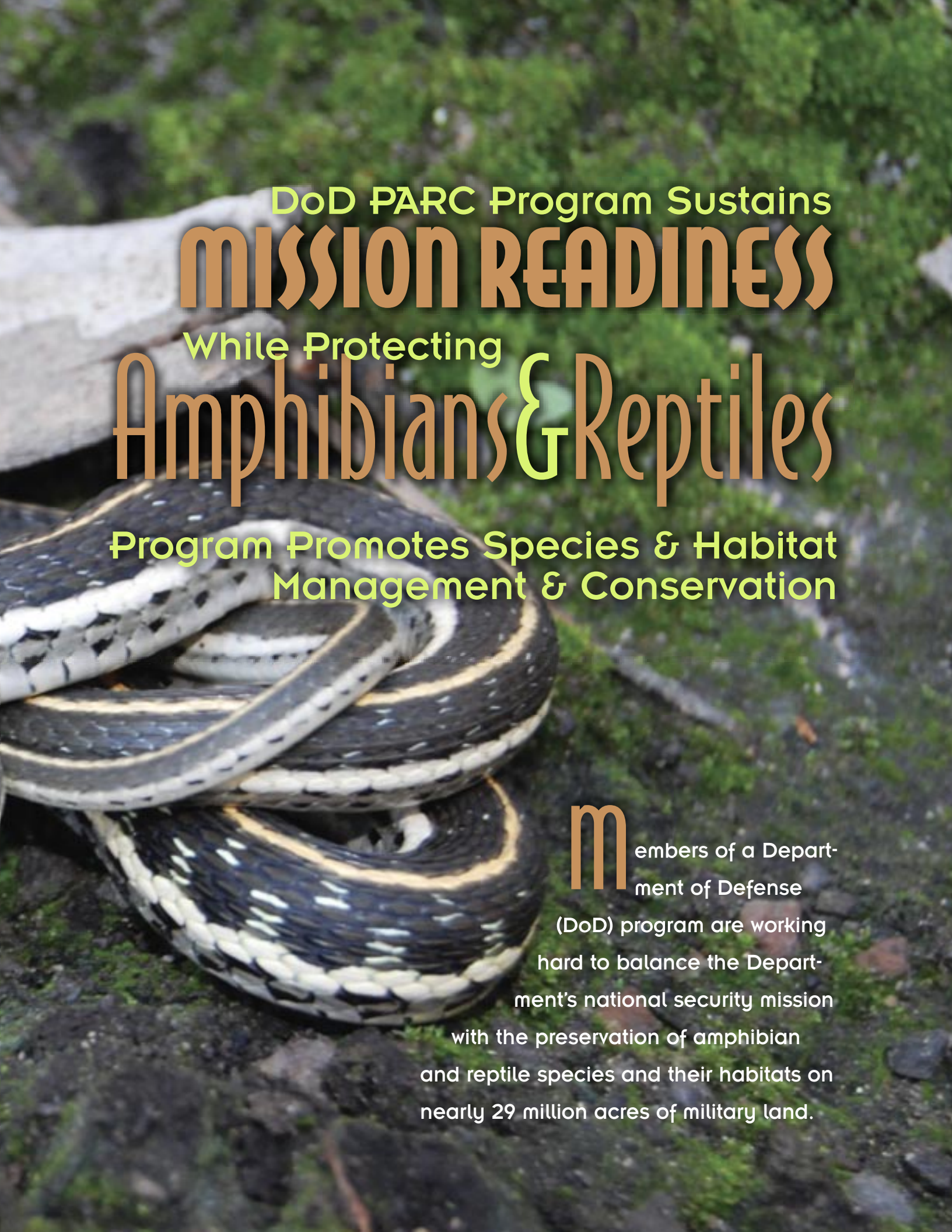
Black-necked Garter Snakes, found in secure populations on military lands, are among the species being addressed by members of the DoD PARC program.
Robert Lovich



DoD PARC Program Sustains MISSION READINESS While Protecting Amphibians & Reptiles

Program Promotes Species & Habitat Management & Conservation

Members of a Department of Defense (DoD) program are working hard to balance the Department's national security mission with the preservation of amphibian and reptile species and their habitats on nearly 29 million acres of military land.

DoD PARC is dedicated to sustaining the nation's mission readiness while managing, conserving, & studying amphibians & reptiles & their habitats.

Now led by Robert Lovich and Chris Petersen of the Naval Facilities Engineering Command (NAVFAC), the Department of Defense Partners in Amphibian and Reptile Conservation (DoD PARC) program was originally formed in 2009 to provide leadership, guidance, and support for the conservation and management of amphibians and reptiles on military lands. An open-membership organization, DoD PARC is dedicated to sustaining the nation's mission readiness while managing, conserving, and studying amphibians and reptiles and their habitats, especially with respect to military operations and land management practices.

DOD PARC MISSION & PROGRAM GOALS

In support of military readiness, the DoD PARC strives to sustain amphibian and reptile populations and their habitats through proactive management, conservation, stewardship, outreach, and partnerships. To achieve this mission, the program has established the following goals:

1. Support the military mission by managing amphibians and reptiles.
2. Reduce population declines of common and at-risk species, thus avoiding or minimizing the need to Endangered Species Act-listed species and designate critical habitats that could impact military missions.
3. Provide strategies, tools, and information for amphibian and reptile protection, conservation, and consideration to be incorporated into existing natural resources and land management programs.
4. Provide sound, science-based management and conservation guidelines, priorities, and objectives for reptiles and amphibians residing on DoD installations.
5. Promote communication and coordination among national and local experts to achieve DoD mission and stewardship goals.
6. Provide outreach tools to the military community, the general public, natural resources managers, and non-governmental organization partners to promote collaborative efforts and increase understanding of mission and conservation compatibility.

This Ensatina Salamander was discovered under a fallen log at Naval Radio Station Jim Creek.
Paul Block

This Northwestern Garter Snake was observed during an amphibian and reptile species survey at Naval Radio Station Jim Creek.

Conserving and caring for these species helps ensure unrestricted access to essential military training and testing lands by avoiding species-protection related restrictions.

AMPHIBIANS & REPTILES

Amphibians (frogs, toads, salamanders, and caecilians) and reptiles (snakes, lizards, land and sea turtles, crocodilians, and tuataras) represent ancient groups of vertebrates that have existed for 400 million years. Although they are ancient and relatively poorly studied, amphibians and reptiles account for a considerable portion of the earth's biodiversity with approximately 17,000 species worldwide.

The nearly 29 million acres of DoD lands and waters provide significant habitat for numerous species and populations of amphibians and reptiles. For the DoD, these species represent many things—a rich legacy of America's natural and cultural heritage, fundamental components of robust ecosystems, and indicators of global ecological balance. Conserving and caring for these species helps ensure unrestricted access to essential military training and testing lands by avoiding species-protection related restrictions. Even as early as 1775, the United States military recognized the importance of reptiles when the First Continental Marines used the Gadsden Flag depicting a rattlesnake alongside "Don't Tread on Me" as their motto flag.

At present, amphibians and reptiles are experiencing unprecedented declines. Globally, approximately 20 percent of all amphibians and nearly 50 percent of all turtles are threatened with extinction. In fact, amphibians are declining at the fastest rate of any organisms since the extinction of the dinosaurs. At present, 30 of the 59 species of amphibians and reptiles listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS), and 19 additional species considered as species-at-risk for listing can be found on DoD lands. The management of these listed reptiles and amphibians is already a significant part of the natural resource management on military lands. DoD expenditures from 1991–2011 included approximately $15 million on the conservation and management of listed amphibian species and $128 million on listed reptile species.

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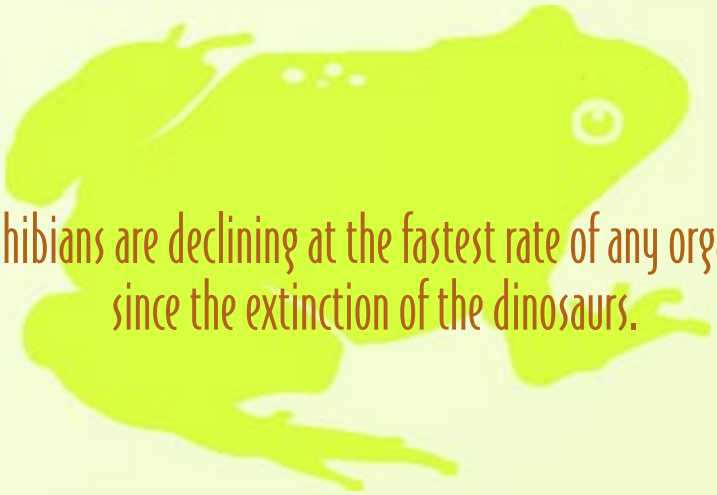
DoD lands support the populations of many interesting species of amphibians and reptiles including the Reef Gecko at Guantanamo Bay, Cuba.
Chris Petersen

Gadsden Flag depicting a rattlesnake alongside "Don't Tread on Me."

A common species on many military installations in the eastern United States, the American Toad is relatively large and commonly encountered species in wildlands and along the urban-interface.

Robert Lovich

The military has contributed valuable support for the Texas Horned Lizard, resulting in new scientific discoveries about its movements and ecology.
Robert Lovich



Amphibians are declining at the fastest rate of any organisms since the extinction of the dinosaurs.

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DOD PARC BENEFITS TO THE MILITARY MISSION

The DoD PARC program enhances military readiness by promoting healthy landscapes to support long-term military testing and training requirements. In addition, the program increases the effectiveness of resource management on DoD lands by developing proactive, science-based conservation and management strategies and tools. Additional benefits to the military mission include supporting ecosystem-based management, and increasing communication, information, and partnerships within and outside the DoD.

The program has made significant progress on many fronts, including growing the program's membership to more than 150 members. These members have helped DoD PARC achieve the following goals within the program's draft action plan.

Updating Species Lists

DoD PARC members have been updating amphibian and reptile species lists for the approximately 80 Navy installations that have Integrated Natural Resource Management Plans (INRMP). To date, Navy installations within the NAVFAC Field Engineering Command Washington, Mid-Atlantic, Mid-West, and Northwest areas of responsibility have been updated. Once all the updated species lists are completed, they will be entered into a database that will be stored on the Navy Environmental Portal (at https://eprportal.cnic.navy.mil/zeprwebnet/logon.aspx). The database will serve to fill numerous needs in the community. Many of our bases lack an accurate and up-to-date list of amphibian and reptile species found therein. With data calls, INRMP updates, and other relevant planning documents needed to support our projects and missions, it is essential that we have the most accurate species occurrence data on which to base our natural resource management decisions.

Developing a Web Resource

DoD PARC members are also developing what has become a very popular website (at http://dodparcphotolibrary.shutterfly.com).

RIGHT: Chris Petersen has been helping the Toledo Zoo conduct a study of the habitat use and movement patterns of the Cuban Boa (*Epicrates angulifer*) at Naval Station Guantanamo Bay.

BELOW: Robert Lovich holds a Texas Horned Lizard (*Phrynosoma cornutum*) while instructing a field course in herpetology near Animas, New Mexico.

Military lands in southern Arizona protect many mountain species including the Rock Rattlesnake.
Robert Lovich

The results of this study will help to control the spread of dangerous pathogens on the DoD landscape.

The website's purpose is to promote the free exchange of amphibian and reptile images, literature, reports, and publications with DoD biologists, environmental planners, outreach publishers, and others. The website contains links to other informative amphibian and reptile sites, an events calendar, and discussion forums for members to use in communicating across the conservation community. With nearly 600 images of 50 species from 40 DoD facilities, the website has become a "one-stop-shop" for high quality amphibian and reptile imagery. Visit the website to request membership.

Initiating a Web-based Lecture Series

The DoD PARC program initiated a monthly Web-based lecture series in early 2013 that members are able to join by using Defense Connect Online (DCO). Lectures are conducted by DoD and contractor biologists and herpetologists. The goal is to help members stay connected and keep up with the most recent scientific herpetological studies and news. (See http://dodparcphotolibrary.shutterfly.com for lecture topics and dates.)

Conducting Disease Surveys

The DoD PARC program conducted amphibian disease surveys at 30 military installations in 2009 and 2011 to gather baseline data on the general health of amphibians on military lands, and provide insight into their vulnerabilities from disease. Notably, the surveys documented the occurrence of the *chytrid fungus Batrachochytrium dendrobatidis* (Bd) on resident amphibians, which can have a lethal effect on individuals, populations, and even species of amphibians. (The final report can be downloaded at www.denix.osd.mil/nr/upload/Final_Route_66_Bd_Report-with-appendix.pdf.)

The effort will expand in 2013 when the DoD PARC program will conduct amphibian disease sampling across the DoD landscape, including bases in other countries, using a 'citizen science' approach. The 2013 effort will include providing installation natural resource staff the field and laboratory materials

Field surveys conducted by DoD PARC members reveal secretive species such as the Slimy Salamander on Naval Support Activity Indian Head.
Seth Berry

Amphibian disease surveys conducted by DoD PARC members in 2009 and 2011 help to keep the Spring Peeper common on Navy installations.
Joe Mitchell

One goal of the DoD PARC program is to maintain the health of common species such as the Eastern Snapping Turtle.
Seth Berry

necessary. Funded by the DoD Legacy Program, the cost of all materials and sample analyses will be paid for by the DoD PARC program.

This study will be one of the single largest sampling events for amphibian disease (Bd) in a single season ever accomplished. The results of this study will help to control the spread of dangerous pathogens on the DoD landscape, and help to preserve amphibians as vital members of military installation ecosystems.

The DoD PARC program has already been recognized for its accomplishments. In March 2011, the National Military Fish and Wildlife Association awarded DoD PARC members the Natural Resource Conservation Research Award for their 2009 amphibian disease project.

DoD PARC members receive the Natural Resource Conservation Research Award. Left to right: Dave McNaughton, Chris Petersen, Rob Lovich, Priya Nanjappa, Mike Lannoo.

LOOKING TO THE FUTURE

The DoD PARC program looks forward to a future of partnerships that will serve both the military mission and its ever-evolving environmental challenges. In this time of dwindling resources, habitats, and species, DoD has an opportunity to lead the way in amphibian and reptile species and landscape conservation, defending the nation's natural wealth for current and future generations.

Please contact Chris Petersen if you are interested in becoming involved or visit www.dodnaturalresources.net/DoD-PARC.html for more information. ⚓

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