



AMERICAN TURTLE OBSERVATORY

2015



Dear Friends,

American Turtle Observatory (ATO) is a new organization dedicated to the conservation of North American turtles and the critical landscapes upon which they rely.

Nearly half of the world's 335 recognized species of turtle are at risk of extinction caused by a complex range of threats, including habitat fragmentation, deforestation, roadkill, pathogens, overharvest, and climate-related habitat shifts. The importance and magnitude of each threat varies around the World and across North America. But in all cases, conserving the incredible diversity of North American turtles *in the wild* throughout their range—in *functional landscapes*—will require a focused, persistent, and collaborative effort to identify and conserve critical landscapes capable of supporting—and connecting—**diverse, dense, distinct, or resilient** turtle populations.

North America is the most **turtle-rich region on Earth**, encompassing numerous watersheds and landscapes of critical importance noteworthy for their richness of turtle species. For example, the **Apalachicola, Escambia, Mobile, and Pascagoula** basins of northern Florida and southern Alabama and Mississippi support a hotspot of globally significant turtle species richness, surpassed only by a portion of the Ganges-Brahmaputra watershed.¹

Other areas of North America support **endemic or restricted-range species, or distinct evolutionary lineages**, such as the box turtles of the Yucatán forests; the terrapins and mud turtles of the mangroves and islets of the Lower Florida Keys; the map turtles of the great rivers flowing into the northern Gulf of Mexico; the sliders and mud turtles of the Big Bend of the Rio Grande; the tortoises of the Bolsón de Mapimí; the aquatic box turtles of Cuatro Ciénegas in northern Mexico; and the sliders of the Baja California oases (among many other areas).

Still other landscapes support large populations of wide-ranging, at-risk species that were formerly abundant over much larger areas: for example, the Northern Forests, Southern Appalachians, Florida Everglades, Nebraska Sand Hills, Madrean Sky Islands and the Sierra Madre Occidental. At a finer scale, certain landscapes provide habitat essential to the long-term conservation of species, as outlined in species conservation plans such as those recently completed for wood turtles and eastern populations of Blanding's turtles (see page 7).

A modern strategy for biodiversity conservation requires that the precautionary principle be applied in order to conserve the full range of significant evolutionary lineages and ecotypes, wherever feasible. This approach—focusing intensive efforts on landscape prioritization and conservation for American turtles—will have the added benefit of contributing to the overall successful design of North American reserve networks and preserving associated species of plants, amphibians, and other threatened species. At the same time, where possible, we need to improve, streamline, and standardize our long-term monitoring methods.

Many of the ATO projects have been underway for over a decade, but we hope the new, formal organizational structure will provide additional support, capacity, and opportunities for collaboration, and we hope that you'll join us in our initial year.

Sincerely,


Michael Jones, Executive Director


Lisabeth Willey, Board President

ON THE COVER: The Madrean Sky Islands of Arizona, New Mexico, and Sonora encompass an incredible diversity of desert, grassland, chaparral, scrub, and forested habitats across eight distinct life zones. Situated at the convergence of the Sonoran and Chihuahuan deserts, the southern Rocky Mountains, and the Sierra Madre Occidental, the Sky Islands and adjacent regions support significant populations of Sonora mud turtle, yellow mud turtle, desert box turtle, spotted box turtle, and Sonoran desert tortoise.

AT LEFT: The Nebraska Sand Hills span twenty counties from the South Dakota border to the North Platte River. Here, the Ogallala Aquifer reaches its greatest saturated thickness. Surface water ponds support immense populations of Blanding's turtle, western painted turtle, and snapping turtle. The great, stabilized dune system supports populations of ornate box turtles and yellow mud turtles. The wetland systems of the Sandhills are threatened by ongoing development and natural resource extraction.

FOOTNOTES:

1. See K.A. Buhlmann et al. (2009) in *Chelonian Conservation and Biology* for a thorough review of the global hotspots of turtle biodiversity.

Why Turtles?

Many turtles are at risk of extinction.

Turtles are among the most threatened vertebrate groups on Earth: over half the species assessed by the International Union for Conservation of Nature (IUCN) are considered vulnerable to extinction. Because of their “slow” reproductive cycle, many species of turtle are vulnerable to threats ranging from climate-driven habitat shifts to habitat fragmentation to overcollection.

Turtles embody North America’s functional wild landscapes.

Because turtles are long-lived (individuals of many species regularly survive to over 50 years in the wild), but relatively limited in their movements, freshwater turtles are uniquely tied to the landscapes in which they live. As such, turtles serve as optimal umbrella species for a wide range of other taxa of conservation concern. Landscapes that support particularly dense or diverse populations or communities of turtles driven by natural disturbance regimes should be priority conservation targets.

Turtles are familiar icons for conservation.

Turtles are integral to the creation stories of cultures worldwide, from Mesoamerica to India and China. In many areas of the Earth, turtles are revered for their longevity or perceived wisdom. Further, freshwater turtles can serve as familiar icons for land, habitat, biodiversity, and natural resource protection, and they offer opportunities for conversations about landscape conservation across cultural and language barriers.

What We Do

The mission of the **American Turtle Observatory (ATO)** is to identify, conserve, and protect the functional landscapes that support the freshwater turtle diversity of North America.

We direct our efforts toward collaborative, landscape conservation for diverse, dense, distinct, resilient, or representative populations of North American turtles in need of conservation. We place strong emphasis on building long-term partnerships with agencies, landowners, researchers, communities, and institutions. We achieve our mission through seven program areas:

Identify & Map
Critical Landscapes

Establish & Manage Networks of
Freshwater Turtle Observatories

Develop & Implement
Conservation Plans

Support
Emerging Scientists

Provide Technical Assistance to
Towns, Landowners, & Agencies

Provide Outreach Materials to
Students and Stakeholders

Protect Land



Top: Adult male Northern red-bellied cooters (*Pseudemys rubriventris*) may be distinguished by their long foreclaws. The northernmost population of these striking, large-bodied turtles occurs in the ponds and reservoirs of Plymouth County, Massachusetts, USA. The red-bellied cooter is the focus of a multi-year status assessment by Massachusetts Division of Fisheries and Wildlife, the U.S. Fish and Wildlife Service, the University of Massachusetts, and ATO.

Middle: Meso-American sliders (*Trachemys venusta*) occur in a wide range of wetlands and ponds in southeastern Mexico and northern Central America. With researchers from the Autonomous University at Puebla, Mexico, and the Smithsonian, ATO has monitored populations of this species in Quintana Roo, Mexico, since 2013.

Bottom: The furrowed wood turtle (*Rhinoclemmys areolata*) ranges across southeastern Mexico and adjacent Belize and Guatemala in tropical forests (left). Creaser’s mud turtle is endemic to temporary, rocky pools in the forests of the Yucatán Peninsula (right). ATO studies the population dynamics of both species at multiple sites in southeastern Mexico.



Observatory networks encompass replicated, standardized, long-term (>10 years) studies of freshwater turtle populations within focal landscapes. As critical landscapes are identified, new observatory networks will be established.

- ATO & Partners (Ongoing)
- ATO & Partners (Planned)
- Key Partners
- Other Areas of Interest

The focal landscapes of ATO and key partners include ecoregions, sites, or watersheds supporting either: (a) exceptionally diverse assemblages of freshwater turtles; (b) turtle populations significant for their size, density, distinctiveness, or resilience; (c) robust metapopulations of turtle species of greatest conservation need; (d) active and engaged partners in conservation. This site network includes many landscapes significant at a continental scale. For several focal species, (see pp. 5–7) priority sites are delineated at a finer scale not visible on this map. ATO is refining these layers and species distribution models (SDMs) as new data become available.

North Maine Woods, Maine (ATO)

Over nine million acres of high-integrity boreal forest support scattered, regionally significant populations of North American wood turtle (*Glyptemys insculpta*). ATO maintains a network of five wood turtle (*Glyptemys insculpta*) reference sites in collaboration with Maine Department of Inland Fisheries and Wildlife (IF&W).

St. Lawrence Valley, New York (SUNY Potsdam)

The marshes, shrub swamps, and rivers of the St. Lawrence Valley provide critical habitats for Blanding's turtle (*Emydoidea blandingii*) which have been the subject of long-term, conservation-driven study by biologists at SUNY-Potsdam.

Driftless Area, Wisconsin/Minnesota (ATO in development)

The Driftless Area of the upper Mississippi supports large populations of three species of map turtle, as well as some of the largest known populations of Blanding's turtle, and unusual xeric-adapted species more common in the Great Plains.

Connecticut Valley, Massachusetts (ATO)

The Connecticut Valley encompasses the northernmost populations of eastern box turtle (*Terrapene carolina carolina*) in the eastern United States. ATO maintains a large network of observatory sites for wood turtle, eastern box turtle, and spotted turtle in this area of western Massachusetts.

Merrimack Valley, New Hampshire/Massachusetts (ATO)

The Merrimack watershed supports numerous significant populations of eastern Blanding's turtle (*Emydoidea blandingii*). ATO maintains observatory sites for Blanding's turtle and eastern painted turtle (*Chrysemys picta*) in New Hampshire and Massachusetts.

Cape Cod and Plymouth County, Massachusetts (ATO)

Cape Cod and adjacent Plymouth County harbor the northernmost populations of diamondback terrapin (*Malaclemys terrapin*) and northern red-bellied cooter (*Pseudemys rubriventris*).

Shenandoah Valley, Virginia/West Virginia (SCBI)

As the urban areas of Washington, D.C. and Richmond continue to spread west, the Shenandoah River watershed provides high-integrity, but at-risk, habitat for regionally significant turtle populations.

Missouri Ozarks, Missouri (ATO in development)

The Ozark region—including the Missouri Ozarks, the Boston Mountains, and the Ouachita Mountains—provide forested habitat for the three-toed box turtle (*Terrapene c. triunguis*) and several species of map turtle (*Graptemys* spp.).

Alachua and Putnam Counties, Florida (FWC)

Formerly the target of cypress loggers, north-central Florida supports large populations of many wide-ranging southeastern turtles, as well as Florida box turtles (*Terrapene bauri*) and spotted turtles.

Nashville Corridor, Tennessee (Bryn Mawr)

A network of protected forestland in a rapidly urbanizing area of the Cumberland Plateau.

Apalachicola Basin, Florida (ATO)

One of the most diverse basins on the continent, the Apalachicola watershed supports significant populations of Barbour's map turtles, (*Graptemys barbouri*), Alligator snapping turtles (*Macrochelys temminckii*), and Gulf Coast box turtles (*Terrapene carolina major*). Additionally, the region is a biogeographic break for the American box turtles and encompasses several significant populations of ornate diamondback terrapin (*Malaclemys terrapin macrospilota*).

Nebraska Sand Hills, Nebraska (ATO in development)

The Sand Hills of northwestern Nebraska support the largest known populations of Blanding's turtles, as well as large populations of painted turtle (*Chrysemys picta*), snapping turtle (*Chelydra serpentina*), ornate box turtle (*Terrapene ornata*), and yellow mud turtle (*Kinosternon flavescens*).

Big Bend, Texas (ATO in development)

The Big Bend region of Texas supports the healthiest remaining populations of the Big Bend slider (*Trachemys gaigeae*) and the only U.S. populations of rough-footed mud turtle (*Kinosternon hirtipes*).

Oregon Coast Range (ATO in development)

The Rogue River basin provides wild, intact, forested habitats for the northwestern pond turtle (*Actinemys marmorata*).

Madrean Sky Islands, Arizona (ATO/BUAP/SCBI in development)

The Sky Islands and intervening deserts of southern Arizona support populations of Sonoran desert tortoise (*Gopherus morafkai*), desert box turtle (*Terrapene ornate luteola*), yellow mud turtle, Arizona mud turtle (*Kinosternon arizonense*), and Sonora mud turtle (*Kinosternon sonoriense*).

Sierra San Pedro Martir, Baja California (BUAP/SCBI/ATO in development)

The highest mountains in Baja California provide wilderness stream habitats for the southwestern pond turtle (*Actinemys pallida*).

Baja Oases, Baja California Sur (BUAP, SCBI, and ATO)

Scattered oases in central Baja California support populations of the Baja slider (*Trachemys nebulosa*).

Sierra Madre Occidental, Sonora/Sinaloa (BUAP, SCBI, and ATO)

The mountains of central Sonora provide wilderness habitats for the spotted box turtle (*Terrapene nelsoni*), Sonora mud turtle, Arizona mud turtle, Alamos mud turtle (*Kinosternon alamosae*) and Yaqui slider (*Trachemys yaquia*).

Everglades, Florida (ATO)

Florida's Everglades provides aquatic habitats for many species of freshwater turtle. Outlying barrier islands, such as Marco Island and Cape Sable, support populations of gopher tortoise (*Gopherus polyphemus*). Upland hammock areas support populations of Florida box turtles (*Terrapene bauri*).

Lower Keys, Florida (FWC)

The Lower Florida Keys support disjunct and ecologically distinct populations of diamondback terrapin, striped mud turtle (*Kinosternon bauri*) and Florida box turtle.

Northern Yucatán (ATO, BUAP, UADY, SCBI)

The Cattlelands of northern Yucatán support the largest populations of the endemic Yucatán box turtle (*Terrapene yucatana*).

Puuc Hills, Yucatán (ATO, BUAP, UADY, SCBI)

The Puuc Hills of the Yucatán-Campeche border support the largest known populations of Creaser's mud turtle (*Kinosternon creaseri*) as well as large populations of furrowed wood turtle (*Rhinoclemmys areolata*) and box turtle.

Sian Ka'an, Quintana Roo (BUAP, UADY, SCBI, ATO)

The cenotes and aguadas of interior Quintana Roo support large populations of Meso-American slider (*Trachemys venusta*) as well as populations of scorpion mud turtle (*Kinosternon scorpioides*).

Calakmul, Campeche (ATO, BUAP, UADY, SCBI)

Calakmul supports the highest species richness of kinosternid (mud) turtles and encompasses one of the largest forested wilderness areas in southeastern Mexico.

Tzicatlacoyan, Puebla (BUAP)

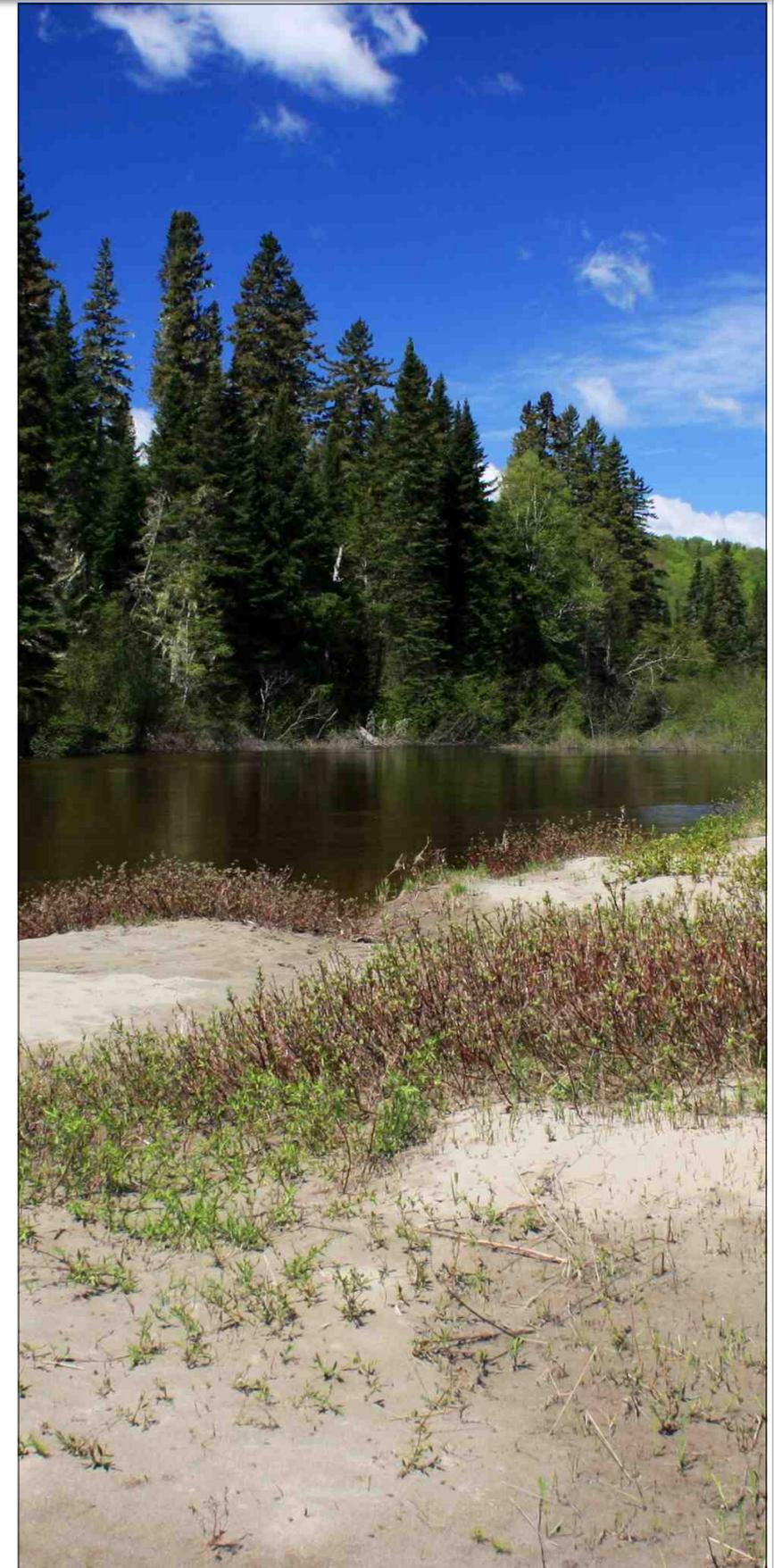
Long-term population studies of the Mexican mud turtle (*Kinosternon integrum*).

Mazunte, Oaxaca (BUAP)

Long-term population studies of the Oaxaca mud turtle (*Kinosternon oaxacae*).

Culebra, Puerto Rico (ATO in development)

Largely in federal ownership, Culebra supports large populations of Central Antillean slider (*Trachemys stejnegeri*)—at risk on the main island of Puerto Rico.



Above right: ATO long-term study site in northern Maine.

NETWORKS of TURTLE OBSERVATORIES

How are focal species determined?

All North American freshwater turtle species are candidates for study or conservation management. However, we prioritize the following species or lineages: (a) “species of greatest conservation need,” as determined by state wildlife agencies through their Wildlife Action Plans or Endangered Species Acts; (b) **endangered, threatened, or vulnerable** taxa, as identified by the IUCN, the U.S. Fish and Wildlife Service, or expert opinion; (c) genetic, morphological, ecological, or behavioral lineages distinct from wide-ranging and common taxa. On this page, we have outlined some of our initial focal species.



POND & MARSH TURTLES (EMYDINAE).—The pond, box, and marsh turtle group (subfamily Emydinae) are one of ATO’s several focal groups. The emydines comprise about fourteen species of freshwater and terrestrial turtle distributed primarily across the United States and Mexico (a single lineage occurs in Europe). Emydine turtles are among the most terrestrial of North America’s turtles, and face difficult conservation challenges unique to life on land. Further, emydine turtles are among the longest-lived vertebrates in North America, indirectly resulting in additional challenges for conservation. With partners, ATO has developed regional conservation plans for northeastern populations of wood turtle and Blanding’s turtle, and coordinates long-term research on the spotted turtle.

PRELIMINARY FOCAL SPECIES



AMERICAN BOX TURTLES (genus *Terrapene*).— Box turtles comprise a distinct lineage within the emydine clade (depicted at left). Though formerly abundant across the prairies and forests of central and eastern North America, populations of box turtles have declined throughout the United States and Mexico as a result of habitat fragmentation, deforestation, increased roadkill, and collection for pet markets. Large and robust populations are rare on the American landscape, and several of these are threatened by major infrastructure projects or aggressive land management and development. To understand and conserve these populations in functional landscapes, we work with public and private partners to monitor, study, manage, and protect significant populations in New England, Florida, and southeastern Mexico. Clockwise from top left (* indicates a focal species of ATO): Yucatán box turtle*, Gulf Coast box turtle*, Florida box turtle*, desert box turtle, three-toed box turtle, eastern box turtle*.



MUD TURTLES (KINOSTERNIDAE).— The mud and musk turtles are unique to the western hemisphere and are distributed primarily in central Mexico and the southern United States. The mud turtle family reaches its greatest diversity in the forested hills of the southern Yucatán Peninsula, but representatives extend as far north as New England and the Great Lakes. Many species of mud turtle are narrowly distributed within a limited area, such as Creaser’s mud turtle (above right). Other species are constrained to aquatic habitats in extreme desert environments and are threatened by aquifer drawdowns, floods, and climate shifts, including the Sonora mud turtle (top left). The red-cheeked or scorpion mud turtle is shown at center.



DISJUNCT or UNIQUE LINEAGES.—In many cases, a given species is widespread, but occurs in some areas as a disjunct or relictual population, or is otherwise distinct from the animals in the main range. Such is the case with the Massachusetts populations of the northern red-bellied cooter (pictured at left), which are ecologically unique and biogeographically significant because they comprise the northernmost occurrences of the widespread North American genus *Pseudemys*. A similar example includes the disjunct occurrences of Blanding’s turtle in New York and New England., which are isolated by several hundred miles from the main range in the Great Lakes region. In both cases, populations in the main range are believed to be larger and more stable than the disjunct occurrences, although there is growing concern for both species throughout their range.

HIGHLIGHTED PROJECTS

NETWORKS of TURTLE OBSERVATORIES



1. CRITICAL LANDSCAPES.—We are working to identify the most important landscapes for North American freshwater turtles—modeled after the Priority Amphibian and Reptile Conservation Areas (PARCAs) and Important Bird Areas (IBAs)—using a combination of field sampling data and landscape information. The United States and Mexico encompass many globally significant freshwater turtle habitats. We are working within several critical landscapes, including the northern forests of New England, the Florida Panhandle, Everglades, and Yucatán's Puuc Hills. With our partners, we will continue to develop active partnerships for conservation and land protection in these areas.

2. SPOTTED TURTLE CONSERVATION PLANNING.—The spotted turtle (*Clemmys guttata*) occurs in emergent marshes, shrub swamps, and temporary wetlands from Maine to Florida. It is of conservation concern throughout the northeastern United States, and is listed as “Endangered” by the IUCN. We have partnered with the Smithsonian Conservation Biology Institute, UMass Amherst, and state wildlife agencies in New England, Virginia, and Florida to coordinate regional monitoring, and to lay the groundwork for conservation planning. As part of this effort, we maintain long-term spotted turtle observatories, including several 20+ year monitoring efforts.



3. FLORIDA BOX TURTLE and GULF COAST BOX TURTLE CONSERVATION.—Coastal habitats of Florida are likely to be negatively influenced by the 18–59 cm sea level rise expected in this century (IPCC 2013), altering habitat availability, community structure, and species diversity. The average expected sea level rise would result in a loss of dry land in many regions of western and northern Florida, threatening wildlife throughout this unusual system. In 2006, we began a long-term study of Florida box turtles (*Terrapene bauri*) in the Ten Thousand Islands region of Florida to study the species on unique shellworks islands built by the Calusa about 2000 years ago. And in northern Florida, we are partnering with biologists from the Florida Fish and Wildlife Conservation Commission, Turtle Conservancy, U.S. Fish and Wildlife Service, and other organizations to learn more about the distribution, abundance, behavior, and ecology of this little-known subspecies. We are currently establishing long-term plots on offshore barrier islands as well as the Florida mainland and are working to evaluate the effects of landscape change and habitat management (such as prescribed burns) on demographics, abundance, and habitat use.



4. NEBRASKA TURTLE CONSERVATION.—The Nebraska Sand Hills harbor some of the largest turtle populations in North America, including globally significant populations of Blanding’s turtle, ornate box turtle, and yellow mud turtle. ATO has proposed a 1000-km roadway transect, with several spur trails, from Grand Island to Alliance, to identify key habitat features for species of greatest conservation need.



5. YUCATÁN TURTLE CONSERVATION.—The northern portion of Mexico’s Yucatán Peninsula supports five species of freshwater turtle, including two species endemic to the Peninsula: Yucatán box turtle and Creaser’s mud turtle. The Yucatán box turtle remains one of the least well-known of all American turtles, and is certainly the most poorly known of the eastern box turtle species complex. We have initiated a long-term, community-based program to investigate the status and distribution of wild turtle populations in Yucatán, with the long-term goal of identifying feasible reserve areas and informing management strategies. This work is conducted in partnership with the Smithsonian Conservation Biology Institute, Benemérita Universidad Autónoma de Puebla, Universidad Autónoma de Yucatán. Our work in Yucatán is funded by the Andrew Sabin Family Foundation, the Turtle Conservation Fund, Conservation International, and the Lucille F. Stickel Award (North American Box Turtle Conservation Committee).

Status and Conservation of the Wood Turtle

ATO helps to lead a large coalition of agencies, universities, and biologists dedicated to the continued survival of the North American wood turtle (*Glyptemys insculpta*) in the streams, fields, and forests of the northeastern United States. With State Wildlife Grant (SWG) funds from the Northeast Association of Wildlife Agencies, (NEAFWA), we assessed the status of the wood turtle in thirteen northeastern States. As a founding partner to this effort, we manage **twenty long-term wood turtle observatories** in Maine, New Hampshire, and Massachusetts, a network now in its twelfth year. This project is a partnership between the state agencies of the Northeast Region, UMass Amherst, the Massachusetts Cooperative Wildlife Unit, and the Smithsonian Conservation Biology Institute.

Blanding's Turtle Conservation Plan

ATO is a member of the Northeast Blanding's Turtle Working Group (NEBTWG), a team of state agency biologists, scientists, land managers, and key stakeholders in five states focused on the conservation of the isolated populations of Blanding's turtle in the northeastern United States. With funding from the U.S. Fish and Wildlife Service's Competitive State Wildlife Grants program, NEBTWG and ATO have developed a regional **conservation plan** for the species by conducting region-wide, standardized monitoring, prioritizing sites, and working with land trusts to secure and manage habitat for Blanding's turtle. As part of this effort, we study, monitor, and work to proactively manage two large population complexes in New Hampshire and Massachusetts.



Top: Wood turtles (*Glyptemys insculpta*) mating on the bottom of a shallow stream in the White Mountain region, New Hampshire, at one of ATO's long-term observatories.

Bottom: An adult male Blanding's turtle (*Emydoidea blandingii*) first captured in 2002 (and shown pictured in 2013) at an observatory site in eastern Massachusetts.

Status and Conservation
of the Wood Turtle
in the Northeastern United States



Made possible by State Wildlife Grants
and funded by the Northeast Regional Conservation Needs Program

Conservation Plan
for the Blanding's Turtle
associated Species of Conservation Need
in the Northeastern United States



Made possible by State Wildlife Grants
and funded by the Competitive State Wildlife Grant Program

Field Technicians

We hire and work with field technicians for most projects, and encourage their involvement in decision making and project planning. Depending on the location and scope of a project, we hire local residents who are familiar with the landscape, as a way to build local investment in the conservation outcome.

Graduate Assistantships

As resources are available, we offer graduate assistantships to students in conservation biology.

Grants

Among our initial proposed programs, we will grow an endowed fund to offer grants to emerging scientists focused on landscape ecology (or landscape conservation) of freshwater turtles in North America.



Above: Eddie Nahuat and Luis Diaz Gamboa, project leaders in Yucatán.

LAND PROTECTION

Our long-range plan is to build a sufficiently strong organization to protect habitats within critical landscapes **through fee acquisition**. In the near-term, we will assist in land conservation efforts by developing spatial, predictive models, providing technical assistance to land protection committees within agencies, and conducting surveys within preliminary critical landscapes.



Technical Assistance

As a way to promote and facilitate freshwater turtle habitat conservation at multiple levels in the United States and Mexico, ATO has worked with towns, municipalities, state and provincial agencies, federal agencies, non-governmental organizations (NGOs), and private landowners to develop conservation strategies for specific land areas. We plan to expand these efforts in the future.

Technical assistance may take many forms:

1. Targeted population studies
2. Presence/absence surveys
3. Site management plan development
4. Best management practices
5. Habitat management guidelines
6. Public workshops and forums
7. Regulatory strategies and consultations
8. Monitoring strategy consultations



Outreach

In addition to the various technical aspects, we have developed outreach and educational materials geared toward distributing information about freshwater turtle conservation and habitat management. Outreach materials include versions of technical assistance materials, including habitat management guidelines and best management practices, as well as educational cards, posters, and books. We manage social networks to share education information about landscape conservation for American turtles.

Additionally, we offer presentations and workshops geared toward landscape conservation for freshwater turtles throughout our focal areas.



BOARD of DIRECTORS

Michael Jones, Ph.D. (executive director)

Mike is a biologist at the University of Massachusetts in Amherst, Massachusetts. Mike has coordinated studies of Blanding's, wood, painted, spotted turtles, Northern red-bellied cooters, and several species of box turtle.

Lisabeth Willey, Ph.D.

Liz is a member of the core faculty at Antioch University New England in Keene, New Hampshire. Liz has worked with over a dozen species of freshwater turtle in eastern North America.

Marlissa Briggett

Marlissa has been practicing law since 1991. Marlissa has been actively involved in city government in Cambridge and Arlington, Massachusetts, and served as an attorney-advisor to the United States Commission on Civil Rights.

Jonathan Mays

Jonathan is a research biologist with the Florida Fish and Wildlife Conservation Commission in Gainesville, Florida, where he supervises studies of Barbour's map turtle, alligator snapping turtles, Keys mud turtle, and other species.

Tom Akre, Ph.D.

Tom is an ecologist for the Smithsonian Conservation Biology Institute in Front Royal, Virginia, where he is the director the Virginia Working Landscapes program. Tom has coordinated studies of freshwater turtles in the United States, Mexico, and Venezuela.

SUPPORTING ORGANIZATIONS

(Project-level support)

U.S. Fish and Wildlife Service

Northeast Association of Fish and Wildlife Agencies

Andrew Sabin Family Foundation

Turtle Conservancy

Conservation International

Turtle Conservation Fund

North American Box Turtle Conservation Committee

Northeast Partners for Amphibian and Reptile Conservation (NEPARC)



CONSERVATION
INTERNATIONAL



BOARD of ADVISORS / KEY PARTNERS

Paul R. Sievert, Ph.D.

Paul and his students at the University of Massachusetts have studied an incredible range of threatened species, ranging from Pacific albatross to Sumatran rhinos, and the freshwater turtles of New England.

Dr. Rodrigo Macip Ríos

Rodrigo is an Assistant Professor at the Benemérita Universidad Autónoma de Puebla in Puebla City, Puebla, México, where he focuses on the ecology of kinosternid turtles. His research focuses on links between biodiversity and development in eastern México.

David M. Carroll

David is an artist and naturalist from Warner, New Hampshire, and is the author of four nationally-acclaimed natural history books on wetland ecology and conservation including *The Year of the Turtle*, in which he beautifully catalogs the annual cycle of the spotted turtle.

Glenn Johnson, Ph.D.

Glenn is the Chair of the Biology Department at the State University of New York in Potsdam, New York. Glenn coordinates studies of turtles throughout northern New York.

Derek Yorks

Derek is a wildlife biologist with the Maine Department of Inland Fisheries and Wildlife in Bangor, Maine, where he supervises field studies and conservation of rare turtles, reptiles, amphibians, and invertebrates. Previously, Derek conducted studies of wildlife-road effects.

Noah Charney, Ph.D.

Noah is a wildlife biologist and landscape ecologist at Bryn Mawr University in Bryn Mawr, Pennsylvania. Noah applies novel analytical methods to large ecological datasets to quantify meaningful trends.

Brian Zarate

Brian is a wildlife biologist with the New Jersey Division of Fish and Wildlife's Endangered and Nongame Species Program. He coordinates the state's reptile and amphibian conservation work and leads a statewide wildlife habitat connectivity initiative.

Charlie Innis, DVM

Charlie is the lead vet for the New England Aquarium and has extensive experience with freshwater and marine turtle conservation.

Angelena Ross

Angie is a wildlife biologist with the New York State Department of Environmental Conservation in the St. Lawrence Valley of northern New York, where she coordinates conservation programs for spruce grouse and Blanding's turtle.

Al Richmond, Ph.D.

Al teaches herpetology, comparative vertebrate anatomy, and marine vertebrates at the University of Massachusetts, and has studied the turtles of Massachusetts for several decades.

Lori Erb

Lori is a bog turtle program manager for the Mid-Atlantic Center for Herpetology and Conservation (MACHAC) and the senior co-chairs of the Northeast Partners in Amphibian and Reptile Conservation (NEPARC).

McKenzie Jones

McKenzie is the sustainability specialist for the city of Flagstaff, Arizona.

Erika Gonzalez

Erika is a botanist and ecologist with the Smithsonian Conservation Biology Institute in Front Royal, Virginia, and a key partner on the Yucatán projects.

Luis Diaz Gamboa

Luis teaches herpetology at the Universidad Autónoma de Yucatán (UADY) in Merida, Yucatán. He coordinates field studies of freshwater turtles on the Yucatán Peninsula and supervises herpetological inventories in Campeche, Quintana Roo, and Yucatán.

Eddie Gabriel Nahuat

Eddie is a project manager in northern Yucatán, where he coordinates field studies of Yucatán box turtles and supervises other projects on the Peninsula.

Betty Mobbs

Betty supervises a sixteen-year study of eastern painted turtle in eastern Massachusetts.

Joan Milam

Joan is an adjunct assistant professor with the U.S. Forest Service, Northeastern Research Station at the University of Massachusetts Amherst. Joan's graduate research focused on the ecology and conservation of spotted turtles. Joan is a partner on the spotted turtle study.

PARTNER AGENCIES

Massachusetts Division of Fisheries and Wildlife (MassWildlife)

New York Department of Environmental Conservation (NYSDEC)

New Hampshire Fish and Game Department (NHFG)

New Jersey Division of Fish and Wildlife (NJDFW)

Maine Department of Inland Fisheries and Wildlife (IF&W)

Virginia Department of Game and Inland Fisheries

Florida Fish and Wildlife Conservation Commission

- Apalachicola River WEA

Florida Department of Environmental Protection

- Rookery Bay National Estuarine Research Reserve
- Apalachicola National Estuarine Research Reserve

U.S. Fish and Wildlife Service

- Eastern Massachusetts National Wildlife Refuge
- Massasoit National Wildlife Refuge, Massachusetts
- Ten Thousand Islands National Wildlife Refuge, Florida
- Florida Panther National Wildlife Refuge, Florida
- St. Vincent National Wildlife Refuge, Florida
- New England Office, Concord, New Hampshire
- Northeast Regional Office, Hadley, Massachusetts

U.S. Forest Service

- Apalachicola National Forest, Florida
- White Mountain National Forest, New Hampshire

National Park Service

- Everglades National Park

Smithsonian Conservation Biology Institute

- Conservation Ecology Center

PARTNER UNIVERSITIES

Antioch University New England; Keene, NH

State University of New York; Potsdam, NY

University of Massachusetts; Amherst, MA

Benemérita Universidad Autónoma de Puebla, Puebla City, Puebla, Mexico

Universidad Autónoma de Yucatán, Merida, Yucatán, Mexico



HOW YOU CAN HELP

Annual Meeting

Each year, we will host an annual meeting of the board of directors, advisory board, and key partners. All project collaborators are invited. Our initial meeting will be held on **Sunday, June 28, 2015**. Or... join us in the field!

Launch a New Observatory Network

We have established observatory networks for focal freshwater turtle species of greatest conservation need in a broad array of landscapes throughout North America, from intact wilderness to fragmented urban areas to long highway transects. ATO is currently working with partners to finalize protocols for new observatories. If you are a wildlife biologist with turtle experience interested in starting a new long-term study, consider launching an observatory site (or network of replicated sites), following existing, standardized protocols. Please contact us if you have questions or ideas, or discuss the idea with your state herpetologist.

Conservation Implementation

Freshwater turtle species for which regional conservation plans have been completed—namely, Blanding's and wood turtles (p.7)—need “site leaders” to take responsibility for the implementation of site-specific conservation benchmarks. In coordination with the state agency project lead, qualified wildlife biologists may sign up to coordinate progress toward turtle conservation within priority sites.

Raise Awareness of ATO and American Turtle Conservation

Consider spreading the word about ATO, and in-situ freshwater turtle conservation, in Canada, the United States, and Mexico.

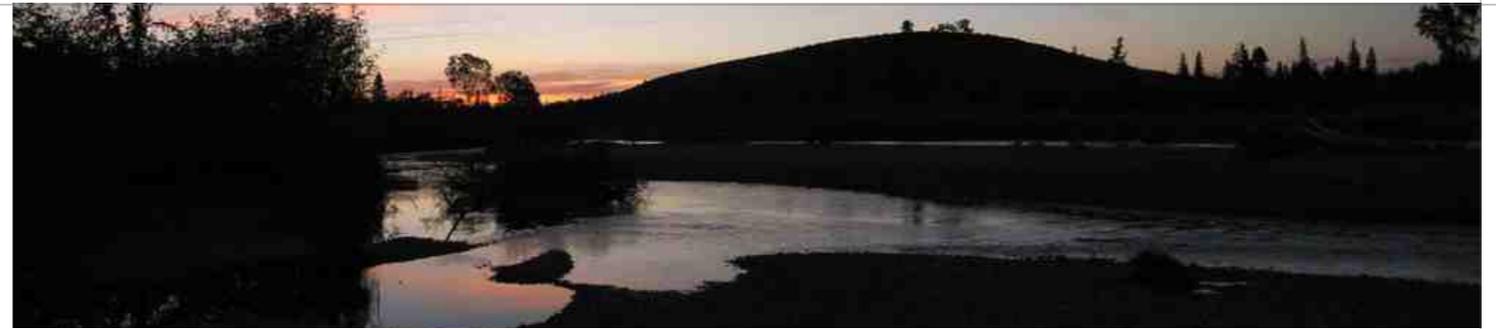
Support Freshwater Turtle Organizations

There are several excellent turtle conservation organizations dedicated to the conservation of turtles. Each has a different focus, emphasis, and expertise. Please consider supporting the **Turtle Survival Alliance**, **Turtle Conservancy**, and **Conservation International**, as well as regional chapters of **Partners for Amphibian and Reptile Conservation (PARC)**, and state chapters of the **Nature Conservancy**.

Support ATO

Consider making a donation to help launch ATO in its initial year. Donations may be made to:

American Turtle Observatory
90 Whitaker Road
New Salem, MA 01355 USA
<http://americanturtles.org>



Collage: Key partners and advisors in the field.