

Year of the Turtle News

No. 4

April 2011

Basking in the Wonder of Turtles

www.YearoftheTurtle.org

What Can YOU Do?

This month, the Year of the Turtle extends its hand to you, the reader, to aid in our mission of turtle conservation by kicking off our focus on public involvement and how you can help. In your community, state, and across the globe—even in your own backyard—you can help.



Photo by Scott McDaniel.

As you read this month's *Year of the Turtle News*, we encourage you to explore options for how you can get involved in volunteer citizen science projects and other turtle conservation efforts during the Year of the Turtle and beyond. **We encourage you to consider the following actions on what you can do to help turtles:**

Keep Wild Turtles Wild!

If you are thinking of getting a pet turtle, go to your local pet store rather than taking one you see in the wild, even if you think you may be removing it from

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a dangerous situation (for example, one that your dog has found or one in an area with high vehicle traffic). With turtle populations requiring high levels of adult survivorship, every individual is important to a population's stability. This concern is even greater in recent years because many U.S. turtle populations are becoming fragmented, isolated, and progressively smaller. Thus, removal

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Is America Next?

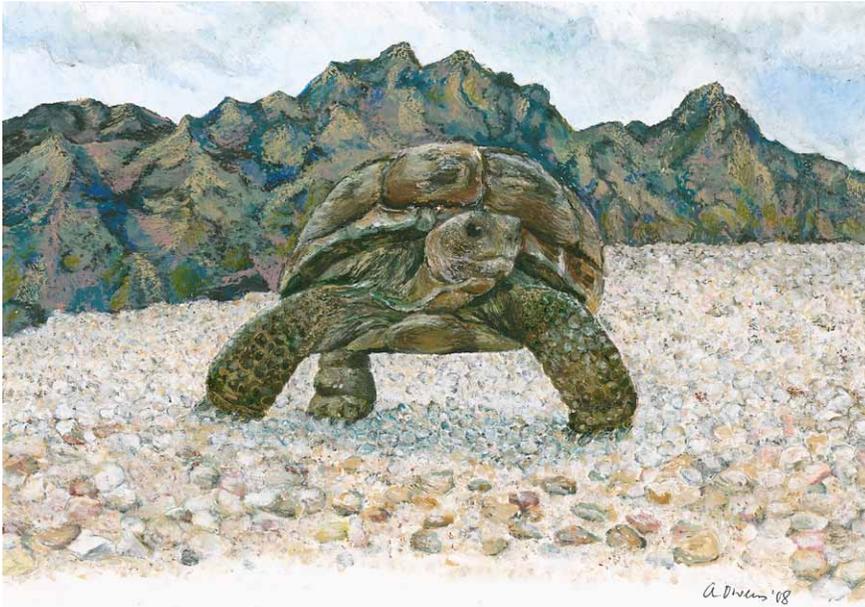
Conservation Leaders Meet to Discuss the Global Decline of Turtles

On March 17th, a special event on freshwater turtle conservation was held at the North American Wildlife and Natural Resources Conference in Kansas City, Missouri. The event, sponsored by the US Fish & Wildlife Service's (USFWS) International Affairs Program, and the Association of Fish and Wildlife Agencies (AFWA, a coordinating entity for state fish and wildlife agencies), was attended by some of the top leaders of state fish and wildlife agencies, federal fish and wildlife and resource agencies, and non-governmental organizations.

The USFWS International Affairs Assistant Director, Teiko Saito, and AFWA President, Curtis Taylor, West Virginia DNR's Wildlife Resources Section Chief, welcomed participants to the event. Both noted the potential conservation impact of turtle trade issues, and our need to take a closer look at the export of these animals. The featured speaker at the event was Dr. Anders Rhodin, MD, a practicing orthopedic surgeon who is also a global leader in turtle conservation in his "spare" time. In addition to other roles, he serves as Chair of the International Union for the Conservation of Nature's Tortoise and Freshwater Turtle Specialist

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"Behold the turtle. He makes progress when his neck is out." — James Bryant Conant (1893-1978), educator and scientist



Submit Your Turtle Art, Stories, and Poetry

Do you have turtle art, like this oil pastel submitted by Audrey Owens (of a Sonoran desert tortoise photographed by Paul Condon), that could be highlighted during the Year of the Turtle? How about stories or poetry such as this submission, penned by our very own newsletter editor, David Dimitrie:

*Sun shining on a
lake in March. Wait, what is that?
A turtle - ah, Spring!*

Submit your turtle art (in jpg, tiff, or pdf format) and copies of your stories and poems via email to yearoftheturtle2011@gmail.com. We will be including submissions in upcoming newsletters and in other Year of the Turtle materials and outreach efforts throughout 2011, and we want your work to be part of it!

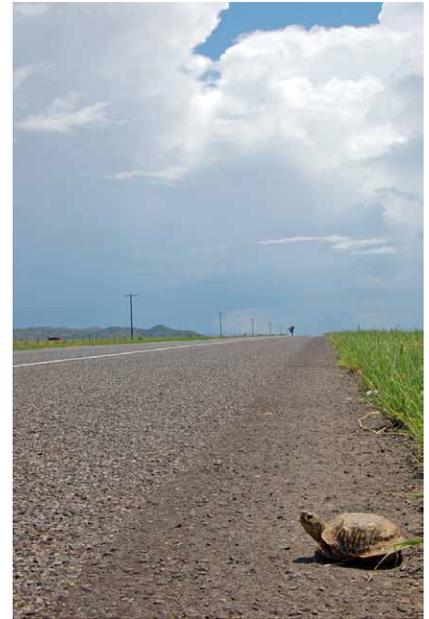
Call for Photos for the 2011 Year of the Turtle Calendar Photo Contest

It's not too late to enter the 2011 Calendar Photo Contest! We are accepting entries all year long. Give us your best shot! For more information and for entry details, please visit www.parcplace.org/yearoftheturtlephoto.htm.



Alabama Map Turtle (*Graptemys pulchra*), by Sara Viernum

Get Your April Calendar!



April's calendar photo contest winner, Troy Hibbitts, photographed this adult male Ornate Box Turtle (*Terrapene ornata*) on 26 August 2006 as it was preparing to cross U.S. Highway 90 near Marathon, Texas. After the photo was taken, Troy carried it safely across the highway in the direction it seemed to be going and placed it by a fence well off the road. When he's not photographing wildlife, Troy is a full-time high school science teacher and a part-time reptile and amphibian breeder. He is a past-president of the Texas Herpetological Society, and currently serves as the THS liaison officer. He has a BS in Wildlife & Fisheries Sciences from Texas A&M and a Masters in Biology from the University of Texas at Arlington. See this month's winner (above) and runner-up at www.parcplace.org/YOTYearoftheTurtleCalendarApril.pdf

Are You an Educator or Interpretive Naturalist?

We continue to work to develop a collection of Year of the Turtle resources for teachers and naturalists to use for turtle education. If you are willing to share, please send your unit materials, educational program information, websites, or PowerPoint presentations to yearoftheturtle2011@gmail.com. Please include your name, the name of your school/nature center or organization, and location. If you did not create the materials, please be sure to tell us where you found the materials.

Year of the Turtle Collaborating Partners

The Year of the Turtle Planning Team is pleased to welcome the following organizations to our growing list of collaborating partners:



The Dutch-Belgian Turtle and Tortoise Society is involved in international conservation projects for chelonians. Our society facilitates information on conservation projects and information on welfare, husbandry and breeding of tortoises and turtles by organizing meetings three times a year in The Netherlands and Belgium, by our magazine Trionyx, and through our website. www.trionyx.nl

Earthshine Nature Programs is a small nature and outreach center in Lake Toxaway, North Carolina. Our focus is on the conservation of the Eastern Box Turtle and the education of the public and visitors to our lodge on the beauty and value of the Eastern Box Turtle and wildlife and nature in general. Our premier program is an Eastern Box Turtle mark/recapture census study and radio telemetry based movement study. www.earthshinenature.com



WWW.EARTHSHINENATURE.COM

Friends of the Mukwonago River



P.O. Box 21
Egel, WI 53119

Visit us at www.mukwonagoriver.org

The Friends of the Mukwonago River is a volunteer organization that works to maintain high quality waters for the people and creatures of the river's watershed. We watch over one of the highest quality river systems in the state of Wisconsin with a mostly intact series of wetlands. Our mission is to protect the Mukwonago River and its associated watershed ecosystems by way of education, advocacy, and promotion of sound land use throughout the watershed.

www.mukwonagoriver.org

Toronto Zoo's Adopt-A-Pond Programme undertakes community-based social marketing research to develop programs for audiences whose behaviors have an impact on turtle species at risk. Their Ontario Turtle Tally monitoring program gathers important data on species distribution and abundance, while research projects investigate habitat use and the threat of roads. They have also developed innovative outreach tools and identification guides for the public. Additionally, the Programme provides financial support to partners like Turtle Survival Alliance and Turtle Conservation Fund. www.torontozoo.com/adoptapond



Our full list of partners can be found at www.parcplace.org/yearoftheturtlepartners.htm. If you are interested in contributing to the Year of the Turtle efforts, please send an email to yearoftheturtle2011@gmail.com with a brief description of your organization and its efforts.

facebook

Follow all of the Year of the Turtle news and happenings on
Facebook (<http://www.facebook.com/pages/yearoftheturtle2011>)
and Twitter (<http://twitter.com/YearOfTheTurtle>).



Ask the Experts!

Do you have questions about turtle biology or turtle conservation issues, but you can't quite seem to find the answers? Submit your turtle questions via email (yearoftheturtle2011@gmail.com) to our panel of experts, and we will select questions to answer in our upcoming newsletter editions. Please include your name and location in your email message

Turtles in the News

Following up on last month's release of the Turtle Conservation Coalition's Top 25+ Turtles in Trouble report, the Environmental News Service examines some of the species in the report and efforts to halt the threats they face. Read the full article about some of the efforts of Year of the Turtle partners at www.ens-newswire.com/ens/mar2011/2011-03-03-02.html.

Connecticut's Department of Environmental Protection (DEP) is one of the latest partners to join the Year of the Turtle efforts and will host a public program on turtles in conjunction with The Friends of Sessions Woods on April 10 and a "Year of the Turtle Day" in June. They have also recently announced sponsorship of a children's Year of the Turtle art contest. Find out more about their efforts to reach out to

Connecticut residents about the state's turtle populations and specific conservation actions at www.ct.gov/dep/yearofturtle.

The Connecticut DEP also reminds the public of the dangers of releasing unwanted pet turtles into the wild in this news release from StamfordPlus.com at www.stamfordplus.com/stm/information/news1/publish/News_1/DEP-reminds-about-pet-turtles12177.shtml.



Wood Turtle (*Glyptemys insculpta*), by Scott McDaniel

Efforts continue in Vietnam to treat the Hoan Kiem turtle. Recent efforts to capture the turtle in order to treat it proved unsuccessful when the 440-pound turtle eluded the capture net and escaped from rescuers. The full story from the New York Times can be accessed at www.nytimes.com/2011/03/09/world/asia/09hanoi.html.

When considering slowing down for turtles, it's not only while operating a car on the road that this should be a thought, writes the Cheshire Patch of Connecticut. Operators of lawnmowers and other equipment should also be aware of turtles in their surroundings. Read the full story at <http://cheshire.patch.com/articles/do-you-brake-for-turtles>.

If you have items you would like to contribute to Turtles in the News, please send them for consideration to yearoftheturtle2011@gmail.com.

What Can You Do?

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of any adult turtle could have negative results. Because turtles live so long, the effects of removal may not be noticed for decades, as only the adults are easily observed. However, many populations that may appear healthy could be what scientists call "functionally extinct": young individuals are not surviving to replace the loss of adults. Some turtle species are successfully bred in captivity and these captive-bred offspring are often found in pet stores; these are better options for pets as they are used to being in captive conditions. Be sure to ask your local pet stores whether the turtles they sell are captive-bred. Let wild turtles continue to live free and reproduce!

Eat wild turtles with caution.

If you are one of many Americans who harvest wild turtles for food in your home, make sure to do so in accordance with your local wildlife laws. As noted above, turtle populations require high levels of adult survivorship, and every individual is critical to each population, so consider harvesting males – these have concave or "hollowed" plastrons (undersides) – instead of females (flat plastrons), or harvesting fewer numbers of turtles overall. Additionally, some studies suggest that due to the long-lived nature of turtles they are able to accumulate higher levels of environmental contaminants. Check your local or state health departments to be sure there are no warnings on turtle consumption, particularly for pregnant women.

Be on the lookout for turtles crossing the road.

The months of April, May, and June are nesting seasons for many turtles. Female aquatic turtles leave the water to find terrestrial nesting sites, and this often requires crossing a road. Helping a turtle move across the road can be the difference between life and death for the animal, and even for future generations when considering gravid (egg-bearing) females. However, assisting a turtle should be done ONLY WHEN IT IS SAFE to stop, pull over to the shoulder (if you are driving), and move the turtle across the road. Do not attempt to stop traffic; your safety comes first. Snapping turtles can be large, heavy, and feisty, so if you are unable to "shoo" them across the road, pick them up by the back of their shells, NOT by their tail (which

can damage their spinal cord) to avoid a bite. Always keep the turtle pointed in the direction it's going, even if that direction is away from water. It knows better than us where it wants to go! When driving, only swerve to avoid a turtle if it is completely safe; not if you could cause a car accident!

Make efforts to discourage raccoons on your property.

Raccoons are a well-known predator of eggs, hatchlings, and adult turtles. Some populations of turtles experience complete nest failure – no eggs survive to hatch – for many successive years due to raccoon predation. Some species, due to low numbers of young produced or lengthened time to reproductive maturity, are more greatly affected by raccoons than other species. Throughout much of the United States studies suggest that raccoon populations are at record highs. Raccoons are called “subsidized

predators” because humans provide “subsidies” or aid raccoon survival by increased food availability in the form of agricultural byproducts, garbage, and intentional feeding. Raccoons also gain “subsidized” refuge from open sheds or vacant buildings. To help avoid these problems, especially if you live in areas with sensitive turtle species or important turtle habitat, you can:

1. Check local and state laws regarding releasing, rehabilitating, and feeding raccoons – this may already be illegal in many states or municipalities;
2. Discontinue or tell neighbors to avoid feeding raccoons;
3. Make efforts to eliminate sources of garbage that may be accessible to raccoons (for example, put the garbage out only on the morning of garbage day);
4. Secure vacant buildings to eliminate resident raccoons;
5. Repair areas within used structures

to ensure raccoons don't take up residence;

6. Where raccoon trapping is legal, check state laws and consider trapping raccoons or develop a relationship with a local trapper.

Get involved in a citizen science (volunteer) program in your neighborhood, community, or elsewhere.

Citizen science places volunteers of all backgrounds and ages in partnerships with organizations and scientists to collect important biological data. There are many great programs focused on turtles available to the public. Starting this month and continuing throughout the year, we will highlight several citizen science programs from North America and around the world with which you can become involved. A full list of programs can be found at www.yearoftheturtle.org.

April's Featured Citizen Science Programs

North Carolina Museum of Natural Sciences Neighborhood Box Turtle Watch

The Neighborhood Box Turtle Watch is one of several citizen science initiatives that involve citizens monitoring their resident box turtles. The goals of the program are to follow the movements of individual turtles and better understand how the species adapts to human pressures. Likewise, the Museum hopes to make people more aware of the box turtles and herpetofauna and increase conservation awareness. This will allow for future initiatives that will make areas more “turtle-friendly”. Volunteers simply have to take clear photographs of turtle shell pattern, take measurements, note the location the turtle was found (using an aerial map), and release the turtle before sending data to the North Carolina Museum of Natural Sciences.

Contact Information

Jerry Reynolds, NC State Museum of Natural Sciences, 11 W. Jones Street, Raleigh, NC 27601



Phone: 919-733-7450, ext. 522

E-mail: jerry.reynolds@ncdenr.gov

Web: www.naturalsciences.org/research-collections/citizen-science/neighborhood-box-turtle-watch

Texas Turtle Watch

The Fort Worth Zoo created the Texas Turtle Watch in 2010 using a grant from the Texas Parks and Wildlife Department. The goal of the program is to use citizen science to collect data on three native turtle groups whose population numbers are poorly understood. The three target groups are Sliders (*Trachemys*), Cooters (*Pseudemys*), and Softshells (*Apalone*). Participants just have to recognize these types of turtles and submit detailed information online. This partnership among the Fort Worth Zoo, Texas Parks and Wildlife Department, the Fort Worth Nature Center, Texas Master Naturalists, Texas State University, Turtle Survive Alliance,



and the University of Texas – Arlington hopes to better understand these species based on many years of data collection.

www.fortworthzoo.org/conserve/txturtlewatch.html

Ontario Turtle Tally

If see a turtle in Ontario, Canada, go to the Turtle Tally website and complete and submit a form. The program's purpose is to collect, record, and store location and species information on Ontario turtles, including species at risk. The information that is collected in this database is submitted to the Natural Heritage Information Centre and used to learn more about turtle distributions in Ontario. Information on turtle species and location is useful to identify areas of concern and threats to turtles.

Contact Information

Email: aap@tortontozoo.ca

Web: www.torontozoo.com/adoptapond/turtletally.asp

We thank everyone who has contributed information on their citizen science programs to the Year of the Turtle thus far. We also greatly thank Dr. James Gibbs'



Herpetology course at SUNY-ESF, especially students Daren Card, Tim Dorr, Eric Stone, and Selena Jattan, for their contributions to our growing list of citizen science programs. **Are you involved with a turtle citizen program or have information on a specific project that you would like to share?** Please send information on your citizen science programs to yearoftheturtle2011@gmail.com and make sure your project helps us get more citizens involved in turtle science!

Is America Next?

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Group, has authored numerous scientific publications on turtles, and has founded several turtle research and conservation organizations and resources.

Dr. Rhodin began by describing the rich turtle diversity that the world has to offer, and explained how the US has the highest global diversity overall. "We're number one!" he exclaimed with enthusiasm. He also noted that some of our states are particularly rich in turtle species. In fact, if Alabama, Florida, Georgia, Louisiana, Mississippi, and Texas were countries rather than states, they would each be in the top 15, globally, for freshwater turtle diversity!

As the presentation continued, Dr. Rhodin provided information on the unique life histories of turtles. For example, it takes 10 to 20 years before many turtle species are able to reproduce, and when they do, they produce few eggs; in addition, many eggs are preyed upon, and many young die in the first few years due to predation, road mortality, and other threats. He explained that high adult survivorship is necessary to maintain stable populations. Dr. Rhodin compared the reproduction of turtles to typically managed wildlife species, like deer, moose, and bears; by the time one turtle is just getting started with its reproductive years, individuals of these other species have already produced tens of offspring,

which in turn have each produced several offspring themselves, effectively multiplying that first individual hundreds of times. Because the turtles that do survive and reproduce live for a very long time, some species more than 60 years, people see the larger adult turtles and think the populations are doing fine; but the persistence of a long-lived turtle population can be misleading. Juvenile turtles are a sign of successful population reproduction and growth; if juveniles are not observed, the population may be in trouble.

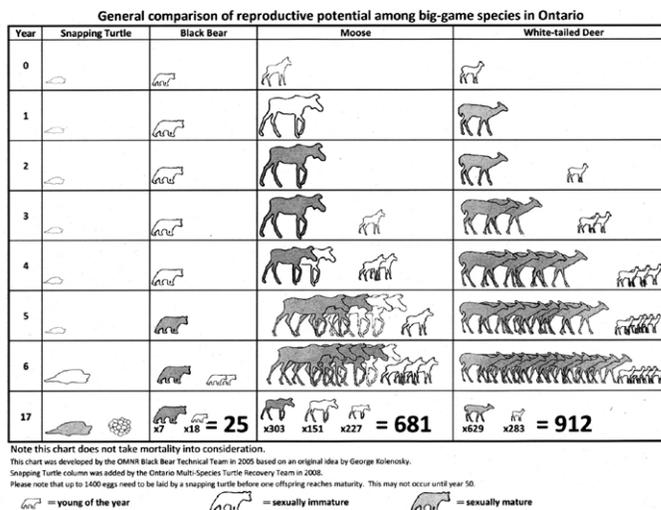


Image created by Ron Brooks, Co-Chair of Ontario Multi-Species of Turtles At Risk Recovery Team (OMSTARTT).

Those of you following Year of the Turtle News know that approximately 50% of turtle species worldwide are threatened with extinction (more than primates, amphibians, mammals, or birds), with the majority of these species in Asia. North America's turtles, on average, are less threatened with extinction than Asian species, though some species are worse off than others (for example, bog turtles and flattened musk turtles, as noted in the recent **Turtles in Trouble** report). However, the gradual globalization of turtle trade to meet Asian consumer demand (primarily in China but in other countries as well) has caused most turtle species in Asia to become "ecologically extinct"—the numbers of most Asian turtles that exist in the wild are so low that natural reproduction and population recovery is nearly impossible. Due to the collapse of wild freshwater turtle populations in Asia, turtles are being imported from other parts of the world, including the US, to meet the high level of consumer demand. Exports of US turtles, primarily to Asia, topped one million in 2009 (not including red-eared sliders, over 12 million of which were produced on turtle farms and exported); some of these came from US captive turtle farming operations, but many were wild-caught. This is a sharp increase from numbers seen 10 years ago, and an even sharper increase from 20 years ago.



Bog Turtle (*Clemmys muhlenbergii*), photo by Jeff Hall

Dr. Rhodin posed the question, "Is America Next?" If the trend continues, without proactive conservation measures to protect them, the decline of America's wild turtle populations will undoubtedly accelerate, just as they have in Asia. He urged us to learn from Asia's experience, and provided some thoughts for how the audience of wildlife managers could begin to address the issue, and to sustain turtle populations. "These are America's turtles," he said, "and we should ensure that America benefits from this resource long-term, whether for managed use within sustainable limits, for the ecosystem roles they fulfill, or for wildlife watching and appreciation."

'State of the Turtle' now 'El Estado de la Tortuga'

Thanks to volunteer translator Pablo Garcia of Los Angeles, California, the **State of the Turtle** report is now available in Spanish. You can download **El Estado de la Tortuga** at www.parcplace.org/YOTStateoftheTurtleSpanish.pdf. The report also benefited by the copy editing skills of Analia Martinez and Susana Martinez.



Pablo has always had a special admiration for all kinds of little critters since he was a little boy; his father frequently drove along a two-lane highway cutting through the sub-tropical forest of Guatemala, and Pablo once rescued a turtle recently injured by a truck. Her shell had lost a chunk, but the poor turtle was all right, she survived for years. Though he's not 100% sure, it could've been a box turtle. Pablo works in Los Angeles, California for an Early Development Program for Young Children. He adopted two desert tortoises from the California Turtle & Tortoise Club, Foothill Chapter in the spring of 2010. Pablo worries about the situation of tortoises and turtles around the planet, and believes others should know, too.

El Estado de la Tortuga
Aumentando la conciencia sobre la Conservación de la Tortuga
1 Enero 2011

Tortugas en Problemas
Los registros que han dejado los científicos nos demuestran que las tortugas, como las conocemos el día de hoy, han estado en nuestro planeta desde el Periodo Triásico, hace más de 230 millones de años. Aunque han persistido pasando por muchos períodos tumultuosos en la historia del planeta tierra, desde períodos glaciares hasta desplazamientos continentales, hoy día son las primeras en las listas de las especies que están desapareciendo del planeta tierra: el 26% de las especies de tortugas están clasificadas como "bajo riesgo de extinción" por todo el mundo. Su situación es debida en parte a una pérdida constante de la biodiversidad en el planeta, con aproximadamente 30% de anfibios, 25% mamíferos, y 12% de aves en circunstancias similares. Sin embargo, esfuerzos entusiastas de conservación pueden disminuir o reducir considerablemente esta situación para las Tortugas "2011. El rol de la tortuga (y/o araña) es una oportunidad para aumentar la conciencia acerca de las preocupaciones frente a esto, y finalmente, para iniciar acciones para conservar y aumentar las que ya están en existencia para que con ello se pueda retener, disminuir o reducir los problemas que las tortugas están enfrentando. Ya que dicho grupo puede responder favorablemente a las campañas de publicaciones y esfuerzos de conservación, no es demasiado tarde para preservar el legado que representan las tortugas.

El Legado Natural de la Tortuga
Aunque las tortugas (incluyendo las tortugas terrestres) se encuentran en agua dulce, agua salada y en la tierra, sus tierras las distingue de otros animales en el planeta. Las tortugas son muy únicas, que algunos científicos argumentan que deberían tener su propia clasificación de animales vertebrados. Chetonia, separada de otros reptiles (como lagartos y serpientes) y otros cuadrúpedos.

La longevidad de la tortuga les ha dado una reputación casi icónica en muchas culturas en el planeta. El folklore que rodea a la tortuga es muy abundante, muchas veces representando a la tortuga como a un ser sabio y respetado. En muchas historias antiguas provenientes de varios lugares, desde América hasta Asia, se cree que nosotros mismos en la espaldilla de una tortuga. Las tortugas frecuentemente aparecen en historias recientes como lo son libros infantiles y películas animadas, interpretadas como criaturas geniales que ayudan a otros a resolver sus problemas. Muchas personas pueden recordar cuando eran niños y observaron tortugas en su mundo ambiente. Es muy claro que las tortugas son un símbolo importante de la conexión entre gente y naturaleza.

An interview with David M. Carroll

By Margaret Liszka, Society for the Protection of New Hampshire Forests

Naturalist-artist David M. Carroll was named a MacArthur Foundation Fellow in 2006 and has written three acclaimed natural histories: *The Year of the Turtle*, *Trout Reflections*, and *Swampwalker's Journal*. This “wet-sneaker trilogy” was followed by his memoir, *Self-Portrait with Turtles*, and his latest book, *Following the Water: A Hydromancer's Notebook*. David was interviewed at his studio/gallery in Warner, New Hampshire on March 12, 2011.

How did your lifelong dedication to turtles and their habitats begin?

The turtle was my guide, my initiation, my totem animal, that led the way for me into the natural world. It happened to me in a remarkable way when I was eight years old. In *Self-Portrait with Turtles*, I tell this story. Through family circumstances I was transported from an urban town in central Pennsylvania where I had no connection with nature, to southeastern Connecticut, which at the time had quite a wealth of wetlands, woodlands, and streams. Late one afternoon I slipped away from the house and my mother's watchful eye. I walked along the woods and came to a brook and a backwater marsh. I was absolutely spellbound by what I was seeing. I think the fact that I was completely on my own was significant. I saw some reeds and grasses moving, and then this turtle moved into the open space in the water. Of course I knew nothing about turtles—what kind it was or anything—but it was a spotted

turtle with this extraordinary black shell with the yellow spots, and his head with those orange markings. Shoes and all I went in. I just had to hold this turtle. I remember this ‘holding of the turtle,’ which happened 60 years ago, as if it were yesterday. From that day on I went home late for supper with wet shoes. My habitat was blueberry swamps, red-maple wetlands, and streams.



Photo © Jeremy Barnaby.

Would you consider turtles a key indicator species of general ecological health?

Yes. In the field work and talks I've done and in the books I've written, I use the turtles in this region, particularly the spotted, wood, and Blanding's turtles, as indicator species. If they are present in robust sustaining populations, that tells you that you have a wetland mosaic—an integrated system of riparian,

wetland, and upland habitat, and a landscape that is removed enough from roads and human activities that the turtles are not getting run over or picked up. To have their corner and go unnoticed—that's the best thing that can happen. I also consider them an umbrella species, because if you were to protect these kinds of areas for the turtles that are so tightly bound to them, you are automatically protecting the habitat for a lot of other animals that move through the system along these riparian corridors. They are migration routes for everything from moose to black bear to neotropical nesting birds.

What would you like to accomplish through your books, field studies, and talks?

At the time I got the contract for *Year of the Turtle*, what I saw to be the greatest need in the world, and I still feel this way, was to do something about preserving these natural lands and ecologies. I want to try and be a voice for the preservation of habitats. My main message is that we need to move far beyond stewardship and far beyond conservation to outright preservation. I would be happy if somehow I've managed to help establish some extensive functioning ecosystem reserve...a place left wild and rambling.

Visit David's websites at: www.carrollstudiogallery.com, www.davidmcarrolljournal.com, and (coming soon) www.davidcarrollturtleart.com

Turtle Town, USA

By Dede Olson, US Forest Service and PARC National Co-chair

The Wetland Buffers Symposium, held as part of Wisconsin Wetland Association's 16th annual Wetlands Conference, took place in Baraboo, Wisconsin, 16-17 February 2011. Organizational leads were Dr. Ray Semlitsch, University of Missouri, and Dr. Tracy Rittenhouse, University of Wisconsin.

This two-day symposium convened scientists, managers, land-use planners, non-government organizations, and private landowners to synthesize knowledge of USA-wide research on wetland buffers (including pond and stream habitat buffers), and to discuss current and future directions to meet the needs of science-based management decisions. The two dominant themes expressed by participants were that goals of wetland buffers are to maintain or restore water quality and habitat for biodiversity, with a high degree of focus on fish and wildlife species in particular. Amphibians, turtles, and snakes were the common biotic metrics of wetland ecosystem health across several nationwide studies.

A new paradigm has emerged relative to wetland buffer designation. First, the 'buffer' relative to the goal of retaining biodiversity should be placed to provide protection of those core habitats used by target species (see figure below). For species like turtles and amphibians, such a buffer does not begin at the water's edge, but surrounds the wetland-associated riparian and terrestrial

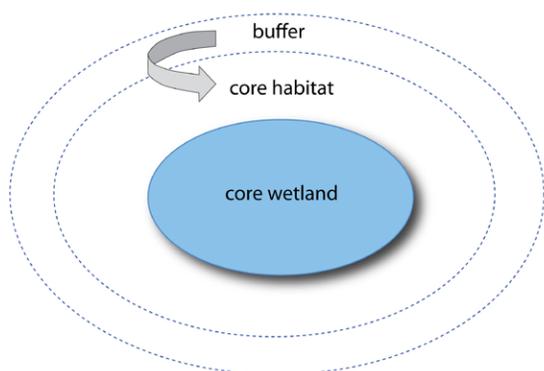


Photo by
Valorie Titus

zone that is heavily used by these animals for their nesting (turtles) or non-breeding activities (amphibians). Hence the buffer would start some distance from the water to encompass this core habitat and extend out to protect it from disturbances such as land-use practices. The distance to be considered for this buffer needs to incorporate species-specific habitat-use information, site conditions, as well as the land-use activities in the area. Second, there is a need to put each pond or stream location within a larger landscape context because long-term persistence of populations requires connectivity across uplands. Corridors and networks of linkage areas are needed. In a fragmented landscape with a mosaic of human uses and land ownerships, designs for connectivity require innovative thinking and network planning by partnerships of scientists, watershed councils, city and county planners, and private landowners. The burden is on each of these sectors to engage in the process, with monitoring and adaptive management as key components to ensure success. This can be a tedious, compromising, and humbling process, but the consequences can be retention of our precious natural heritage—the species native to our townships. To balance multiple priorities of land use and species/habitat protection, some areas may be afforded greater protection whereas others are allowed greater risk relative to species persistence. A one-size fits all approach may not be practical.

At the close of the meeting, Wisconsin Wetlands Association Board Chair Mary Linton suggested we expand efforts to promote pride among local communities that take on this challenge to preserve their native wetland species. "Bird City Wisconsin" is such a program already underway. Mary suggested (partly in jest, but largely with seriousness) that we designate local communities as "Turtle Towns" for their efforts on behalf of turtles. I don't know if any Turtle Towns already exist, but I can see Turtle Town, USA as a larger network within and across the United States. And because political jurisdictions are not borders to these animals, Turtle Towns without borders could certainly be broader in scope.

Core habitat + Buffer - a defined area offering protection for the core habitat of amphibians and turtles



Wetland buffer designs for turtle and amphibian species protection need to consider 'core habitats' used by animals that include the wetlands and areas adjacent to wetlands. For example, turtles may rely on ponds for refugia but nests may be distributed in upland habitats surrounding ponds. An effective buffer would protect both the pond and the nesting habitat from habitat-altering activities in the neighboring upland area. Figure provided by Dr. Ray Semlitsch, University of Missouri, Columbia.

PARC Regional Working Group Spotlight: SEPARC Members Tackle Some of the Most Pressing Turtle Conservation Issues

The Southeastern United States is home to an amazing diversity of turtle species. The 42 unique species that are found in the region make it one of the world hot spots for Chelonians. The Southeast contains an astounding 75 percent of the species found in the U.S. and roughly 13 percent of the world's turtle diversity. Unfortunately, many of these species have experienced rapid population declines and are highly vulnerable to anthropogenic pressures. In fact, over 50 percent of the turtle species found in the Southeast have declined to the point that state and/or federal agencies have deemed it necessary to afford them protection. Southeast PARC (SEPARC) and its members are working diligently to reverse this trend through a number of research projects, applied conservation efforts, educational outreach programs, and products that are available to the public (learn more at www.SEPARC.org).

The ongoing research efforts by SEPARC members are a tribute to our dedication to the preservation of turtles, both locally and globally. One such research project that is having an important local impact is the reintroduction of the gopher tortoise (*Gopherus polyphemus*) to the Aiken Gopher Tortoise Natural Heritage Preserve (AGTHP) in South Carolina. Researchers Andrew Grosse, Kurt Buhlmann, Tracey Tuberville, Brett DeGregorio, Robert Horan, and Bess Harris from Savannah River Ecology Laboratory (SREL) and wildlife biologist Brett M. Moule (South Carolina Department of Natural Resources) have been working diligently to ensure that the AGTHP once again has a viable population of a longleaf pine ecosystem keystone, the gopher tortoise. The team has started documenting signs of successful site fidelity, survivorship, and reproduction and will continue to carry on their hard work by monitoring, tracking, and augmenting the population with translocated tortoises. These actions will ensure that gopher tortoises remain an important component of South Carolina wildlife.

Jim Godwin of the Alabama Natural Heritage Program is carrying out another example of some extraordinary local turtle conservation research in the Southeast. Jim is conducting research in the center of turtle diversity in the

Southeast, the Mobile-Tensaw Delta, where he is gathering data important to ensuring the recovery of one of the most endangered turtles in North America, the Alabama red-bellied turtle (*Pseudemys alabamensis*). The Alabama red-bellied turtle has one of the most restrictive ranges of any freshwater turtle in North America. The species was federally listed as endangered in 1987 but while site-specific mortality factors have been identified, such as nest loss and road mortality of females, no single underlying cause can explain a systemic decline of the species. Jim's research is focused on answering the question of what may be the underlying cause of the Alabama red-bellied turtle's decline. Jim's work is determining actions that can be taken to help conserve this species and his data is being utilized to revise the U.S. Fish and Wildlife Service recovery plan for the Alabama red-bellied turtle.

SEPARC members are also focused on research that will benefit turtles worldwide. Globally, one of the largest threats to freshwater turtles is the loss of upland nesting sites to development. Therefore, it is critically important that we identify important habitat for turtles before development occurs. A team of scientists led by David Steen (Auburn University) is working on accomplishing this monumental task. By identifying the extent of movements from wetlands, they were able to generate recommendations related to the area required to protect nesting turtles. Overall, they obtained data for over 8,000 individual nests or gravid females for 31 species across the United States and Canada and mined the literature to obtain average distances for over 2,000 additional nests. Early results suggest that buffers (or "critical habitat", if you prefer) of hundreds of meters may be required to protect the majority of freshwater turtle nests for some species.

More information on SEPARC can be found at www.SEPARC.org. There you can find updates on SEPARC activities, data products, and our 2012 meeting. Also, be sure to check out our forthcoming SEPARC blog, featuring a great deal of Year of the Turtle content.





Reptiles and Amphibians Session presenters celebrated 2011's "Year of the Turtle" at the annual meeting of the Western Section of TWS. Pictured from left to right are Dr. Larry LePre, Dr. Sid Silliman, Dr. Philip Rosen, Edward Ervin, Andrew Borchert, Scott Boczkiewicz, and Patricia Valcarcel, and "Tuttle the Turtle" (center). Not shown are Cheryl Brehme and Dr. Cameron Barrows.

Recent Turtle and Tortoise Presentations at Annual Meetings

The following presentations were given at **The Wildlife Society-Western Section Annual Meeting** in February in Riverside, California. Authors, presentation title, and a brief summary of the presentation are included here. For additional information from the meeting and to view the presentation abstracts in full, visit joomla.wildlife.org/Western/index.php?option=com_content&task=view&id=212&Itemid=324.

Barrows, Cameron. Sensitivity to Climate Change for Two Reptiles at the Mojave-Sonoran Desert Interface.

Climate change sensitivity analyses for desert tortoises and chuckwallas across the Mojave-Sonoran Desert interface; tortoises projected to face 49% loss of habitat, with a fragmented habitat pattern resulting.

Berry, Kristin. Long-term Responses of a Desert Tortoise Population to Drought, Predation, and Disturbance.

2010 resurvey of desert tortoises in the northwestern Mojave Desert (California) after a hiatus of 37–39 years finds 27 animals (47 found in 1971–1973), 2 of which were marked in the original survey.

Berry, Kristin, Timothy A. Gowan, Nathaniel Newman, & David M. Miller. Sahara Mustard in Desert Tortoise Critical Habitat: Invasion, Establishment, and Potential Impacts on Tortoises.

Potential negative impacts on desert tortoises of introduced Sahara mustard include obstruction of movements, reduction in access to burrows, reduction in preferred native forage plants, diseases associated with consumption of toxic substances, and decline in health.

Bransfield, Raymond. The Role of the U.S. Fish and Wildlife Service in the Development of Renewable Energy.

U.S. Fish and Wildlife Service's role in the renewable energy development with focus on the desert tortoise, California condor, and golden eagle.

Christie, Nicole, Wendy St. John, Nick R. Geist, Zannie Dallara & Katherine E. Desmond. Timing of Nesting and Nest Site Selection in a Northern California Population of Western Pond Turtles.

2008–2010 field study of western pond turtles in Lake County, CA found June nesting, dusk nesting migrations, nests 2–300 m from ponds in grassy areas, and nesting philopatry.

Desmond, Katherine, Zannie Dallara, Nick R. Geist, Nicole E. Christie & Wendy St. John. Temperature Variation and Diurnal Fluctuation in Nest Chambers of the Western Pond Turtle: Implications for Sex Determination and Development.

Variable temperature profiles of western pond turtle nests in Lake County, CA depended on nest site selection by individual females, indicating that temperature variation likely plays a far greater role in a range of incubation-related developmental factors than previously thought (e.g., incubation duration, sex determination).

Fesnock, Amy. Can Renewable Energy Lead to Tortoise Recovery?

In coordination with USFWS, CDFG, and CEC, California BLM is striving to determine: "Could industrial renewable energy provide an unprecedented opportunity to implement suites of targeted recovery actions and actually move the tortoise towards recovery?"

Keaton, Chereka & Thomas V. Mull. Desert Tortoise Head Start Program at Edwards Air Force Base.

Headstarting of desert tortoises since 2002 and 4 subsequent releases of 1- and 2-yr olds resulted in 100% mortality from predation; releases of older juveniles with harder shells are expected to yield increased survival rates.

LaPre, Larry. Impacts of Solar Energy Power Plants on Desert Reptiles.

Effects on desert tortoises of Bureau of Land Management's six fast-track solar energy power plant projects in 2010 are under review; effectiveness is being evaluated of protective

Turtle and Tortoise Presentations, continued

measures at two projects; relocation efforts have had both successes and oversights.

Lovich, Jeff & Joshua R. Ennen. Lessons Learned About the Long-term Effects of Wind Energy Development on the Desert Tortoise.

Desert tortoises have persisted at the wind energy site since construction began in 1983 with high adult survivorship and no evidence of population decline or disease, although mortalities have been documented as a result of industrial activities; tortoises appear to have adapted to the industrial landscape as tortoise burrows are more likely to be located closer to roads and turbines than are random points without burrows.

Rosen, Philip, Mercy L. Vaughn, Kristin H. Berry, Mary Brown, Taylor Edwards, Alice E. Karl, Robert Murphy & Ma. Cristina Meléndez Torres. The Desert Tortoise in Mexico—a Cooperative Interdisciplinary Research Approach.

With ~40% of the desert tortoise geographic range in northwestern Mexico, 2001-2010 collaborative international efforts are documenting multiple concerns for tortoises in Mexico: documented mortality, disease, genetic variation, and effects of climate-driven mortality and increased fire intensities from vegetation conversion to non-native Africanized buffelgrass pasture.

Silliman, Sidney. The Political Economy of Desert Tortoise Conservation.

Science and politics of desert tortoise conservation in the Mojave: Science documented the tortoise decline, while wealth and power gained the “threatened” listing; implementation of the science in the Desert Tortoise Recovery Plan would recover the species, but wealth and power drives the approval of solar projects on desert tortoise habitat.

The following presentations were given at the **Oregon Chapter of The Wildlife Society’s Annual Meeting** in February in Bend, Oregon. Authors, presentation titles, and a brief summary of the presentations are included here. For additional information from the meeting, visit joomla.wildlife.org/Oregon.

Beilke, Sue. The Western Pond Turtle and Painted Turtles: How These Ancient Species Are Faring in Modern Times.

Research in Oregon by the Northwest Ecological Research Institute is contributing knowledge on the state’s two native turtles relative to nesting behavior, hatchling emergence and timing, and habitat use.

Barnes, Susan. Western Painted Turtle Conservation Efforts in the Portland Metro Area—Achievements, Challenges, and Needs.

Oregon Native Turtle Working Group partners are involved with several measures to benefit native western painted turtles: development of a conservation assessment and Best Management Practices, outreach products, non-native invasive turtle removal, illegal turtle sales response, and habitat enhancement.

Bury, Bruce. Ecology and Conservation of the Western Pond Turtle: Waiting for Superman?

Western pond turtles in the Pacific Northwest are larger than those in the Central Valley of California, but have slower rates of growth. Longevity can be >55 yrs in the wild! Current needs include: 1) data archival; 2) population size estimates; 3) regional monitoring; and 4) publication of studies.

Rosenburg, Dan & Roberta Swift. Post-emergence Behavior of Hatchling Western Pond Turtles.

At two Willamette River, Oregon sites, hatchling emergence occurred the spring following nesting, and hatchlings used the nest chamber for up to 59 days after emergence. After leaving nests, hatchlings used ‘stop-over sites.’ Management implications include need for year-round management of nesting site areas.

Wray, Simon N., R. Bruce Bury & David J. Germano. Analysis of Population Data of Western Pond Turtle in Southern Oregon.

At 12 sites in southwestern Oregon from 1992 to 2008, western pond turtle population sex ratios were about even, and females weighed more than males of the same shell lengths. The best-monitored site showed the population becoming more adult-biased over time, possibly due to: 1) bullfrog introduction; 2) nest predation; 3) food competition; and 4) stochastic events including periodic pond drying.

The following presentation was given at the **Society for Northwestern Vertebrate Biology Annual Meeting** in March in Gig Harbor, Washington. Authors, presentation title, and a brief summary of the presentation are included here. For additional information from the meeting, visit www.thesnvb.org/annualmeeting.html.

Reitz, M.M. & D. Beck. Maternal and Environmental Effects on Hatchling Western Pond Turtles in Washington.

Radio transmitters allowed tracking of 41 female Western Pond Turtles over 450 g during the nesting season at 2 Washington sites. At the re-introduced Puget Sound population there were more eggs per nest, a 37% lower hatch success, and smaller hatchlings than at the native Columbia River Gorge population. Identifying habitat factors associated with reproductive success will be useful in selecting suitable re-introduction sites.

Upcoming Meetings and Events

Rare Pond Species Survey Techniques Workshop, April 2-3, Rohnert Park, California.

New York Turtle and Tortoise Society, 26th Annual Seminar, April 3, New York, New York.

North Carolina PARC Annual Meeting, with NC Chapter, The Wildlife Society. April 5-7, Junaluska, North Carolina.

Connecticut Dept. of Environmental Protection and Friends of Sessions Woods' Year of the Turtle Public Program, April 10, Burlington, Connecticut.

Earthshine Nature Programs Open House and Fundraiser, April 17, Lake Toxaway, North Carolina.

Northeast Fish and Wildlife 67th Annual Conference, April 17-19, Manchester, New Hampshire.

River Park North/Walter L. Stasavich Science & Nature Center "Sea Turtles" Program, with Guest Speaker Dr. Matthew H. Godfrey, NCWRC Sea Turtle Program Coordinator, April 28, Greenville, North Carolina

Heckscher Spring Festival. April 30-May 1, Long Island, New York.

River Park North/Walter L. Stasavich Science & Nature Center "North Carolina Turtles in Peril" Program, with Guest Speaker Jeff Hall, PARC Biologist, May 5, Greenville, North Carolina

World Turtle Day. May 23.

Second Mediterranean Congress of Herpetology, May 23-27, Morocco.

"Year of the Turtle Day", Connecticut Dept. of Environmental Protection and Friends of Sessions Woods, June 26, Burlington, Connecticut.

Joint Meeting of Society of Wetland Scientists, Wetpol, and Wetlands Biogeochemistry, July 3-8, Prague, Czech Republic.

Joint Meeting of the American Society of Ichthyologists and Herpetologists League, and Society for the Study of Amphibians and Reptiles, July 6-11, Minneapolis, Minnesota. Includes the **Biology of Turtles of the Upper Mississippi River Basin Symposium**, July 10-11.

Western Association of Fish and Wildlife Agencies - Summer Meeting, July 15-21, Big Sky, Montana.

American Museum of Natural History's Southwestern Research Station course on field herpetology, July 24 - August 3, Portal, Arizona.



Look closer! Yes, that's really an American Alligator (Alligator mississippiensis) on the back of a Florida Red-bellied Cooter (Pseudemys nelsoni). This surprising photo was taken by Alan Cressler.

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Don't miss the upcoming editions of the Year of the Turtle News! If you have not already, subscribe to the monthly electronic newsletter by submitting an email with the subject "subscribe" to yearoftheturtle2011@gmail.com.

TSA Announces a Call for Papers for 9th Annual Symposium

The Turtle Survival Alliance (TSA) has announced a call for papers for the **9th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles**. The Symposium, held jointly with the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, will be held August 14-17, 2011 in Orlando, Florida. For abstract submission guidelines and further information on the Symposium, including how to register, visit www.turtlesurvival.org/get-involved/2011-conference.

