



Maryland Amphibian & Reptile Atlas

*A Joint Project of The Natural History Society of Maryland, Inc.
& the Maryland Department of Natural Resources
October 2014 Newsletter*

Hello!

Happy Fall! We are heading into the final push for the Atlas data collection period. December marks the end of the project. Please keep entering your data!

You may already be observing a noticeable decline in the activity of amphibians and reptiles. However you can still see some of these critters out and about. Painted Turtles and Northern Red-bellied Cooters may still be seen basking. Woodland salamanders can still be found, in addition to stream salamanders. Frogs may still be stumbled upon. Also, some of our sophisticated serpents may still be around.

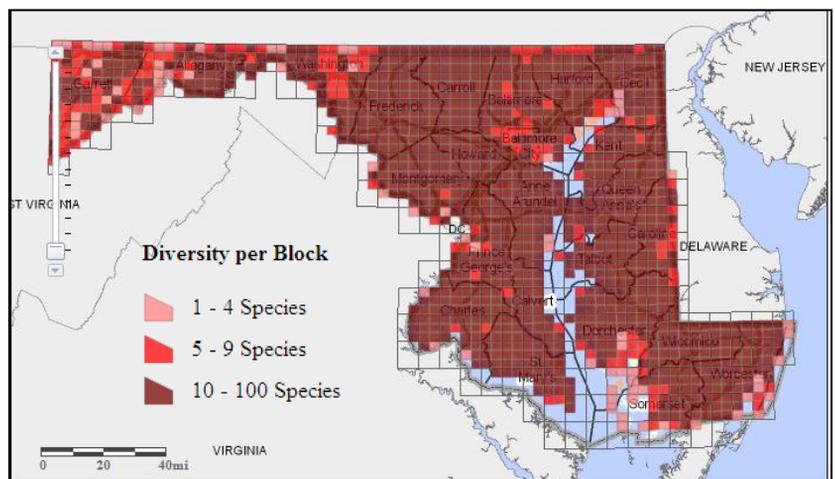
Keep your eyes open for Marbled Salamanders. They migrate in the fall. They are the first of Maryland's mole salamanders to undertake their migration to breeding sites. They are widely distributed in the state with the exception of the far western region. We have had recent reports of Marbled Salamander activity.

Please be sure to share your finds on the MARA Facebook page! Let us know what is out in your neck of the woods. <https://www.facebook.com/MDHerpAtlas>

Thanks to everyone who contributed to this month's newsletter!

Happy Herping!

Heather Cunningham
Statewide Coordinator



Results as of 10/22/2014



The Highway to Hellbenders: Finding Maryland's Lost Amphibian

By Andy Adams

Maryland is home to more than 20 species of salamanders. These amphibians live in a wide variety of habitats, but are rarely seen due to their secretive nature and generally small size. Many people are familiar with some of Maryland's more common species such as the Eastern Redbacked or Spotted Salamander, but few are aware of the state's largest species, the Eastern Hellbender. Despite reaching lengths of roughly 2 feet, this amphibian is rarely seen, as it is fully aquatic, spending its entire life underwater in large rivers and streams. Once found throughout the eastern US, there are now only a few scattered isolated populations of varying size in each state. In Maryland the hellbender is considered by the Department of Natural Resources to be endangered.

The hellbender is truly a habitat specialist, preferring clear fast-running water, large flat rocks for hiding, and plenty of crayfish and other shellfish, which are its primary diet. As an ectothermic amphibian, the hellbender is very sensitive to changes in temperature and depends on its permeable skin for breathing – it has multiple skin flaps that it uses to filter oxygen from the water. They fill a significant role in freshwater ecosystems that other animals do not occupy. Yet, because of these specific requirements, hellbenders are especially vulnerable to threats of habitat modification and destruction, much of which stems from land and water development. Other human activities such as dam-building can fill the water with loose sediment, eliminate oxygen from the water, and drastically alter the water's temperature. Such abrupt and fluctuating changes make streams uninhabitable for the hellbender. Other threats may include pollution, disease, harassment, and illegal collection.



Eastern Hellbender, *Cryptobranchus alleganiensis*.
Photograph Donnie McKnight

Due to this long list of threats, hellbender populations have seen a drastic decrease in Maryland and are critically endangered. They were once found in the Appalachian Mountains in Garrett County and the tributaries of the Susquehanna River in Harford County. Currently, the only known populations of hellbenders occur in the westernmost part of the state, where they are still rarely encountered. Because hellbenders are extremely difficult to find, it is a challenge to monitor and manage their numbers. In some areas, including the Maryland portion of the Susquehanna River, it is unknown if they still even exist.

Recent innovations, however, may provide hope for finding historical populations of hellbenders. A newly-developed technique involving the collection of Environmental DNA (eDNA) is being used across the world to find evidence of aquatic species that are otherwise difficult to detect. The process involves filtering a sample of water from the study site and using genetic techniques to detect the presence of a specific animal's DNA in the water (usually in the form of skin sheds or fecal matter). With this technique, researchers would be able to determine if the hellbender still exists in its historical range without having to find the salamander itself.



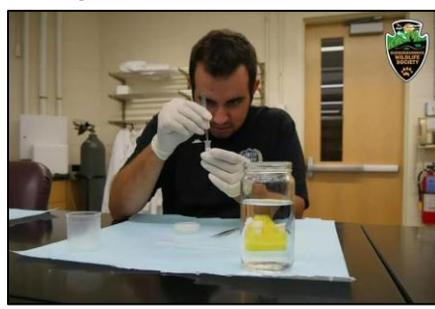
Any hellbenders here? Photograph by Susquehannock Wildlife Society

In Harford County, the Susquehannock Wildlife Society has partnered with the Smithsonian Institution and Department of Natural Resources to do just that. A multi-year, statewide study has just begun to evaluate and test waters in which the hellbender has historically been found with the hope of rediscovering populations that were previously thought to be lost. This fall, eDNA studies are being performed by the Susquehannock Wildlife Society in the tributaries of the Susquehanna River to determine if these large and secretive amphibians are still present in the area. Stream samples from a series of sites along the river have been collected, filtered, and are currently in a lab being tested for hellbender DNA; these data will contribute to other eDNA studies done in western Maryland. If successful, the rediscovery of hellbenders in the Susquehanna would be a victory for the salamander and appropriate steps can then be taken to ensure the further survival of Maryland's largest and arguably most unique amphibian.



Looking for evidence of hellbenders. Photograph by Susquehannock Wildlife Society

You can help as well! If you have seen any hellbenders in Harford County, please notify the Maryland DNR or the Susquehannock Wildlife Society. Don't interfere with this rare and endangered amphibian, but report its sighting and, if possible, photograph and document where you found it.



MARA Harford County Co-coordinator Scott McDaniel and MARA surveyor Andy Adams help prep samples of water. Photograph by Susquehannock Wildlife Society

Field Notes

Late October —Mid-November Amphibian and Reptile Watchlist

Turtles

Eastern Musk Turtle
Eastern Mud Turtle
Eastern Box Turtle
Wood Turtle
Northern Diamond-backed Terrapin
Northern Map Turtle
Painted Turtle
Red-eared Slider
Northern Red-bellied Cooter
Eastern Snapping Turtle
Eastern Spiny Softshell

Reference(s):

-Active Season for Maryland Turtles, compiled by Chris Swarth, available from the MARA website (www.marylandnature.org/mara).

Snakes

Northern Watersnake
Queen Snake
Eastern Smooth Earthsnake
Northern Brownsnake
Eastern Gartersnake
Ring-necked Snake
Eastern Wormsnake
Northern Rough Greensnake
Smooth Greensnake
Eastern Hog-nosed Snake
Northern Black Racer
Eastern Ratsnake
Mole Kingsnake
Eastern Kingsnake
Coastal Plain Milksnake
Copperhead

Reference(s):

-Active Season for Maryland Snakes, compiled by Scott Smith.

Salamanders

Marbled Salamander
Red-spotted Newt
Eastern Redbacked Salamander
Wehrle's Salamander
Northern Slimy Salamander
Valley and Ridge Salamander
Seal Salamander
Northern Dusky Salamander
Northern Red Salamander
Eastern Mud Salamander
Northern Spring Salamander
Northern Two-lined Salamander
Long-tailed Salamander
Green Salamander

Reference(s):

-Active Season for Maryland Salamanders, compiled by Heather Cunningham and Rachel Gauza
-Kyle Loucks, Nate Nazdrowicz, and Ed Thompson, personal communication.

Frogs & Toads

For frog and toad species, calling season is concluded. However, individuals can still be encountered moving about. Especially during rain events. This is a good time of year for road cruising.

Lizards

Lizards become really scarce this time of year. You may still see one but the colder weather will cause a decline in their activity. Watch for the occasional sighting of one basking.

The Good, Bad & Just Plain Weird!

Interesting finds from 2014



Common Ribbon Snake, *Thamnophis sauritus*, Anne Arundel County. Photograph by Bonnie Ott



Northern Map Turtle (juvenile), *Graptemys geographica*, Cecil County. Photograph by Susquehannock Wildlife Society



Red Cornsnake, *Pantherophis guttatus*, Allegany County. Photograph by Paul Petkus



Green Treefrog, *Hyla cinerea*, Anne Arundel County. First documented Green Treefrog at Smithsonian Environmental Research Center (SERC). Photograph by Rob Aguilar



MARA Steering Committee Meeting Notes

The committee met Wednesday October 22nd at DNR Headquarters in Annapolis. Those in attendance included Glenn Therres, David Smith, Dave Walbeck, Nate Nazdrowicz, Heather Cunningham, Charlie Davis, and Lynn Davidson.

The meeting began with a brief update from the statewide coordinator. Work continues on the MARA book. Editing revisions to the first drafts are underway.

More than 33,000 records have been submitted to the online database to date. There have been 5,226 records from 2014 thus far. We had an increase of 443 records since last month.

Verification continues and is up-to-date. Review of pending records will begin in November.

The committee discussed the protocol for posting photos of sensitive species to the MARA Facebook page. Specifically, the committee discussed if county in which the species was found should be posted. After discussion it was decided that county would be posted. However, the committee decided to post a message to page followers warning that they should not give out locality information to people they do not know and that people may be watching the page in order to learn the localities of sensitive species in order to collect them.

The next Steering Committee Meeting will be held Wednesday November 19th at 6:00pm. The meeting will be held at DNR Headquarters in Annapolis.

2014 MARA Steering Committee

Glenn Therres *	Maryland Department of Natural Resources
Charles Davis *	Natural History Society of Maryland
David Smith*	Coastal Resources, Inc.
Rachel Gauza	Association of Zoos and Aquariums
David Walbeck	Maryland Department of the Environment
Wayne Hildebrand	North American Amphibian Monitoring Program
Lynn Davidson	Maryland Department of Natural Resources
Linda Weir	United States Geological Survey, Patuxent Wildlife Research Center
Kyle Rambo	Patuxent River Naval Air Station, Environmental Department
Nate Nazdrowicz	University of Delaware
Don Forester	Towson University
June Tveekrem	NASA Goddard Space Flight Center

* Co-Chair

County	Coordinator	Email Address
Allegany	Ed Thompson	elthompson@dnr.state.md.us
Anne Arundel	Dave Walbeck	dwalbeck@mde.state.md.us
Baltimore Co./City	Don Forester	dforester@towson.edu
	Joel Snodgrass	jsnodgrass@towson.edu
Calvert	Andy Brown	brownaj@co.cal.md.us
Caroline	Scott Smith	scott.smith@maryland.gov
Carroll	David Smith	lacsmith12@comcast.net
	June Tveekrem	June@SouthernSpreadwing.com
Cecil	Jim White	jim@delawarenaturesociety.org
Charles	George Jett	gmjett@comcast.net
Dorchester	Lynn Davidson	lynn.davidson@maryland.gov
Frederick	Wayne Hildebrand	wayne.mdfrog@comcast.net
Garrett	Seth Metheny	seth.metheny@gmail.com
	Amo Oliverio	amonatureprogram@gmail.com
Harford	Bob Chance	chancetreefarm@aol.com
	Brian Goodman	brian@daggerpress.com
	Scott McDaniel	scott@suskywildlife.org
Howard	Sue Muller	smuller@howardcountymd.gov
Kent	Nate Nazdrowicz	spinifer@aol.com
Montgomery	Rachel Gauza	MARA.montgomerycounty@gmail.com
	Lance Benedict	lbenedict@yahoo.com
Prince George's	George Middendorf	gmiddendorf@howard.edu
	Mike Quinlan	mikemq41@verizon.net
	Tasha Foreman	tashamforeman@gmail.com
Queen Anne's	Glenn Therres	glenn.therres@maryland.gov
Somerset	Doug Ruby	deruby@umes.edu
St. Mary's	Kyle Rambo	kyle.rambo@navy.mil
Talbot	Scott Smith	scott.smith@maryland.gov
	Glenn Therres	glenn.therres@maryland.gov
Washington	Andrew Landsman	Andrew_Landsman@nps.gov
Wicomico	Ron Gutberlet	rlgutberlet@salisbury.edu
	Lance Biechele	ltb0076@yahoo.com
Worcester	Jim Rapp	dlitedirector@comcast.net
	Dave Wilson	dwilison@mdcoastalbays.org
	Roman Jesien	rjesien@mdcoastalbays.org

Contact Information & Resources

Additional Contact Information

Statewide Coordinator: Heather Cunningham hcunningham@marylandnature.org

Co-chairs of the MARA project

Glenn Therres, Maryland Department of Natural Resources, gtherres@dnr.state.md.us

Charles Davis, Natural History Society of Maryland, charliedavis1@verizon.net

David Smith, davids@coastal-resources.net

MARA Websites & Groups

Project Website

<http://www.marylandnature.org/mara>

<https://www.facebook.com/MDHerpAtlas>

Project Database

<https://webapps02.dnr.state.md.us/mara/default.aspx>

County Websites

Calvert:

<http://www.calvertparks.org/Herp%20Atlas/Herp%20Atlas%20Home/Herp%20Atlas%20Home2.html>

Carroll:

<http://southernspreadwing.com/herps/>

<http://www.facebook.com/CarrollCountyHerpAtlas>

Garrett:

<https://www.facebook.com/GarrettCountyHerpAtlas>

Harford:

<http://suskywildlife.org/>

<http://www.facebook.com/SuskyWildlife>

Howard:

<http://www.howardbirds.org/herpatlas/index-MARA.htm>

Lower Eastern Shore (Wicomico, Worcester, & Somerset)

<http://www.salisbury.edu/lowershoreherpatlas/>

<http://www.facebook.com/lowershoreherpatlas>

Montgomery:

<http://www.facebook.com/MARA.MontgomeryCounty>

Other Websites & Weblinks

NHSM Meetup Site:

<http://www.meetup.com/marylandnature>

Discover Maryland Herps (Maryland Department of Natural Resources)

http://www.dnr.state.md.us/wildlife/Plants_Wildlife/herps/index.asp