

DoD Partners in Amphibian and Reptile Conservation 2018 Annual Report



Northern Watersnake —Paul Block



Green Anole—Paul Block



Eastern Box Turtle -David Burkwal



Blue Ridge Two-lined Salamander -Kevin Stohlgren

The Department of Defense Partners in Amphibian and Reptile Conservation (DoD PARC) network is a tremendous example of what teamwork and partnerships can accomplish. Our network continues to serve as a model of excellence for the management and conservation of amphibians and reptiles on military lands, with 2018 being no exception. We thank all who have and who continue to contribute to our collective success.

2018 was another extremely productive year, and we are very proud of our many accomplishments. A summary of our most significant accomplishments for the year follows, as well as short biographies of our Representatives who work passionately to help you.

Network Growth

Using live snakes brought by VIPER (Virginians Interested in Protecting Every Reptile), DoD PARC conducted a snake safety and handling workshop in March 2018 at the National Military Fish and Wildlife Association Meeting in Norfolk, Virginia. Military natural resource managers learned all about these important species, including how to use tongs and hooks to safely hold and pick up live snakes.



Priya Nanjappa, PARC National States Coordinator (left), William Walls, Wildlife Management Institute (center), and Seth Berry, DoD PARC (right) demonstrate how to safely hold snakes. Pictures by Valerie Arkell



DoD PARC group members hold five snakes (two Northern Black Racers and three Eastern Ratsnakes, L-R) captured under a single piece of tin. Picture by Chris Petersen

DoD PARC held their first in-person Strategic Planning Meeting at Fort Indiantown Gap National Training Center, PA in May 2018. The purpose of the two-day meeting was to review implementation of the DoD PARC Strategic Plan, and to discuss a wide variety of amphibian and reptile conservation and management topics specific to supporting military readiness. The group also conducted an afternoon field survey, documenting 24 species of herpetofauna on this important National Guard site.

Habitat Conservation

In partnership with the U.S. Fish and Wildlife Service, we developed recommended Best Management Practices for the at-risk Gopher Frog. This document identifies proactive conservation and management strategies that can be implemented by military natural resource personnel to enhance Gopher Frog habitat and populations on military lands.



Gopher Frog (Picture by J.D. Willson)

Education and Outreach

Spring Peepers and the Department of Defense

The Spring Peeper (*Pseudacris crucifer*) is a common frog species on military lands. Its scientific species name "crucifer" is derived from the Latin word crucis, which means "cross-bearing". This refers to the cross-like pattern on the frog's back.

Description: Adults are typically $\frac{1}{4}$ to $\frac{1}{2}$ in (1.9 to 3.2 cm) in length. Spring Peepers are light brown, tan, rusty orange, gray, or olive on top. Dark brown lines are present across the hind limbs and between the eyes, and form the characteristic X-shaped mark across the back. The belly is plain cream or white. Toe pads are wider than the toes. Males have dark throats and are usually smaller and darker than the females.

Source: NatureServe

Range: The Spring Peeper's range extends from Ontario and Quebec south to northern Florida, and west to Manitoba, Minnesota, Iowa, eastern Kansas, Oklahoma, and eastern Texas.

Habitat: This species inhabits wooded areas, especially near wetland sites. It is particularly abundant in brushy secondary growth or cutover woodlots if they are close to wetlands. Breeding and egg-laying occur in small temporary or permanent freshwater wetlands such as ponds, marshes, ditches, and swamps, especially those with standing plants, sticks, or other debris.

Behavior: The species is mostly terrestrial and hides under leaf litter, logs, rocks, or other objects when inactive. Males produce a high "peep" call (usually at one-second intervals) among herbaceous vegetation adjacent to or in water. Females lay between 750-1300 eggs in small clusters. Spring Peepers can survive even if most of their bodies freeze during hibernation. This is possible because they produce an antifreeze-like substance called glycerol that prevents ice crystals from forming in their body tissues. They feed mainly of small insects such as ants, beetles, and flies, as well as spiders, and may help to control certain insect populations.

Military Interactions: The Spring Peeper is a very common frog species on DoD lands. They are more often heard vocalizing on rainy nights than encountered.

Conservation Status: The Spring Peeper is not federally- or state-listed as endangered or threatened. This species has a NatureServe conservation ranking of G5-Secure and IUCN Red List category as Least Concern.

Threats/Planning Considerations: Threats to this species include destruction/alteration of wetland habitats and chytrid fungus. Military natural resources managers should try to conserve a buffer of upland habitats that surround known breeding wetland sites.

Department of Defense Partners in Amphibian and Reptile Conservation: <http://www.dodpartnersinamphibianandreptileconservation.com/PARC-Resources.html>

Confirmed	Potential
Confirmed present on 120 military properties (17 Air Force, 63 Army, 6 Marine Corps, and 34 Navy).	Up to an additional 73 military properties (17 Air Force, 28 Army, 1 Marine Corps, and 26 Navy).

Educating military and civilian personnel about the herpetofauna on the military bases where they work and live is vital to successful species conservation. This year, we developed 45 amphibian and reptile species fact sheets, including the 30 most common herpetofaunal species on military lands. The purpose of these fact sheets is to educate military personnel about the species on the properties they manage.

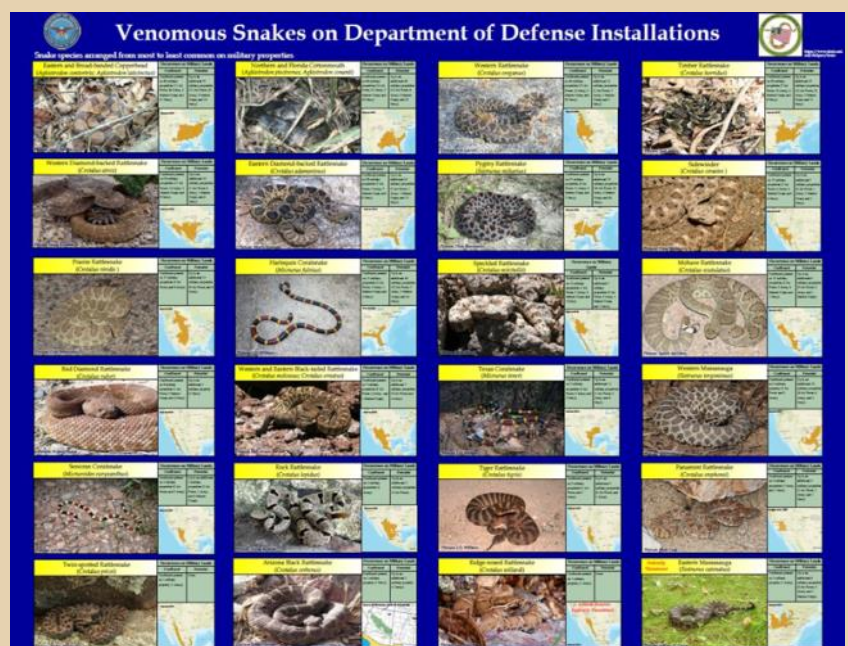
All of the fact sheets can be downloaded at:

<https://www.denix.osd.mil/dodparc/parc-resources/>

We developed an educational poster of the 26 species of venomous snakes confirmed present on North American DoD lands. The poster contains each species picture, range map, and the number of military sites where each species is confirmed present.

The poster can be downloaded at:

<https://www.denix.osd.mil/dodparc/parc-resources/education-and-outreach/venomous-snakes-on-dod-installations-poster>



HerpMapper

HerpMapper is a cooperative project, designed to gather and share information about reptile and amphibian observations across the planet. As a result of our partnership with HerpMapper, 3,300 records have already been collected on military lands! Those with access can view record occurrences within the property boundaries of military installations in real time. We will use HerpMapper records as a tool to keep our herpetofauna species lists up to date. We encourage you to sign up online (<https://www.herpmapper.org>) and download the mobile mapper to your smartphone. We look forward to seeing the very interesting herpetofauna biodiversity records you add to HerpMapper.



Spotted Salamander—Edwin Sanchez



Salamander eggs—Noah Charney

Species Conservation

Salamander Chytrid Fungus Risk Assessment: In partnership with the USGS National Wildlife Health Center, we performed a risk assessment of the salamander fungal pathogen *Batrachochytrium salamandrivorans* (otherwise known as Bsal) on over 200 military installations. The goal was to determine which military installations may be at risk to Bsal introduction, improve the potential response to an outbreak, and help prioritize relevant actions on military installations if this fungal pathogen is introduced into the U.S. DoD has been engaged in the Bsal threat since 2015.

OCONUS Herpetofauna Inventory: DoD PARC developed the first ever inventory of herpetofauna on overseas military installations, including those in Europe, Southwest Asia, Africa and Micronesia. This inventory (which includes venomous species) will provide important data on the diversity of herpetofauna on military sites outside of the continental U.S. and assist with avoiding potential encounters with venomous reptiles. We look forward to adding more installations to our inventory in 2019.

Snake Fungal Disease Survey: Utilizing a "citizen science" approach to collect data, 80 military installation personnel were provided field materials necessary to conduct sampling for Snake Fungal Disease (SFD) in 2018. SFD is negatively impacting many snake species in the U.S., similar to those being experienced by bat and amphibian species as a result of White Nose Syndrome and Chytrid fungus. We will provide participating installations results from the laboratory analysis from collected swabs in early 2019.



Western Pond Turtle – picture by Chuck Carroll



Spotted Turtle – picture by Paul Block



Striped Newt-picture by Dirk J. Stevenson

Partnerships

Partnership development by DoD PARC group members in 2018 included participating in projects that sought to prevent the federal-listing of several at-risk herp species including the Flat-tailed Horned Lizard, Gopher Tortoise, Gopher Frog, Striped Newt, Southern Hog-nosed Snake, Florida Pine Snake, Spotted Turtle, Wood Turtle, Northern Red-bellied Turtle, Blanding's Turtle, Southwestern Pond Turtle, and Northwestern Pond Turtle. With federal, state, and other partners, we helped assess the statuses of these 12 at-risk species to inform where and how to invest conservation resources.

Publication

In December 2018 the journal, Herpetological Conservation and Biology, published [*Amphibians and Reptiles of United States Department of Defense Installations*](#). This publication was truly a team effort and could not have been completed without the dedication, enthusiasm and persistence of our DoD PARC network members and partners. The DoD is the first federal agency to complete an agency-wide inventory of herpetofauna.

Photo Website (<https://dodparcphotolibrary.shutterfly.com/>)

This photo website serves as a platform to share pictures of herpetofauna and their habitats for use in presentations, Integrated Natural Resources Management Plans (INRMPs), posters, pamphlets, fact sheets, etc. Group members have added more than 2,000 pictures to the website – including photos of more than half of all amphibian and reptile species found in the U.S. Our goal is to get pictures of all the amphibians and reptiles confirmed present on military lands. So, keep taking and submitting photos!



Eastern Skink-Todd Pierson



Eastern Corn Snake—J.D. Willson

DoD Legacy Program Support

We reviewed and provided technical expertise on herpetofauna-related proposals to the DoD Legacy Resource Management Program. Our inputs are used to help the program prioritize project funding so DoD can find the highest priority efforts and maximize return on its investments.

DoD Natural Resources Program Support

This year we participated in the bimonthly DoD Natural Resources Conservation Committee meetings, providing regular updates about our herpetofauna activities. We also contributed four articles to the DoD Natural Resources Program's newsletter, *Natural Selections*. These opportunities increase communication and partnerships among the DoD community; promote awareness, involvement, and coordination both within DoD and among national, regional, and local experts; and help DoD achieve mission and stewardship goals.

Looking Ahead

2019 is DoD PARC's 10th Anniversary!! We plan to celebrate this milestone by developing many new products in addition to updating some of our previous deliverables (Scope of Work Template; INRMP Guidance document; Conservation Status Summary). New products will include more recommended best management practices reports for at-risk species on DoD lands; a video on how to tell the difference between venomous and non-venomous snakes; and short biographies highlighting the careers of military veterans who have made significant contributions to the field of herpetology.



**Thank you again for all your hard work this year.
We look forward to your continued support in 2019!**



Broad-headed Skink—Paul Block

Short Biographies of DoD PARC Representatives



Name: Chris Petersen

DoD PARC Position: National Representative

Job Title: Senior Natural Resources Specialist

DoD Service: Navy (Naval Facilities Engineering Command Atlantic)

Address: 6506 Hampton Blvd. Norfolk Virginia 23508

Contact Information: 757-322-4560; chris.petersen@navy.mil

Herpetofauna Expertise: radio telemetry; pitviper ecology; development of scopes of work and government cost estimates for herpetofauna surveys; field surveys and monitoring; development of educational outreach materials; acoustic loggers.



Name: Rob Lovich

DoD PARC Position: National Technical Representative

Job Title: Senior Natural Resources Specialist

DoD Service: Navy (Naval Facilities Engineering Command Southwest)

Address: 1220 Pacific Highway, San Diego, CA 92132

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Herpetofauna Expertise: Inventory and monitoring design; natural history, evolution, and molecular systematics of herpetofauna; pathogen/disease monitoring.



Name: Valerie Arkell

DoD PARC Position: DoD PARC Representative

Job Title: Natural Resources Specialist

DoD Service: Oregon Army National Guard

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vaerie.j.arkell.nfg@mail.mil

Herpetofauna Expertise: National Military Fish and Wildlife Association herpetology working group co-chair; herpetofauna surveys; snake educational outreach.



Name: Seth Berry

DoD PARC Position: DoD PARC Representative

Job Title: Natural Resources Specialist

DoD Service: Navy (NAVFAC Washington PWD NSA South Potomac)

Address: 3972 Ward Road, Suite 101, Indian Head, MD 20640

Contact Information: 301-744-2273; seth.m.berry@navy.mil

Herpetofauna Expertise: wildlife photography; field surveys and monitoring; development of educational outreach materials; habitat management/creation.



Name: Paul Block

DoD PARC Position: DoD PARC Representative

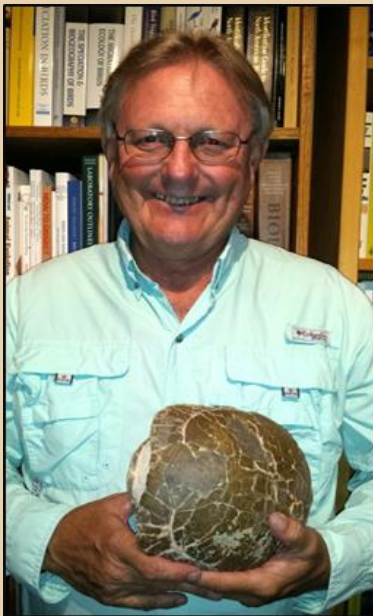
Job Title: Senior Natural Resources Specialist

DoD Service: Navy (Naval Facilities Engineering Command Atlantic)

Address: 6506 Hampton Blvd. Norfolk Virginia 23508

Contact Information: 757-322-8499; paul.block@navy.mil

Herpetofauna Expertise: wildlife photograph; field surveys and monitoring; scope of work and government cost estimate development for herpetofauna surveys; and development of educational outreach materials.



Name: Jim Castle

DoD PARC Position: DoD PARC Representative

Job Title: Wildlife Biologist

DoD Service: U.S. Army Corps of Engineers, Walla Walla District

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James.H.Castle@usace.army.mil

Herpetofauna Expertise: modelling and research design of herpetofauna surveys; scope of work and government cost estimate development for herpetofauna surveys; field surveys and monitoring; education and outreach; northwest herpetofauna systematics and technical reviews.



Name: John Himes

DoD PARC Position: DoD PARC Representative

Job Title: Integrated Training Area Management Coordinator

DoD Service: Louisiana National Guard (Camp Beauregard, Camp Minden, Camp Villere)

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Herpetofauna Expertise: life history and ecology; field surveys and monitoring; radio telemetry; education and outreach; habitat restoration and management; taxonomy; permitting and other regulations; study design development and editorial reviews.



Name: Brett Degregorio
DoD PARC Position: DoD PARC Representative
Job Title: Wildlife Biologist
DoD Service: Army Corps of Engineers
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Contact Information: brett.a.degregorio.civ@mail.mil
Herpetofauna Expertise: Massasauga rattlesnake ecology;
translocation of herpetofauna, spotted turtle population dynamics



Name: Dave McNaughton
DoD PARC Position: DoD PARC Representative
Job Title: Assistant Wildlife Program Manager
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Gap NGTC, PA)
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Herpetofauna Expertise: field ecology; inventory and
monitoring; radio telemetry; disease monitoring; habitat; turtles; fire.



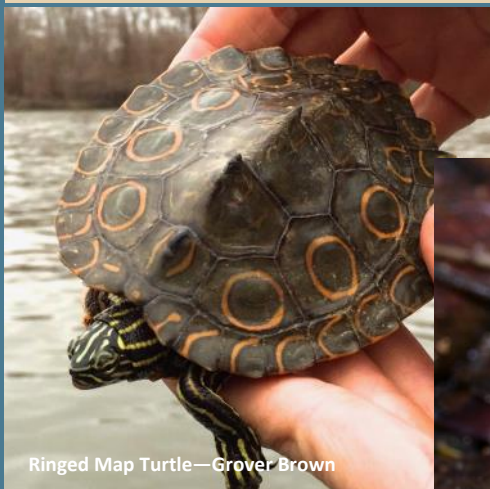
Name: Mike Ravesi
DoD PARC Position: DoD PARC Representative
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-344-6175
Herpetofauna Expertise: spatial ecology; habitat
management; disease monitoring; thermal ecology;
Massasauga rattlesnake ecology.



Name: Julie Robbins
DoD PARC Position: Marine Corps Representative
Job Title: Natural Resources Manager
DoD Service: Marine Corps
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Herpetofauna Expertise: habitat management of southern pine ecosystems; development of educational outreach materials.



Name: Ian Trefry
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Herpetofauna Expertise: scope of work and government cost estimate development for herpetofauna surveys; field surveys and monitoring; education and outreach; northeast herpetofauna ecology.



Ringed Map Turtle—Grover Brown



Green Toad—J.D. Willson



Reticulated Flatwoods Salamander—Pierson Hill