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ABOUT THE COVER

One-year-old Bob is a rabbit roommate to Keiki, a Java macaque at OPR Coastal Primate Sanctuary in Longview, Washington. OPR takes in monkeys formerly used in research laboratories, as well as unwanted or abused monkeys from private owners. OPR generally pair-houses monkeys with their own kind. Some, however, act aggressively toward other monkeys but will accept and nurture rabbit companions. Keiki arrived at the sanctuary in 2002 after his former owner pleaded no contest to animal abuse and surrendered custody. The monkey was in shock, with an untreated heart condition, a concussion, and a damaged finger (which had to be amputated) after his owner hit him with a stick for stealing one of her cigarettes. Keiki is thriving at OPR, and he and Bob have become inseparable friends. See page 14 to meet more OPR residents and learn about the sanctuary.

Photo by Polly Schultz

ADVERSE DECISION FOR WOLVES AVERTED IN THE SENATE

As the 111th Congress drew to a close, Sen. Mike Crapo (R-ID) sought unanimous consent on a bill that would have delisted the gray wolf as a threatened or endangered species under the Endangered Species Act (ESA). Only months earlier, a federal court had overturned a U.S. Fish and Wildlife Service decision to delist wolves in Montana and Idaho, finding that the attempt to treat these wolves as a separate population was “a political solution that does not comply with the ESA.”

Since that ruling, which stopped wolf hunting in those two states, a handful of elected officials have sought to legislatively remove wolves from the protections afforded by the ESA and to return wolf management to state wildlife agencies. In this latest attempt, Crapo and his colleague, Sen. James Risch (R-ID), claimed wolves were decimating big game herds and livestock in Idaho. However, the state's own Department of Fish and Game data reveal that, in 26 of Idaho's 29 elk management zones, wolves are not the primary mortality threat to elk; and that mule deer numbers in the state are in decline due to habitat loss and degradation, not wolves. Further, for both sheep and cattle, the number of deaths attributable to wolves in Idaho is well under 5 percent of total losses from all factors.

Fortunately, this congressional end-run around the ESA was thwarted by Sen. Ben Cardin (D-MD), who warned it would undermine “one of the most important laws in our country, the Endangered Species Act” and that “good science,” not politics should be the basis for ESA decisions. Unfortunately, more attempts to weaken the ESA can be expected from the 112th Congress. 🐾



Sakari

ANIMAL WELFARE INSTITUTE QUARTERLY



Winter 2011

VOLUME 60 NUMBER 1

ANIMALS IN LABORATORIES

12 Training Primates to Cooperate During Blood Collection

FARM ANIMALS

18 In Harmony
20 Fire Engulfs Crowded Hatchery
20 Killing by Decompression
20 Cage-Free or Just Bigger Cages?
22 Animal Sacrifice in Nepal: Local Activists Seek to Stop the Bloodshed

MARINE LIFE

25 Manatees Rule in Florida's Kings Bay
28 Some Stranded Dolphins May Be Deaf

WILDLIFE

2 Adverse Decision for Wolves Averted in the Senate
4 Tigers Clawing for Survival
4 African Elephants are Officially Two Species

4 Longer Sentence for Reptile Smuggler
5 A Call for Grant Proposals: The Christine Stevens Wildlife Awards
6 White-Nose Syndrome Devastates Bat Colonies
9 Palm Oil Cooks Up Extinction for Orangutans
10 Risking Fatal Collisions: Linking Crane Flight Habits to Habitat near Power Lines
21 Rat Poisons Putting Predators at Risk

ANIMAL BEHAVIOR

13 Do Animals Have a Sense of Humor?
14 Primate Sanctuary Provides Happy Home for Hard Luck Monkeys

GOVERNMENT AFFAIRS

5 D.C. Council Votes for More Humane Treatment of Wildlife
24 Shark Protections Strengthened
24 Crush Bill Signed

IN REMEMBRANCE

25 Robbins Barstow
26 John Gleiber

REVIEW

27 *Do Fish Feel Pain?*

Above Left: Sumatran orangutans like this one gaze into an uncertain future, as palm oil plantations destroy their homes (Photo by Helen Buckland).

Top Right: An endangered gray bat perches on a cave wall. The disease white-nose syndrome is wiping out bat colonies in the eastern U.S. (Photo © Merlin D. Tuttle, Bat Conservation International, www.batcon.org).

Bottom Right: John Gleiber, AWI staff and board member for over 35 years, died in January. Here, he protests dolphin slaughter at a 2005 rally (Photo by AWI).



Tigers Clawing for Survival

LEADERS FROM THE 13 TIGER RANGE COUNTRIES convened in St. Petersburg, Russia at the International Tiger Forum in November to discuss strategies to save the world's remaining tigers. A century ago, the global population of wild tigers was estimated at 100,000. Poaching, habitat destruction and illegal trade have left only 3,200 alive today. In the past 70 years, three tiger subspecies have disappeared. In the next 12 years, experts say, wild tigers may go extinct altogether. To prevent this, delegates to the forum endorsed a historic Global Tiger Recovery Program aimed at doubling the world's wild tiger population by 2022 through the implementation of 80 projects over the next five years. Five international organizations at the forum also signed a letter of understanding to create an International Consortium on Combating Wildlife Crime (ICWC). The ICWC will work to strengthen laws against trade in tigers and other wildlife. 🐾



A tiger walks along an unpaved road in India's Kanha National Park, part of the Kanha Tiger Reserve (and the inspiration for Rudyard Kipling's Jungle Book). Such reserves provide much-needed habitat, but do not always keep poachers at bay. Globally, wild tiger numbers have dropped to 3 percent of the population a century ago.

AFRICAN ELEPHANTS ARE OFFICIALLY TWO SPECIES

Though several morphological differences exist between African savannah elephants and forest elephants, it has been a challenge to conclusively determine the genetic relationship between them. Up until now they have been classified as subspecies (*Loxodonta africana* and *Loxodonta cyclotis*). In a recent study published in the journal *PLoS Biology*, scientists from the U.S., U.K. and Germany analyzed the DNA of modern elephants, as well as that of extinct mammoths and mastodons. They concluded that the divergence between the two African elephants occurred between 2.6 and 5.6 million years ago—about as ancient as the split between Asian elephants and mammoths. Study leader Alfred Roca of the University of Illinois at Urbana-Champaign says it is important to develop separate conservation plans for the two species in light of the findings. A little over a fifth of Africa's 500,000 elephants are forest elephants, and their numbers, in particular, are dwindling rapidly from ivory poaching and habitat loss. 🐾

Longer Sentence for Reptile Smuggler

AFTER BEING CAUGHT ATTEMPTING TO PASS a cache of snakes and a turtle through Kuala Lumpur International Airport into Indonesia, notorious wildlife smuggler Anson Wong of Malaysia initially received a lenient six-month jail sentence (as reported in the Fall 2010 *AWI Quarterly*). We are pleased to report that, after an appeal by the attorney general, High Court Judge Datuk Wira Mohtarudin Baki has extended Wong's sentence to five years. In passing sentence, the judge said that human beings "should be considerate to animals." His prime motivation in handing down the harsher sentence, however, was the risk to humans from the two venomous rhinoceros vipers among the snakes in Wong's possession. "It is apparent that the accused is greedy and only thought of himself. He did not care about other people" the judge added. 🐾

D.C. Council Votes for More Humane Treatment of Wildlife

THE COUNCIL OF THE DISTRICT OF COLUMBIA, on November 9, 2010, unanimously passed the Wildlife Protection Act (B18-498), which imposes humane treatment standards upon nuisance animal control operators who work to remove wildlife from residential and commercial settings within city limits. Sponsored by D.C. Councilmember Mary Cheh and backed by AWI, the Wildlife Protection Act prohibits the use of leghold traps, body-gripping traps, glue traps and snares to capture wildlife, as well as the use of toxicants against certain species of birds. The legislation also requires that nuisance wildlife control operators (who must be trained and licensed) use every reasonable effort to keep family units together when trapping, and take animals injured in traps to rehabilitation centers. While the Wildlife Protection Act does have some deficiencies in that it does not apply to actions taken directly by property owners, it is definitely a step in the right direction. Once signed by the mayor, this new law is expected to take effect sometime in 2011. 🐾



Room with a view: In search of warm, dry shelter, mother squirrels may build nests in walls and attics. Humans evicting uninvited guests, however, should do so humanely.

A CALL FOR GRANT PROPOSALS: THE CHRISTINE STEVENS WILDLIFE AWARDS

March 25, 2011 is the deadline to apply for grants toward the development of innovative strategies for humane, non-lethal wildlife management and non-invasive scientific research.

AWI is now accepting applications for its 2011 Christine Stevens Wildlife Awards. This award program, named in honor of the organization's late founder and president for over 50 years, provides \$10,000 grants to award recipients to help spur innovative and creative research on humane, non-lethal tools and techniques for wildlife conflict management and the scientific study of wild species.



Jim Krueger

Habitat destruction and degradation, urban and suburban sprawl, and ongoing challenges posed by invasive species make conflicts between wildlife and humans inevitable. Homeowners, property managers, and biologists need effective, non-lethal, and humane strategies to deal

with conflicts—whether the encounter involves coyotes, deer, Canada geese, bears, exotic species, or a host of other animals. Though humane techniques to address some situations have been developed, more are needed. Scientists and animals would also benefit from the development of non-invasive methods that facilitate more efficient and effective studies of wild species.

The Christine Stevens Wildlife Awards were established to stimulate and support efforts to discover new techniques, test existing products, develop educational tools, and devise new strategies to humanely defuse wildlife conflicts or devise non-invasive wildlife research methodologies. With this award program we aim to honor Mrs. Stevens' legacy and inspire a new generation of compassionate wildlife scientists, managers and advocates. 🐾

For complete application requirements, plus examples of applications and *AWI Quarterly* articles written by past recipients, visit the AWI website at: www.awionline.org/csaward.

WHITE-NOSE SYNDROME DEVASTATES BAT COLONIES

By Nina Fascione, Executive Director of Bat Conservation International and Mylea Bayless, BCI White-Nose Syndrome Response Coordinator

BAT CONSERVATIONISTS throughout North America are holding their breath this winter, waiting nervously for the grim news of spring: how much farther has white-nose syndrome (WNS) spread and how many more bat hibernation caves will be littered with the bodies of bats killed by this tragic disease?

WNS has killed at least one million bats—and probably far more than that—as it has raced across the eastern United States since appearing in a single New York cave in the winter of 2006. Since then, each winter's end has brought word of new species and new states facing the devastation of WNS. Last spring, its front lines expanded an astonishing 980 miles. Despite tireless efforts in biology labs and in the field, scientists are still unable to cure this infectious wildlife disease or slow its relentless spread.

The disease and/or the fungus that's linked to it (and is the likely cause) has so far hit nine bat species in 14 states and two Canadian provinces. The endangered Indiana bat has been hammered by WNS, and the fungus was recently confirmed on endangered gray bats. Two endangered subspecies, the Virginia and Ozark big-eared bats, are also at imminent risk. Recent research predicts that WNS will likely drive even the once-common little brown bat into regional extinctions. We are struggling against the most precipitous decline of North American wildlife species in a



© Merlin D. Tuttle, Bat Conservation International, www.batcon.org

An Indiana bat roosts under the bark of a hickory tree. White-nose syndrome has taken a heavy toll on this endangered species.

century. The future for hibernating bats looks grim.

The fungus was found last winter on a bat in the Oklahoma panhandle. If the pattern of infection continues, WNS is poised to move into the American West and expose a whole new community of bat species to mortality rates that approach 100 percent at some sites.

To appreciate what that mortality rate means, consider Vermont's Aeolus Cave. Long considered the most important hibernation site in New England, this cave sheltered tens, perhaps hundreds, of thousands of bats each winter. Then WNS arrived. Boston University graduate student Jonathan Reichard visited Aeolus Cave in January 2009:

"As we approached, the snow was packed with scavenger tracks. Bat wings were scattered on the landscape," he said. "There was a clearing with tracks of a crawling bat terminating in wing and talon prints of a bird. Bats circling by the cave would crash to the ground and tumble head over heels into the pile of dead bats right in front of the cave. A tufted titmouse scavenged dead bats, eviscerating carcasses just outside the cave. Bats were frozen to ice stalagmites, seemingly having attempted to climb to high ground and to take flight after crashing to the ground."

A survey last March counted 112 living bats in Aeolus Cave. The impact of such devastation will be felt for decades to come. Bats are long-lived for their size, often

with lifespans of 20 years or more. But they reproduce very slowly. Females of most species give birth to a single pup each year. Decimated bat populations are unlikely to recover to pre-WNS levels in our lifetimes—if ever.

The ecological and economic impacts are uncertain but could be immense. Bats are primary predators of night-flying insects, including many that carry disease, damage forests, and attack farm crops. One of the most damaging is the corn earworm moth, blamed for \$1 billion in damages to various crops worldwide. Recent research in south-central Texas found that Mexican free-tailed bats consume so many of these pests that they save farmers up to \$1.7 million a year in pesticide costs for a crop valued at about \$6 million.

White-nose syndrome takes its name from *Geomyces destructans*, the cold-loving fungus that typically appears on the faces and wings of infected bats. This previously unknown fungus is believed to be transmitted primarily from bat to bat—an enormous problem for animals that often migrate hundreds of miles each year. Circumstantial evidence suggests humans may inadvertently carry *Geomyces destructans* into previously uninfected sites, which has led some federal agencies to restrict non-essential visits to bat hibernation caves in many states. Extensive decontamination protocols to clean clothing and equipment meticulously between visits are required or strongly recommended for everyone entering caves used by bats.

Twenty-five of the 46 bat species in North America get through the cold winter months, when their insect prey are not available, by hibernating. They gorge on insects to build



© Michael Schirmacher, Bat Conservation International, www.batcon.org

Little brown bats in an abandoned mine hibernaculum. White spots on their noses indicate the presence of the *Geomyces destructans* fungus. The fungus doesn't kill bats directly, but may cause them to rouse from hibernation too early and often, depleting critical fat reserves.

fat reserves in the fall, then gather at "hibernacula"—mostly cold caves or abandoned mines—to wait out the winter. Their metabolism slows dramatically and body temperature plummets so their fat stores will last through the winter. They briefly arouse from hibernation a few times each winter, and these natural arousals can burn through most of their stored energy.

Bats afflicted with WNS arouse much more frequently than normal through the winter. Anything that increases these arousals, such as disturbances by humans or WNS, can deplete their stockpile of fat before the winter ends and the insects return. This causes bats at WNS-infected caves to exhibit very unbat-like behavior. They are often seen flying around in daytime in midwinter, apparently searching for insects that are not around. They freeze or starve, leaving their emaciated bodies in or near their hibernation caves.

Urgent research by scientists around the country has revealed a great deal about white-nose syndrome, but solutions are elusive. Some fungicides are able to kill *Geomyces destructans*, but caves are remarkable ecosystems that are rich with diverse, often rare organisms. Treating bat caves with toxins would almost certainly destroy those cave ecosystems. The Nature Conservancy hopes to build an artificial cave in Tennessee to serve as a safe haven for hibernating bats and a test bed for research. Other treatment or isolation options are being pursued by biologists around the continent, but much work remains.

Scientists, meanwhile, will likely discover in coming months whether the WNS fungus, which thrives in cold



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An apparently healthy little brown bat perches on a cave wall, where the bat may spend the winter. For hibernation, little brown bats prefer humid, cold spots with temperatures between 40° and 45°F—conditions also ideal for the *Geomyces destructans* fungus.

temperatures, can also work its damage in the warmer climates of southern states. WNS has so far been found only in the cold caves and abandoned mines used for hibernation. Some southern species, however, hibernate in hollow trees, bridges, buildings and cisterns. Will the disease hit these sites? Many questions remain unanswered.

Bat Conservation International (BCI), through its white-nose syndrome grants program, has provided initial funding that allowed a range of urgent research projects to get under way quickly. We were key organizers and funders of a series of annual WNS Science Strategy Meetings that brought together scientists and wildlife managers to share research results and set priorities.

Our funding efforts are focused now on carefully targeted priorities and on the emerging WNS national strategy. We are working to identify critical research gaps in which our funding can make a difference. BCI is also working closely with federal, state and private groups to set and implement standardized guidelines and priorities for WNS surveillance, monitoring and mitigation.

BCI and AWI, as part of a collaborative group of non-governmental organizations, are working to secure significant federal support for WNS research and mitigation. In May, we submitted testimony, endorsed by 60 conservation organizations, to congressional committees requesting urgent funding to deal with WNS. Working closely with AWI, we recently visited Washington, D.C., to

strategize with other leading nonprofits and to make the case for additional funding with key congressional aides.

Convincing much of the public—and public officials—that they should care about the bats disappearing from their night skies is a challenge that BCI has been meeting for almost three decades. Few animals are as misunderstood and needlessly feared as bats, the victims of countless myths in folklore, books and movies. More than 1,100 bat species fill vital roles in maintaining the health of ecosystems and human economies around the world. Their loss would have catastrophic impacts.

We must find a way to end this unprecedented threat to bats, and that requires real funding from Congress and from private foundations and donors. An incredibly dedicated group of scientists and conservationists are working valiantly to solve this heartbreaking puzzle. The cost of failure is disastrously high. 🐾

To learn more about bats and white-nose syndrome, visit www.batcon.org.

SENATORS CALL FOR FUNDING

In December 2010, 13 U.S. senators sent a letter to Interior Secretary Ken Salazar and Agriculture Secretary Tom Vilsack expressing their grave concern about WNS and requesting that they commit a minimum of \$9 million in FY 2012 to address this “wildlife emergency.”

Palm Oil Cooks Up Extinction for Orangutans

THE INDUSTRIAL DEMAND FOR INEXPENSIVE, versatile palm oil has significantly increased within the past five years. The oil—which originates from the fruit of the tropical oil palm tree (*Elaeis guineensis*)—is used mainly in food items: as a cooking oil or in processed foods such as cookies, crackers, candy, and pet food. It is also found in many personal care products such as shampoo, soap, and cosmetics, as well as in other consumer products, including biodiesel.

Unsustainable mass production of the oil, however, is having a drastic effect on the biodiversity of Asian countries—particularly Malaysia and Indonesia, which currently account for almost 90 percent of palm oil production and global exports. Entire native forests have been and continue to be clear-cut to make way for an increasing number of palm tree plantations. These native forests are home—the only home—for the arboreal Sumatran orangutan. During the process in which land is cleared for palm oil plantations, orangutans are either displaced to lower quality habitats, burned alive, hunted and killed, or—if they are young—captured and sold into the pet trade. This habitat destruction is occurring at an astounding rate; researchers have predicted that within a decade, if no alternate palm oil production methods are developed and implemented, the orangutans will be extinct in the wild.

Sumatran orangutans are not the only species affected. Both the Sumatran tiger and rhinoceros and the Asian elephant are also being pushed to the brink of extinction due to severe habitat destruction associated with palm oil production. Meanwhile, small farmers are losing their land to new palm oil plantations, and the very culture of the indigenous people of the region is threatened by the destruction of rainforests and loss of native species.

As demand for palm oil has risen, alternatives have been suggested—including soya and sunflower seed oil in some products. Unfortunately, these sources run a similar risk of being produced unsustainably. An organization known as the Roundtable on Sustainable Palm Oil (RSPO) has developed stringent criteria for palm oil plantations to promote the growth and use of sustainable palm oil. Although the certification process has developed a



Mathieu Fortin

A Sumatran orangutan and her baby at home in the trees. As their native forests give way to rapidly expanding palm oil plantations, these critically endangered primates could disappear from the wild within the decade.

reputation for complexity, many major manufacturers, including Nestlé and General Mills, have agreed to comply with RSPO standards and have been certified. While there is always room to improve on the criteria and practices of the RSPO, as long as palm oil remains a key ingredient in a variety of products, institutions like the RSPO are needed to promote less destructive methods of production and provide hope for rainforest inhabitants, including the Sumatran orangutan. 🐾

IN LATE 2010, the RSPO unveiled a packaging logo that will allow consumers to distinguish products containing certified sustainable palm ingredients sourced according to RSPO rules. Beginning in early 2011, product manufacturers and retail companies will be able to apply the new logo to thousands of products, allowing consumers concerned about habitat loss to make more informed choices. 🐾



Big brown bats roosting under a wooden bridge. Big brown bats play a well-documented, vital role in consuming numerous insects harmful to crops and forests—including ground, scarab, cucumber, and snout beetles, stink bugs, numerous species of moths, and leafhoppers. Reproductive females often consume their body weight in insects each night.

Risking Fatal Collisions:

Linking Crane Flight Habits to Habitat near Power Lines
By Kim Ness

People have long admired cranes for their tall and stately posture, their monogamous pair bonds involving ritual courtship dances and territorial unison calls, and their majestic flight. In some cultures, cranes symbolize peace and freedom. The ubiquitous power lines that stream electricity to our televisions and microwaves,

line strikes. About one whooping crane dies each year from a power line strike in the eastern migratory flock of 106 individuals—a significant loss considering that fewer than 400 individuals are thought to be left in the wild. In fact, power lines are the highest known cause of mortality of fledged whooping cranes. For sandhill cranes, the number of deaths from power line strikes is less well-known. However, with an estimated 600,000 greater and lesser sandhill cranes migrating and breeding throughout North America, a mortality rate similar to that of eastern migratory whooping cranes would indicate several thousand sandhill deaths each year from power line strikes.

Working with resources and researchers at the University of Wisconsin-Madison and the International Crane Foundation (ICF) in Baraboo, Wisconsin, I studied power line risks to sandhill cranes in local populations in Wisconsin to develop a predictive model of where, when, and why power lines are threats to cranes. To understand where power lines pose a collision risk, this project aimed to assess how sandhill cranes reacted to power lines and identify the habitat conditions that correlate with abrupt reactions.

By collaborating with crane experts, we discovered that cranes, when within 20-30 feet of a power line, exhibited abrupt reactions by immediately flaring upwards or

changing directions to avoid striking the line. This is consistent with the findings of other researchers, who observed cranes reacting abruptly just before a power line that the crane ultimately failed to clear, clipping a wing, leg, or foot on the line. Therefore, we considered these abrupt flight behaviors as indicators of a potential collision risk. While clipping power lines may not kill cranes instantly, they can inflict serious injuries that cripple the birds and make them more vulnerable to predators.

After observing such abrupt reactions, we then identified and quantified habitat conditions surrounding each power line. I compared the flight behaviors to habitat types. From previous land surveys of habitat, we knew cranes preferred foraging in row-crop agriculture or pasture, roosting in emergent, shallow wetlands, and strongly avoided densely forested areas. Data also suggested that cranes avoided forested areas when flying at low altitude. Such patterns in habitat use may provide a key link in understanding where power lines pose a collision risk to cranes. Eventually, this information might be used to devise effective mitigation strategies and reduce mortality in the U.S. and other parts of the world.

Fieldwork took place during the summer and fall of 2009 and spring of 2010. I observed cranes flying near power lines in two

wetland-agricultural communities in southwestern Wisconsin. Equipped with binoculars, a video camera, and strong coffee, I meticulously recorded crane reactions, flight direction and height, and weather. Sitting in my car, which served as the “blind,” on small roads for two-hour shifts at dawn and dusk, it took 46 days and about 184 hours to record cranes flying near the entire 30 miles of low-voltage power lines. ICF interns helped search these power lines for dead birds weekly. Fortunately, we found no dead cranes during the study, but discovered a female mallard with a broken neck directly under a line near a cut wheat field in the fall, where cranes commonly foraged.

Though we found no dead cranes, the following observation illustrates the danger cranes face: At dawn on an overcast, windy March morning, almost 200 sandhill cranes flocked in freezing temperatures to feed on the previous fall’s corn. Three cranes flew straight at a power line surrounded by cut corn. Within 15 feet of the line, they abruptly “put on the brakes” and veered right, flapping wildly and practically striking each other in the process. Throughout my study, I recorded many of these reactions. Further, just after completing the study, an ICF intern observed a crane strike a power line near the study area. Not only did this crane continue flying, but it turned around and clipped its leg on the same power line again!

Throughout the rest of the study, of the total 1,300 individual cranes, I recorded 381 flights ranging from solitary birds to flocks of up to 26 cranes, with an average of three to

four cranes per flock. Birds within a flock commonly mirrored the leading bird’s behavior, like geese in migration. On the approach, 150 feet before a power line, flocks gradually gained altitude to fly, on average, 54 feet above a line. Of these, 56 flocks (15 percent) displayed abrupt reactions, and four flew under a power line, which indicated a higher collision risk near these locations.

Observing these sudden changes in behavior, and mapping power lines and associated land cover, we found a close correlation between pasture and row-crop agriculture and abrupt flight reactions. Initial results indicate that cranes reacted abruptly near power lines over agricultural fields with cultivated crops (soybean, wheat, or corn) or pasture lands (alfalfa or grass) with less wetland and forested areas within a 0.25-mile radius centered on the power line. By contrast, around more forested areas, cranes flew at higher altitudes and did not alter their flight near power lines.

As this study continues, we hypothesize that proximity of agricultural fields or pasture lands and wetlands to power lines during varied weather events (e.g. cloudy or windy weather) increase the likelihood of cranes abruptly reacting near power lines. Such predictive modeling projects can serve as a tool in the conservation planning toolbox. We hope this information will aide electric companies, state and federal wildlife agencies, crane advocates, and other conservationists as they seek to create and coordinate strategies to establish and protect safe flyways for cranes. 🐾



A whooping crane on a nest. Unseen power lines in the path of flight can prove deadly to these endangered birds.

however, place cranes in grave danger. As they fly each dawn from roosting wetlands to foraging fields and back again at dusk, the cranes risk striking these lines in the dim morning light, fog, or high winds.

Both species of North American cranes—the abundant sandhill crane and the endangered whooping crane—are vulnerable to power



Top: Sandhill cranes take flight against a backdrop of farm buildings. Cranes often forage in row-crop agricultural fields and pastures.

Bottom: A dead 10-month-old sandhill crane. This chick learned to fly a mere two months before it was felled by a power line.

Training Primates to Cooperate During Blood Collection

FOR MACAQUES AND OTHER PRIMATES in research laboratories, blood draws can be extremely stressful events. The anxiety and fear, however, may result not so much from any “phobia” involving the needle, but from the restraint often employed to enable the technician to perform the procedure. Depending on the nature of the study, the distress these animals experience could actually affect test results.

Recently, participants in AWI’s Laboratory Animal Refinement & Enrichment Forum (LAREF) discussed how laboratory personnel can reduce stress during blood draws by training primates to cooperate—eliminating the need for restraint. Through a series of patient steps coupled with rewards, many primates can be induced to willingly present a leg or other body part to the handler to allow for blood draws.

Some animals—even without training—have been known to figure out on their own that going along with the procedure gets the unpleasantness over faster and with less fuss. With most others, positive reinforcement training (PRT) can lead the animal toward cooperation via

incremental steps. Each step is patiently repeated until the animal is calm, cooperative, and knows what is being expected of her before proceeding to the next step, leading finally to the animal voluntarily getting in position for the draw (like a human in a doctor’s office rolling up her sleeve and presenting an arm).

In these cases, the PRT itself can even be a reward—and not just for the monkeys. One forum participant noted how a



From pain to gain: No forced restraint and a compensatory treat at the end can help primates lose their fear of blood draws.



Photos by Bob Dodsworth

A macaque presents a leg for a blood draw. An animal who has been gently persuaded to cooperate feels less stress and more control over his situation.

certain macaque would come attentively to the front of the cage when the caretaker approached, ready to interact and eager to get raisins after accomplishing the first training step of the day. The caretaker added that, “The training sessions are a kind of environmental enrichment not only for the trainee but for me; they break the monotony of my routine husbandry work and challenge me to make a creative, and at the same time, useful contribution to scientific methodology.”

If the PRT is successful, the benefits can be dramatic. According to one story in a lab where heel sticks and blood draws were done on a daily basis, the monkeys were trained so well that they presented their legs through the bars of their cages as soon as they saw a syringe.

An animal who is taught to associate cooperation and a quick procedure with obtaining a treat (and not being manhandled) is thus more “in control” of his situation and more likely to remain calm—reducing the threat that stress will become an unwanted variable and making the technician’s job less stressful as well. 🐾

Do Animals Have a Sense of Humor?

WHETHER ANIMALS HAVE A SENSE OF HUMOR was the focus of a recent Laboratory Animal Refinement & Enrichment Forum (LAREF) discussion. Certainly the juveniles of many animal species exhibit play behavior. And anyone who has spent time around dogs can attest to the fact that a desire to have fun doesn’t necessarily end when an animal reaches adulthood. In fact, many adult animals in research facilities are given toys in an effort to stave off boredom.

Fun is one thing, though. “Funny” is another. Do animals display “humor”—behaving in a way designed



Loren Sztajer

Members of the parrot family, like this scarlet macaw, often show a mischievous side. Teasing humans and other animals seems to amuse them.

to get reactions out of others just for laughs? Some researchers think they do. Several anecdotes shared on the forum suggest humorous intent:

My most memorable experience was a while back when I worked with young chimpanzees.... One female in particular would often take a blanket and put it over her head, like a little ghost. She would then chase the other chimps around. They would run away, screaming and smiling. The little “ghost” would then suddenly pull that blanket off, and the other chimps would laugh and laugh. It looked like a human game of tag, and they definitely seemed to enjoy it.

As with humans, some animals seem to delight in tormenting others—seemingly just for the perverse joy of it. A forum participant recalled the story of how famed natural scientist Miriam Rothschild’s parrot would call the dog’s name and whistle. When the dog

dutifully came, the parrot laughed. Parrots, in fact, figured in several stories of the “causing trouble to get a reaction” brand of humor. For example:

Many years ago when I managed a pet store I had a scarlet macaw that would wait until I had swept the floor. Then he would proceed to take his beak and scoop the seed out of his bowl and fling it across the floor. When the bowl was empty he would stick his head upside down in it and laugh as loud as he could (he liked the echo of the bowl) until I swept it all up.

Of course, it is hard to know what is going on inside an animal’s head when they do these things—and whether in comparison to humans, similar behavior implies similar motives. Some take an open attitude:

Even if animals... learn to respond to a certain situation in order to trigger a predictable, albeit futile reaction in another partner, this does not exclude the possibility that the learned response is an expression of humor/amusement/fun.

For others, a “Who knows?” suffices:

How much is just reaction to a stimulus, or... true emotion or humor we are witnessing? I don’t really care what the reasons are behind the actions. I just think they are fascinating to watch. 🐾



Tambako

Playing is thought to prepare juveniles for the social interactions and survival skills needed as adults. But some animals seem to enjoy “kidding around” just for laughs.

Primate Sanctuary Provides Happy Home for Hard Luck Monkeys



Photos by Polly Schultz

MISS RILEY, a large stump-tailed macaque, selects a carrot and hands it to her roommate, Bugs. As Bugs (as in “Bunny”) starts to eat, Riley leans in close, her face within inches of the rabbit’s mouth, watching intently as she chews. Though Riley loves carrots and generally scolds anyone who comes near her food tray, she freely shares carrots and broccoli with Bugs, and delights in watching her much smaller, long-eared companion eat. On other occasions, Riley pets and grooms Bugs, and generally keeps close watch over her pal.

Riley is a retired research monkey—one of several lucky enough to have found a home at the OPR Coastal Primate Sanctuary, a rescue facility in Longview, Washington. OPR was established (originally in Oregon, as “Oregon Primate Rescue”) in 1998 “to provide lifetime care in a humane and enriching environment” to unwanted, orphaned or crippled monkeys taken in from private owners, from government agencies, and to those—like Riley—retired from research.



Top: George (see profile, p. 15), on his way to the pool, stops to chat with OPR Primate Sanctuary President Polly Schultz. A “monkey tunnel” allows residents to travel from the macaque barn to the outdoor swimming area at will.

Middle: George—shown here at one year of age—was months old when he came to the sanctuary.

Bottom: Bugs cozies up to Miss Riley. Miss Riley wasn’t keen on having a primate roommate, but quickly warmed to Bugs.

Most of the time, OPR tries to pair monkeys with other monkeys to provide companionship. When Riley couldn’t be housed with another of her kind, OPR founder and CEO, Polly Schultz, tried the rabbit, so Riley could still have the opportunity to touch and snuggle with another warm body. Through a long and deliberate process, Schultz introduced the disparate pair to make sure Bugs would be accepted. She was. Riley clearly likes having Bugs around, and according to Schultz, “Bugs learned quickly that whenever Miss Riley was crunching away on fresh produce, she could approach her and expect to be hand-fed carrots, broccoli and other goodies from this gentle giant.” Schultz has since successfully paired other monkeys with rabbits (such as Bob, who graces this issue’s cover).

OPR is not only a place of refuge, but an educational resource, as well. Some of the research animals at OPR don’t “retire” entirely, as staff and interns at the sanctuary observe them and conduct non-invasive behavioral studies. Schultz herself co-authored a paper published in the *American Journal of Primatology* on how macaques will use human hair or other tools to floss their teeth. Other studies have documented self-awareness (by a monkey named Annie who demonstrated an understanding that the image in a mirror was her, not another monkey), and the ability to use novel tools (as demonstrated by Pearly Su, a

retired research monkey who could hang her own hammock using quick links).

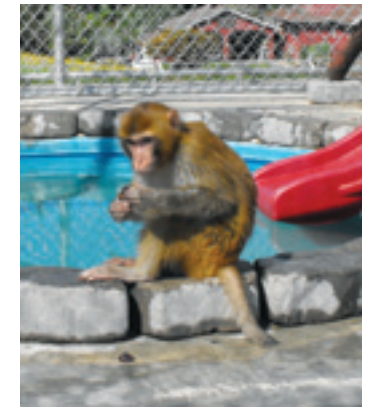
Schultz says working to advance OPR’s mission, along with the 24/7 care of the primates, is an enormous challenge. “Countless sleepless nights, checkbook woes, and trying to make a difference in the lives of these very special but needy creatures takes a toll.” While offering health, diet, enrichment and management information to all who care for captive primates, OPR also seeks to raise awareness of the enormous difficulties inherent in keeping primates as pets, in hopes of reducing the number of unwanted primates in the private sector. “There are so many people buying pet monkeys,” says Schultz. “Monkeys (and



Justin, a Java macaque, flosses his teeth. Such behaviors amazed primatologists visiting the sanctuary.

chimps) are being sold to families without any experience or ability to properly care for an adult primate, and the babies grow quickly!”

Often, these home situations spiral badly out of control, and many of the primates taken in by OPR have suffered severe neglect and, sometimes, horrific abuse.



george

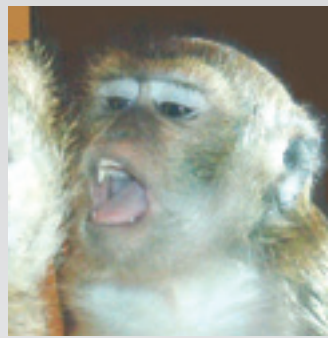
George, a rhesus macaque, was kidnapped from a jungle in Thailand at three days old. His abductors used dangerous drugs of improper type and strength to keep him sedated during the long trip from Thailand through customs and into the U.S. The repeated use of these drugs combined with George’s tender age caused damage to his neurological system, resulting in tremors.

Because George wasn’t properly tested before entering the U.S., authorities placed baby George in strict quarantine in a research facility for three months before he could be transferred to the OPR sanctuary. At this young age, George should have been cuddling in the security of his mother’s arms, suckling and being groomed, learning skills to help him thrive as an adult.

Instead, following his cruel abduction, he spent three months frightened and alone in an unfamiliar cold steel cage, untouched, no mother to nurse or reassure him—not even a comforting bottle which he should have been on until at least a year old. Eventually, OPR was awarded full and permanent custody of George. Now a lively adolescent, George loves the outdoor swimming area at OPR.

annie

Annie, born in a captive breeding facility and having lost her mother during the birth process, was fed mechanically for the first five months of life. Isolated from other monkeys she was rarely touched, nurtured or socialized. In addition, Annie was the product of severe inbreeding through a program the breeder designed with hopes of creating a smaller version of the cynomolgus monkey. As a result of this inbreeding Annie was born with an array of health and emotional problems which made pairing her



Photos by Polly Schultz

with another monkey impossible. Annie became OPR's mascot and spent a great deal of time with Schultz. As mentioned in the article "I See Myself" published in the Summer 2006 AWI Quarterly, Annie demonstrated self-awareness—recognizing her image in the mirror and using the mirror as a tool to examine her mouth or remove bits of food from her teeth.

ivan the great

OPR's most recent arrival is "Ivan the Great," a rhesus macaque and 17-year veteran of a testing facility. Ivan was shy at first. When Schultz put tiny pieces of dried mango in the palm of her hand and held the open hand near the bars of his enclosure, he would reach through and take the treats, then dart back to a perch near the top.

After a while—as soon as she knew he was about to retreat—Schultz would quickly offer more treats and Ivan would stay a bit longer. After he took the treats she would leave her open hand extended where he could reach it. His eyes would move back and forth from Schultz's eyes

to her hand. Each time he was made to wait longer before Schultz placed another treat in her hand. In time he lost interest in retreating at all and just sat there next to Schultz.

On one occasion, Schultz's hand had been extended for some time when he reached through the bars and gently tapped her palm with his fingertips, followed by immediate eye contact. She placed another treat in her palm, which he took. Afterwards, he tapped the empty palm three more times, each time followed by immediate eye contact.

This time, however, Schultz didn't respond with additional treats, but rather remained still, observing him. After a short time, Ivan held his own right hand out and tapped his open palm with his left fingertips just as he had tapped Schultz's. Schultz was awestruck and quickly placed a treat in the palm of Ivan's hand. Ivan repeated this behavior several times. He was communicating in a way never before observed with OPR monkeys.



One OPR resident had been kept by her owner in diapers that were changed once a week, held in place with a denim cover the monkey couldn't remove. To prevent biting during diaper changes, 16 of her teeth were removed... without sedatives. By the time OPR got her, the waist collar had grown into her body and her diaper wounds were so deep they ulcerated nearly to the bone. Another monkey (dubbed "Kermie") hopped along like a frog, his leg muscles atrophied after being padlocked in a small dog crate from the time he was 5 until he was 10 years old. This was followed by seven more years in a filthy, poorly lit, smoke-filled room in the back of a trailer, where he developed serious lung issues. In both cases, Schultz and her sanctuary staff rescued the monkeys and did what they had done for many others: They gave them a happy home and nursed them back to relative health—both physically and psychologically.

The nonprofit facility gets requests several times a year from researchers seeking a home for favorite primates ending their time as research subjects. According to Schultz, "The sad truth of limited funding means that not all requested intakes can be accepted. One can only hope that those engaging in animal testing will someday be required to include, within their project budgets, funding appropriate to provide care at a sanctuary for the lifetime of the animal."

A true sanctuary, it is not open to the public, but does provide free, private educational tours by appointment. "We don't



The product of severe inbreeding, Java macaque Ernie arrived at OPR as an infant with severe physical abnormalities and a grim prognosis. He flourished at OPR and will turn 13 in May.

charge a fee," says Schultz, "but do ask for a donation to help us continue our mission of hope for the monkeys. Some donate fresh produce, Kong toys, etc., in lieu of cash."

OPR moved from Oregon to its current home in Washington three years ago, on 28 acres of donated land nestled in the woods. The primates are housed in two separate barns—one for Old World and one for New World monkeys. New enclosures are constructed as needed. "Because we are a 'one new enclosure at a time' sanctuary," says Schultz, "we are normally near or at full capacity," and tend to take in new

monkeys only as funding allows. In the really bad cases, however, Schultz says she'll rescue the monkey and figure out the money and boarding issues later.

Schultz says most of her husband's income also goes into the "monkey fund," adding wryly, "Sure am glad he loves me."

For Schultz, however, there is no other path. Why does she spend every waking hour in the service of OPR? "Because it matters," she states simply. "I think part of my passion for the primates, and why I have to help them, is because they are intelligent thinking creatures, and I know they share human emotions. I see it every day. So it's just really hard for me to see a creature so intelligent, so

much like us in so many ways, in a filthy parrot cage in someone's basement, eating stale dog food, sitting in feces in a smoke filled room—depressed and so alone."

For many OPR residents, the facility represents an evergreen oasis after a bleak and barren existence. Through the ministrations of Polly Schultz and her crew, as well as the companionship of other primates (and the occasional rabbit), the monkeys at OPR receive the space, care and emotional support so long withheld but needed and deserved. 🐾

amy

One morning Schultz and her husband, Skip, woke to a choir of alarming cries from the macaque barn. After more than a decade of working with macaques, Schultz knew something was desperately wrong. She'd never heard such distressing cries. "When I opened the door to the macaque barn, timid little Mandy was frantically extending her arms through the bars of her enclosure and reaching out toward Amy, an old Barbary macaque. Every macaque in the barn was cooing out painfully intense mourning calls and looking in the direction of Amy's enclosure. I knew without even looking what had happened and began to cry. I found Amy lying lifeless on the ledge she so enjoyed sleeping on. She had passed away peacefully in the night. I remembered the day we rescued Amy. Morbidly obese, injury-covered body, maggot clusters in both armpits the size of baseballs and infected, untreated wounds on her abdomen. A noble creature so mistreated who had suffered for so many years." Knowing Amy's last years were peaceful and happy at OPR, Schultz's tears weren't so much for Amy, but for her troop, grieving so hard at her passing. "It was one of the hardest things I've ever experienced." Another lesson learned: Monkeys like humans, do mourn the loss of loved ones.



In harmony

By Andrew Gunther

AS DIRECTOR of AWI's Animal Welfare Approved program, I recently had the opportunity to visit the Arapaho Ranch, in north-central Wyoming. At 580,000 acres, it is the largest USDA certified organic ranch in the U.S.—and one of the most inspiring ranches that I have ever seen. Arapaho Ranch is actually *part* of its environment, working in harmony with nature, rather than trying to control it.

My visit began at the front of the local high school in the town of Thermopolis, where I met with David Stoner, who manages the Arapaho Ranch on behalf of the Tribal Council of the Northern Arapaho Nation. David is one of those people who can say a huge amount with very few words, and as we drove out to the first pasture it quickly became clear that the Arapaho Tribe had struck gold by appointing him to manage their ranch. David talked passionately about the grazing strategy that he uses to maintain the productivity of the land. He rotates the cattle around the different areas of the ranch to graze throughout the year. This rotational grazing strategy ensures that the grassland is always vibrant and full of young, vigorously growing grasses, ready for grazing on the next rotation. And as they graze the pasture, the cattle also consume mature grass seed, which is later deposited elsewhere on the land—encased in a healthy

dollop of natural fertilizer—helping to encourage the multitude of ancient grasses to naturally reseed.

The more we moved around the ranch, the more I realized just how unique this space was. As we chatted, we saw more non-farmed animals than farmed, with moose, elk and deer grazing the pasture. David explained that this method of ranching recognizes these fellow “users” of the range as equal inhabitants, rather than as competitors. Indeed, the farm’s website proudly proclaims the Northern Arapaho Tribe’s intent “to reconnect with its strong traditions as a hunter/gatherer society whose very existence depended on its willingness to live in harmony with nature.”

This mission is reflected in the unique wolf management plan at the ranch, which has been approved by the federal government and gives the tribe full control over decisions concerning the local wolf population. In its opening paragraph the plan states that: “Traditional views of the Eastern Shoshone and Northern Arapaho Tribes recognize wolves as kin, as helpers, as strong, and as deserving of respect and placed here by the Creator for a purpose.” I knew wolves lived on the ranch and had heard tales that wolves would readily take both wild and domesticated animals. So how did the ranch deal with this threat? David quickly put me straight: First, he isn’t convinced that the threat is real; second, the plan—and the beliefs of the Arapaho Tribe—means that he can only address the challenge using non-lethal management.

The wolf control plan at the ranch is as fascinating as it is plain old common sense. David explained that the whereabouts and hunting patterns of the wolves are well-known by him and the ranchers, so they simply ensure that any cattle that graze in the areas patrolled by wolves are cattle that are “not prey.” I must have looked a little



Above Left: Wild bison graze near domesticated cattle at Arapaho Ranch. At Arapaho, wild animals like bison and bighorn sheep (opposite page) are treated as members of the community, not as intruders. **Above Right:** No crowding here. Wide vistas frame cattle grazing on the expansive grasslands of Arapaho.

confused. “Wolves take the injured, sick and young,” he explained. By ensuring that any injured, sick or young cattle are not grazed in the range of the wolves, the issue of predation is avoided. It’s a very simple and symbiotic solution to the challenge, which is reflected elsewhere on the ranch. These older, stronger cattle drift as they graze and this spares the riparian pastures and encourages seed spread. The ranch team is made up of cowboys who grew up with the philosophy of respect for and knowledge of their surroundings, and who know how to interact with the “other” inhabitants of the ranch.

I noted that surface runoff from rainfall and snow melt isn’t as big a problem here as it is in other farms I’ve visited. Heavy rains can lead to flooding and fast moving water, which can flatten large areas of pastures and cause soil erosion. I asked David how he managed to keep runoff damage down. “Beavers,” he said. My eyes must have spoken volumes. I had no idea how you might control runoff with beavers, but I knew that this was going to be interesting. As we all know, beavers chop down trees to make dams and, in doing so, clear small patches of forest where light can fall on the highly fertile soil. These are great for grazing cattle, he explained, while also providing access to water. But perhaps the key byproduct of the beavers’ presence is that their dams act to slow down the

flow of water and control runoff, like man-made dams but in a less heavy-handed way.

It was clear that what David and the Council are doing with this land is right, and that the care and compassion that David and his team show for the flora and fauna profits everyone and everything on the ranch. But as we prepared to leave, my heart sank in the realization that this farming utopia could not possibly make a bottom-line profit without some complicated argument about the value of habitat conservation; or the fact that grazing the pastures in this way actually locks atmospheric carbon dioxide into the ancient grassland through carbon sequestration; or by explaining the net positives of not using artificial fertilizers, which inevitably leach nitrogen and phosphorus into the water table.

So I was utterly taken aback when David said that the farm was making an operating profit. Here is a living, breathing, working example of how to farm in a truly sustainable way and still make a living—even by today’s skewed perceptions—yet be a billionaire in the eyes of those who value nature and the planet. The Arapaho Ranch is not just the pride of the Northern Arapaho Tribe: It’s an example to us all. 🐾



Photos by David Stoner



Daily News-Record

Over 37,000 chicks died when a fire swept through this chicken hatching facility. In factory farms where large numbers of animals are crammed together, equipment malfunctions and natural disasters can spell mass death.

Fire Engulfs Crowded Hatchery

DISASTERS LIKE FLOODS, ROOF COLLAPSES AND FIRES are not uncommon occurrences on factory farms. And given the large numbers of animals confined on these operations, such emergencies can kill tens—even hundreds—of thousands of living beings in a matter of minutes. That's what happened last October at a chick hatching facility near Mauzy, Virginia, when a fast-moving fire ignited by a malfunctioning heater claimed the lives of 37,200 chicks. "None of my peeps made it," the owner, who raises chickens for poultry giant Pilgrim's Pride, jokingly told reporters. His good spirits, perhaps attributable to insurance coverage, appeared to show scant regard for the immense pain and distress suffered by the birds under his care. 🐾

KILLING BY DECOMPRESSION

Poultry company **OK Foods** announced it intends to begin killing chickens by decompression, using a technique referred to as "vacuum stunning" or "low-atmospheric pressure killing." Thus far, little evidence exists to support the notion that vacuum stunning is humane. Animal welfare scientists are worried that the reactions of birds to decompression have not been adequately researched. Dr. Mohan Raj, visiting fellow in the University of Bristol's School of Veterinary Sciences and a renowned expert on humane slaughter, has expressed concern that gas trapped in the birds' air sacs and guts may rupture, causing significant pain and distress. In view of these concerns, a coalition of animal protection groups, including AWI, is urging poultry suppliers not to employ the new method until answers are obtained to many critical questions about the birds' experience from an animal welfare perspective. Poultry companies are instead encouraged by animal welfare groups to adopt "controlled-atmosphere killing" (whereby oxygen is removed from the atmosphere while the birds are still in their transport crates)—considered the least painful slaughter method currently available. 🐾

Cage-Free or Just Bigger Cages?

WHEN CALIFORNIA VOTERS passed Proposition 2 two years ago, they thought they were banning the confinement of egg-laying hens in tiny "battery cages." Unfortunately, the language of the ballot measure did not specifically ban cages and also failed to provide a minimum space allowance for each bird. Instead, the wording relied on a vague "performance" standard—requiring that hens be able to lie down, stand up, fully extend their limbs, and turn around freely, but failing to mandate that all hens be able to do these things simultaneously. As a result, the exact meaning of the new law is subject to debate. Instead of going cage-free as voters no doubt intended, some California egg producers have begun switching to slightly larger enclosures referred to as "enriched" or "colony" cages. Egg producer JS West filed a lawsuit seeking clarification of Prop. 2, saying it doesn't want to invest a lot of money in new equipment until the exact dimensions for cages are spelled out. 🐾

Rat Poisons Putting Predators at Risk

by Laurel Klein

ANTICOAGULANT RAT POISONS—the number one method of rodent control used worldwide—may take a week or more to kill rodents. During this interim, the rodents continue to move around, leaving predatory wildlife species at risk of consuming poisoned prey. Despite the widespread use of anticoagulants in commercial and residential areas, little is known about the indirect effects of sublethal, chronic exposure of wildlife to these poisons.

In Southern California, National Park Service (NPS) and U.S. Geological Survey (USGS) biologists have found widespread exposure of bobcats, mountain lions, and coyotes to anticoagulant rodenticides. Through the testing of livers, 92 percent of bobcats (n=48), 87 percent of mountain lions (n=8), and 83 percent of coyotes (n=24)¹ tested positively for anticoagulant rodenticides. Further, NPS and USGS have documented that more than 70 percent of the animals tested for anticoagulants in Los Angeles, Ventura, and Orange counties were exposed to several different compounds, suggesting multiple exposure events.

The biologists have also documented an epidemic outbreak of notoedric mange in bobcats in these three counties highly associated with anticoagulant exposure. Notoedric mange is caused by an external parasitic mite and has generally only been reported in isolated cases in wild felids. Necropsy results of bobcats who died after contracting mange revealed that mortality was not due to direct anticoagulant toxicity, but rather from the mange itself. However, mange and anticoagulant exposure were highly associated: All 39 bobcats with advanced mange tested positive for anticoagulant compounds.

¹(n=sample size)

Mange is typically suggestive of an immune compromised state, and so we hypothesize that sublethal, chronic anticoagulant exposure compromises bobcat immunity, increasing their susceptibility to the disease. As a UCLA Ph.D. student and NPS collaborator, this hypothesis is central to my dissertation research. My work focuses on how urban development can increase disease susceptibility in bobcats at the urban-wildlife interface. I am particularly interested in the effects of anticoagulants. To understand the sublethal impacts of these poisons on bobcats, I have been trapping bobcats in areas in and around Los Angeles. In



Laurel Klein

This bobcat, trapped in the hills northwest of Los Angeles, had mange. Before she was tagged and released, she spent six weeks in rehabilitation—gaining over 12 pounds and recovering her coat.

order to trap bobcats, we use cage traps that we check twice daily to ensure that no animals are injured during the course of the research. We collect samples at the site of capture for a variety of assays that will help us understand whether sublethal chronic exposure to anticoagulants affects the health of bobcats, potentially increasing their susceptibility to disease.

Recently, I trapped and released 20 bobcats in areas around Beverly Hills, Bel Air, and the Hollywood Hills. Of these 20 cats, five had mange and three required rehabilitation. While it is reassuring to find so many bobcats in such urban regions, these data confirm that a mange outbreak is affecting multiple bobcat populations around Los Angeles. As this research goes forward, blood samples from these animals will be tested to determine if anticoagulant exposure is also linked with these cases of mange.

Documenting the prevalence of exposure to these poisons and their potential sublethal effects may help spur the implementation of rodent control measures that pose fewer risks to predator species. 🐾

For more information about this study, see urbancarnivores.com.

Animal Sacrifice in Nepal: Local Activists Seek to STOP THE BLOODSHED

IN A LARGE ENCLOSED YARD in a small town in southern Nepal, a man stands over a young water buffalo, a heavy sword held high in both hands. With a quick motion he brings the sword down on the buffalo's neck, severing the head from the body. By day's end, this grisly scene is repeated 20,000 times, as roving men in the yard single out other buffaloes for decapitation, until the area is turned, in the words of one observer, into "a foul smelling marsh land covered in blood and animal remains."

The killing of the buffaloes is intended as a sacrifice to Gadhimai, a Hindu goddess of power. It is part of the month-long Gadhimai Festival, held every fifth year in November in the town of Bariyarpur. During the 2009 festival, an estimated 5 million people converged on the town of a little over 7,000 residents. Participants—70 percent of whom are from neighboring regions of India where animal sacrifice is restricted or banned—believe that animal sacrifices to the goddess will end evil and bring prosperity.

Two days (November 24 and 25) were devoted to the sacrifices. An estimated 250,000 animals were killed—the blood of goats, pigs, sheep and birds joining that of the buffaloes. It is, perhaps, the largest ritual animal sacrifice in the world. And some animal welfare activists in Nepal are working to stop it.

As preparations for the 2009 Gadhimai Festival gathered steam, Animal Welfare Network Nepal (AWNN), a consortium of seven Nepali animal welfare organizations, launched the Stop Animal Sacrifice Campaign to promote less cruel methods of worship. Meanwhile, animal welfare groups in India are attempting to form a similar consortium.

According to Pramada Shah, vice president of Animal Welfare Network Nepal, one of the organizations that created AWNN: "The anti-sacrifice movement began 15 years ago in Nepal by a group of devout Hindus opposed to this ritual." In anticipation of the 2009 Festival, she said, "Various awareness raising programs were organized at Bara [the district in which Bariyarpur is located] to appeal to the temple priests and public to opt for vegetarian offerings."

The cruelty to the animals begins long before they are slaughtered. Nepali activist Manoj Gautam states: "The animals were not provided with any water and food in the days before the sacrifice. Many young animals had in fact already died from stress, exhaustion and



Photos by Animal Welfare Network Nepal

Protesters in Nepal call attention to the cruelty of animal sacrifice. The Stop Animal Sacrifice Campaign works with religious leaders and others to promote non-lethal expressions of faith and devotion.



dehydration before the killings started. Their bodies were left among the live animals." There are also no measures taken to ensure humane slaughter, says Gautam: "The organizers failed to issue rules for the general sacrifices that were carried out randomly in a radius of 3 kilometers of the temple. Everyone could kill anything, with whatever knife or sword. Many animals died an unbearable, slow and violent death because the knives were not sharpened properly and the butchers were inexperienced."

The Gadhimai Festival is not the only religious celebration in Nepal during which animals are killed. A number of annual festivals feature smaller—but still significant—sacrifices, most notably Dasain, the country's largest festival, a 15-day celebration held before the rice harvest, in September/October. On the eighth day of Dasain, mass sacrifices commence. The government itself publicly beheads 54 buffaloes and 54 goats, followed by the Nepali army's killing of 108 buffaloes. The event is shown on national television. It is estimated that hundreds of thousands of goats are sacrificed during Dasain, as well as an undetermined number of buffaloes, ducks, chicken, and other animals.

Appeals to the Nepali government to curb the killing have gone largely unheeded, says Shah: "Menaka Gandhi, noted animal rights activist and member of Parliament from India, supported this campaign wholeheartedly and wrote to the president and prime minister [of Nepal] to stop the sacrifices. Brigitte Bardot, eminent animal rights activist and actor from France, did the same. All pleas, however, fell on deaf ears and the government refused to intervene, saying it would not impinge on the rights of people to practice animal sacrifice according to their beliefs."

AWNN is also working with the religious community to promote alternatives. Says Shah: "Since this ritual is based on faith and belief, we need to tread carefully. One of the founders of the anti-sacrifice movement—cultural expert Dr. Govinda Tandon—has studied the Hindu texts intensively and has concluded that the Hindu religion does not prescribe animal sacrifice." AWNN promotes vegetarian offerings of flowers, pumpkins and coconuts—even sacrificing of one's bad habits. They enlist religious scholars to explain that these are acceptable practices. Shah cautions, however, that "Deep-rooted cultural and religious beliefs—not only among the uneducated but also among the educated—is a great obstacle. Nepali society is very superstitious by nature and this is an obstacle as well. 'What if something bad happens to

our family if we stop sacrificing animals' is a common comment from many."

Despite the grim prospects for an immediate end to the sacrifices, Shah does see rays of hope:

"Logical arguments and fact-based evidence can help change people's minds. Nepali people have experienced and welcomed many political and social changes so this gives us hope. Many families have seen the futility of animal sacrifice and are giving it up voluntarily. One thing that made us hopeful recently was when the main priest of Gadhimai who initiated and supported the massacre at the temple performed a cleansing ritual organized by our group to commemorate the first anniversary of the Gadhimai massacre. This is a positive change. We hope he comes around and encourages people to offer vegetarian sacrifices."

Shah says since the animal rights movement is relatively new in Nepal, very few people are involved, though the number is steadily growing. "We had realized



Final moments: A lone buffalo calf stands forlornly amid the corpses of others—just one of an estimated quarter million animals killed during the 2009 Gadhimai Festival.

that it would be impossible [in 2009] to stop the sacrifices but it was our intention to make a huge hue and cry about it and to start a debate in society about animal sacrifice." As for the future: "We have started working with the media more intensively and with the local communities in Bara. We are going to mobilize people against animal sacrifice locally and nationally. We do realize it will take a long time to eradicate the practice, if ever, but we are confident that it can be greatly reduced." 🐾

For more information about the Stop Animal Sacrifice Campaign and what the international community can do to support it, see www.stopanimalsacrifice.org.

Shark Protections Strengthened

THERE IS GOOD NEWS TO REPORT from the last days of the 111th Congress: Legislation to close loopholes in the 11-year-old ban on shark finning finally passed and was signed by the president. With one exemption (which AWI opposed), the new law prohibits the removal of shark fins at sea within all U.S. waters.

Shark finning is a brutal and wasteful practice by which living sharks' fins are sliced off and their mutilated bodies thrown back into the ocean, where the animals endure long, painful deaths. Driven by the demand for

shark fin soup, shark finning kills an estimated 73 million sharks each year.

In 2000, President Bill Clinton signed a law making it unlawful to possess a shark fin in U.S. waters without a corresponding carcass. Loopholes in the ban, however, prevented effective enforcement, and finning continued. In 2008, NOAA mandated that sharks (other than smooth dogfish sharks) must be landed with fins attached in the Atlantic, Caribbean, and Gulf of Mexico, but not the Pacific. The just-passed Shark Conservation Act extends this requirement to all U.S. waters, and prohibits the transfer of shark fins at sea.

Following its passage, Sen. John Kerry (D-MA)—who championed the legislation along with Rep. Madeleine Bordallo (D-GU)—issued a statement: “Shark finning has fueled massive population declines and irreversible disruption of our oceans. Finally we’ve come through with a tough approach to tackle this serious threat to our marine life.”

Unfortunately, the new law retains the exemption for smooth dogfish sharks, for which a small fishery exists in North Carolina, targeting the fish for both meat and fins. The exemption will allow these few fishermen to continue to separate fins of this species from carcasses at sea to facilitate processing. The fishermen will be responsible for demonstrating that the fins on their boats belong to the carcasses. While AWI is disappointed with the exception, the overall effect of the new law will be positive.

Requiring that sharks be landed with their fins attached is the only way to truly enforce a finning ban, and this requirement sets a new standard for other countries to follow. 🐾



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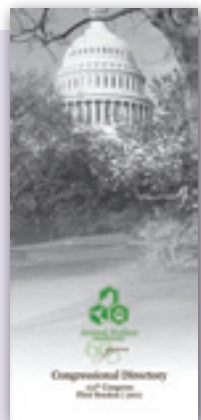
In U.S. waters, thanks to a new law on the books, it is no longer legal to subject sharks like this hammerhead to the cruel practice of finning.

Crush Bill Signed

PRESIDENT OBAMA SIGNED the Animal Crush Video Prohibition Act on December 9. The previous April, the Supreme Court overturned the 1999 ban on such videos (see Summer 2010 AWI Quarterly), and depictions of the torture of animals immediately reappeared. In restoring the ban, the new law addresses the Court’s concerns and will once again close the market for such videos. 🐾

YOU CAN MAKE A DIFFERENCE

The 112th Congress is under way. Stay informed by signing up for AWI eAlerts at www.awionline.org/takeaction, and meet the members with the new *Congressional Directory* from AWI (available in March—to order, call or visit the AWI website).



MANATEES RULE IN FLORIDA’S KINGS BAY

The U.S. Fish and Wildlife Service (USFWS) has created a manatee refuge for all of Kings Bay, the site of the animal’s largest winter habitat in Florida. For decades, tourists have come to Crystal River in Kings Bay to swim with the endangered animals. But love has sometimes turned to harassment as rising manatee numbers coupled with increased boat traffic make it hard for the manatees to escape the attention. The new refuge was established under the emergency rule provisions of the Endangered Species Act and the Marine Mammal Protection Act. It joins an existing network of 11 federal manatee sanctuaries and 13 refuges. Manatee sanctuaries—where all waterborne activities are prohibited—already exist in Kings Bay, and this emergency rule will not change those existing sanctuaries, according to the USFWS press release. But those existing sanctuaries were deemed too small now to adequately protect manatees in the bay. The USFWS, therefore, felt that establishing a refuge for all of Kings Bay was necessary to provide an area of adequate size



Keith Ramos/USFWS

where manatees can rest, free from disturbance. Creation of the new refuge allows the USFWS to, among other things, quickly move in and post “no-entry” areas where needed. “The Kings Bay federal manatee refuge designation expands vital access for manatees to warm water habitat during the coldest months of the year, while clarifying what swimmers and others cannot do when in the presence of manatees,” said USFWS North Florida Field Supervisor Dave Hankla. 🐾

IN REMEMBRANCE

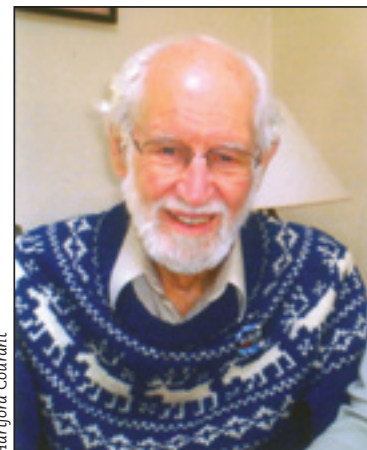
Robbins Barstow Warrior for Whales

ON NOVEMBER 7, 2010, two weeks after his 91st birthday, long-time AWI colleague and whale advocate Robbins Wolcott Barstow, Jr. died at his home in Wethersfield, Connecticut. Robbins was Director Emeritus of Cetacean Society International (CSI) and spent decades working to save whales. In 1974, he co-founded the Connecticut

years, from 1976 to 1994, promoting an end to whaling for commercial gain. He was instrumental in the creation of the Southern Ocean Whale Sanctuary at the 46th IWC meeting held in Puerto Vallarta, Mexico, his last such meeting. Robbins was still fighting the whaling wars last spring when he made the following call to arms to U.S. NGOs:

Friends, this is it—the final battle! If we lose this one, and the IWC authorizes any kind of resumption of commercial whaling, we have lost the war. It will be generations before there is any chance to stop all commercial whaling again. Our thirty-year war to end whale killing for profit will be ended in defeat.

He then went on to prescribe a series of actions, including advertisements in newspapers and a rally in front of the White House. We’re happy to relate that both these actions—and others—were taken, and that the battle, though not yet the war, was won. 🐾



Hartford Courant

Cetacean Society (now CSI) and successfully spearheaded an effort to make the sperm whale Connecticut’s state mammal. In 1983, he organized the seminal and widely attended Whales Alive conference in Boston. Robbins attended meetings of the International Whaling Commission (IWC) for nearly 20

John Gleiber Colleague and Dear Friend

I WAS IN HIGH SCHOOL when John Gleiber met AWI's founding president, Christine Stevens, at a dinner party. Christine invited John to her home the next day. It was 1975 and John was offered a job over tea. He became one of an intimate group of employees who worked diligently in the basement of Christine's home. For the next 29 years, John was AWI's assistant to the officers. He was also executive secretary and later secretary of AWI's then-companion organization, the Society for Animal Protective Legislation. Upon his retirement, John joined AWI's board of directors and served as secretary.

In 1980 I hoped to intern in the animal protection field during my summer break from college; I sat at my manual typewriter and composed many a letter seeking a position with a nonprofit organization. Fortunately for me, one of those letters reached the hands of John Gleiber. I remember meeting him in the living room of Christine Stevens' stately home. He was dapper and charming, and I adored him from the start.

In those good old days, when you lobbied Congress you could actually meet directly with senators and representatives if necessary or—if not—the chiefs of staff or legislative directors didn't mind you dropping in to chat about a critical issue. I was privileged to march the halls of Congress with Christine and John, and they worked beautifully as a team. Christine would provide comprehensive detail on an issue, including books, news articles, and scientific studies as appropriate, and then John would sweep in with a clever remark to make the lawmaker or staff member smile, or a brief few sentences that summarized the issue well.

In addition to being the wittiest person I have known, John was also an amazing, amusing and talented writer. Longstanding members of AWI no doubt recall his clever column "Periodical Pleasures," which he penned throughout the 1980s and early 1990s. John's activities ranged well beyond lobbying and writing, and



John with AWI founding president, Christine Stevens at the 1986 presentation of the Schweitzer Medal to Senator Bob Dole.

included his ready participation at any rally or protest. In fact, one of the highlights of his career was surely the ride he took in the skies around the White House in the massive whale dirigible as part of AWI's Save the Whales campaign in the late 1970s (sigh, how times have changed).

In December I had the pleasure of celebrating John's 85th birthday with him, and we continued to see each other as often as our schedules allowed. He died the morning after my last visit. I shall miss my dear friend. I'll miss his intellect, his political commentary, his advice and support—but, most of all, his boundless kindness and love. 🐾

—Cathy Liss



John was a familiar presence in the inner circles of Washington, D.C. Here (from left to right), John greets Charles, Prince of Wales, former Secretary of State Colin Powell, and former First Lady (and current Secretary of State) Hillary Rodham Clinton.

Do Fish Feel Pain?

By Victoria Braithwaite
Oxford University Press
ISBN: 978-0199551200
Hardcover, 256 pages, \$29.95

THE REALIZATION that mammals and birds are capable of experiencing pain and distress has had a profound influence on our relationship with them. The knowledge of this pain capacity has inspired a substantial number of laws, ordinances, regulations, and policies that dictate how mammals and birds can and should be treated when used for food and fiber production, in research, as companion animals, in zoological displays, and in many other situations. Although there is much work still to be done in improving the lives of these animals, no one should question that mammals and birds need to be protected from unnecessary pain and distress.

But what about fish? Fish are hooked for recreation and food. Commercial fisheries capture and kill millions of fish every day. Fish are electro-shocked by researchers, managers poison unwanted fish in lakes and rivers, and the aquarium trade is thriving.

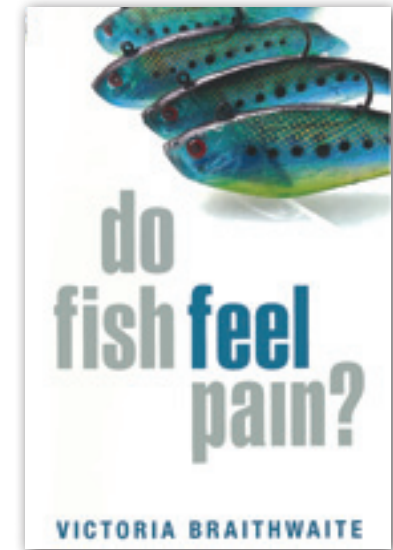
Do fish feelings matter?

Victoria Braithwaite explores the science and the ethics behind fish pain and suffering in her groundbreaking work, *Do Fish Feel Pain?* Braithwaite is a Professor of Fisheries and Biology at Pennsylvania State University, and in her book she summarizes research—much of it her own—on pain and suffering in fish.

A chinook salmon isn't a golden retriever. And Braithwaite doesn't argue that it is. What these animals have in common, however, are mechanisms for detecting painful events, a nervous system that reacts during these events, and a behavioral or decision-making response to these events. In other words, a salmon, like a retriever, can sense, react, and respond to painful stimuli.

Braithwaite develops a convincing case that fish can feel pain. Although their expressionless faces and a lack of vocalization in response to painful stimuli—no yelps, cries, or shouts—make fish easy to ignore in discussions about animal welfare, her book clearly shows why it is meaningful and appropriate to discuss pain in fish.

The fundamental importance of this research is its effect on human decision-making. If fish can feel



pain, if they can suffer, then how do we respond to this knowledge? What does it mean for catch and release angling? How should it be applied in commercial aquaculture? Should animal welfare proponents be as concerned about a swordfish caught with long-line fishing as a leatherback turtle?

This is a conversation that is long overdue. As Braithwaite writes, "Finding out what triggers or contributes to animal suffering allows us to find ways of avoiding it." It is time to include fish in our animal welfare discussions. 🐾

—Robert Schmidt, Ph.D.
Department of Environment and Society
Utah State University, Logan, UT

BEQUESTS

If you would like to help assure AWI's future through a provision in your will, this general form of bequest is suggested:

I give, devise and bequeath to the Animal Welfare Institute, located in Washington, D.C., the sum of \$_____ and/or (specifically described property).

Donations to AWI, a not-for-profit corporation exempt under Internal Revenue Code Section 501(c)(3), are tax-deductible. We welcome any inquiries you may have. In cases in which you have specific wishes about the disposition of your bequest, we suggest you discuss such provisions with your attorney.



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Some Stranded Dolphins May Be Deaf

NEW RESEARCH BY SCIENTISTS in South Florida indicates that a high percentage of stranded dolphins were almost deaf at the time of stranding. The cause of the near-deafness is unknown. It might be age-related, or attributed to birth defects, disease, or a complex of several causes. One potential cause that cannot be ruled out is anthropogenic (man-made) noise in the ocean, which, in specific instances has already been proven to cause animals to strand and die. If such noise is also having a chronic effect on marine animals, then the long-term impacts could be devastating. Anthropogenic ocean noise of greatest concern

is that caused by shipping, military sonar, explosions, and seismic airguns used by the oil and gas industry. In some parts of the oceans anthropogenic noise levels have doubled every decade for the past 60 years. Scientists are finding that some species of whale are making louder vocalizations, presumably in an effort to overcome the background din. The impacts of this behavioral change are not known—although there are obvious concerns with any impairment in marine mammals' ability to use sound to detect prey, avoid predators, and communicate with mates and offspring.

A total of 34 animals were tested, including seven Risso's dolphins, two pygmy killer whales, one Atlantic spotted dolphin, one short-finned pilot whale, one juvenile Gervais' beaked whale, one spinner dolphin, seven bottlenose dolphins, and 14 rough-toothed dolphins. The study was conducted using sensors attached to the dolphins' heads with suction cups, on animals who had live-stranded and were being rehabilitated. The sensors were able to detect changes in electrical activity in the brain in response to tones. The short-finned pilot whale, four of the bottlenose dolphins, and five of the rough-toothed dolphins were found to be suffering from severe to near-total hearing loss. With this limited data it is difficult to draw definitive conclusions. But with such an alarming result, it is important to test more animals and make efforts to reduce anthropogenic ocean noise. 🐾



Docklands/Tony

Dolphins are acutely acoustic creatures who use sounds to survive. Oceanic noise pollution caused by military and industrial operations puts them in peril.