



Western Black-tailed Rattlesnake—Paul Block

DoD Partners in Amphibian and Reptile Conservation 2021 Year in Review



Introduction

On behalf of Department of Defense Partners in Amphibian and Reptile Conservation (DoD PARC) network leadership, we wish you a Happy New Year! 2021 continued to be a challenging year for all of us, given the perseverance of the COVID-19 pandemic's impact on our personal and professional lives. Working remotely, attending virtual meetings, and reducing our travel has become the norm. In the face of this adversity, DoD PARC continued to support the mission, our members, and the crucial work we do to manage and conserve amphibians and reptiles on military lands. A summary of our most significant accomplishments for 2021 follows, as well as short biographies of our DoD PARC representatives, who work enthusiastically to assist you. We are hopeful for a happy, healthier, and downright normal new year and wish you the very best in 2022!



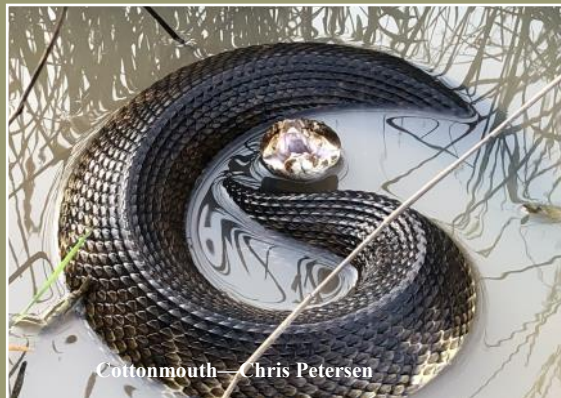
Ringed Salamander—Jeff Briggler



Ornate Chorus Frog—John D. Willson



Green Anole—Paul Block



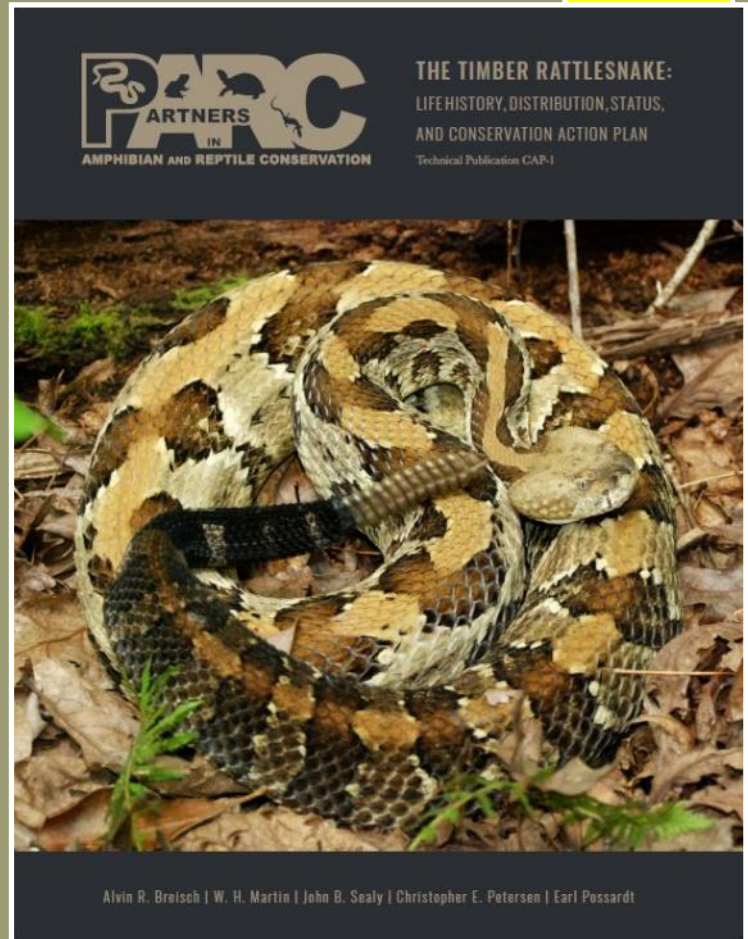
Cottonmouth—Chris Petersen

DoD PARC Mission Statement

In support of military readiness, DoD PARC strives to sustain amphibian and reptile populations and habitats through proactive environmental stewardship, conservation, outreach, and partnerships.

Timber Rattlesnake Plan

DoD PARC was an instrumental collaborator in the creation of *The Timber Rattlesnake: Life History, Distribution, Status, and Conservation Action Plan* in 2021. The information provided in the 472-page plan can serve as a reference for military natural resource managers to enable them to develop science-based management and conservation actions for Timber Rattlesnake populations on their installations. The Timber Rattlesnake is state endangered or threatened in 13 states and confirmed present on 41 military sites. We distributed 35 free copies of the plan to military sites that have this species confirmed present. We have just a few remaining copies of the book to give away. If you would like a free copy, please contact us.



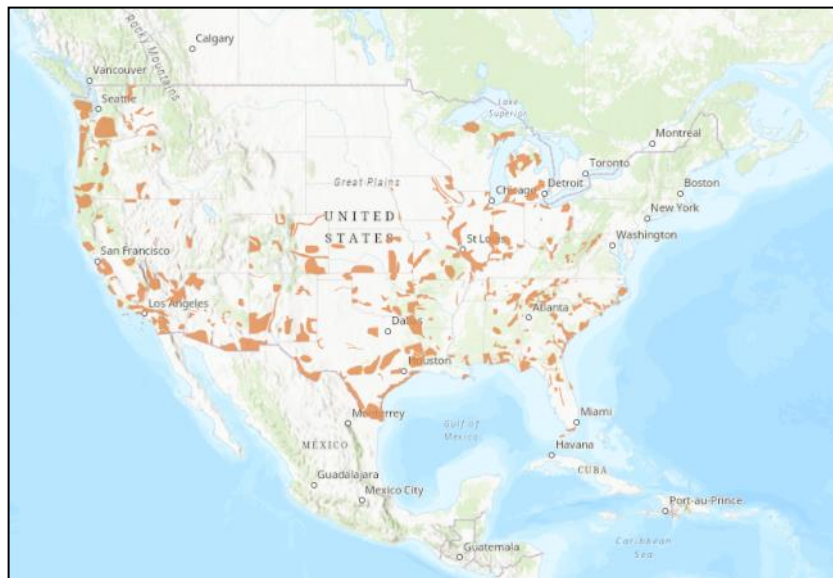
Bioacoustic Recorders

To help DoD natural resource managers document frog and toad species presence on their installations, we loaned bioacoustic loggers (sometimes called “frog loggers”) to three military sites in 2021 (Naval Air Station Pensacola, Fort Carson, Moody Air Force Base). Over 600 hours of data were recorded, generally from spring to late summer at these installations. DoD PARC analyzed these data (at no cost) and provided the results to the participating installations for incorporation into their respective Integrated Natural Resources Management Plans (INRMPs). If you would like to borrow a frog logger in 2022, please contact us.



PARCA Report

Working in partnership with the Amphibian and Reptile Conservancy and the national PARC network, we developed a report summarizing the newly developed Priority Amphibian and Reptile Conservation Areas (PARCAs) that overlap or are in close proximity to military sites. PARCAs are similar to



Important Bird Areas (IBAs) developed for birds. In total, 317 PARCAs have been identified in 26 U.S. states. Of these PARCAs, 68, or 21%, partially or fully overlap with 103 DoD properties, indicating the importance of DoD installations to herpetofaunal conservation and the PARCA effort. Download the report today to see if your installation is near a PARCA:

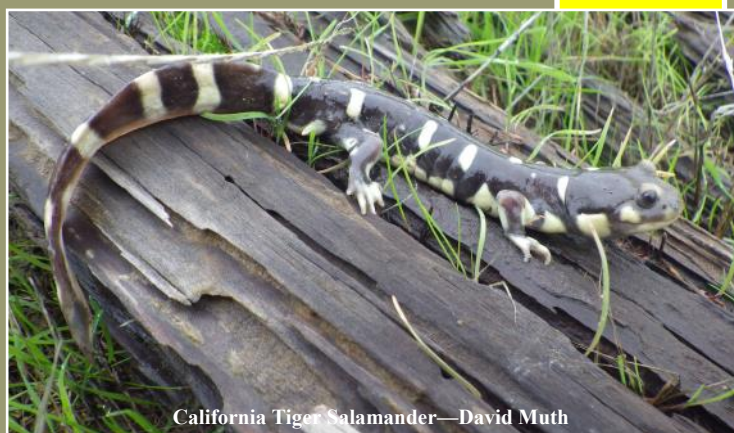
[https://www.denix.osd.mil/dodparc/parc-resources/dod-parc-reports/summary-identified-parcas/DoD_PARCA_Final_Report_March%](https://www.denix.osd.mil/dodparc/parc-resources/dod-parc-reports/summary-identified-parcas/DoD_PARCA_Final_Report_March%202021.pdf)

Podcasts

In June 2021, DoD PARC released our third podcast titled “**The What For – Keeping Common Species Common.**” The focus of this episode was on federally-listed and at-risk amphibians and reptiles on DoD lands, species recovery, and keeping common species common. Discussion topics also include DoD PARC’s products, tools, and partnerships to help prevent at-risk species from becoming listed under the Endangered Species Act. Check out the podcast, which has received over 70 views: <https://youtu.be/HQ9BQR7MloE>



Eastern Indigo Snake—Paul Block



California Tiger Salamander—David Muth

2021 Snake Fungal Disease Survey



Building on the successes of the 2018 DoD PARC Snake Fungal Disease (SFD) survey and resulting peer-reviewed [publication](#), DoD PARC conducted additional sampling for this disease on military sites in 2021. Using the same approach as the first survey, we used a "citizen science" methodology for the 2021 data collection effort. Military natural resource managers and other interested parties volunteered to collect swabs from snakes on both CONUS and OCONUS installations, and sent them to our cooperator at the University of Illinois for analyses. All of the supplies needed for collecting field data and the analysis of the samples were provided at no cost. To date, we have received 1,146 swabs from 41 installations in 29 states! If you are interested in participating in the study in 2022, please contact us.

Spotted Turtle Survey

The Spotted Turtle is one of DoD's Mission Sensitive Species. Despite its large range, the species has declined across the eastern U.S. over the past decade and has been petitioned for federal listing. In cooperation with the Smithsonian Institution, DoD PARC conducted surveys on nine military sites (Fort A.P Hill; Fort Belvoir; Fort Stewart; Naval Support Activity Northwest Annex; Marine Corps Base Quantico; Joint Base McGuire-Dix-Lakehurst; Camp Edwards; Camp Curtis; Fort Indiantown Gap) in 2021 to determine its distribution, abundance, and habitat use. These data will be incorporated into a species status assessment that is being developed by the U.S. Fish and Wildlife Service. Up-to-date knowledge of Spotted Turtles on installations will allow military natural resource personnel to make informed recommendations for improving INRMPs, while simultaneously promoting mission readiness by supporting Spotted Turtle conservation and habitat management.



Spotted Turtle—Paul Block



Spotted Turtle—Beth Berry



Spotted Turtle—Chris Petersen

Species Profile Video Series

Species profile videos are DoD PARC's newest effort to inform and educate base residents and natural resource managers of the exciting amphibian and reptile species that may be encountered in the places they live and work. These videos are approximately three to four minutes in duration, and contain narration, pictures, and footage of a particular species on a military site. We developed nine videos this year, which are posted both on our DoD PARC YouTube Channel (<https://m.youtube.com/channel/UCwcQ84H1oEHerSRFbK4DetA>) and milTube (links below). In total, the videos have collectively had approximately 1,500 views!

- ◆ Episode 1 – [Cottonmouth](#)
- ◆ Episode 2 – [Copperhead](#)
- ◆ Episode 3 – [Spotted Turtle](#)
- ◆ Episode 4 – [Eastern Box Turtle](#)
- ◆ Episode 5 – [Rough Greensnake](#)
- ◆ Episode 6 – [Eastern Hog-nosed Snake](#)
- ◆ Episode 7 – [Southern Two-lined Salamander](#)
- ◆ Episode 8 – [Dekay's Brownsnake](#)
- ◆ Episode 9 – [Eastern Black Ratsnake](#)



Cottonmouth—Chris Petersen



Copperhead—Chris Petersen



Spotted Turtle—Paul Block



Eastern Ratsnake—Paul Block



Eastern Box Turtle—Paul Block



Dekay's Brownsnake—Chris Petersen



Rough Greensnake—Seth Berry



Southern Two-lined Salamander—Jonathan Mays



Eastern Hog-nosed Snake—Seth Berry

Western Pond Turtle MOU



Western Pond Turtle—Rob Lovich

DoD PARC has coordinated signatures from most of the Military Services on the Western Pond Turtle MOU, and is working with those Services and DoD to begin to implement some of the actions referenced therein. This is a big step forward for this imperiled species, and we are joining a number of other federal, state, and non-governmental stakeholders to manage and conserve the species proactively. Look for even more actions for this species resulting from this important partnership in 2022!

Best Management Practices Documents

DoD PARC and the U.S. Fish and Wildlife Service jointly developed Best Management Practices (BMPs) for the Alligator Snapping Turtle in 2021 and are in the process of developing BMPs for the Gopher Tortoise, Blanding's Turtle, Western Spadefoot, and Florida Pinesnake (to be completed in 2022). The management practices described in these documents are intended to serve as guidelines that DoD resource managers can use to plan, prioritize, and implement conservation and management actions. Previously developed BMPs for the Spotted Turtle, Wood Turtle, Western Pond Turtle, Red-bellied Cooter, Gopher Frog, and Eastern Diamond-backed Rattlesnake can be downloaded at: <https://www.denix.osd.mil/dodparc/parc-resources/>.



Alligator Snapping Turtle—Jim Godwin



Gopher Tortoise—Paul Block



Western Spadefoot—Rob Lovich

Photo Website



Blue Spotted Salamander—Robert Brodman

Our [photographic website](#) serves as a platform to share pictures of herpetofauna and their habitats for use in presentations, natural resource management plans, posters, pamphlets, fact sheets, and more. Network members added several dozen pictures to the website in 2021, bringing the total number of pictures on the website to nearly 3,700. Our goal is to feature pictures of every amphibian and reptile species confirmed present on military lands. For access to the website, email paul.block@navy.mil.

NMFWA 2021

DoD PARC conducted two live presentations during the virtual 2021 National Military Fish and Wildlife Association (NMFWA) workshop to approximately 150 participants. In the first presentation, we provided an update to recently completed and ongoing research projects, products, and initiatives of our network. The second presentation provided an overview of the DoD PARC Herpetofaunal Database, a DoD-wide comprehensive inventory of amphibians and reptiles on 507 military properties. Although conducting the presentations virtually was enjoyable, we look forward to presenting to you in-person once again at the 2022 NMFWA workshop in Spokane, Washington.



Introduction to the DoD PARC Herpetofaunal Database



Department of Defense Partners in Amphibian and Reptile Conservation
Technical Presentation

National Military Fish and Wildlife Association Workshop 2021

DoD PARC Annual In-person Meeting

We held our third in-person Strategic Planning Meeting August 2-5, 2021, at the Fort Huachuca Military Reservation in southern Arizona. The purpose of the meeting was to review the DoD PARC Strategic Plan and discuss a wide variety of amphibian and reptile conservation and management topics specific to supporting military readiness. The group also conducted a herpetofaunal inventory of Fort Huachuca, confirming the presence of 19 species, two of which (Mediterranean Gecko and Zebra-tailed Lizard) were the first documented observations of these species on the installation! Thanks to Fort Huachuca for hosting us. Let us know if you would be interested in hosting our annual meeting in 2022 or beyond.



Col. Jarrod P. Moreland (center) with Rob Lovich (left) and Chris Petersen (right).



Rock Rattlesnake—Paul Block

Photo Contest

DoD PARC sponsored our second annual photo contest in July 2021 to help keep our members in touch with our network and the species they love. We received many high-quality pictures this year and are very thankful to all that participated in the contest. The winners were:

- ◆ **Best Reptile (non-snake):** Eastern Collared Lizard; U.S. Army Corps of Engineers (Table Rock Lake Project Office); Photographer: Jennifer Mullins
- ◆ **Best Amphibian:** Slimy Salamander; Fort Leonard Wood; Photographer: Kenton Lohraff
- ◆ **Best Snake:** Eastern Hog-nosed Snake; Joint Base McGuire-Dix-Lakehurst; Photographer: Robert Moyer

Winning Photos



Looking Ahead

We have plans for many more great products in 2022, including more podcasts, BMPs for mission sensitive species, species profile videos and much more! We will also be loaning out more bioacoustics loggers and continuing our surveys for Snake Fungal Disease. **Thank you again for all your hard work this year. We look forward to your continued support in 2022!**



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 Systems Command Atlantic)
Address: 6506 Hampton Blvd., Norfolk, VA 23508;
Contact Information: 757-322-4560
Christopher.e.petersen4.civ@us.navy.mil
Herpetofauna Expertise: radio-telemetry, pitviper ecology, development of scopes of work/government cost estimates for herpetofauna surveys, inventory and monitoring, 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 Systems Command Southwest)
Address: 750 Pacific Hwy., San Diego, CA 92132
Contact Information: 619-705-5673;
robert.lovich@navy.mil
Herpetofauna Expertise: inventory and monitoring design; natural history, evolution, and molecular systematics of herpetofauna; pathogen/disease monitoring.



Name: Chris Frauenhofer
DoD PARC Position: DoD PARC Representative
Job Title: Wildlife Biologist
DoD Service: Utah Army National Guard
Address: 17800 Camp Williams Dr. Bluffdale, UT 84065
Contact Information: 716-479-8839;
cfrauenhofer@utah.gov
Herpetofauna Expertise: inventory and monitoring, telemetry, rattlesnakes, wetland/riparian habitat and herpetofauna, great basin & mojave desert habitat and herpetofauna.



Name: Seth Berry
DoD PARC Position: DoD PARC Representative
Job Title: Natural Resources Specialist
DoD Service: Navy (Naval Support Facility Indian Head)
Address: 3972 Ward Rd., Suite 101, Indian Head, MD 20640
Contact Information: 301-744-2273;
seth.m.berry.civ@us.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 Systems Command Atlantic)
Address: 6506 Hampton Blvd., Norfolk, VA 23508
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paul.a.block6.civ@us.navy.mil
Herpetofauna Expertise: wildlife photography, field surveys and monitoring, scope of work and government cost estimate development for herpetofauna surveys, development of educational outreach materials.



Name: Kenneth Erwin
DoD PARC Position: DoD PARC Representative
Job Title: Wildlife Biologist
DoD Service: Marine Corps. Marine Corps Base Quantico
Address: 3049 Bordelon St., Quantico, VA 22134
Contact Information: 703-432-6777;
kenneth.j.erwin@usmc.mil
Herpetofauna Expertise: Long-term monitoring of salamanders, drift fence surveys with emphasis on Flatwood Salamander mark/recapture, Gopher Tortoise burrow inventory/monitoring, Ambystomatid surveys, general herpetofaunal inventory and monitoring, acoustic data loggers.



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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Contact Information: 318-290-6306; john.g.himes3.nfg@mail.mil
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: Dan Leavitt
DoD PARC Position: DoD PARC Representative
Job Title: Natural Resources Program Lead
DoD Service: Navy (Naval Facilities Engineering Systems Command Southwest) - Dan has taken a new position with the U.S. Fish and Wildlife Service
Herpetofauna Expertise: conservation biology, population ecology, statistics and modeling, study design, inventory and monitoring, desert herpetofauna.



Name: Dave McNaughton
DoD PARC Position: DoD PARC Representative
Job Title: Natural Resource Specialist
DoD Service: Navy (Naval Facilities Engineering Systems Command Southwest)
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Contact Information: 619-705-5569;
david.k.mcnaughton2.civ@us.navy.mil
Herpetofauna Expertise: field ecology, inventory and monitoring, radio telemetry, disease monitoring, turtles, fire ecology.



Name: Ian Trefry
DoD PARC Position: DoD PARC Representative
Job Title: Natural Resource Manager
DoD Service: Navy (Naval Facilities Engineering Systems Command Public Works Department Maine)
Address: Portsmouth Naval Shipyard, Bldg 59, Third Floor, Portsmouth, NH 03804
Contact Information: 207-438-4362;
ian.trefry@navy.mil
Herpetofauna Expertise: scope of work and government cost estimate development for herpetofauna surveys, field surveys and monitoring, education and outreach, northeast herpetofauna ecology.