



*Excellence in Wildlife Stewardship Through Science and Education*

## **ANNOUNCEMENTS**

*Week of Friday, April 5<sup>th</sup> 2013*

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<https://www.facebook.com/pages/The-Wildlife-Society-New-Mexico-Chapter/122478411098284>

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## **1. Study: Big Cats Living in Urbanized Areas in India**

First Posted: Mar 30, 2013 06:52 AM EDT

Benita Matilda

A recent finding from the Wildlife Conservation Society claims that five large carnivores, including leopards and striped hyenas, are living in a human-dominated landscape, according to a news release.

This study was led by WCS-India scientist Vidya Athreaya. It was conducted in Western Maharashtra, India. By using camera traps, researchers noticed that the big cats roamed to human populated-areas and have managed to stay unnoticeable by the public. Despite such close proximity, there has been no incident of leopard attack reported.

Athreaya works with India's Center for Wildlife Studies and the Wildlife Conservation Society. She has been studying the interaction between leopards and humans for the past eight years, reports The Huffington Post.

Apart from this, the researchers also found the rusty spotted cat, small Indian civet, Indian fox, jungle cat, jackal and mongoose.

"Human attacks by leopards were rare despite a potentially volatile situation considering that the leopard has been involved in serious conflict, including human deaths in adjoining areas," said big cat expert Ullas Karanth of WCS in a press statement. "The results of our work push the frontiers of our understanding of the adaptability of both humans and wildlife to each other's presence."

Through this research finding, the authors emphasize on the need for conservationists to explore the regions outside the protected areas. They can then make a more holistic approach to protect wildlife in different landscapes.

The study, titled 'Big Cats in Our Backyards', is published in the March 6 edition of the journal PLOS One.

Article link: <http://www.scienceworldreport.com/articles/5907/20130330/study-big-cats-living-urbanized-areas-india.htm>

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## 2. Nature's Drone, Pretty and Deadly

By NATALIE ANGIER  
Published: April 1, 2013

African lions roar and strut and act the apex carnivore, but they're lucky to catch 25 percent of the prey they pursue. Great white sharks have 300 slashing teeth and that ominous soundtrack, and still nearly half their hunts fail.

Dragonflies, by contrast, look dainty, glittery and fun, like a bubble bath or costume jewelry, and they're often grouped with butterflies and ladybugs on the very short list of Insects People Like. Yet they are also voracious aerial predators, and new research suggests they may well be the most brutally effective hunters in the animal kingdom.

When setting off to feed on other flying insects, dragonflies manage to snatch their targets in midair more than 95 percent of the time, often wolfishly consuming the fresh meat on the spur without bothering to alight. "They'll tear up the prey and mash it into a glob, munch, munch, munch," said Michael L. May, an emeritus professor of entomology at Rutgers. "It almost looks like a wad of snuff in the mouth before they swallow it."

Next step: grab more food. Dragonflies may be bantam, but their appetite is bottomless. Stacey Combes, who studies the biomechanics of dragonfly flight at Harvard, once watched a laboratory dragonfly eat 30 flies in a row. "It would have happily kept eating," she said, "if there had been more food available."

In a string of recent papers, scientists have pinpointed key features of the dragonfly's brain, eyes and wings that allow it to hunt so unerringly. One research team has determined that the nervous system of a dragonfly displays an almost human capacity for selective attention, able to focus on a single prey as it flies amid a cloud of similarly fluttering insects, just as a guest at a party can attend to a friend's words while ignoring the background chatter.

Other researchers have identified a kind of master circuit of 16 neurons that connect the dragonfly's brain to its flight motor center in the thorax. With the aid of that neuronal package, a dragonfly can track a moving target, calculate a trajectory to intercept that target and subtly adjust its path as needed.

The scientists found evidence that a dragonfly plots its course to intercept through a variant of "an old mariner's trick," said Robert M. Olberg of Union College, who reported the research with his colleagues in Proceedings of the National Academy of Sciences. If you're heading north on a boat and you see another boat moving, say, 30 degrees to your right, and if as the two of you barrel forward the other boat remains at that 30-degree spot in your field of view, vector mechanics dictate that your boats will crash: better slow down, speed up or turn aside.

In a similar manner, as a dragonfly closes in on a meal, it maintains an image of the moving prey on the same spot, the same compass point of its visual field. "The image of the prey is getting bigger, but if it's always on the same spot of the retina, the dragonfly will intercept its target," said Paloma T. Gonzalez-Bellido, an author of the new report who now works at the Marine Biological Laboratory in Woods Hole, Mass.

As a rule, the hunted remains clueless until it's all over. "Before I got into this work, I'd assumed it was an active chase, like a lion going after an impala," Dr. Combes said. "But it's more like ambush predation. The dragonfly comes from behind and below, and the prey doesn't know what's coming."

Dragonflies are magnificent aerialists, able to hover, dive, fly backward and upside down, pivot 360 degrees with three tiny wing beats, and reach speeds of 30 miles per hour, lightning for an arthropod. In many insects, the wings are simple extensions of the thoracic box and are moved largely as a unit, by flexing the entire thorax. In the dragonfly, the four transparent, ultraflexible wings are attached to the thorax by separate muscles and can each be maneuvered independently, lending the insect an extraordinary range of flight options.

"A dragonfly can be missing an entire wing and still capture prey," Dr. Combes said.

Dragonflies are true visionaries. Their eyes are the largest and possibly the keenest in the insect world, a pair of giant spheres each built of some 30,000 pixel-like facets that together take up pretty much the entire head.

“They have a full field of vision,” Dr. Olberg said. “They can see you when they’re flying toward you and still see you when they’re flying away.”

Their other senses get short shrift. Dragonflies can’t really hear, and with their stubby little antennas they’re not much for smelling or pheromonal flirtations.

For neuroscientists, the dragonfly’s large head capsule, eyes and brain cells hold particular appeal. “It’s that much easier to insert tiny electrodes into single neurons and make neural recordings from inside the brain,” said Steven Wiederman of the University of Adelaide in Australia.

As they reported in *Current Biology*, Dr. Wiederman and his colleague David O’Carroll explored how dragonflies single out one target from a chaotic swarm. Working with the two-inch-long Emerald dragonfly often seen darting around Australian ponds, the researchers inserted an electrode about 1/1500th the width of a human hair into a dragonfly neuron known to be involved in visual processing. They then positioned the dragonfly in front of an L.C.D. screen and showed it first one and then two moving targets at a time.

The scientists predicted that the dragonfly’s probed neuron would react to the competing targets as simpler nervous systems do, with the addition of the second target altering and degrading the response to the first. Instead, the scientists were amazed to find that the dragonfly attended to multiple stimuli in primate-like style, concentrating first on one target while ignoring the other, and then suddenly switching full attention to Target B, and then back to Target A — rather as we humans can sequentially shift our focus at a busy party from friend to friend, to a wineglass in need of a refill.

“It suggests the possibility of a top-down process of selective attention of the sort we normally associate with high order thinking,” Dr. Wiederman said. “So here we have a simple brain of less than a million neurons behaving like our own brain of 100 billion neurons.” The scientists have yet to determine what cues might prompt a dragonfly to decide, ah, there’s the target I will pursue.

Perhaps not surprisingly, much dragonfly research both here and abroad is supported by the United States military, which sees the insect as the archetypal precision drone.

Dragonflies are not a very species-rich group. Their order, Odonata, which means toothed ones — after the notably serrated mandibles that crush prey to snuff — includes only some 7,000 species worldwide, compared with hundreds of thousands of beetle and butterfly species. (And that 7,000 figure includes

dragonflies, with their stiff wings, and the related damselflies, which can fold back their wings.)

Yet dragonflies are rich in history, their ancient lineage dating to the Carboniferous period, some 300 million years ago. Back then the atmosphere's high oxygen content helped give rise to supersize dragonflies with wingspans the length of an arm, three or four times the dimensions of today's biggest tropical specimens.

Adults spend the great bulk of their days aloft, and not only to hunt and eat. Males spar with other males in midair and relentlessly swoop after females, and mating itself takes place on the wing, with male and female forming a circle that can look somewhat heart-shaped but is an awkward, aggressive affair.

Grasping the female's head in his mating pincers, the male first must transfer his sperm from a storage site on his lower abdomen to a copulatory organ inconveniently located on his upper abdomen. Then he must induce his headlocked mate to curl her genitals up toward that loaded midbelly penis, and wouldn't you know it, she's already mated and the male must pause to expand a little bristled lobe to scrape out the previous suitor's sperm.

Some dragonfly species migrate long distances each year, a still mysterious phenomenon not unlike the celebrated flight of the monarch butterfly. Recent studies have shown that green darner dragonflies migrate in sizable swarms each fall and spring between the northern United States and southern Mexico, while the globe skimmer dragonfly lives up to its name: it has been tracked crossing between India and Africa, a round trip, multigenerational pilgrimage that may exceed 10,000 miles.

Dragonflies migrate to maximize breeding opportunities, to find warm freshwater ponds in which they can safely lay their eggs. From those eggs hatch dragonfly larvae: astonishing gilled predators that will spend weeks to years hydrojetting through water and shooting their mouthparts after aquatic prey, until they're ready to spread their wings and take the hunt to the sky.

Article link: <http://www.nytimes.com/2013/04/02/science/dragonflies-natures-deadly-drone-but-prettier.html?pagewanted=1&r=0&ref=science>

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### 3. Ken Salazar to leave Interior with no regrets

By Juliet Eilperin,  
Apr 03, 2013 10:39 PM EDT

The Washington Post

The walls of [Interior Secretary Ken Salazar](#)'s office are nearly bare now: He has packed up his photos and most of his books, so only a few paintings remain. But tucked inside a desk drawer is an artifact from his more than four years in office: a small vial of oil recovered on July 14, 2010, from the [BP oil spill](#) in the Gulf of Mexico.

"I'm not sure if I'll take it," Salazar confessed, though he said the federal reforms and restoration funding stemming from the Deepwater Horizon disaster have left the country better off. "The legacy, of it, I think, is a positive one."

In a 40-minute interview Wednesday reflecting on his time in President Obama's Cabinet, Salazar said he was satisfied with his accomplishments. "I don't know that I would have done anything differently," he said. "I feel very good and very much at peace."

Coping with the oil spill dominated his time during 2010, but Salazar said that the two agencies he created in its aftermath — the Bureau of Ocean Energy Management and the [Bureau of Safety and Environmental Enforcement](#) — meshed neatly with the "energy reform" he had hoped to undertake at Interior.

"I wanted to reform the department," he said, adding that the [Minerals Management Service](#), which had overseen offshore oil drilling at the time of the accident, "was archaic and needed to be overhauled."

Salazar, who promoted renewable energy both on public lands and in federal waters, said he took over a department that had embraced a mind-set when it came to energy of "drill everywhere" and has brought balance to it.

And when it came to the question of allowing drilling in the Arctic Ocean, which many environmentalists oppose outright, the secretary defended his decision to allow Royal Dutch Shell to pursue exploratory activities there. Shell had to [scale back its activities in the area this past summer](#) because of unfavorable weather conditions and delays in acquiring permits, and has announced [it will not drill on its ocean leases in 2013](#) because two of its vessels were damaged in Alaska over the winter.

"We wouldn't allow them to drill into the hydrocarbons," he said of Shell's 2012 drilling season. "We did what we wanted to do this summer. We watched them carefully and didn't let them move forward" when they hadn't met federal requirements.

Salazar also touted the nine [national monuments](#) Obama has declared over the past four years, including five the president designated late last month. He described preserving those historic, cultural and environmental sites, including

Colorado's Chimney Rock and New Mexico's Rio Grande del Norte, as acts that "will be seen as foundational to the conservation legacy of this president."

Even as he has put away many of his belongings, Salazar still faces some uncertainty. He has not decided what job he will take next, though he plans to spend more time in Colorado with his family. And because Obama's pick to replace him, REI chief executive [Sally Jewell](#), has yet to be confirmed by the Senate, he "doesn't have an end date yet."

Even as he described the tight budget constraints the department is now experiencing under the mandatory, across-the-board cuts known as sequestration and the government's funding by continuing resolution, Salazar said he still considered his post the best in the Cabinet.

"It's a glorious job," he said.

Article link: [http://www.washingtonpost.com/national/health-science/salazar-to-leave-interior-with-no-regrets/2013/04/03/d2c92fb8-9c9b-11e2-a941-a19bce7af755\\_story.html](http://www.washingtonpost.com/national/health-science/salazar-to-leave-interior-with-no-regrets/2013/04/03/d2c92fb8-9c9b-11e2-a941-a19bce7af755_story.html)

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## 4. Coyote control program proves popular in North Dakota

Published April 04, 2013, 01:11 PM  
BLAKE NICHOLSON, Associated Press

BISMARCK, N.D. (AP) — A new state-sponsored program in North Dakota that helps connect landowners plagued by coyotes with hunters and trappers who can eliminate the pesky predators has proven popular, but some conservation groups say it is misguided.

The Coyote Catalog online database is a collaborative effort between the state Game and Fish Department and state Agriculture Department, and allows landowners to apply online to receive contact information for hunters and trappers, who also have registered. The database is patterned after a similar deer control program that has been around for a decade.

Coyotes have always been common in western North Dakota, but have expanded into the rest of the state. The animals are most active at night and no one has a good count on how many there are, but anecdotal accounts point to a growing population in recent years.

This winter, 51 landowners and 486 hunters used the catalog, nearly half of the total for the deer program in its peak years, according to the Game and Fish Department. There isn't an official number of coyotes killed yet, and officials expect to gather more information during annual public meetings later this month.

Some farmers and ranchers estimate that dozens of coyotes have been killed on their land, Agriculture Commissioner Doug Goehring said.

"Someone told me an almost unbelievable number, close to 60," he said.

Durnell Klain, a rancher in central North Dakota near Turtle Lake, said he hasn't lost any calves to coyotes yet, but worries about what will happen once he turns them out to summer pasture.

"The yard pressure is phenomenal," he said of coyotes hanging around his farmstead. "We hear them every day. We see them two or three times a week."

The coyote population uptick can partially be attributed to the absence of mange disease — a key factor that keeps coyote numbers in check, said Jeb Williams, assistant wildlife chief for the Game and Fish Department. Outbreaks of mange were reported in North Dakota in the late 1990s, but Williams said the disease is cyclical and not prevalent at the moment.

The federal Agriculture Department's Wildlife Services division has seen an increase in coyote calls in North Dakota. Last year there were 530 cases, up 20 percent from 2008, State Director Phil Mastrangelo said.

His division uses various methods to kill coyotes, and does not charge landowners for the service. There are only nine people to do the work, though, so programs such as the Coyote Catalog could provide a quicker resolution, he said.

But some conservation groups disagree with the method, saying killing coyotes is not the solution.

"What it does is actually increase the local coyote population," said Ashley DeLaup, a wildlife ecologist in Colorado with the California-based nonprofit Project Coyote, which promotes coexistence of people and coyotes. "They replace themselves unlike any other canid or even any other predator that I know of.

"Once there's lethal pressure, you're (killing) the old, weak, young and stupid ones, and you're creating an even more intelligent, adaptable predator in your territory," she said.

DeLaup said coyotes respond to hunting and trapping pressure by breeding at younger ages and having larger litters — leading to more coyotes in the hunted area and also pushing some out to other areas.

Killing off coyotes also can lead to other ecosystem problems, such as an increase in rodents as well as animals that eat songbirds and bird eggs, said Kirk Robinson, executive director of the Utah-based Western Wildlife Conservancy.

Robinson and DeLaup both advocate other methods, such as using dogs or llamas to protect calves and lambs, or putting material on fences that flaps in the wind and scares off wild animals.

"It does change the expense, but again, it's a matter of adapting to your environment," DeLaup said.

Klain said the idea of using such measures to combat coyotes is "totally ludicrous."

"There's balance in nature and there is no balance here. (Coyotes) have exploded, basically," he said. "They have no superior other than us."

Mastrangelo questioned the assertion that killing coyotes can lead to a population increase. His agency's program and the Coyote Catalog are aimed at dealing with local problems, he said.

"They're never intended to be a broad landscape population reduction effort," he said.

Other states have coyote control programs — the Utah Legislature, for example, approved one last year that pays people \$50 for every coyote they kill. But Goehring and Williams said they are not aware of a program similar to the Coyote Catalog.

They think it could be a model for other states, especially those in which hunters need permission to access private land. Williams added he hasn't heard opposition to the program in North Dakota.

"We recognize that it's a new program, and a lot of opinions are probably yet to be formed," he said. "All in all, we've heard it to be positive right now, at least the concept."

No decision has been made on whether to continue the program next year.

Article link: <http://www.wday.com/event/article/id/78025/>

# 5.A Rewarding Road

April 04, 2013

By Sarah Piecuch

## **How Transportation Biologists Ease Impacts on Wildlife**

Like most wildlife biologists, I am a lover of wild places, a seeker of remoteness, a despiser of the din of traffic. Yet I am employed by the New York State Department of Transportation (NYSDOT). Wildlifers working for road builders may sound like a conflict of interest, even an oxymoron. But we transportation biologists see it very differently.

Biologists at transportation agencies are deeply involved in wildlife conservation. Our job is to ensure the development and maintenance of roads in an environmentally sound manner. Much of this work is straightforward, but also wide-ranging: it involves obtaining federal and state wetlands and stormwater permits, working with engineers to ensure that road projects avoid sensitive wildlife habitat, minimizing and mitigating environmental impacts to streams, wetlands, and endangered species, and managing invasive species. The work can also offer biologists unique opportunities that they might not find in more-traditional roles, such as working on long-range projects with public-private partnerships across state lines, all in the interest of efficiently moving people while protecting habitat.

The need for such expertise has gained recognition at a national level. According to the U.S. Fish and Wildlife Service (FWS), “The Service encourages the design of transportation projects that provide the greatest value to the greatest number of people while avoiding or minimizing impacts to habitat and to the disruption of the ecological processes that naturally sustain these areas” (FWS 2012). In addition, the U.S. Department of Transportation’s Federal Highway Administration (FHWA) issues two classes of awards — for Exemplary Ecosystem Initiatives and Environmental Excellence. These awards honor projects that reduce habitat fragmentation and barriers to animal movement, encourage sustainable mitigation sites, foster ecosystem research and planning, or go beyond mere “compliance” to benefit the environment. Achieving these goals, however, often requires some out-of-the-box thinking and intense collaboration.

## **Roads that Work for Wildlife**

One vivid example of broad-scale collaboration involves the I-90 Snoqualmie Pass East project, now under construction in Washington State. Linking Puget Sound to eastern Washington, I-90 intersects the rugged Cascade Mountains in Washington’s Snoqualmie Pass region, which has been identified as a critical link in the north-south movement of wildlife species such as bear, elk, mountain lions, wolverines, and several species of small mammals and amphibians. This area is

also the focus of an extensive effort by the Washington State Department of Transportation (WSDOT) to expand the highway while making it safer for people and wildlife.

The effort involves extensive collaboration among WSDOT and the U.S. Forest Service, the U.S. Bureau of Reclamation, the FHWA, FWS, the Washington Department of Fish and Wildlife (WDFW), the state's Department of Ecology, the Environmental Protection Agency, and regional cities, counties, and community groups, which are all working together to develop consensus on their vision for the project. The ultimate goal is to create an efficient six-lane freeway that will have fewer closures from avalanches and rock slides, yet accommodate wildlife movement. Plans include connecting wildlife habitat on either side of I-90 with new bridges and culverts, which will allow for safer passage while minimizing wildlife-vehicle collisions. "It is very rare to have an opportunity to provide and restore ecological connectivity at this scale," says Craig Broadhead, WSDOT assistant manager for biology. "We have the chance to provide untold benefits to wildlife species and populations at a scale far beyond the scope of a typical highway project."

Such projects are expensive, but because road functionality is directly related to commerce and the economy, state DOTs are generally among the better-funded state agencies. Even a simple transportation project can have a large budget, and some transportation project costs exceed the entire annual budget of a state's natural resource agency for targeted species management. It's therefore advisable — and often very doable — to incorporate wildlife improvements into overall road project costs, especially since those wildlife improvements often run less than 10 percent of the total project cost.

For example, NYSDOT was planning a bridge rehabilitation project that cost \$11.5 million. We worked with the New York State Department of Environmental Conservation (NYSDEC) to design and incorporate two snake hibernaculums (at a total cost of \$10,000) to help protect queen snakes (*Regina septemvittata*), a state-listed endangered species that would not have received habitat management without DOT funds. A day's work of strategically hand-placing flat rocks in an area cut near the bridge abutments created lots of access to a partially submerged structure that will give the snakes winter shelter from predators.

### **Power of Persuasion**

It can take the skill of a diplomat to arrange such improvements, however. A transportation biologist must be a mediator, or a translator between biologists working for regulatory agencies and the transportation agencies' engineers. Each has its own vernacular that may not be understood by the other. During permitting, I've often noticed that both sides are viewing things from different scales or saying the same things but using different terms (i.e., stream invert = streambed). The result is confusion, misunderstandings, and delayed permit

approvals. It's challenging, but once these issues are overcome, great partnerships can develop. In my experience, engineers enjoy the challenge of integrating ecologically sensitive solutions into their project designs. The key is to educate them of the need, and inform them of it early in the project's development.

Early engagement is crucial both internally (with project engineers) and externally (with regulatory agencies) for a transportation biologist, because if you wait until permits are submitted, it is usually too late to add features for the betterment of wildlife. Highway and bridge projects — even those perceived as “simple” roads — can take several years to design, and the closer you get to the construction date, the harder it is to change design plans. Some regulatory agencies tend only to comment on projects when they have a permit application to review, and by that point the project design is 90 percent complete, so changes are very difficult to make without compromising the budget or schedule — both of which are high priorities for transportation agencies.

An example of effective early planning involved a project at Melvin Brook in Clyde, New York. Early in the project's development, I noticed a road-killed otter (*Lontra canadensis*) at the site. Because the large culvert was constantly filled with water, the scent trail of this mustelid had been interrupted. The lack of an upland area forced otters to travel out of the water and over the road embankment to leave a scent trail, thus making them vulnerable to traffic. I explained the need and ideal parameters for an upland bench to be built under the culvert. The project engineers eagerly brainstormed the “how,” took ownership of this wildlife improvement, and brought it to life. We made a great team: I identified the need and they created a solution. A year of post-construction monitoring has shown that several medium-sized mammal species are using the bench.

Even the best planning can't prevent unexpected events during construction. For example, after a bridge painting project had already begun, the contractor spotted the nest of a peregrine falcon (*Falco peregrinus*), an endangered species not seen in that area before. Prompt discussions with NYSDEC's endangered species biologists resulted in establishing a buffer area around the nest. Work was allowed to continue while I monitored the adult bird's behavior and fledgling progression to make sure construction activities were not disturbing the falcons. This resulted in minor delays to the project. By summer's end, the contractors were still eagerly observing and reporting the falcon's activities.

### **Route to Nature's Renewal**

Roads have traditionally been viewed as connections for society to transport people and aid commerce. But today the significance of roads has expanded beyond pavement, and their role as links between wildlife corridors is now at the forefront of transportation planning. Likewise, the role of transportation biologists has expanded. Beyond making technical improvements to the ecological integrity

of projects, we also contribute to the environmental awareness of the traveling public.

Road travel is often a first step to outdoor recreation, and that's where people connect with wildlife. Dendritic branches of roads that reach into wild areas facilitate encounters with wildlife, returning us to our roots in nature. This leads to the growth of relationships with nature, which are foundational to a person's desire and will to protect the environment. People will protect what they know and love, so it's not a far reach to conclude that roads support the growth of conservation ethics.

It's therefore logical to have biologists working for transportation agencies. It's our job to ensure that roads function in the most ecologically friendly ways possible, while facilitating and enhancing the experiences of the traveling public. It's our job to think beyond the pavement.

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Article link: <http://news.wildlife.org/featured/a-rewarding-road/>

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