2) this surveillance should extend beyond mid-October.[3]

In 2001, infected birds, mosquitoes, or horses were detected in 16 states in which no previous WNV activity in animals had been reported. These findings demonstrate the dramatic spread of WNV westward and southward since 1999, when the virus was first recognized in North America. Although virus activity was detected for the first time in many southern states in 2001, the simultaneous appearance of 2 epizootic foci very early in 2001 (one in the mid-Atlantic region and one in the southeast along the common borders of Florida, Georgia, and Alabama) suggests that WNV was introduced into the southern states by migrating birds in late 2000, but circulated at levels below the detection threshold of surveillance.

Because many migratory bird species use well-established north-south flyways along the eastern seaboard, this movement of WNV from the mid-Atlantic region to the south Atlantic region and the Gulf states was expected; however, the reasons for WNV's rapid expansion into multiple foci in the central United States are less obvious. Possible mechanisms include carriage of the virus by the return of infected birds from wintering sites in southern states or by their incremental east-to-west local movements.[4]

Surveillance of dead birds is essential in monitoring WNV activity. Infection in species within the family Corvidae (e.g., crows and jays) is a particularly important indicator of WNV activity. In 2001, the proportion of tested birds that were infected continued to be disproportionately higher in crows than all other birds (53% vs 9%). Although 83% of infected birds reported were either crows or blue jays, this might be attributed to greater emphasis placed by states on monitoring these species. State and local health department surveillance programs should continue to emphasize the collection and testing of dead corvids. However, because non-corvid birds were first indicators of WNV activity in 57 (16%) of 359 counties where the virus was detected, surveillance programs should include these other species wherever possible. In 2001, sero-surveillance of sentinel chickens and wild-caught birds contributed additional information on WNV transmission and provided collectively the initial signal of WNV activity in 6 counties. The limitations of these supplemental systems are documented[3,5] and their overall utility continues to be evaluated.

The 2001 equine WNV epizootic was unprecedented given its geographic span and the number of horses affected. In addition to a substantial epizootic in the northeast, an intense equine epizootic in Georgia and Florida accounted for 75% (551) of all reported equine cases. Scattered cases also were detected as far west as Louisiana, in the Ohio valley, and in northern Illinois. In August 2001, the U.S. Department of Agriculture granted conditional licensure of a commercial equine WNV vaccine because of the detrimental effect of these events on equine health and industry. Because WNV-infected horses are unlikely to develop viremias sufficient to infect feeding mosquitoes, they are unlikely to pose a risk to humans.[6] However, equine epizootics reflect intense enzootic WNV activity in mosquitoes, which might place humans at increased risk.

In 2001, *Culex* mosquitoes (*Cx. pipiens*, *Cx. restuans*, and *Cx. salinarius*) were the most commonly identified mosquito vectors of WNV in the United States, and since 1999 these species have been found in close spatial and temporal proximity to the majority of human cases of WNV meningoencephalitis.[1,7,8] Detection of WNV in several common human-feeding mosquito species (e.g., *Cx. nigripalpus*, *Oc. sollicitans*, *Oc. taeniorhynchus*, and *Cq. perturbans*) and recent studies demonstrating their ability to transmit this virus under laboratory conditions[9,10] raise concerns about increased human risk in areas where these species are common.

The data available to the ArboNET system likely underestimate actual geographic distribution and intensity of WNV virus transmission in the United States. Data provided by the 54 ArboNET coordinators are derived largely from local health unit surveillance efforts, which vary according to capacity and ability. The 28 jurisdictions reporting activity probably support additional, undetected WNV transmission within their borders, and undetected foci of transmission probably exist in counties and states that have not reported transmission activity. In addition, some detected WNV infections might not have been entered into the ArboNET system.

In Florida, epizootic WNV activity has been reported since January 2002, indicating that year-round transmission is occurring in that state. In northern states, WNV activity has been reported since April 2002. The extended seasonal activity, the broad vertebrate host and vector-mosquito range, and the establishment of multiple epizootic foci throughout the eastern United States demonstrate that WNV has established itself permanently in temperate North America and strongly suggest that it will spread further westward. This underscores the need for increased surveillance geared toward early viral detection and mosquito-control activities that weaken or break amplification cycles and decrease the risk for human and domestic animal infection with WNV. Prevention activities should continue to include 1) public education programs urging residential source reduction and personal protective measures to reduce mosquito exposure; 2) development of sustained, community-level integrated mosquito-surveillance and management programs;[3] and 3) high-priority emphasis on the control of urban *Culex* mosquitoes.

References:

(1) Marfin AA, Petersen LR, Eidson ME, et al. 2001. Widespread West Nile

virus activity, eastern United States, 2000. Emerging and Infectious Disease 7:730-1.

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Infectious Disease Prevention and Control, Population and Public Health Branch, Health Canada. Available at<http://www.hc-sc.gc.ca/pphb-dgspsp/bid-bmi/dsd-dsm/nb-ab/2002/nb2302_e.ht

(3) CDC. Update: epidemic/epizootic West Nile virus in the United States: revised guidelines for surveillance, prevention, and control, 2001. Available at

<http://webdev.cdc.gov/ncidod/dvbid/westnile/resources/wnv-guidelines-apr-2001.pdf>.

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(8) Nasci RS, White DJ, Stirling H, et al. 2001. West Nile virus isolates from mosquitoes in New York and New Jersey, 1999. Emerging and Infectious Disease 7:626-9.

(9) Sardelis MR, Turrell MJ, Dohm DJ, et al. 2001. Vector competence of selected North American Culex and Coquillettidia mosquitoes for West Nile virus. Emerging and Infectious Disease 7:1018-22.

(10) Turrell MJ, O'Guinn ML, Dohm JD, et al. 2001. Vector competence of North American mosquitoes (Diptera: Culicidae) for West Nile virus. Journal of Medical Entomology 38:130-4.

- *Morbidity and Mortality Weekly Report; as reported by ProMed, June 13, 2002.*