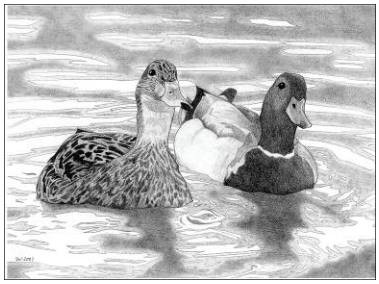
National Wildlife Disease Program

THE CARRIER

Volume 3, Issue 2

July 2011



INSIDE THIS

COORDINATOR COMMENTARY

By Dr. Thomas DeLiberto

Every year, the NWDP conducts a Surveillance and Emergency Response Preparedness Training conference for its personnel. This year's meeting was held on Colorado State University's Pingree Park Mountain Campus, located on the northern border of Rocky Mountain National Park. Wildlife disease biologists received training and certification in sampling and biosafety protocols, respirator fit testing, immobilization and euthanasia, and emergency response. This annual training event is crucial for NWDP personnel to maintain its ability to safely and effectively provide the disease surveillance and the all-hazards emergency response support to our state, federal and tribal cooperators that you read about in these issues.

Colorado State University, Pingree Park Mountain Campus

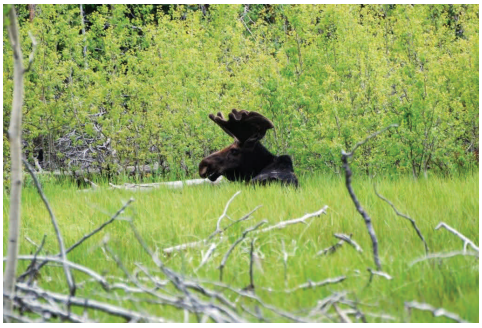
The biologists provided project updates on activities in each of their states, and the program office reviewed sampling protocols for ongoing projects and introduced new ones such as Baylisascaris, bluetongue/epizootic hemorrhagic disease, and Hepatitis E.

First and second place in the poster competition were awarded to Jay Cumbee for Wildlife Disease Biologists' Deepwater Horizon Response (see page 5) and Dave Sinnett for Harlequin Duck Capture Technique Used on Kodiak and Afognak Islands (see page 3), respectively. Scott Woodruff won first place in the long presentation category for "Louisiana's Tularemia Surveillance"; Darren Bruning (Wildlife Capture: Training Needs for Wildlife Services) and Wes Gaston (Hepatitis E Testing in the U.S. Virgin Islands [see page 4]), tied for second place. For short presentations, Clint Turnage (Using Dogs To Assist with Wild-life Disease Surveillance in Feral Swine) took first, and Joe Caudell (Green Ammunition) received second place. In the Chemical Immobilization Competition, Dave Marks won first place, and Clint Turnage and Shannon Chandler tied for second.

This year there was a tie for Wildlife Disease Biologist of the Year, and Darrell Kavanaugh (Georgia) and Darren Bruning (Washington) received the NWDP's highest honor. Coincidentally, Darren also received the NWDP's most notorious award, the Gold Schwabber, in part for his efforts with javelina to improve the human-animal "bond."

We also thank Dr. Gordon Gathright and Steve Greiner of Wildlife Service's National Wildlife Research Center and Commander Mark Burke of the US Public Health Service for providing training on immobilization and euthanasia (see page 5) and respirator fit testing (see page 6). Finally, we thank Drs. Laurie Baten and Angela Bosco-Lauth of Colorado State University for providing updates on Chikungunya viruses and plague.

Thanks to all our cooperators, the wildlife disease biologists, Wildlife Services, and USDA/APHIS for assisting the NWDP in managing diseases at the human-animal-ecosystem interface.



Bull moose at Colorado State University, Pingree Park Mountain Campus

NWDP

The wildlife drawings on this page are original artworks created by the National Wildlife Disease Program's former Administrative Support Assistant Erika Kampe (prairie dog) and Wildlife Technician Sarah Goff (ducks)

Federal Tribal Assistance Coordination Group Conference

By Barb Bodenstein

Wildlife Services attended the Federal Tribal Assistance Coordination Group Conference May 10-13 at the Oneida Nation Conference Center in Green Bay, Wisconsin. Sixty-eight members of 21 nationally recognized native American Tribes, and ten federal and state agencies were in attendance. USDA Plant Protection and Quarantine and Wildlife Services provided a presentation highlighting the different APHIS programs and their roles, resources and contact information.

Wildlife disease biologist Barb Bodenstein at the Federal Tribal Assistance Coordination Group Conference

The purpose of the 2011 Tribal Assistance Coordination Group National Workshop was to provide an open forum for federal collaboration with Native American Tribes, and Tribal governments in emergency preparedness and response. Workshop objectives included providing a diverse forum for an open dialogue amongst Federal, State, County, and local jurisdictions to discuss emergency services support to Tribal Communities; to give participants the opportunity to network with other officials with related interests and issues; to continue the self-propagating system of Tribal Assistance Coordination Group national and regional workshops and conference participation; and to inspire participants to take what they have learned, and actively engage in making their fellow participants and colleagues aware of Tribal emergency services issues upon their return to their respective organization.

For more information go to:

http://www.indianaffairs.gov/WhoWeAre/AS-IA/OHSEM/workshop/index.htm

Coyote Plague Research in Collaboration with Colorado State University

By Dennis Kohler

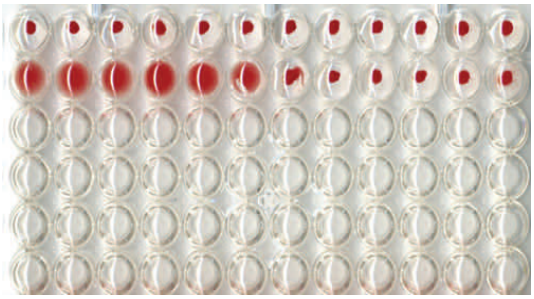
The NWDP is collaborating with Colorado State University, Centers for Disease Control and Prevention (CDC) and the National Wildlife Research Center on a project to assess plague infections in coyotes. Wildlife Services conducts plague surveillance by opportunistically collecting blood samples from coyotes removed during wildlife damage management operations. A limitation to this approach is the lack of knowledge regarding the immunological response of coyotes from exposure to plague. Thus, the goals of this project are to characterize the antibody response in coyotes from plague infection by different routes of exposure.

The coyotes were housed at the Colorado State University Large Animal Disease Laboratory Biosafety Level 3 facility. One group of coyotes was inoculated intradermally to simulate a flea bite or multiple flea bites. Another group was inoculated orally by allowing coyotes to feed on a mouse carcass that was infected with *Y. pestis*. Blood was collected from all individual coyotes before and at different time intervals after the initial inoculation to determine the antibody response over time. Three months after the initial inoculation, a second inoculation was completed to determine if the coyotes would produce an anamnestic response. The information already obtained from this work has provided interesting insight in immune responses of coyotes to the different routes of exposure.

An associated project was developed to address the short and long-term stability of plague antibodies on blood-soaked Nobuto strips in different environmental storage conditions. The Nobuto strip is essentially a filter paper product that wildlife disease biologists and other field personnel use to collect blood samples for diagnostic analysis. When blood is collected onto a Nobuto strip, the sample is allowed to dry and then placed into a manila envelope. What is not known is if there is an optimal environmental condition to store these samples until they can be tested or archived. Multiple Nobuto samples from the plague seropositive coyotes were collected and stored under ambient, 4^0 C, and - 20^0 C conditions. The samples will be analyzed to determine the most effective environment to preserve sample integrity and to reduce protein degradation.

Coyote

Wildlife Services' plague surveillance system submits approximately 6,000 to 7,000 samples for diagnostic analysis throughout the western United States annually. Until recently, the CDC has been testing all of those samples; however, recently the CDC has been only capable of testing samples related to outbreak situations and other episodes concerning public health and safety. This change in diagnostic testing availability will greatly impact the effectiveness of the Wildlife Services plague surveillance. The development of a diagnostic test was determined to be critical for the continued success of the Wildlife Services plague surveillance operations. In response to the need for additional diagnostic tools, Colorado State University personnel began the process of developing a validated diagnostic test for analyzing Nobuto samples for plague titers. When this diagnostic test becomes available, Wildlife Services personnel could be trained to perform this test and offer quicker diagnostic results and better customer service for the states participating in the plague surveillance program.



Hemagglutination assay used to identify the presence of plague antibodies

Sea Duck Capture Technique Used on Kodiak Island, Alaska

By David Sinnett

Biologists from the Kodiak National Wildlife Refuge designed and built a trap for the purpose of capturing molting sea ducks near shore. Wildlife Services assisted the Kodiak National Wildlife Refuge with harlequin duck and Barrow's goldeneye captures using this capture method. Molting mergansers have also been captured using this trap at Kodiak National Wildlife Refuge. Theoretically, this trap can be used with any type of molting waterfowl but would work best with those species that do not like to leave the water.

Step 1: Assembling the cage

The first step in this process is to assemble the cage. The trap is deployed on a gravel beach approximately 10 ft. from the water line on a rising tide. The main component of the trap is the cage. The cage consists of 9 panels of PVC pipe, each measuring 4ft. x 6ft. All the panels are constructed of 1 1/2 in. PVC except the front and rear panels which are 1in. PVC. All panels are covered with black 3/4 in, netting except the rear panel which is covered with monofilament netting. The front panel has two doors that, when fully open, have a 6-8 in. opening. The doors are held open with bungee cords until birds are captured and then the cords are removed and the doors cable-tied in the closed position. The cage is assembled using cable/zip ties at the desired trap location.

The second step is to attach the ocean side net to the cage. The ocean side net is approximately 12ft. tall and 80ft. long. First the net must be attached to the cage. The end of the net that attaches to the cage has a 4ft. x 6ft. notch cut out to go around the door. A separate 4ft. x 6ft. PVC frame is cable tied in this notch while the net is lying flat on the ground. Then the frame is stood up and zip-tied to the cage door. This frame serves a dual purpose as it strengthens the cage as the net is pulled out to sea by the boat.

On the top cord of the net there are 20 PVC "T's" sown in every 4 feet. To go with each PVC T there is a ring, also sown into the net, directly below each T about 3 1/2ft. down. The PVC T's and the rings are where the buoy-anchor line attaches to the net. This can be done either on shore or off the bow of a boat as the boat slowly backs up. Once the buoy-anchor line is attached, the net is pulled tight with the boat and the anchor is dropped over the side. Position the net so that it "funnels" birds into the cage. The boat then positions on the downwind side of the net and begins attaching a galvanized chain to the bottom of the PVC uprights. The chain weighs down the bottom of the PVC uprights, which in turn pulls the top of the net out of the water and keeps the birds from escaping over the top.

Step 2: Attach ocean side net to cage

Step three is to attach the shore side net to the cage. The shore side net is attached using a 150 ft. rope tied to the top front corner of the cage and then pulled tightly and tied off to a tree or rock on the beach. Sometimes this line has to be tied off before pulling the ocean-side net tight and dropping the anchor, as the cage will be dragged out into deeper water. Next, a separate 6ft. x 75ft. net is attached using stainless steel longline clips to the taut rope. Rocks are placed at 2 ft. intervals on the bottom of the net. Due to sagging, the net will need to be propped up every 10 to 15 ft. with a stick or piece of drift wood.

Step 3: Attach shore side net to cage

As the tide rises and submerges the cage, the back corners will start to float up slightly. To prevent this, attach a small anchor to each of the back corners of the cage. The last preparation is to place appropriate decoys directly behind the back panel of the cage.

Step 4: Find the birds and start dive

The fourth and final step is to find the birds and start the drive. Once birds are located, a suitable trap location proximate to the target birds is identified. The trap is then set up out of view of the birds to avoid freighting them and potential causing them to leave the area. Once the trap is established, slowly drive the birds towards the trap, keeping the them as calm as possible. This is accomplished by using small kayaks, rather than outboard motors which tend to cause more disturbance. When the birds get too nervous they will start flapping their wings and attempt to run on the water to get more speed, or start diving under the boats, which usually results in a poor catch.

http://www.aphis.usda.gov/wildlife_damage/nwdp/

SAMPLING IN THE VIRGIN ISLANDS

By Wesson Gaston

Wildlife disease biologist Wesson Gaston collecting blood from an Indian Mongoose,.

Wildlife Services traveled to the U.S. and British Virgin Islands to conduct invasive species control and disease monitoring. At the U.S. Virgin Islands National Park on St. John, invasive species control was conducted on Indian Mongoose and feral goats. The Indian Mongoose was first introduced to the islands to control black rat populations; however, they ended up causing damage to native fauna including sea turtle hatchlings, ground nesting birds, and other endangered species. Feral goats were introduced by the early settlers as a source of food, and as escapees from domestication. The goats consistently use trails along the cliffs which, in turn, causes erosion that can adversely affect sea turtle hatchling success. They also eat native vegetation and spread nonnative vegetation across the island. Conducting control work on these animals provided an excellent opportunity to collect disease samples from the Caribbean. Indian Mongoose are being tested for Hepatitis E virus and Tularemia, while the feral goat serum will be archived at Fort Collins. A special- use permit was accepted for white-tailed deer Hepatitis E virus disease surveillance. Each collected individual was scanned for ectoparasites and the information was provided to the Southeastern Cooperative Wildlife Disease Study.

The Hepatitis E virus testing is of interest on these islands because of the notable monsoon season and occasional hurricanes that occur in the region. Excess water collects in pools where numerous wildlife species congregate and defecate, potentially passing the virus through a fecal/oral route. Most residents collect rainwater for drinking purposes into cisterns that are located outside of their houses. Wildlife species are known to feed/scavenge around houses and could potentially spread the virus to the drinking water

.

Since mongoose home ranges are relatively small, cage traps were set on different parts of the island to test different populations for diseases. Cage traps were baited with an assortment of baits including canned dog food. A total of 24 mongoose were collected on St. John from six different locations.

Feral goat control work was mostly conducted by boat. Wildlife Services and a National Park Service employee scanned the park shoreline to spot goats on the cliffs or beaches. Most of the goats were too far away to shoot from the boat, so personnel had to stalk and shoot them from land. Several goats were also collected from the truck while driving roads where goats had been spotted in the past. A total of 19 goats were harvested yielding seven archive samples.

Four white-tailed deer were collected and blood and fecal samples were taken for Hepatitis E virus along with ectoparasites. Last year's ectoparasite collection yielded the first records of two species of chewing lice on WTD not known to be in the U.S. Virgin Islands.

Due to the close proximity of the British Virgin Islands to the U.S. Virgin Islands, an opportunity for international cooperative wildlife disease sampling existed. Wildlife Services had made previous contact with the director of the Jost Van Dyke Preservation Society, a nonprofit organization that was set up to preserve the history, culture, and environment on Jost Van Dyke and the surrounding smaller islands. In February 2011, the society started a new biodiversity project involving the protection of native animals through feral cat and mongoose control, and public education on how these species can severely impact native fauna. No prior disease surveillance has been conducted on the island.

Wildlife Services personnel trained the Director of the Jost Van Dyke Society to collect the necessary biological samples from the mongoose. Seven mongoose were trapped on the island. Blood and fecal samples were collected for Hepatitis E virus and Nobuto strips were collected for Tularemia. All the samples were kept cool and later frozen in preparation for shipping to the U.S.

Immobilization and Euthanasia Training at the 2011 NWDP Annual Meeting

By Tom Gidlewski

At this year's NWDP Annual Disease Surveillance and Emergency Response Preparedness Training, immobilization and euthanasia training was incorporated into the agenda. All Wildlife Services employees who use immobilization and euthanasia drugs must be trained, certified and continually recertified as required by the Wildlife Services Directive 2.430. Most NWDP disease biologists have received the initial training and certification which is valid for three years. The current directive specifies that the employees that administer or may need to administer these drugs must be recertified every three years. The Directive also specifies that a minimum of four hours of recertification be devoted to immobilization and euthanasia drugs and the balance of the 16 hrs. of training must be on issues directly addressed in the training manual. Earning a passing score on a written test is also required.

NWDP wildlife disease biologists at the shooting range in Pingree Park

Our goal was to provide six hours of training that could be used to partially fulfill the 16 hr. requirement for certification or recertification. Specifically, four classroom hours including lectures and scenario driven exercises followed by two hours of hands-on experience were provided. Dr. Gordon Gathright, attending veterinarian for Wildlife Services' National Wildlife Research Center, was the primary instructor assisted by Drs. Tom Gidlewski and Dale Nolte of the NWDP.

Attending veterinarian, Gordon Gathright, instructing the NWDP wildlife disease biologists

The didactic portion of the class covered legal responsibilities and policies, Wildlife Services approved immobilizing drugs, administering immobilizing drugs, and drug dosages and calculations. A lecture also was provided on immobilization of North American .

A shooting range was established at Pingree Park where the participants practiced loading, handling and charging darts. The biologists also practiced with blow guns and fired pneumatic dart pistols and rifles. A combined shooting and drug dose calculation competition was held and won by David Marks.

The following day, 13 of the biologists elected to take the written examination in partial fulfillment of their certification or recertification requirements. All of the biologists passed the exam with flying colors.

The National Wildlife Disease Program expresses their sincere appreciation to Dr. Gathright and Wildlife Services' National Wildlife Research Center for their assistance in the training event.

NWDP's Emergency Response to Deepwater Horizon

By Jay Cumbee

On 22 April 2010 an explosion was reported on the drilling platform Deepwater Horizon in the Gulf of Mexico. British Petroleum reported that the blow-out preventers on the rig failed resulting in an 87-day oil spill of an estimated 4.9 million barrels (205.8 million gallons) of oil, of which only about 800,000 barrels (33.6 million gallons) were recovered. In comparison, the Exxon Valdez dumped 257,000 barrels (10.8 million gallons) in Prince William Sound. Over 650 miles of shoreline along the Gulf was impacted; affecting wildlife, commercial fisheries and the overall economy and culture of the region.

Gulls affected by the BP oil spill in April, 2010

Wildlife Services' oil spill response and recovery efforts were initiated in Louisiana on 2 May 2010 by request from the U.S. Fish and Wildlife Service and the subsequent implementation of a Pollution Removal Funding Authorization with the U.S. Coast Guard. By early June, Wildlife Services' response efforts expanded to Alabama, Mississippi, and Florida under separate Pollution Removal Funding Authorization's with duties as follows:

1. Recovery of dead wildlife from oil contaminated areas to be used by Fish and Wildlife Services for regulatory purposes;
2. Recovery of wildlife contaminated by oil to be turned over to a rehabilitator; and
3. Dispersal of birds and/or other wildlife from oil contaminated areas.

The NWDP mobilized five wildlife disease biologists and coordinated the response of over 80 other Wildlife Services personnel to Louisiana, Mississippi, Alabama and Florida. In order to accomplish the objectives of the response, personnel conducted extensive surveys for wildlife by foot, truck and boat. The wildlife disease biologists stationed in Florida and Alabama focused their surveys on the beach front areas and barrier islands. While biologists stationed in Louisiana surveyed the large costal marshes of the mouth of the Mississippi River,

(Continued on page 6)

Respirator Fit Testing at the NWDP Annual Training

By John Baroch

All eligible NWDP wildlife disease biologists updated their respirator fit testing during the annual program training at Pingree Park, Colorado, June 13-17, 2011 with a total of 34 biologists participating. In addition, seven disease biologists and one assistant coordinator at the national program headquarters completed annual fit testing in the week prior to the annual training. Respirator fit testing is a vital component of the annual training. By bringing everyone in the program to a central location for a few days, we are able to efficiently fit test many people on a routine annual basis. The alternative is for each biologist to "tag along" at fit testing sessions being held in their state by other branches of APHIS, primarily Plant Protection and Quarantine.

Commander Mark Burke of the U.S. Public Health Service monitors wildlife disease biologist Sam Goldstein during a full-face respirator fit test

As first responders for APHIS, NWDP biologists are required to be fit tested annually or bi-annually. The determination is made by the Federal Occupational Health Service. All biologists receive an annual physical exam by Federal Occupational Health prior to fit testing to assure they are capable of wearing a respirator for prolonged periods. Because the diverse nature of emergencies we might be asked to respond to, biologists are fitted for at least three and in many cases, four types of respirators. The N-95 is the common disposable "paper" filter mask. A variation of the N-95 is the P-95, which is similar but can be used in oily environments, such as oil spills. Biologists who have completed the HAZWOPER training, which makes them eligible to respond to oil spills, are fitted for the P-95 filter mask. Many of the disease biologists have completed the HAZWOPER training. All biologists are also fitted for half-face and full-face respirators.

Fit testing has become a quantifiable science since the advent of highly accurate particle counters, which actually measure the difference in particles in the environment (ambient air) and compare it with the particles in air being filtered by the mask. Prior to this, fit testing relied upon qualitative (subjective) testing. Typically this involving putting a person wearing a respirator inside a plastic "tent" and wafting banana scent into the tent. No banana smell = no leaks. Now APHIS uses portable particle counting instruments, a.k.a., porta-counters. The operation of the instruments is straightforward, but operators must complete a one-day training course sponsored by the manufacturer to learn testing procedures, how to operate the software, and troubleshooting.

In past years, the program has relied upon Safety Officer Steven Greiner from the National Wildlife Research Center, assisted by two porta-count operators from Federal Occupational Health Service, to complete the fit testing at the annual training. This year, in an effort to increase our in-house capabilities, three program biologists completed the manufacturer training and became certified fit-testers. APHIS's Industrial Hygiene Program in Riverdale, Maryland provided the program with 2 porta-count units in addition to the one assigned to Mr. Greiner. Federal Occupational Health arranged for Commander Mark Burke of the U.S Public Health Service to operate one of the porta-counts. The three program biologists took turns operating the third instrument. This allowed all three to attend most of the other training at the meeting. Fitting a single person for three to four respirators requires about 45-60 minutes. Using three instruments simultaneously, it was possible to complete all fit-testing in two and a half days at Pingree Park.

Persons with facial hair cannot wear regular respirators and must use Powered Air Purifying Respirators, which provide a constant stream of filtered air across the face covered with a clear shield. The units are heavy and require a battery pack, but are useful for those with facial hair, or those who become claustrophobic wearing half-face and full-face masks. About a half dozen disease biologists choose to use Powered Air Purifying Respirators. Although they are not fit-tested annually, they are still required to receive annual medical clearance by the Federal Occupational Health Service to wear a Powered Air Purifying Respirator.

(**Deepwater**, *Continued from page 5)*

south of the town of Venice. Daily work assignments were given at 6:00 am briefing and safety meetings. Extreme heat, intense thunderstorms and hurricane warnings made safety a top priority while working in remote areas. Teams surveying the delta marshes in Louisiana utilized the British Petroleum organized Vessels of Opportunity program. The Vessels of Opportunity program allowed private boat owners to take teams of wildlife responders out into the affected areas to conduct surveys. These boat captains were an invaluable resource of local navigational knowledge, and were able to safely guide recovery teams and assist with the transport of captured wildlife to rehabilitation centers. Wildlife Services personnel also responded to reports of oiled wildlife that were called into the Incident Command Center.

During the daily surveys, field notes were kept to record the number and species of oiled wildlife observed. Also, the recovery teams reported any piece of boom or other protective equipment that was damaged or not functioning properly to the Incident Command Center. Global positioning units were used to track progress and record location information for the recovery teams in the field. Afternoon de-briefings, involving multiple agency responders, guided and set priorities for the next day's work tasks. Wildlife Services' personnel spent more than 70 days on the response capturing a 629 birds (411 alive and 218 dead). Over 20% of all live-bird captures throughout the Gulf are attributed to Wildlife Services efforts.

Wildlife Services employees prepare to transport an oiled pelican

State Highlights

Western Region

CALIFORNIA

During April, samples were collected from 12 feral swine in Colusa, San Luis Obispo, and Yuba counties. During May, samples were collected from 19 feral swine in Colusa and Napa counties. These samples were tested for Classical Swine Fever, Plague, Pseudorabies, Swine Brucellosis, and Tularemia. Samples from the May collections were also submitted for Hepatitis E virus testing. The first sow was fitted with a Lotek GPS collar for a study with Lindsey Holmstrom, a PhD candidate at the University California at Davis School of Veterinary Medicine. Two additional feral swine were fitted with Lotek GPS collars in May. Holmstrom's project seeks to provide spatial movement data for feral swine disease spread modeling. We will attempt to collar and track 60 additional feral swine for ten week periods over the next two years.

WASHINGTON

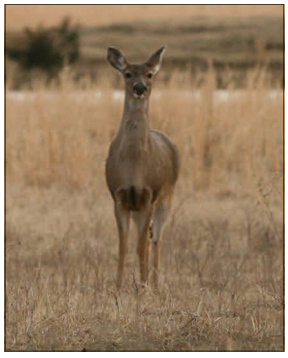
Wildlife disease biologist Darren Bruning coordinated with Lewis County, Washington Road Department and Washington Wildlife Services field personnel to develop a notification system for black-tailed deer (*Odocoileus hemionus columbianus*) carcass locations in a select area of western Washington. Deer carcasses will be examined for the presence of lice and, if detected, provided to an ongoing Deer Hair-Loss Syndrome research and monitoring project in Washington and Oregon. Bruning examined six black-tailed deer carcasses located in the surveillance area during May 2011. No lice were observed on these six carcasses. Thank you to Mat Craig, Danny Craig, and James Lev for assisting in locating black-tailed deer carcasses.

Bruning continued work with the Washington Animal Disease Diagnostic Laboratory and the Washington Department of Fish and Wildlife veterinarian, Dr. Mansfield, in the investigation of the presence of papillomavirus in two beaver (*Castor canadensis*) in western Washington (photos on left). To our knowledge, this is the first molecular level confirmation and identification of this particular virus in beaver. Phylogenetic analysis conducted by the Washington Animal Disease Diagnostic Laboratory shows that the beaver papillomavirus most likely belongs to the Delta papillomavirus genus. Bruning provided case history and began review of the first draft of the manuscript *'A Novel Papillomavirus Isolated from Proliferative Skin Lesions of a Wild North American Beaver (Castor canadensis)'*. The corresponding author for this manuscript is Artem S. Rogovsky, Department of Veterinary Microbiology and Pathology, College of Veterinary Medicine, Wash-

Eastern Region

LOUISIANA

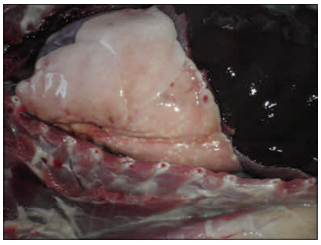
On 12 April, staff wildlife disease biologist Mark Lutman emailed a request for wildlife disease biologists to start collecting serum and fecal samples from feral swine and deer as part of a collaborative study with the National Institutes of Health to survey for Hepatitis E virus in wildlife. Wildlife disease biologist Scott Woodruff immediately contacted the state veterinarian for the Louisiana Department of Wildlife and Fisheries, Dr. Jim LaCour, to see if he would be willing to collect additional samples from deer that he his collecting for herd health checks. It is hoped that the Louisiana Department of Wildlife and Fisheries will be able to collect up to 100 samples statewide for Hepatitis E virus testing. Woodruff also contacted Mark Gates, the natural resources biologist at Barksdale Air Force Base, for the same request. Barksdale is conducting a study using radio-collared deer, which are currently being removed. Samples will be taken from these deer for Hepatitis E virus surveillance.



To date Woodruff collected serum and fecal samples from eight white-tailed deer removed from a military installation in Plaquemines Parish. These samples were sent to Fort Collins for Hepatitis E virus surveillance. Woodruff also has received nine samples from white-tailed deer collected by the Louisiana Wildlife and Fisheries Department.

INDIANA

Early in 2011, bovine tuberculosis was detected on a farm in southeastern Indiana. The Indiana State Board of Animal Health has been the lead agency for managing the response. In March, one of the NWDP Mobile Disease Labs was delivered and set up at the infected premise to assist with sample collection from wildlife. In May, wildlife disease biologist Dave Marks was mobilized from Michigan to assist with sampling for two days. Wildlife disease biologist Joe Caudell captured peridomestic animals on the affected property for eight days in May. A total of four opossums and 27 raccoons, were captured and sampled. Seven animals had lesions and were submitted for histopathology and acid-fast testing at the Indiana Animal Disease Diagnostic Lab in Dubois, Indiana. All samples were negative for bovine tuberculosis. The NWDP mobile disease lab was removed from the property and driven to the Indiana Department of Natural Resources office in Mitchell, Indiana.



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PHOTOS OF THE QUARTER

NWDP wildlife disease biologists, technicians, and national wildlife disease coordinator, Tom DeLiberto, at Pingree Park in Colorado, with the Mummy Range in the background

Young mule deer in Pingree Park, Colorado

RECENT NWDP PUBLICATIONS

DeLiberto, TJ, SR Swafford, and KR Van Why. 2011. Development of a National Early Detection System for Highly Pathogenic Avian Influenza in Wild Birds in the United States of America. Pages 156-175 in S K Majumdar, FJ Brenner, J E Huffman, RG McLean, AI Panah, PJ Pietrobon, SP Keeler and S Shive. Pandemic Influenza Viruses: Science, Surveillance and Public Health. The Pennsylvania Academy of Science, Easton, PA.

Nemeth N, NO Thomas, DS. Orahood, **TD Anderson**, And PT Oesterle. 2010. Shedding and serological responses following primary and secondary inoculation of house sparrows (*Passer domesticus*) and European starlings (*Sturnus vulgaris*) with low pathogenicity avian influenza virus. Avian Pathology 39:411-418.

Lavelle, MJ, KC Vercauteren, TJ Hefley, GE Phillips, SE Hyngstrom, DB Long, JW Fischer, **SR Swafford,** and T A Campbell. 2011. Evaluation of fences for containing feral swine under simulated depopulation conditions. Journal of Wildlife Management 75:1200-1208.