

SCWDS BRIEFS

A Quarterly Newsletter from the
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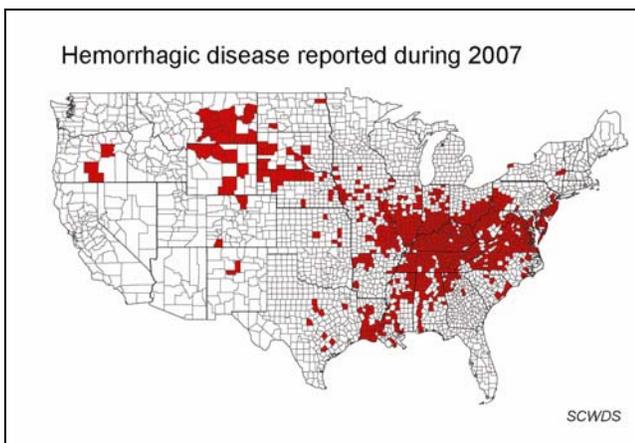
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HD in 2007: A Year to Remember

During late summer and fall of 2007, SCWDS received an unprecedented number of submissions for hemorrhagic disease (HD) testing [see *SCWDS BRIEFS* Vol. 23, No. 3] and ended the year with 283 isolations of bluetongue virus (BTV) and epizootic hemorrhagic disease virus (EHDV). The scale of the outbreak recently became even more apparent after we compiled the results of the 2007 annual hemorrhagic disease survey. This survey has been conducted annually by SCWDS since 1980 and collects HD data with the assistance of wildlife management agencies, veterinary diagnostic laboratories, and other collaborators from all 50 states, as well as federal animal agriculture, land, and wildlife management agencies. Information contributed by survey participants indicates that 2007 saw the heaviest HD activity ever documented.



Counties where HD was reported during 2007 are shown on the map above, and the extent of the outbreak is impressive. Nationwide, suspected or confirmed HD activity was reported from 812 counties in 31 states, which is approximately twice the number of counties that

typically report HD during years of moderate activity. Based on survey data and the virus isolation results, there appear to have been two concurrent outbreaks: one in the East associated with EHDV-2, and the other in the West associated with BTV-17. In addition to EHDV-2 and BTV-17, there were several isolates of BTV-10, BTV-11, EHDV-1, and EHDV-6.

The EHDV-2 outbreak spanned more than 1,000 miles from the Atlantic Coast to areas west of the Mississippi River, with extensive white-tailed deer mortality observed in southeastern, mid-Atlantic, and midwestern states. In addition, HD was documented in northern states where deer rarely are affected. Estimated mortality of more than 100 deer per county was reported in 11 states (IL, IN, KY, MO, NC, OH, PA, SD, TN, VA and WV). Within heavily hit states, such as Kentucky and Tennessee, more than 85% of counties reported HD. Overall, more than 65,000 deer mortalities were reported.

Fortunately, HD activity was not as extensive in 2008 as it was in 2007. We currently are receiving completed 2008 questionnaires from survey participants, and preliminary results indicate a much quieter year for HD. Virus isolations at SCWDS in 2008 were restricted to Arkansas (BTV-3), Indiana (EHDV-2), Kansas (EHDV-6), and Texas (EHDV-1, -2, -6, and BTV-12, -17). Of these, BTV-3, BTV-12, and EHDV-6 are exotic viruses. This is the third consecutive year in which EHDV-6 has been isolated, and positive states now include Indiana, Illinois, Missouri, Kansas, and Texas (see *SCWDS BRIEFS*, Vol. 23, No. 2). This is the first report of BTV-12 in the United States and the second report of BTV-3 by SCWDS; our first isolation was made from Mississippi in 2006, and this virus also has been detected in Florida by USDA-APHIS-Veterinary Services.

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The extensive cooperation and assistance of all survey participants is deeply appreciated. With your support, we have assembled an enviable nationwide database that illustrates HD activity over nearly three decades. There appear to be some interesting and potentially significant changes going on related to incursions and possible establishment of new orbiviruses in the United States, and many of these "new" viruses would not have been detected without our cooperative wildlife-based surveillance. (Prepared by David Stalknecht and John Fischer)

Ecology of AIV in Shorebirds

Wild shorebirds (Order Charadriiformes, families Charadriidae and Scolopacidae) are repeatedly cited as reservoirs for avian influenza viruses (AIV) of low pathogenicity (LPAI). The emergence of highly pathogenic avian influenza (HPAI) subtype H5N1 in free-living waterfowl in Eurasia and Africa has been a cause for global concern among wildlife managers and scientists. In particular, waterbird and wetland scientists worry that aquatic birds and their habitats will be destroyed due to fears that they could transfer viruses and trigger HPAI epizootics in poultry or a pandemic in humans.

Research at St. Jude Children's Research Hospital that began in the 1980s detected a 14% prevalence of LPAI viruses in resident gulls and northward-migrating shorebirds in the Delaware Bay on the Atlantic coast of the United States. Delaware Bay lies between New Jersey and Delaware and is a critical migratory stopover for many species of long-distance migratory shorebirds, including red knots, sanderlings, ruddy turnstones, and semipalmated sandpipers. It is estimated that over two million shorebirds use this area each year during a five-week period in May and June. These birds feed intensively on horseshoe crab eggs, which are available only during this brief period, to fuel the last leg of migration to their breeding grounds in the Arctic. Shorebirds do not congregate in such high density (up to 210 birds per square meter!) anywhere else in the world.

Based on these initial studies, shorebirds have been considered a reservoir for AIV despite many recent studies that, with rare exceptions,

failed to detect AIV in shorebird populations around the globe. SCWDS began investigating the epizootology of LPAI viruses in wild shorebirds in 2000, and results from the first six years were published in the *Journal of Wildlife Diseases* in April 2008 (Hanson et al. 44:351-361). The authors confirmed a high prevalence of LPAI in shorebirds in Delaware Bay, but found it was restricted primarily to ruddy turnstones. Prevalence in this species ranged from 8-15%, while prevalence in sympatric shorebirds was 0-3%. Also, surveillance conducted at 12 other locations yielded only two AIV isolates from shorebirds, suggesting there is something unique about the Delaware Bay ecosystem that supports the transmission of AIV.

In 2006-2008, SCWDS began intensively studying the ecology of AIV in shorebirds in Delaware Bay, focusing on the ruddy turnstone as the primary shorebird host. Our goals were to: characterize the temporal pattern of AIV infection in order to determine whether birds arrive at Delaware Bay already carrying virus or acquire infection from local sources; analyze serum samples for AIV antibodies to reveal prior exposure and presumed immunity to AIV; ascertain the habitats used by ruddy turnstones and compare these to sympatric species' habitats in order to identify differences that may explain different AIV transmission risks between species; and describe the movements of ruddy turnstones around Delaware Bay to determine any pattern of spreading AIV within the population.

In ruddy turnstones, daily prevalence and seroprevalence were lowest early in the stopover season and were lowest in birds at or near their arrival weight. Highest point prevalence (up to 25%) and seroprevalence (up to 86%) occurred later in the season when birds were significantly heavier (a measure of time spent feeding at Delaware Bay). Birds captured on the latest dates and in the heaviest weight classes had somewhat lower AIV prevalences. These data suggest that most birds become infected with AIV after arrival at Delaware Bay, shed virus for a period, and then are free of infection before continuing their northward migration.

In order to understand habitat utilization of ruddy turnstones, lightweight radio transmitters were

attached to 60 ruddy turnstones in the spring of 2007 and 2008. Birds were located daily and nightly by manual ground tracking and automated recording stations, as well as by aerial surveys every 2-3 days. Data from 2008 are still under analysis, so only 2007 data (n=30 birds) are presented here. Birds were tracked for up to 22 days and nights, and a mean of 39.7 locations were determined per bird. While ruddy turnstones fed and roosted primarily on horseshoe crab egg-laden beaches during the day, similar to other shorebird species, they showed a strong preference to roost at night in remote, expansive salt marshes. One salt marsh that was used by 90% of radio-tagged birds also contained large breeding colonies of herring gulls and laughing gulls. This nighttime habitat preference is in stark contrast to those preferred by other shorebirds; for example, red knots roost on remote sandy points and islands at night. This utilization of salt marsh habitats that are shared with gulls may provide a unique opportunity for AIV transmission to and among ruddy turnstones.

Individual ruddy turnstones moved independently of each other. They shifted their feeding and roosting areas a mean of 2.4 times and crossed the bay 1.1 times. In general, they exhibited much more limited and predictable local movements than sympatric shorebirds such as red knots that seemingly used feeding and roosting sites at random. Most home range shifts and dispersal movements coincided with peak shorebird numbers and avian influenza prevalence, suggesting clonal AIV strains could be moved into new sites. However, the total area used by ruddy turnstones did not overlap any areas where poultry farming occurs, suggesting little or no risk of transmission of these native AIV to poultry.

Currently, we do not fully understand why the ruddy turnstone is the primary species affected or why the Delaware Bay alone is afflicted with LPAI viruses. However, our research has provided insights into the ecology of both AIV and their shorebird hosts at this location. Further characterization of host and virus ecology is planned to identify the source(s) and transmission mechanisms of AIV at Delaware Bay. (Prepared by Angie Maxted)

New USDA Brucellosis Proposal

In October 2008, the USDA-Animal Plant and Health Inspection Service-Veterinary Services (APHIS-VS) announced a new proposal to create the National Brucellosis Elimination Zone (NBEZ) in the Greater Yellowstone Area (GYA) in order to “facilitate the elimination of brucellosis from livestock and provide clear, consistent control and surveillance guidance to producers in the NBEZ, while simultaneously allowing the balance of the country to be considered free of bovine brucellosis.” Designation of the NBEZ would allow the remainder of the United States, including portions of the GYA states outside the NBEZ, to maintain Brucellosis Class-Free status, even if an affected livestock herd is found within the zone, thus minimizing trade and movement restrictions.

The GYA, which includes Yellowstone National Park and surrounding portions of Idaho, Montana, and Wyoming, contains wild bison and elk that are regarded as the last reservoir of bovine brucellosis in the United States. Recent cases of brucellosis in cattle in the GYA have been linked epidemiologically to wild elk as the most likely source of infection and have resulted in loss of Class-Free status by Idaho, Montana, and Wyoming. The continued presence of *Brucella abortus* in bison and elk and the potential exposure of cattle in the GYA presents a significant challenge to livestock and wildlife interests. As proposed, the NBEZ would encompass an area around the GYA and be a defined high risk zone for livestock that will reduce the impact of brucellosis in the three states. For the rest of the United States, creation of the NBEZ would ensure that international livestock trade can continue in accordance with the standards of the World Organization for Animal Health.

Historically, U.S. eradication programs for livestock diseases, such as brucellosis, have applied disease status on a state-by-state basis. When an infected livestock herd was found anywhere in a brucellosis-free state, the entire state's disease status was downgraded. Although this approach has been effective, it has been costly for states when only a few livestock herds in a small geographic area were affected. The statewide downgrade forces all producers in

the state to meet additional testing and mitigation requirements, resulting in a costly situation for them as well as for the state and federal animal health agencies.

The USDA is proposing NBEZ because it would allow the remainder of each of the three GYA states to maintain brucellosis-free status and would provide more flexibility in modifying the zone boundaries as the risks associated with *B. abortus* change. Management of the NBEZ would be a “collaborative state-federal effort, reducing the burden on each state and creating a more effective way to work toward brucellosis elimination in these livestock populations.” APHIS-VS regards participation of the three affected states as the key to the plan’s success.

The official boundaries of the NBEZ would be established on the basis of a thorough risk assessment that evaluates current brucellosis surveillance and control practices in livestock and wildlife in the GYA, risk factors associated with brucellosis transmission, and other ecological factors. Eliminating brucellosis in the NBEZ and, consequently, the entire United States, will require enhanced surveillance and risk mitigation to detect infected herds early and prevent spread of the disease outside the zone.

In addition to working with livestock interests, concurrent planning with the wildlife agencies and entities in the GYA is required for implementing the NBEZ, and a “coordinated approach to surveillance in both domestic livestock and wildlife is critical to ensuring control and elimination of brucellosis in the GYA.” Because neither wild animals nor disease agents recognize or respect political boundaries, consideration of the GYA as an entire ecosystem is regarded as essential for developing potential strategies to eliminate *B. abortus* from bison and elk in the GYA.

The NBEZ Proposal, which can be accessed at http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/, contains a proposed action plan and a timeline for developing and implementing some components of the NBEZ in 2009. Items in the action plan include:

- Receiving stakeholder comments and input
- Development of surveillance standards

- Working with states to standardize the assessment tools
- Conducting the risk assessment to establish NBEZ boundaries
- Conducting individual herd risk assessments and establishing herd plans
- Establishing the NBEZ through federal rulemaking
- States acquiring the necessary authorities to control animal movement

Details regarding risk assessments, surveillance inside and outside the NBEZ, additional mitigations, financial resources, regulatory changes, oversight, and the implementation and enforcement of mitigation efforts can be found in the proposal. APHIS-VS intends to work closely with the GYA states to establish NBEZ boundaries and the associated standardized surveillance activities, mitigations, and movement controls. “To succeed, this effort will require the continued partnership of APHIS-VS with states, agencies, and industry, as well as integrated planning and implementation efforts with wildlife agencies and interest groups.” (Prepared by John Fischer with material from the NBEZ Proposal)

TWS Seeks Comments on Draft Lead Policy

The Wildlife Society (TWS) has published a Draft Position Statement on *Lead in Ammunition and Fishing Tackle* and now is soliciting comments from its members. A TWS position statement is a carefully prepared and concise exposition of a wildlife issue that defines the topic, contains factual background data, describes the most probable biological, social, and economic results of alternative actions, and may also contain recommended courses of action. Previously, TWS and the American Fisheries Society published Technical Review 08-01, entitled *Sources and Implications of Lead Ammunition and Fishing Tackle on Natural Resources* (see SCWDS BRIEFS, Vol. 24, No. 3).

The draft position statement contains background information on lead, particularly regarding its toxic effects, a subject that continues to garner significant attention among

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wildlife managers, hunters, and the general public. In the 1980s, regulations were established that prohibited the use of lead shot for waterfowl hunting. According to two studies, this ban has successfully reduced lead exposure of waterfowl. In recent years, lead toxicosis has emerged as a significant problem among loons and other water birds that consumed lead fishing sinkers and among California condors that scavenged animals killed with lead bullets. Although no human illnesses have been documented, studies in selected upper Midwestern states in 2008 found lead-fragment contamination in venison that hunters had donated to food pantries (see *SCWDS BRIEFS* Vol. 24, No. 2).

According to the Draft Position Statement, the policy of TWS in regard to lead in ammunition and fishing tackle is to:

1. Recognize that lead has been known for centuries to be a broad-spectrum toxicant to humans and wildlife.
2. Advocate the replacement of lead-based ammunition and fishing tackle use and production with non-lead products, with an ultimate goal of complete replacement.
3. Recognize that long-term elimination of lead from outdoor recreational activities will require collaboration among affected stakeholders, a series of incremental regulations, and explicit and targeted education strategies.
4. Urge engineers, economists, and social scientists to conduct studies on reducing the barriers to non-toxic ammunition and fishing tackle development and use, and encourage additional research generating toxicological and environmental chemistry data; monitoring and modeling of exposure and effects; and predicting consequences of exposure and long-term population-level effects.
5. Encourage enhanced educational efforts leading to greater public awareness and understanding of the consequences of lead exposure in wildlife species and emphasize the realized gains in wildlife and environmental quality from use of lead-free ammunition.

Comments from TWS members must be received by February 15, 2009, to be considered

and should be sent to: Laura Bies, Associate Director of Government Affairs, The Wildlife Society, 5410 Grosvenor Lane, Suite 200, Bethesda, MD 20814-2144, or via email to laura@wildlife.org. (Prepared by John Fischer)

Unusual Eagle Death

A cattle farmer in Newton County, Georgia, found more than cows in his pasture this past December. While working on the property, located adjacent to Lake Varner, an 850-acre drinking water reservoir owned by Newton County, he found a large mature female bald eagle lying dead on the ground directly beneath a power line. The bird was found early in the morning and had not been there the previous evening when the farmer worked in the area. He immediately contacted personnel with the Georgia Department of Natural Resources (GADNR), who submitted the bird to SCWDS the same day. Avian vacuolar myelinopathy (AVM) was a prominent rule-out in this case, and GADNR was anxious to learn the diagnosis as soon as possible because there is an active bald eagle nest about 3.4 miles from the site where the dead bird was found.



The bird was in excellent nutritional condition and was exceptionally large compared to most eagles submitted from Georgia. The only external lesion was a small featherless area on the inner aspect of the distal part of one wing (Figure 1). Closer examination revealed that some of the remaining feathers were singed and there was a faint odor of burnt feathers. The pulp cavities of some of the large feathers were ruptured, and the edges of feathers were curled and singed (Figure 2). Only one such burn was evident. No internal lesions were identified, but tissue samples were preserved in formalin for microscopic examination.

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The lesion on the wing was consistent with a burn due to high voltage electricity from the power lines. Lesions induced by electricity from power line interactions vary greatly in their severity, depending on the voltage involved, duration of contact, point of contact, and moisture of the feathers. The most severe lesions that occur in such cases may include extensive burns, bone fractures, rupture of muscles, and damage to internal organs, but death can occur with much milder lesions, as in the current case.

Eagles and other raptors are more prone to electrocution due to contact with power lines than most other birds because of their very large wingspans. They often perch on utility poles, and when they spread their wings they can make contact between adjacent lines or with transformers. Such incidents are generally more common in the more open landscapes of the West due to the relative scarcity of perch sites. The current case was unusual because the bird was found directly between two poles that were about 200-250 feet apart. This was a low voltage residential distribution line. Apparently, the bird was electrocuted as it passed between the power lines rather than while approaching or leaving a perch.

Even though the bird had obvious external lesions consistent with electrocution, microscopic examination was performed on a variety of tissues to screen for other causes of illness. There was severe vacuolation of the white matter of the brain, consistent with avian vacuolar myelinopathy (AVM), and this disease has been diagnosed previously among eagles from this area of Georgia. Although AVM can kill eagles, electrocution caused the death of this bird. It is possible that the neurologic disease impaired the bird's flight and caused the unusual point of contact with power lines in the middle of the span. The eagle may have been uncoordinated and accidentally flew between the lines, or it may have had difficulty flying and attempted to land on one of the lines. The wires might also have been difficult to detect visually because of a nearby tree line.

Power line installations that are a particular risk for raptor electrocutions usually are modified to prevent such events. The U.S. Fish and Wildlife Service, in concert with the electric utility

industry's Avian Power Line Interaction Committee, provides guidelines to help electric utility companies prevent both electrocutions and collisions. These guidelines offer resources for developing Avian Protection Plans that are specific for each utility and are designed to reduce bird mortality and improve service reliability. Utility companies may design new facilities to limit possible power line interactions or retrofit older installations where an apparent risk exists. Although the guidelines are voluntary, electric utility companies benefit from following them due to improved public relations, decreased power outages, and fewer accidental deaths of eagles and other birds.

Personnel from GADNR and the utility company visited the Newton County site to evaluate the risk. They determined that it is highly unlikely that another raptor electrocution would occur and that retrofitting the utility poles is unnecessary. The diagnosis of AVM possibly explains the unusual manner in which the eagle may have come into contact with the lines.

This case reinforces the point that sometimes the most obvious diagnosis based on external examination and circumstantial evidence may not tell the whole story. Fortunately, the farmer and GADNR personnel took immediate action and submitted quality samples that helped SCWDS diagnosticians determine the rest of the story. (Prepared by Kevin Keel with assistance from Jim Ozier and Don McGowan with GADNR, Dennis Rankin with USDA-Rural Utilities Service, and Jim Candler with Georgia Power Company)

New SCWDS Grad Students

In the past few months, SCWDS has welcomed six new graduate students: Emily Blizzard, Elizabeth Gleim, Jessica Gonynor, Whitney Kistler, and Drs. Aaron Hecht and Mark Ruder.

Emily Blizzard received a BS degree in biology in the fall of 2006 from Georgia Southern University, with a concentration in wildlife ecology and management. After graduation she moved to Athens and began an internship with the Georgia Wildlife Federation where she worked on improving the educational gardens and trails and updated kiosks. After completing

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her internship, she was hired by the University of Georgia as a Research Technician III at the Warnell School of Forestry and Natural Resources where she assisted graduate students conducting field research and laboratory tests. Emily currently is pursuing an MS degree in wildlife ecology and management in the Warnell School of Forestry and Natural Resources and is conducting research at SCWDS on the prevalence rates of *Baylisascaris procyonis*, in raccoons. The larvae of this large intestinal roundworm of raccoons can cause serious illness or death in other animals, including humans, when the larvated eggs are accidentally ingested.

Elizabeth Gleim earned her BA at Hollins University in Roanoke, Virginia. During her undergraduate work, Liz also spent time in Australia where she conducted research on small mammal bioindicators for rainforest restoration success. After graduation, Elizabeth obtained a fellowship at the Centers for Disease Control and Prevention in the Division of Parasitic Diseases (DPD) in Atlanta, Georgia, where she performed research related to recreational waters and parasitic diseases. Upon completion of her fellowship she became a laboratory biologist in DPD's diagnostic laboratory. Elizabeth is pursuing a PhD degree, and her research at SCWDS involves studying the effects of controlled burning on tick populations and tick-borne disease prevalence at the Joseph W. Jones Ecological Research Center in Baker County, Georgia.

Jessica Gonynor completed her BS at Northeastern University (NU) in Boston in 2001. As an undergraduate she worked as a zookeeper at Boston's Franklin Park Zoo and conducted behavioral studies on kea (*Nestor notabilis*), a large species of parrot that lives exclusively on the South Island of New Zealand. In 2006, Jess completed her MS degree in Biology at NU on the zoogeography of *Peromyscus* in Massachusetts, after which she accepted a teaching position at Boston University (BU) as the Anatomy Laboratory Coordinator and served as a curator of Boston University's Natural History Collection. She also served as a field assistant for the BU Center for Ecology and Conservation Biology and taught Vertebrate Biology at Wentworth Institute of Technology as an adjunct faculty member. Jess

is pursuing a PhD at SCWDS, and is researching the ecology of *Mycoplasma*-associated upper respiratory tract disease in gopher tortoises and box turtles.

Whitney Kistler received a BS degree in biology with a molecular ecology concentration from Mercyhurst College in Erie, Pennsylvania, in the spring of 2008. During his undergraduate work he conducted research on the presence of virulent strains of *E. coli* in the beach sand and water in Lake Erie on Presque Isle State Park and in white-tailed deer fecal samples from across Western Pennsylvania. Whitney is pursuing an MS degree at SCWDS and will be investigating the potential for Canada geese to serve as indicators of local avian influenza virus transmission.

Dr. Aaron Hecht received his BS degree in animal science at Purdue University in West Lafayette, Indiana, in 2002 and completed his DVM degree from Purdue University's School of Veterinary Medicine in 2006. Aaron trained as a mixed animal veterinarian and spent time working in Texas, Montana, and Indiana. After a year in mixed animal practice in southern Indiana he took a job as a veterinarian for a pharmaceutical company based in Indiana. He oversaw receiving, assessing, and investigating global adverse event reports and was responsible for approving and reporting applicable events to appropriate regulatory agencies. Additionally, he provided veterinary medical assessments as needed for manufacturing investigations and contributed to the preparation and submission of annual reports on the performance of various drugs. Aaron is pursuing an MS degree and will be working on the distribution of epizootic hemorrhagic disease virus serotype 6 among free-ranging white-tailed deer in the United States.

Dr. Mark G. Ruder completed his undergraduate education at the University of Kansas and earned his DVM degree at Kansas State University (KSU). After graduating from KSU in May of 2007, he completed a one-year internship in wildlife and conservation medicine at the Wildlife Center of Virginia located in Waynesboro, Virginia. Mark came to SCWDS in June 2008 to pursue a PhD in veterinary pathology and to work as a diagnostician on

cases submitted by our member agencies. Mark's graduate research will focus on the pathogenesis of epizootic hemorrhagic disease virus serotype 7, which recently was associated with clinical disease in cattle in Israel.

Emily, Elizabeth, Jessica, Whitney, and Aaron, are working under the direction of Dr. Michael Yabsley, who is co-staffed at SCWDS and the University of Georgia's Warnell School of Forestry and Natural Resources. Mark's major professor is Dr. John Fischer. We welcome these fine, bright young people and wish them luck with their graduate projects. (Prepared by Michael Yabsley)

3rd International CWD Symposium

The Utah Division of Wildlife Resources is hosting the 3rd International symposium on chronic wasting disease (CWD) in Park City, Utah, July 22-24, 2009. The theme of this symposium is "CWD – Advancing the Science and Developing the Tools." Researchers and wildlife managers will be presenting state-of-the-art information on a variety of CWD-related topics.

The deadline for submitting abstracts for oral and poster presentations is February 20, 2009. Abstracts are invited on the following topics: regulating CWD; ecology and epidemiology of CWD; human dimensions of CWD; research in prion biology of CWD; environmental contamination issues and research; surveillance, management, and control of CWD in free-ranging cervids; CWD diagnostics and detection; and cervid industry CWD issues. In order to provide attendees with the option of attending all session presentations, there will be no concurrent sessions.

Complete information, including on-line registration, abstract submission guidelines, and hotel reservations at a group rate, can be found at the conference website: http://www.regonline.com/CWD_symposium or by contacting Ms. Leslie McFarlane of the Utah Division of Wildlife Resources (telephone 801-538-4891 or email lesliemcfarlane@utah.gov). (Prepared by John Fischer)

Tennessee Director Retiring

Gary Myers, Executive Director of the Tennessee Wildlife Resources Agency (TWRA), has announced that he will retire, effective March 1, 2009. Gary began working with TWRA in 1974 after 11 years with the Colorado Game and Fish Department. He was named director of TWRA in 1978 and is one of the longest serving leaders of a state wildlife agency in history.

Gary is highly respected by his peers throughout the country and has received many awards and honors during his career. Among his most recent awards was the George Bird Grinnell Memorial Award for Distinguished Service to Natural Resource Conservation. "The Grinnell Award salutes a person whose career in conservation has been exemplified by integrity, leadership, foresight and achievement." In the summer of 2008, Gary was named Tennessee Outdoors Sportsman of the Year and received the recognition during the annual Legends of The Outdoors National Hall of Fame Banquet.

Gary has been a long-time friend and supporter of SCWDS and served on the SCWDS Steering Committee for 14 years, from 1978 to 1992. We wish him good health and happiness in his well-deserved retirement. (Prepared by Gary Doster)

Another SCWDS Student Award

In the April 2008 issue of the *SCWDS BRIEFS*, we reported on the many accomplishments and awards of one of our students, Christina Lynn Faust. We just learned that Christina has received an additional honor: she is one of 12 recipients of the 2009-2010 George J. Mitchell Postgraduate Scholarship. She was chosen from 300 applicants nationwide and is the first University of Georgia recipient since the scholarship was created 10 years ago.

"The George J. Mitchell Scholarship is a national competitive fellowship sponsored by the US-Ireland Alliance. The Mitchell Scholarship, named to honor the former U.S. Senator's pivotal contribution to the Northern Ireland peace process, is designed to introduce and connect generations of future American leaders to the island of Ireland, while recognizing and fostering intellectual achievement, leadership,

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and a commitment to public service and community. Twelve Mitchell Scholars between the ages of 18 and 30 are chosen annually for one year of postgraduate study in any discipline offered by institutions of higher learning in Ireland and Northern Ireland. Applicants are judged on three criteria: academic excellence, leadership, and a sustained commitment to service and community. The Mitchell Scholarship provides tuition, housing, a living expenses stipend, and an international travel stipend."

University of Georgia President, Dr. Michael F. Adams, said "Christina Faust is clearly one of the brightest stars in the UGA academic sky, and I am very proud of her. She has demonstrated remarkable talent and the ability

to master a variety of areas of study, characteristics which bode well for her future. I expect great things from Christina."

Christina currently is finishing up her work on a dual bachelor's/master's degree, in ecology, and her research on the transmission of avian influenza viruses during its aquatic cycle was done at SCWDS under the direction of Dr. David Stallknecht. Christina will graduate in May of this year. Her future plans are to earn her DVM degree and a PhD degree in the ecology of infectious diseases.

We don't know of anyone more deserving of this award than Christina and we offer our congratulations and wish her the best in all her endeavors. (Prepared by Gary Doster)

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Information on SCWDS and recent back issues of the *SCWDS BRIEFS* can be accessed on the internet at www.scwds.org. The BRIEFS are posted on the web site at least 10 days before copies are available via snail mail. If you prefer to read the BRIEFS online, just send an email to Gary Doster (gdoster@uga.edu) or Michael Yabsley (myabsley@uga.edu) and you will be informed each quarter when the latest issue is available.

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