

www.YearoftheTurtle.org

# Year of the Turtle News

No. 7

July 2011

Basking in the Wonder of Turtles

## Terrapin Delay at JFK: Turtles in the News



Rescued Diamondback Terrapins that had caused delays crossing a runway at New York's JFK airport hitch a ride to safety on June 29, 2011. (Port Authority of New York and New Jersey)

It's been a big week for turtles and tortoises in the news.

CBS News and the Associated Press reported that Diamondback Terrapins in search of sandy nesting beaches caused delays at New York's Kennedy Airport on Wednesday, June 29. About 150 of the turtles

did a slow crawl across Runway 4L and nearby taxiways, sometimes so thick that the controllers had to divert flights to a different runway. Port Authority workers and U.S. Department of Agriculture employees pursued the terrapins, scooping them up and giving them a boost across the

runways to safety and their goal—beaches they have nested on since long before the airport existed.

For the full story, see [www.cbsnews.com/stories/2011/06/29/national/main20075461.shtml](http://www.cbsnews.com/stories/2011/06/29/national/main20075461.shtml).

Desert Tortoises made the news first by the publication of a genetic study that discovered they are really at least *two* species, instead of one. The old designation, *Gopherus agassizii*, applies only to tortoises west of the Colorado River. Tortoises in Arizona and Mexico to the east of the river are apparently a separate species, now named *Gopherus morafkai* after late tortoise researcher David J. Morafka. Science Daily has more on the story at [www.sciencedaily.com/releases/2011/06/110628132555.htm](http://www.sciencedaily.com/releases/2011/06/110628132555.htm).

The 'so what' behind this story is that Desert Tortoises have been at the *More Turtles in the News on p. 4*

### Inside:

	page
Year of the Turtle Partners	2
July Turtle Calendar!	2
A Personal View of John Iverson	5
Turtle Art, Stories & Poetry	6
Meet the YoT Team: Al Breisch	7
Citizen Science Programs	8
Turtle Spotlight	9
MWPARC Regional Spotlight	10
Turtles "All the Way Down"	12
Upcoming Meetings	13

### John Luther Behler (1943 – 2006): A Legacy

By Al Breisch, PARC Joint National Steering Committee Co-chair



John Behler and friend at Delaware Water Gap. Photo: Christina Castellano.

I remember John as a field biologist, fisherman, and hunter of big game and pheasants. He was always happiest in the field: herping, bird watching or botanizing. Or simply sitting and watching turtles. He frequently told stories, sometimes with a perfect Pennsylvania Dutch accent, of his exploits exploring the

*Continued on p. 3*

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

## 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:

**Friends of the Cache River Watershed** is a non-profit citizens' group that promotes natural resource conservation throughout the Cache River Watershed in southern Illinois. We work together with landowners and members of the Joint Venture Partnership, which includes Ducks Unlimited, Inc., Illinois Department of Natural Resources, Natural Resource Conservation Service, The Nature Conservancy and the U.S. Fish and Wildlife Service. Together we share a common goal to protect and restore 60,000 acres along a 50-mile corridor of the Cache River. [www.friendsofcache.org](http://www.friendsofcache.org)

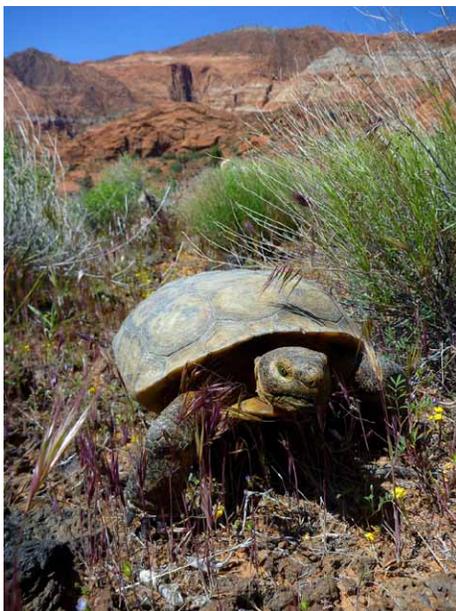


**The Seattle Turtle and Tortoise Club** is a charitable organization formed exclusively for the purposes of chelonian education through monthly meetings, public outreach programs, turtle and tortoise rescue, and supporting private conservation efforts both locally and globally for the preservation of the world's turtles. We are a ten-year-old organization that has built a reputation on educating the public about turtle and tortoise husbandry. We work with individuals, organizations, state and federal agencies, schools, local breeders, herpetologists, and anybody with tortoises who we can help. [www.seattleturtleandtortoiseclub.com](http://www.seattleturtleandtortoiseclub.com)

**Wisconsin Wetlands Association (WWA)** was established in 1969 to protect the state's wetland resources through education, training, advocacy, and research on key issues that affect wetlands. WWA is the only statewide organization focused exclusively on wetland protection. More than 1450 members include wetland scientists and educators, conservationists, hunters, concerned citizens, and local and regional organizations. Our newsletter, Wisconsin Wetlands, is received by more than 1,500 individuals and organizations quarterly. [www.wisconsinwetlands.org](http://www.wisconsinwetlands.org)



Our full list of partners can be found at <http://parcplace.org/news-a-events/year-of-the-turtle/237.html>. If you are interested in contributing to the Year of the Turtle efforts, please send an email to [yearoftheturtle2011@gmail.com](mailto:yearoftheturtle2011@gmail.com) with a brief description of your organization and its efforts.



## Get Your July Calendar!

This Desert Tortoise (*Gopherus agassizii*) roaming among the red rocks won the July calendar contest for Fiana Shapiro. Get a better look at this month's winner and runner-up by downloading your calendar at [parcplace.org/images/stories/YOT/YearoftheTurtleCalendarJuly.pdf](http://parcplace.org/images/stories/YOT/YearoftheTurtleCalendarJuly.pdf)

And it's STILL 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/news-a-events/224.html](http://www.parcplace.org/news-a-events/224.html).

**John Behler, continued from p. 1**

*John Behler at Bog Brook Unique Area, Putnam County, New York. Photo by Al Breisch.*

forests, wetlands and creeks of eastern PA especially near his boyhood home or the Poconos where his family had a hunting and fishing camp. He was always ready to talk about his most recent turtle research or the latest threats to turtles somewhere in the world, generally places he himself had visited. And he encouraged everyone he encountered to take an active role in turtle conservation. Many conversations started or ended with “How can I help?” or “What do you want me to do?”

John’s professional work with turtles began in the late 1960s after completing a master’s degree in biology at East Stroudsburg State College, PA. For two years he taught at Hobart and William Smith Colleges in the Finger Lakes Region of western New York. It was while living in the Finger Lakes area that he began his first detailed turtle studies focusing on the few historic and extant western New York Bog Turtle sites. Later, after relocating to

the Bronx Zoo, he began systematic surveys of all Bog Turtle sites in New York and northeastern Pennsylvania and started extensive communication with everyone else working on Bog Turtles.

John is primarily remembered as Curator of the Department of Herpetology at the Wildlife Conservation Society/Bronx Zoo where he worked from 1970 until his death in 2006. As Curator of Herpetology, John was widely known by many herpetologists as a friend, colleague, mentor and counsel. His job at the Zoo alone would be a full time job for most people but John became a leader in the world of amphibian and reptile conservation. He had a particular passion for turtles, championing local, state, national and international turtle conservation issues. Behler guided the Bronx Zoo to become a leader in the development of captive breeding programs for endangered and threatened tortoises and freshwater turtles. Through his efforts, Batagur Turtles bred in captivity for the first time at the Bronx Zoo. He also successfully bred Madagascan radiated tortoises at the Wildlife Conservation Society’s Wildlife Survival Center on St. Catherines Island, Georgia where he served as the Program Coordinator beginning in 1996 until the tortoise facilities were closed in 2003. John

coupled the captive breeding of the radiated tortoises with extensive field studies of the tortoises of Madagascar visiting the island nation seven times. All aspects of turtle ecology, behavior, genetics, and diseases were of interest to John.

In the early 1990s, John warned about the decimation of wild Asian turtle populations for the food and traditional medicine markets. He pushed for the development of turtle farms in China to supply the quickly expanding commercial market. He petitioned New York State to create the Bog Brook Unique Area, a 136 acre wetland in southeastern New York that the state subsequently purchased in 1981 specifically to protect Bog, Spotted, and Wood Turtles, the first area purchased by the state to protect turtles. He also helped lead a successful campaign to regulate the harvest of Diamond-back Terrapins in New York State in 1990. Following his death, the “John L. Behler Memorial Biodiversity Reserve Area” was established in his honor at his long term Spotted Turtle study site at Muscoot Farm Nature Center in Westchester County, NY.

Behler chaired the IUCN Tortoise and Freshwater Specialist Group (TFTSG) and was a member of the Convention on International Trade in Endangered Species (CITES) Turtle Trade Working Group. He



*John Behler at Bog Brook Unique Area, Putnam County, New York. Photographer unknown.*

was a founding member of the Turtle Survival Alliance (TSA). In 2006 the IUCN TFTSG and TSA established the Behler Turtle Conservation Award, given annually to an outstanding turtle conservationist. John authored or co authored eight books on amphibians and reptiles, including the widely used “*Audubon Society Field Guide to North American Reptiles and Amphibians*”, “*The Amphibians and Reptiles of New York State: Identification, Life History and Conservation*”, and “*Frogs—A Chorus of Colors*” with his wife, Debbie.

John’s true legacy is really the people that he left behind. At every place where herpetologists gather, I meet people who tell me new stories about John. About how he provided advice in an email, letter or phone call, gave someone a foot in the door or an opportunity that set their course in conservation, young, old, he inspired people not just to stop and think but to try and make a difference. John would be really proud if he could see the impact he has made on so many people, the work that is still going on because of him, and the legacy he left behind.

## Turtles in the News, continued from p. 1



*The Desert Tortoise as previously known: G. agassizii.*  
Photo by James Moore.

center of a storm of controversy about the adverse effects of renewable energy development in the southwestern United States. The Land Letter reported on the possible complications that could emerge from the separation of the Sonoran and Mohave populations of Desert Tortoise into separate species [Land Letter, ENDANGERED SPECIES/RENEWABLE ENERGY: New tortoise classification could snag energy development in Southwest (Thursday, June 30, 2011)—sorry, no link available]. Mitigation for tortoise habitat damaged by solar energy development may become harder to design and justify if the Mohave population is really the entire range of *G. agassizii*, which prefers to burrow in low, sandy areas. Luckily for *G. morafskai*, the Sonoran tortoises prefer rocky slopes less favored for solar development.

For more stories of Turtles in the News, read on:

A study is underway in southern Ontario, Canada to better understand how drivers and turtles can coexist. Find out more about the details from St. Catherines’ The Standard at [www.stcatharinesstandard.ca/ArticleDisplay.aspx?e=3179040](http://www.stcatharinesstandard.ca/ArticleDisplay.aspx?e=3179040).

The Seneca Park Zoo celebrated World Turtle Day in May with a variety of activities for the public. Read about their efforts and view photos from the event on their Events Blog at [spzeventsblog.wordpress.com/2011/05/22/spreading-the-message-during-world-turtle-day/](http://spzeventsblog.wordpress.com/2011/05/22/spreading-the-message-during-world-turtle-day/).

Satellite tracking technology has revealed in detail for the first time the annual movements of thousands of loggerhead turtles that live off the east coast of the US. Read the full story from the Natural Environment Research Council’s Planet Earth Online at [planetearth.nerc.ac.uk/news/story.aspx?id=999](http://planetearth.nerc.ac.uk/news/story.aspx?id=999).

Efforts at the Cosley Zoo in Illinois are underway to help save the Blanding’s Turtle. Find out all the details of their efforts from TribLocal at [triblocal.com/wheaton/2011/06/16/cosley-zoo-committed-to-effort-to-save-endangered-turtles/](http://triblocal.com/wheaton/2011/06/16/cosley-zoo-committed-to-effort-to-save-endangered-turtles/).

The fossil of a 65 million year-old sea turtle was recently discovered in New Jersey. Read more about the discovery from Philly.com at [articles.philly.com/2011-06-09/news/29638874\\_1\\_sea-turtle-box-turtles-inversand](http://articles.philly.com/2011-06-09/news/29638874_1_sea-turtle-box-turtles-inversand).

If you have items you would like to contribute to Turtles in the News, please send them for consideration to [yearoftheturtle2011@gmail.com](mailto:yearoftheturtle2011@gmail.com).



*Hatchling Loggerhead Sea Turtles, Caretta caretta, by Andy Adams.*

# A Personal View of John B. Iverson

By Ross Kiester, *Turtle Conservancy*



John Iverson and one big Snapping Turtle (*Chelydra serpentina*). Photo courtesy of Miami University of Ohio.

Almost everyone who works in turtle conservation knows John. He has produced a body of basic biology that critically underpins any turtle conservation efforts, and he has shared information and maintained fruitful contact with turtle people all over the world in a way that no one else has done.

John has contributed extensively and significantly to at least three aspects of the biology of turtles that have important conservation implications: taxonomy and phylogeny, zoogeography, and ecology and demography. To do conservation we must know what turtles there are, where they live, and whether their populations are increasing or decreasing and why.

In the realm of taxonomy and phylogeny, John has worked over 35 years on his beloved genus *Kinosternon*, the Mud Turtles. When he began working on this group, it was, simply stated, the biggest taxonomic mess in North American turtles. Building on the work of Norman Hartweg and collaborating extensively with Jim Berry, John has, through careful work and extreme attention to detail achieved a clear understanding of this once confused group.

John has also spent his career wrestling with perhaps the hardest problem in turtle taxonomy – the Asian Geoemydids. Along the way he participated in describing one of the most remarkable new turtles ever, the Sulawesi Forest Turtle, *Leucocephalon yuwonoi*. Other work

describing new species that turned out to be hybrids was less immediately successful, but led to important advances. A defining character of science according to one of modern science's founders Francis Bacon is that "Truth arises more readily from error than confusion." It takes a very good scientist to make an important mistake. It takes an even better person to build on those mistakes, if we can even call them that. John's unpublished "*Synopsis of Problematic Geoemydid Taxa*" set the research program for that group of turtles for many years.

Although John has worked on his own checklist of turtles since his graduate school days, he is also a key member of the IUCN Turtle Taxonomy Working Group. Here, in the company of others, he brings his unparalleled knowledge to work that directly affects turtle conservation.

In 1986 John published the first edition of his monumental *A Checklist with Distribution Maps of the Turtles of the World*. Here he summarized turtle taxonomy and presented literally every known locality of every species of turtle of the world. To do this he had to read all of the literature and extract all of the museum data that was available anywhere. He then had to look up each locality, find it on a map and determine its latitude and longitude. The process of georeferencing these localities was about 2 decades ahead of its time. In 1992 he published *A Revised Checklist with Distribution Maps of the Turtles of the World* and immediately began collaborating with Ross Kiester to make these data available as a computer database. As this process continued, the Worldwide Web evolved to the point where the data could be presented to all via the EmySystem website. Once the data were in a database, we could finally get a handle on just how much work John had done. At present there are 41,704 localities in the EmySystem, representing 66,939 museum specimens and 24,713 localities from 2,263 literature citations.

*Eastern Mud Turtle, Kinosternum subrubrum, by Tom Diez.*





Ornate Box Turtle,  
*Terrapene ornata*,  
by Eric Gangloff.

In 1981 John began working at Gimlet Lake in the Nebraska Sandhills. Using drift fences on an unprecedented scale, he began studies of the life history and demography of the Yellow Mud Turtle (*Kinosternon flavescens*) and the Ornate Box Turtle (*Terrapene ornata*). Workers in turtle conservation constantly plead for more long-term studies of turtle demography. Because most turtles live so long, a study cannot even begin to be considered as long-term until it is over 30 years. There are all too few of studies of this duration or longer and John has built two of them.

John's passion for turtles is equaled by his passion for connecting to the turtle community. Throughout his career by post and then by email he has maintained a correspondence second to none. The number of emails he answers in a week would cause most of us to weep. His commitment to sharing data came long before that was the expected practice of scientists and is a key aspect of his contribution to turtle conservation.

John received his Ph.D. from the University of Florida in 1977 where he was a student of both Archie Carr and Walter Auffenberg. But in reality John went his own direction, establishing a pattern of independence

throughout his life. In 1978 he took a position at Earlham College in Richmond, Indiana, and remained there until his retirement this June. Earlham is a small, well-respected liberal arts college, but has neither the institutional culture nor the infrastructure to support research careers. So John's productivity as a research scientist is all the more remarkable. However, this institution's relative indifference to research made it possible for John to do exactly the kind of work he felt was important. In contrast, it is hard for research career oriented professors at major universities to continue long-term studies year after year with publications coming only every several years.

What John did receive from Earlham was a constant stream of talented undergraduates. He made the most of these and they, in return, got the benefit of a truly dedicated mentor. Field studies are often labor intensive and John's reputation was such that he never lacked for help.

From 1982 until his retirement this year John was the Director of Earlham's small but surprisingly superb Joseph Moore Museum of Natural History.

John's passion and indefatigable capacity for work have secured him a place in the hearts and minds of turtle conservation people around the world. We look forward to even more inspiration from him now that he is retired from academia. The turtle community is proud to have John as a member, but we do have to share him with the iguana community where he has done, if anything, more direct conservation work than he has with turtles. So John is about twice as remarkable as most of us think. That's truly remarkable.

## Turtle Art, Stories, and Poetry

Nancy Garner created this mosaic of the Diamondback Terrapin by incorporating findings from along the beaches of the Chesapeake Bay. Nancy lives on Tilghman Island on Maryland's Eastern Shore and volunteers for the Phillips Wharf Environmental Center.

Do you have a turtle story or piece of art that could be highlighted during the Year of the Turtle? Submit your turtle art (in jpg, tiff, or pdf format) and copies of your stories and poems via email to [yearoftheturtle2011@gmail.com](mailto: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!



## Meet the PARC Year of the Turtle Team – Al Breisch



Al conducting a Spotted Turtle *hibernacula* survey in Albany County, New York. The turtle in his left hand is radio-tagged. Photo by Kirstin Breisch Russell.

This month we introduce Al (Alvin R.) Breisch. Al was one of the founding members of Northeast PARC in 1999 and currently serves as National Co-Chair of PARC. He was the Amphibian and Reptile Specialist with the NYS Department of Environmental Conservation for 26 years until he retired in 2009.

Growing up in southeastern PA, Al remembers the Eastern Box Turtle (*Terrapene carolina carolina*) as the

most common turtle he and his brother, Rich, found while exploring the neighboring woodlands and farms. He also remembers his Dad telling him when he was a grad student at the University of Albany in the late 1960s that he no longer could find Box Turtles in their hometown.

It was at U Albany where Al met Dr. Margaret (Meg) Stewart, the Frog Professor. It was Meg who encouraged him to study herps and after he finished a tour of duty in the U.S. Army invited him to assist her in a ten-week study of the frogs of Jamaica.

In 1983 Al finally got what he thought was the best job in the world—the person coordinating the conservation efforts for New York State’s herpetofauna. It was also in 1983 that he met John Behler, Curator of Herpetology at the Bronx Zoo, and together they began a joint project radio tracking Bog Turtles (*Glyptemys mühlenbergii*) at a recently acquired Wildlife Management Area. John also introduced Al to the quest of a “three *Clemmys* day,” that is, finding a Bog, Wood, and Spotted Turtle during a single field day (at the time



Al with his first *Terrapene coahuila*, the Coahuila Box Turtle, found at Cuatro Ciénegas 2002. Photo by Ariana Breisch Newell

all 3 were in the same genus: now, they’re *G. mühlenbergii*, *G. insculpta*, and *C. guttata*, respectively).

Although most of Al’s field work with turtles has been in New York, two other ventures stand out in his memory:

1) assisting his daughter Ariana when she was studying Spotted and Wood Turtles for her masters degree at Marshall University in West Virginia;

2) assisting researchers at the University of Texas at Austin to conduct studies on the endangered Coahuila Box Turtle in Cuatro Ciénegas, Mexico.



Setting hoop traps for Painted Turtles. Photo by Sharon Breisch.

### 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](mailto: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.

## July's Featured Citizen Science Programs

**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. This month we highlight several citizen science programs from the US and Mexico with which you can become involved. A full list of US and international programs can be found at [www.yearoftheturtle.org](http://www.yearoftheturtle.org). We thank everyone who has contributed information on their citizen science programs to the Year of the Turtle thus far. 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](mailto:yearoftheturtle2011@gmail.com) and make sure your project helps us get more citizens involved in turtle science!

Extinction is forever



Beaches Sea Turtle Patrol

### Beaches Sea Turtle Patrol

Beaches Sea Turtle Patrol works to preserve endangered sea turtles in the area of Atlantic, Neptune, and Jacksonville Beaches in Florida. The group tries to reduce disturbance and harassment of nesting sea turtles by educating the public, increasing hatching survival rate (by educating the public about the dangers of lighting, human intervention, and

pollution), and contributing data to the Sea Turtle Stranding and Salvage Network and Florida Fish and Wildlife.

#### Contact Information:

Beaches Sea Turtle Patrol, Inc.  
P.O. Box 50723  
Jacksonville Beach, FL 32240-0723  
<http://www.bstp.net/>



*Blanding's Turtle (Emydoidea blandingii) photo by Jim Harding.*

### Blanding's Turtle Research

If you find yourself in Great Meadows, Massachusetts, keep an eye out for Blanding's Turtles! The species is threatened in the state and has declined by 50% in the past 30 years. If you see a Blanding's Turtle, take note of where and when. If there is a radio transmitter on the turtle, record the number on the transmitter. Take a photo if you can and submit it to the contact below. Every sighting gives scientists a better understanding of how many turtles there are and where they live. This knowledge can help conservation efforts for this threatened species.

#### Contact Information:

Bryan Windmiller  
Phone: 978-367-5507  
E-mail: [bwindmiller@gmail.com](mailto:bwindmiller@gmail.com)

### Protecting the Marine Turtles at Colola

Located in Marquelia, Guerrero State, Mexico, the goal of this project is to protect sea turtles and to help run preservation activities focused on protecting endangered species, while promoting international cooperation and international solidarity. Volunteers patrol the beach at night and collect eggs to be moved to a protected site. When hatchlings emerge, volunteers assist in leading them to the ocean. Statistical data from the nests is recorded hatching. Volunteers also help with educational workshops about conservation biology for children in the local schools.

#### Contact Information:

353-1350 Burrard Street  
Vancouver, British Columbia,  
V6Z 0C2, Canada  
Phone: 310-882-7400 or 617-841-0400  
Fax: 604-998-1356



**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>).

facebook



# Turtle Spotlight: Yellow-blotched Map Turtle

By Kimberly Barela, Oregon State University, Corvallis, OR



Download your own Yellow-blotched Map Turtle screen wallpaper from the Tennessee Aquarium at [www.tnaqua.org/OurAnimals/Reptiles/YellowBlotchedMapTurtle.aspx](http://www.tnaqua.org/OurAnimals/Reptiles/YellowBlotchedMapTurtle.aspx)

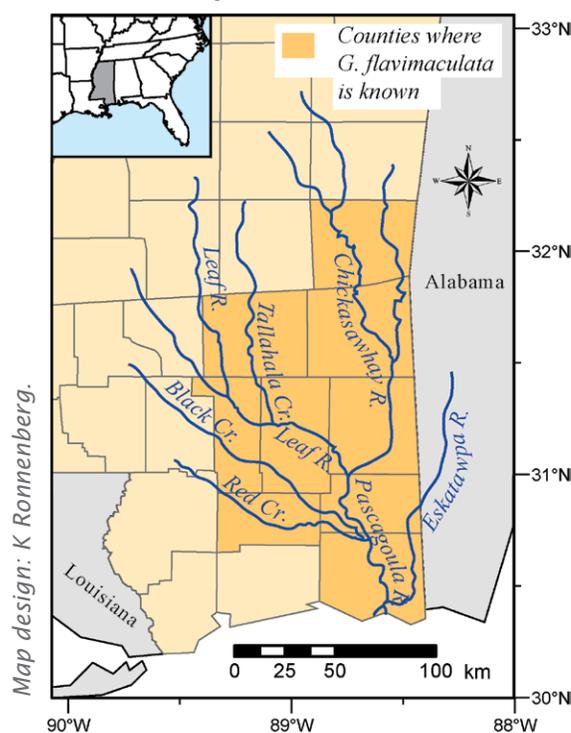
The Yellow-blotched Map Turtle (*Graptemys flavimaculata*), also known as the Yellow-blotched Sawback, is an aquatic freshwater species endemic to the Pascagoula River system, including the Leaf, Chickasawhay, and Escatawpa Rivers of Mississippi. They are generally found in areas characterized by moderate currents, sandbars, abundant basking structures, and an open canopy allowing sunlight to penetrate the water's surface. Their habitats also support a combination of insects, crustaceans, and fish, which are staples of the Yellow-blotched Map Turtle's diet. Along the Pascagoula River, they are the dominant turtle species, but they share their habitat with the Alabama Map Turtle, Red-eared Turtle, River Scooter, and the Razor-backed Musk Turtle.

Two distinguishing characteristics that make up this species' common name are their extremely accentuated scutes that create a saw-like appearance down their back and the yellow-orange blotches that adorn each scute. On average, the female's carapace can reach a length of 8 inches (20.3 cm), while the male may grow to about 4.75 inches (12 cm).

As depicted in children's stories, turtles are slow creatures in many aspects of their life. It can take four to nine years for the Yellow-blotched Map Turtle to mature, and on average, adult females will produce only one clutch of eggs per year. With slow growth and a low reproductive rate, turtles are highly vulnerable to changes in their environment. Their vulnerability is the reason why the Yellow-blotched Map Turtle was listed as threatened in Mississippi in 1991.

Their population decline is the result of several factors including flooding of nesting sites, nest predation, water quality degradation, human disturbances, and over-collecting for the pet trade. Three key external factors—floods, predation by Fish Crows (*Corvus ossifragus*), and human disturbances—lead to the destruction of nearly 90% of the eggs laid each year. Indirectly, humans can alter the behavior of breeding females by their presence and boat activity. Many females will either delay nesting or even abandon a nesting attempt if people or boats enter the area. The breeding season for the Yellow-blotched Map Turtles coincides with the summer months when many people enjoy relaxing on the sandbanks near the rivers. Also, nests are lost by human trampling, setting up campfires on top of the nests, and disturbing or digging up microhabitat cover that camouflages the nests from predators.

In order to protect this beautiful creature, people can exercise caution and be aware of their surroundings along the rivers in the Pascagoula watershed. Establishment of nesting reserves would be one way for us to ensure some turtle areas are protected. After all, the Pascagoula River system is the only place in the world where these animals can be found, and they are part of our cherished natural heritage, both locally and nationally. Therefore it is up to both community and national efforts to assure their persistence for future generations.



## PARC Regional Working Group Spotlight: Happenings with Midwest PARC



Blanding's Turtle,  
*Emydoidea blandingii*, by  
Ryan Miller.

MWPARC has had a strong commitment to turtle conservation. Over the years we have produced several products to address some of the many issues confronting Midwestern Turtles. As a result of discussions at our 2008 meeting in Iowa we developed our Raccoons and Turtle Conservation white paper ([www.mwparc.org/products/raccoons/](http://www.mwparc.org/products/raccoons/)). This document lists simple actions that reduce raccoon predation on eggs, hatchlings and adult turtles. Turtles are long lived and may benefit from even periodic relief from this source of predation. We also generated a state-by-state summary of Midwestern States' Turtle Harvest regulations, species, type of harvest (non-game, game, commercial), permit requirements, season, size restrictions, bag and total possession limit, method of harvest, and restrictions ([www.mwparc.org/products/turtles/](http://www.mwparc.org/products/turtles/)). In 2009 we developed our Prescribed Burning Guidelines for Amphibians and Reptiles ([www.mwparc.org/products/fire/](http://www.mwparc.org/products/fire/)). This document provides management recommendations on the use of prescribed burning based on review of scientific literature, ongoing field research, and discussion amongst experts in the field of herpetology and prescribed fire management. Our 2010 meeting focused on one of the turtle species which ranked very high in our regional prioritization ([www.mwparc.org/species/](http://www.mwparc.org/species/)) the Blanding's Turtle *Emydoidea blandingii*. This meeting featured talks on Blanding's Turtle biology, conservation and management, many of which are posted at [www.mwparc.org/meetings/2010/](http://www.mwparc.org/meetings/2010/) and resulted in the release of our "Blanding's Turtle (*Emydoidea blandingii*) Conservation Assessment Survey" ([www.mwparc.org/products/blandings/Blandings\\_Turtle\\_Conservation\\_Assessment\\_2010\\_FINAL.pdf](http://www.mwparc.org/products/blandings/Blandings_Turtle_Conservation_Assessment_2010_FINAL.pdf)). At this meeting we also developed task teams addressing Blanding's Turtle conservation issues. More information on our Blanding's Turtle conservation efforts and the task teams can be found in the "Conservation Assessment Survey."

Currently, members of MWPARC are active in Midwestern turtle conservation through many projects, a few of which are described below:

We have several studies underway on campus of Southern Illinois University Edwardsville. The first is a population demographic study. Between last year and the current season, we have found more than 50 turtles ranging in age from juvenile to approximately 25 years. These include the Eastern Box Turtle (*Terrapene carolina carolina*), the Ornate Box Turtle (*Terrapene ornata ornata*) (listed as endangered in the State of Illinois), and the Three-toed Box Turtle (*Terrapene carolina triunguis*).



Eastern Box Turtle,  
*Terrapene carolina carolina*, by Brad  
Glorioso.

Three-toed Box  
Turtle, *Terrapene carolina triunguis*,  
by Tara Sprankle.



We are looking at the role of invasive fruit-bearing species, such as Amur Honeysuckle (*Lonicera maackii*) and Autumn Olive (*Elaeagnus umbellata*), on the diet of box turtles. We have established a Turtle Research and Rescue Lab where, with a small investment of time and money, we rehabilitate turtles to a healthy state so that they may continue to make genetic contributions in their original (where possible) populations. This includes a halfway house where turtles acclimate to an outdoor setting after months in a lab setting, and radio telemetry to ensure that turtles settle into their native habitat. Another study is investigating land use/land cover and the length of time it takes for turtles to repopulate a natural area. One student is looking at turtle population demographics and use of agricultural riparian areas as refugia. Another student is mapping native resources utilized by turtles in a habitat area. And finally, we are looking at turtle shell growth rates and annuli definition on a year-by-year basis.

– by Elizabeth M. Walton

The Chicago Academy of Sciences Peggy Notebaert Nature Museum continues working with Du Page County Forestry Preserve District and Willowbrook Wildlife Centre headstarting Blanding's Turtles and releasing them in various locations in Du Page County. Last fall we began a long term survivorship study of released headstarted turtles using radio tracking. Early initial data suggest approximately 40% survival. — by Celeste Troon



Ornate Box Turtle, *Terrapene ornata*, by Mary Kay Baum.



Spiny Softshell, *Apalone spinifera*, by Marilyn Stone.



Snapping Turtle, *Chelydra serpentina*, by David Burkwall.

We are in our third year of an urban turtle study on the campus of Missouri Western State University in St. Joseph, MO. My students and I have marked over 60 turtles of four species (most to least common: *Chelydra serpentina*, *Chrysemys picta*, *Trachemys scripta*, and *Apalone spinifera*) in the nine ponds on campus. Snapping Turtles are present in all campus ponds, but only one pond has produced all four species. In addition to estimating such parameters as growth rates and population size, we are also looking at both external and internal parasite loads. We have documented two turtles, a Snapping Turtle and a Painted Turtle, moving between ponds.

— by Mark S. Mills

In 2008, a long term comprehensive study of Ornate Box Turtles (*Terrapene ornata*) was implemented within the sand prairies of the Upper Mississippi River National Wildlife and Fish Refuge in northwest Illinois. In 2010, the study expanded to include two Illinois Nature Preserve sites and two private properties. The primary goals were to identify the population status of Ornate Box Turtles within these areas and to implement best management practices to protect this imperiled species. A secondary goal was to reestablish a viable population of Ornate Box Turtles at Lost Mound Sand Prairie. To date, field surveys have found fewer Ornate Box Turtle populations and

smaller numbers of individuals within each population than expected. On the nine prairies surveyed, three contained no Ornate Box Turtles, three had only a few individuals, and three had viable populations. Radio transmitters were attached to 66 turtles located at five prairies to identify habitat use, home range size and brumation characteristics. Using automated telemetry, we are quantifying activity patterns and specific behaviors such as nesting events. We are also examining the efficacy of using radio transmitters with tilt sensors to quantify patterns of male courtship activity. Our nest predation study showed a mean predation rate of 30%, with values that ranged as high as 56%. The first year of a headstart program was successful, with the release of four young turtles into the wild, where they exhibited movement patterns similar to wild turtles and entered into brumation when fall temperatures plunged. Habitat management techniques were adopted to protect and conserve Ornate Box Turtles. Environmental education programs were implemented to provide public awareness on the plight of the imperiled Ornate Box Turtle. Project partners included local, state, and federal agencies, conservation organizations, universities, zoos, commercial developers, and private land owners. — by Jeramie T. Strickland

Christopher Woodley and Bruce Kingsbury continue research on the ecology of the Eastern Box Turtle (*Terrapene carolina carolina*) population in southern Michigan, and the impacts of prescribed fire upon it. An extension of a study begun by Kingsbury and Joanna Gibson several years ago, this research has shown that EBTs are susceptible to fire, particularly after emergence. Areas burned more than occasionally post-emergence will likely not support viable populations of the species.

Unburned turtles carry on fairly normally in burned landscapes, though they seek out areas retaining unburnt litter. Burned turtles use wetlands more extensively as they recover from their injuries. Since turtles that have not emerged from hibernation are afforded some protection from burns, we are presently endeavoring to develop a model predicting emergence. — by Bruce A. Kingsbury

## Turtles “All the Way Down” in Wisconsin

By Kimberly Barela, Oregon State University, Corvallis, Oregon

A turtle craze has swept the nation as “Year of the Turtle” reaches its 7th month of turtle advocacy. An increasing number of organizations are coming together encouraging people to learn about the role turtles play in ecosystems around the world. One such organization is the **Wisconsin Wetlands Association (WWA)**, a new collaborator with PARC’s Year of the Turtle.



The WWA has worked to support the protection, restoration and enjoyment of wetlands since 1969. They proudly claim to be “the only statewide organization focused exclusively on wetland protection.” Their membership tallies to more than 1,400, including a variety of wetland professionals and the public. In Volume 2 of their newsletter “Wisconsin Wetlands,” released in

June 2011, Dr. Tracy Rittenhouse (University of Wisconsin, Madison) extends turtle advocacy to the Wisconsin community through her article “Turtles all the way down?” The reader becomes immediately curious about what this could mean, and is drawn into the article to solve the mystery. Tracy tells the Native American story that people live on the back of a turtle, and that turtle lives on the back of another turtle, and that turtle is also on the back of another turtle ... and so on, “all the way down.”

Her article enlightens the public about the variety of turtles that call Wisconsin home, while also conveying the global dilemma that many



Painted Turtle, *Chrysemys picta*, by G.S. Casper.



Eastern Snapping Turtle, *Chelydra serpentina*, by G. S. Casper.

turtle species face with dwindling populations. Most importantly she expresses several different ways in which the community can become directly involved in turtle conservation. These include lacing up those hiking boots and aiding the efforts of the USA Turtle Mapping project. She even provides a map of documented and undocumented sighting areas around Wisconsin that people might go and explore.

Overall, the WWA is an inspiration in their efforts to increasing public awareness on turtle conservation and will become a valuable colleague of PARC in the near future. For more information: [www.wisconsinwetlands.org](http://www.wisconsinwetlands.org)

## 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](mailto: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.

### Subscribe Now!

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](mailto:yearoftheturtle2011@gmail.com).



Spotted Turtle, *Clemmys guttata*, by Andy Adams.

## Upcoming Meetings and Events

**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.

**Turtles and Snakes program**, July 16, Trustees of Reservations naturalist Rene Wendell, Sheffield, Massachusetts.

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

**Midwest PARC Annual Meeting**, August 5-7, Lesterville, Missouri

**Ecological Society of America 96th Annual Meeting**, August 7-12, Austin, Texas.

**SW PARC Annual Meeting**, August 10-11, Tucson, AZ

**9th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles**. Co-hosted by the Turtle Survival Alliance and the IUCN Tortoise and Freshwater Turtle Specialist Group. August 14-17, Orlando, Florida.

**Current Research in Sonoran Desert Herpetology V Symposium**, August 15-16, Tucson, Arizona.

**Northeast PARC Annual Meeting**, August 16-17, Millersville, Maryland.

**Society for Ecological Restoration International World Conference**. August 21-25, Merida, Mexico.

**The Wildlife Society, Central Mountains and Plains Section Meeting**. August 23-25, Gering, Nebraska.

**Association of Fish and Wildlife Agencies 101st Annual Meeting**, September 1-14, Omaha, Nebraska.

**Hatching Diamondback Terrapins Field School**, Massachusetts Division of Fisheries and Wildlife, September 9-11, Wellfleet, Massachusetts.

**Wild About Turtles**, MassAudubon's Broadmoor Wildlife Sanctuary, September 11, Natick, Massachusetts.

**Association of Zoos and Aquariums Annual Conference**, September 12-17, Atlanta, Georgia.

**Wetland Restoration Workshop**, September 25-30, Olympia, Kentucky.