

# DEPARTMENT OF DEFENSE PARTNERS IN AMPHIBIAN AND REPTILE CONSERVATION







*In support of military readiness, we strive to sustain amphibian and reptile populations and habitats through proactive environmental stewardship, conservation, outreach, and partnerships.*



PRODUCED BY CHRISTOPHER E. PETERSEN AND ROBERT E. LOVICH  
FUNDING PROVIDED BY THE DEPARTMENT OF DEFENSE LEGACY RESOURCE MANAGEMENT PROGRAM

ILLUSTRATED BY SARAH HORSLEY  
ILLUSTRATIONS COPYRIGHT © 2023 BY SARAH HORSLEY

MAPS BY TRAVIS W. TAGGART  
RESEARCH ASSOCIATE, STERNBERG MUSEUM OF NATURAL HISTORY, FORT HAYS STATE UNIVERSITY  
DIRECTOR, THE CENTER FOR NORTH AMERICAN HERPETOLOGY

ALL RIGHTS RESERVED



# INTRODUCTION

Herpetofauna are reptiles and amphibians, including snakes, lizards, turtles, crocodilians, salamanders, frogs, and toads. They are found in the oceans, lands, and waters of the United States in nearly every habitat, occur on every continent except Antarctica, and are both ecologically and culturally significant around the globe. Amphibians and reptiles are essential components of the ecosystems they inhabit, playing a key role as predators, competitors, and prey, often surpassing other animal groups in terms of species abundance, diversity, and are excellent indicators of the health of their environment.

The U.S. Department of Defense Partners in Amphibian and Reptile Conservation (DoD PARC) network started in 2009 to provide leadership, guidance, and support for the conservation and management of amphibians and reptiles on Department of Defense lands in ways that help support the military's testing, training, and operational mission activities. DoD PARC helps to support healthy amphibian and reptile populations and the military habitats they live in through partnerships, outreach, and environmental conservation. Conservation is the act of preserving or protecting a species or habitat. We conduct surveys and studies on amphibians and reptiles to learn more about them, and to identify threats to their survival. DoD PARC also makes a variety of educational materials on herpetofauna and helpful information on species conservation and management.



*Scan the QR code to download our species fact sheets, pamphlets, and posters, and to find links to DoD PARC's species profile YouTube videos.*

U.S. Military lands are home to approximately 450 species of native amphibians and reptiles, some of which are considered threatened, endangered, or at-risk. When there are not many of a particular species living in the wild anymore and it is in danger of disappearing from the earth, it is considered a threatened or endangered species. An at-risk species is one that has declining populations and scientists are concerned about it becoming threatened or endangered. DoD PARC has a special list of important at-risk species on military lands called Mission-Sensitive Species. We are focused on helping to increase the populations of these species on military lands so they do not become threatened or endangered. We also work to keep common species common.

On behalf of the DoD PARC network, we hope this coloring book increases your curiosity and wonder of amphibians and reptiles and you enjoy learning about the super cool and amazing herpetofauna found on U.S. military lands.

## Facts about Amphibians and Reptiles

- Herpetofauna include some of the most ancient species on Earth (they evolved from fish ~365 million years ago), yet are widely misunderstood and often feared.
- Department of Defense lands provide habitat for approximately 70% of the total number of native amphibians and reptile species in this country, including 30 federally protected (threatened or endangered) species.
- Approximately half of U.S. military sites are home to at least one venomous snake species.
- Of the Military Services, Army installations have the greatest number of confirmed amphibian and reptile species (400 species); they also are the largest military landholder.

# COPPERHEAD



Profile video  
about this species

## SPECIES FACTS

Copperheads are found on more U.S. military properties (almost 100 military sites) than any other venomous snake. They range in color from light brown, tan, or light orange with reddish-brown crossbands. Copperheads have a pit organ which lets them sense heat from their prey, allowing them to strike prey accurately even in the dark! Copperheads eat a variety of animals, including mammals, snakes, lizards, amphibians, insects, and birds. Young copperheads have a yellow or yellow-green tail tip, which is used to trick prey into moving into their striking range.

## THREATS

Habitat loss, intentional killing, poaching, and road mortality

## HABITAT

Forests, grasslands, fields, and the edges of coastal marshes and wetlands.

Copperheads are usually found in areas with abundant surface cover such as rocks, logs, stumps, or leaf litter.

## SPECIES DISTRIBUTION

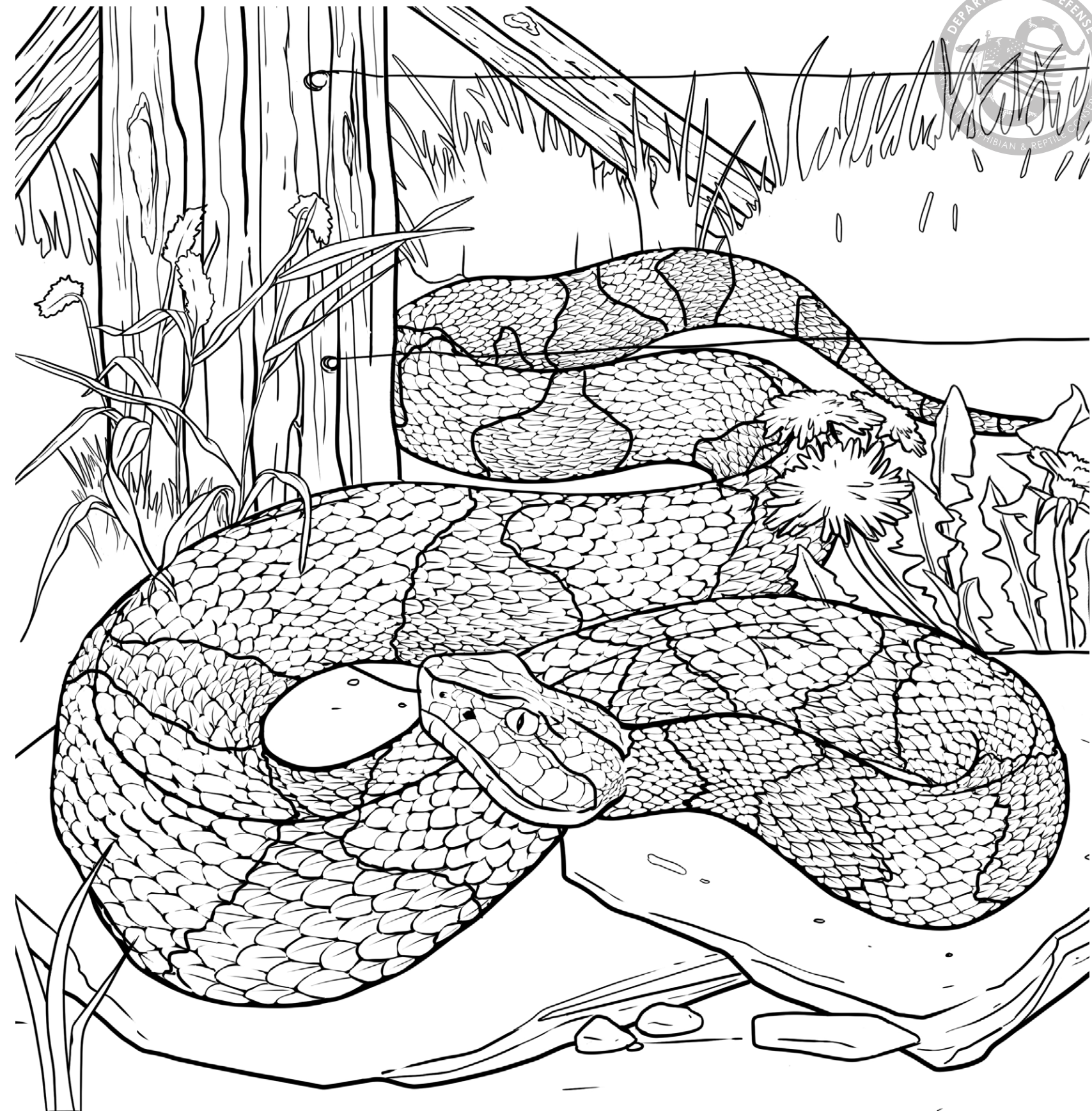
Eastern, Southern and Central United States



Source: Travis W. Taggart



Photograph by Seth Berry



# WOOD TURTLE

## SPECIES FACTS

The wood turtle is a Department of Defense Mission-Sensitive Species that is found on 13 military properties. In spring, wood turtles emerge from their aquatic habitat and congregate in small groups along streambanks and marshes to mate and feed. They eat vegetation (both aquatic and terrestrial), mushrooms, invertebrates and other food sources. Adults may live beyond 70 years in the wild. They are the only reptile that has ever been observed doing “the worm stomp”. They stomp their feet and shells to imitate rain, tricking worms into coming out of the ground so they can eat them.

## THREATS

Habitat loss, fragmentation, road mortality, and poaching

## HABITAT

Wood turtles are primarily found near forested and grassland streams, in which they hibernate during the winter. They prefer streams with sand, gravel, or rocky bottoms.

## SPECIES DISTRIBUTION

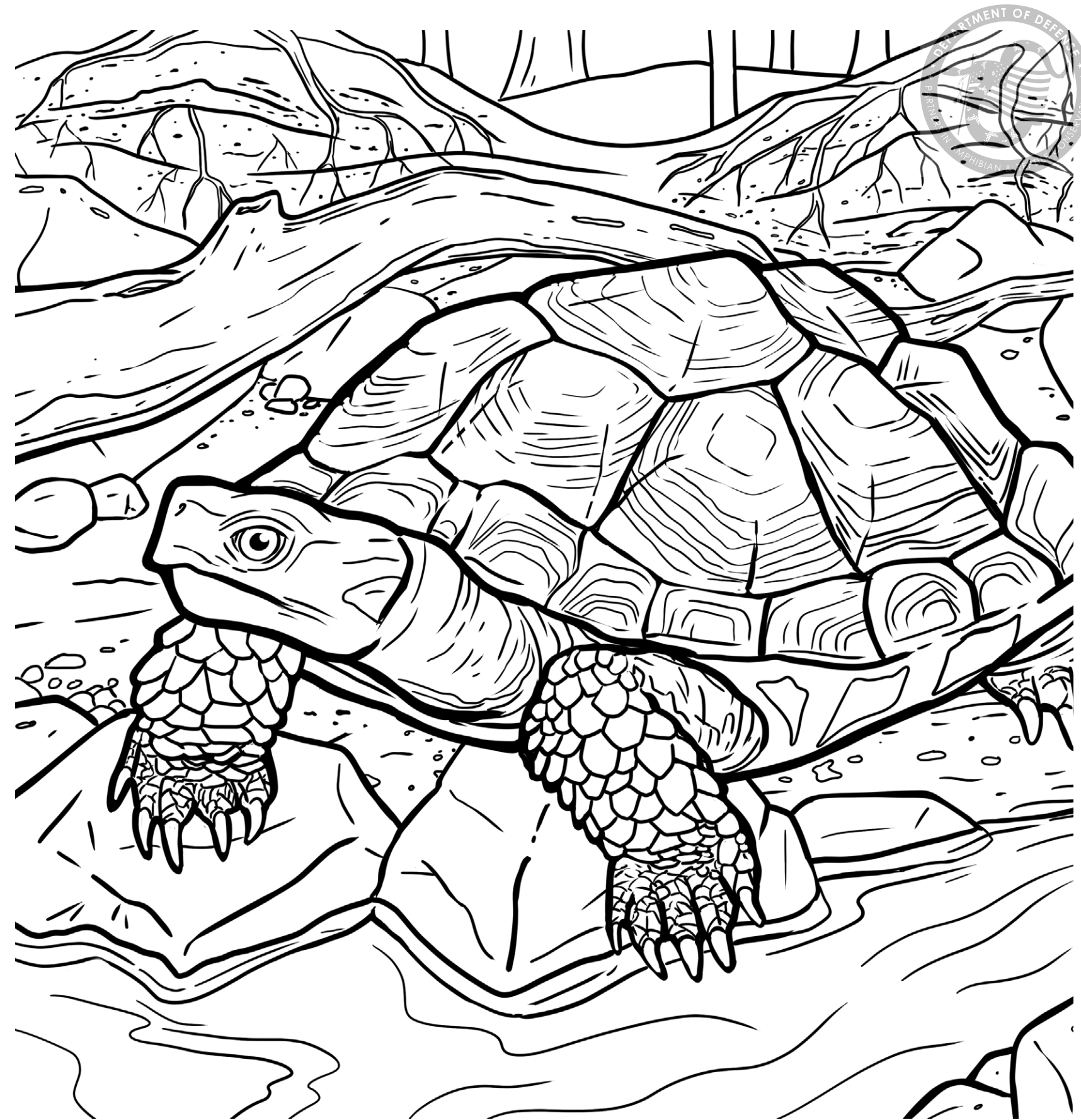
Northeast and Upper Midwestern United States and Eastern Canada



Source: Travis W. Taggart



Photograph by Paul Block



# EASTERN NEWT

## SPECIES FACTS

The eastern newt is found on 87 military properties and is the most common salamander on military sites. This salamander species has three life stages (larval, juvenile, and adult). During its larval and adult life stages, it lives in the water. However, during its juvenile stage it lives on the land and is called an “eft”. They eat small invertebrates, including water fleas, snails, beetle larvae, and soil mites. Newts may benefit people by helping to control the populations of unwanted aquatic insects, including mosquitoes. To avoid predators, juveniles and adult newts secrete toxins from their skin so other animals don’t eat them.

## THREATS

Disease, habitat loss, and road mortality

## HABITAT

Adults and larvae inhabit freshwater ponds, lakes, swamps, and slow-moving water. The eft stage lives in wooded forests.

## SPECIES DISTRIBUTION

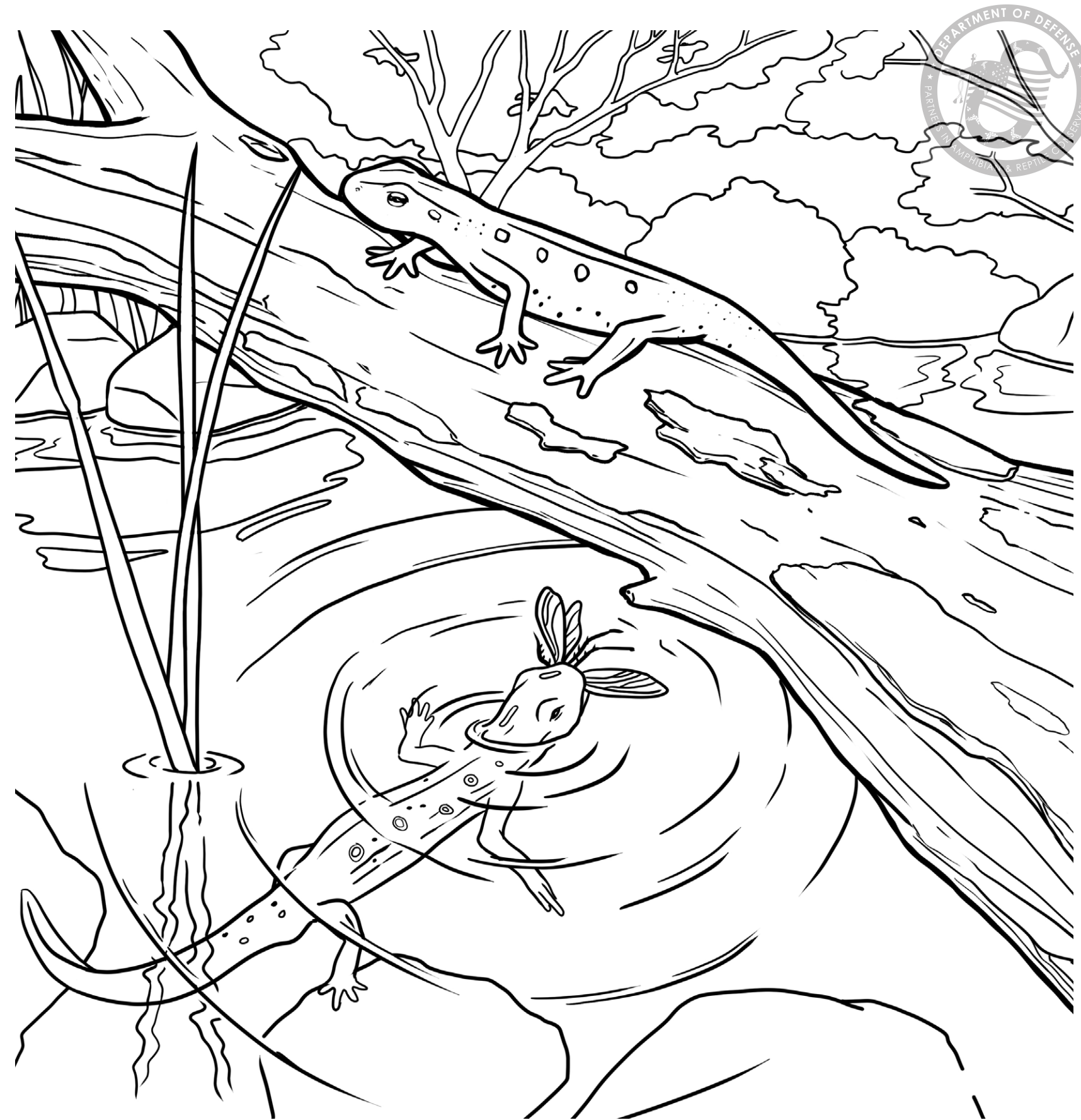
Eastern United States and Southeastern Canada



Source: Travis W. Taggart



Photograph by Paul Block



# GOPHER FROG<sup>1</sup> & GOPHER TORTOISE<sup>2</sup>

## SPECIES FACTS

Both the gopher tortoise and the gopher frog are Department of Defense Mission-Sensitive Species. The gopher frog is found on 15 military properties, and the gopher tortoise on 31 properties. These species share more than just a first name. In fact, the gopher frog (in addition to 360 other species) will inhabit the burrows of gopher tortoise. Gopher tortoises excavate long, deep burrows that provide protection from extreme temperatures, predators, and fire. Both species prefer open sandy habitats that require prescribed burning. Gopher frogs eat earthworms, cockroaches, spiders, grasshoppers, beetles, and other toads and frogs. Gopher tortoise are herbivores and eat grasses, herbs, and prickly pear cacti.

## THREATS

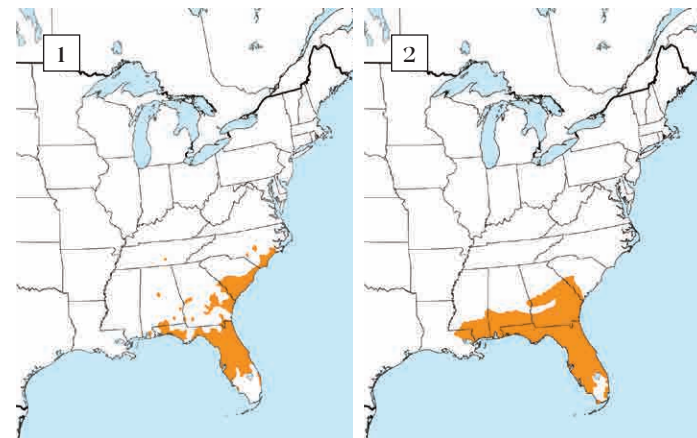
Habitat loss and conversion

## HABITAT

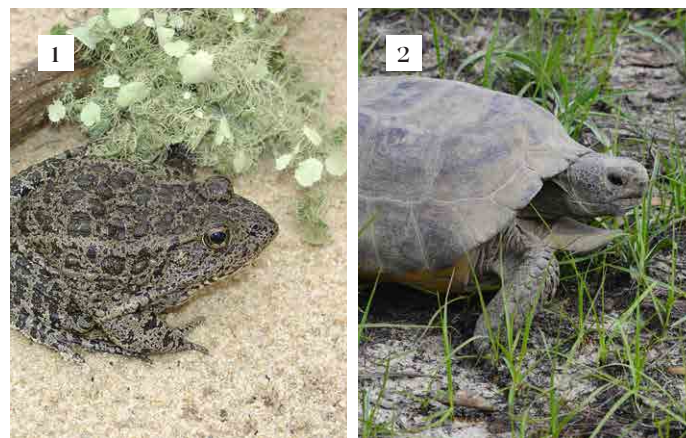
Longleaf pine

## SPECIES DISTRIBUTION

Southeastern United States



Source: Travis W. Taggart



Photographs by Dirk Stevenson<sup>1</sup> Paul Block<sup>2</sup>





# SPOTTED TURTLE<sup>1</sup> & BOG TURTLE<sup>2</sup>



Profile video  
about this species

## SPECIES FACTS

Spotted turtles are a Department of Defense Mission-Sensitive Species and are found on 39 military properties. They have a smooth black top shell with scattered round yellow spots. Field surveys have evaluated the distribution, abundance, and movement patterns of spotted turtles on military lands. Bog turtles are a threatened species and are found on only two military properties. They have a large reddish-orange to yellow blotch on the back of their heads, making them look like they are wearing earmuffs. These two turtle species can live to be at least 40 years of age, and do not grow bigger than 5 inches long. Both turtles are omnivorous (feeding on both plants and animals), and eat on worms, beetles, and snails along with various plants, berries, and seeds. Spotted and bog turtles are popular in the commercial pet trade, due to their small size and unique coloration.

## THREATS

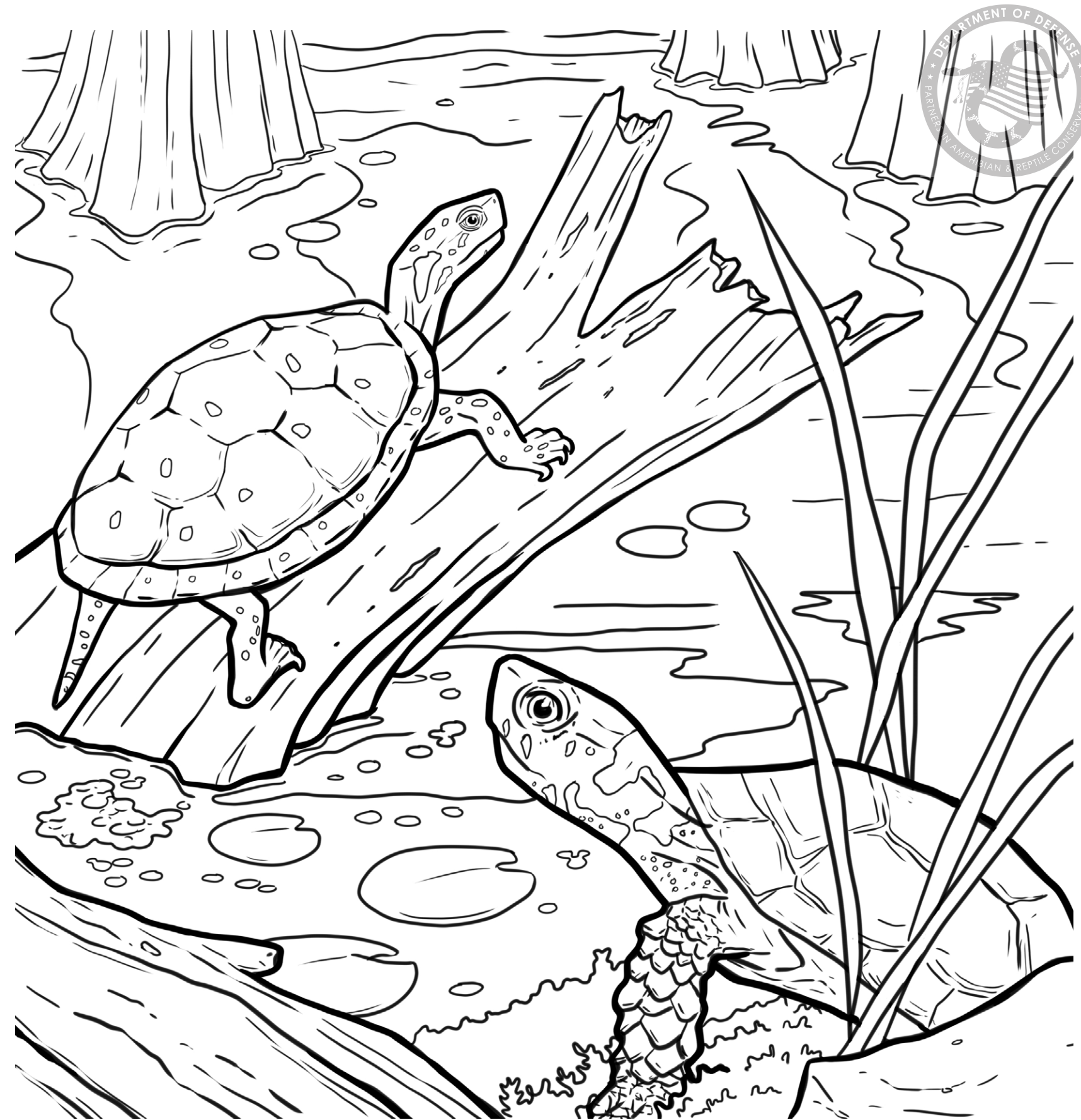
Habitat loss, road mortality, and poaching

## HABITAT

Wetlands

## SPECIES DISTRIBUTION

Eastern United States



# EASTERN DIAMOND-BACKED RATTLESNAKE<sup>1</sup> & SOUTHERN HOG-NOSED SNAKE<sup>2</sup>



Profile video about this species

## SPECIES FACTS

The venomous eastern diamond-backed rattlesnake is the largest rattlesnake species, growing over 8 feet in length! It is a Department of Defense Mission-Sensitive Species and is found on 28 military properties. In contrast, the southern hog-nosed snake only grows to about two feet in length, and is found on 13 military properties. These two snakes have different behaviors when they feel threatened – rattlesnakes shake their rattles making a buzzing noise, whereas hog-nosed snakes often hiss, spread the skin around their head and neck like a cobra, and even play dead. Southern hog-nosed snakes have rear fangs located in the back of their mouths that are used to puncture inflated toads so that they may be more easily swallowed. Eastern diamond-backed rattlesnake have fangs located in the front of their mouths that are used for injecting venom into mammals such as rabbits. Both snakes are important members of longleaf pine habitats that help keep our ecosystem in balance.

## THREATS

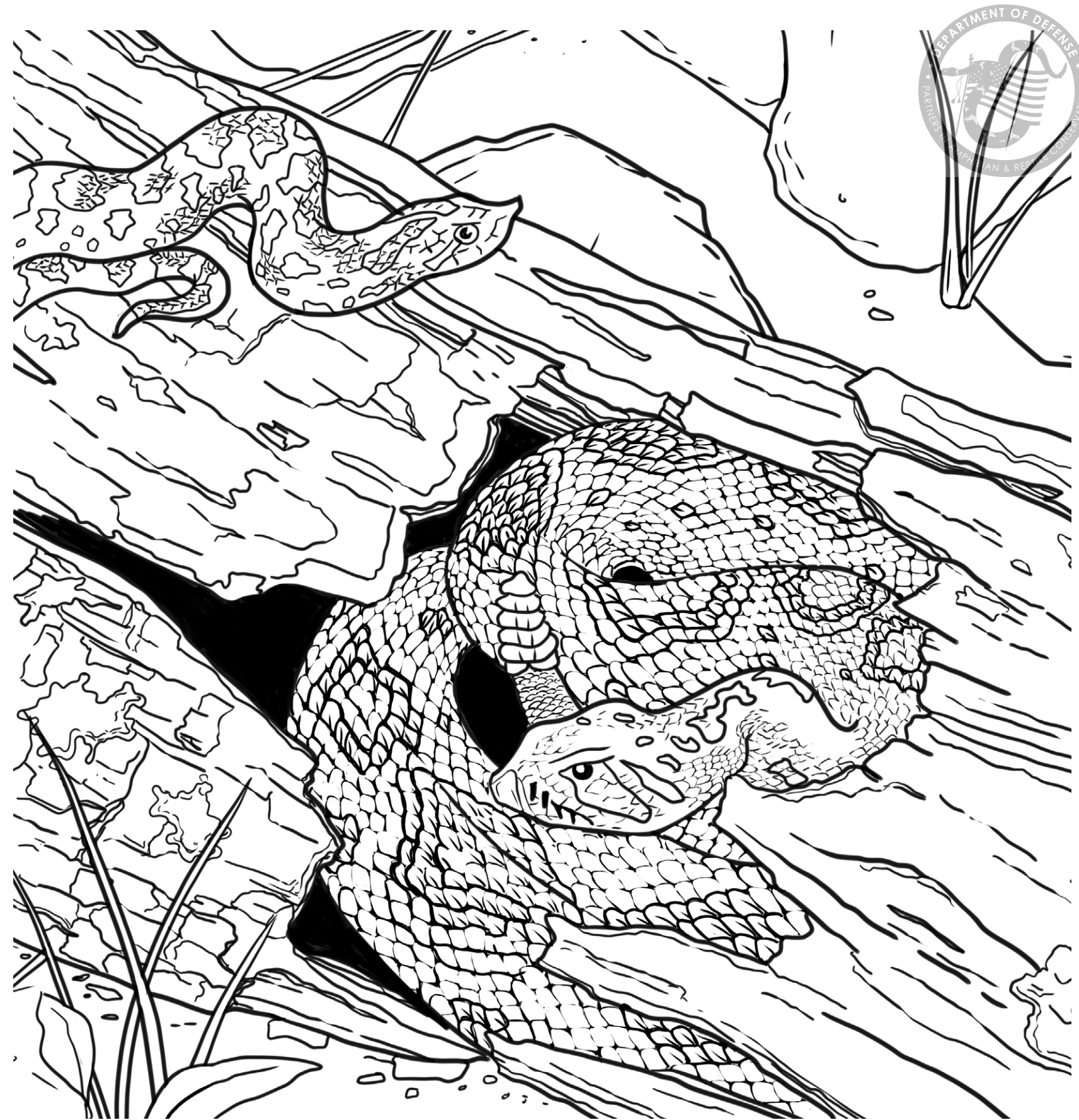
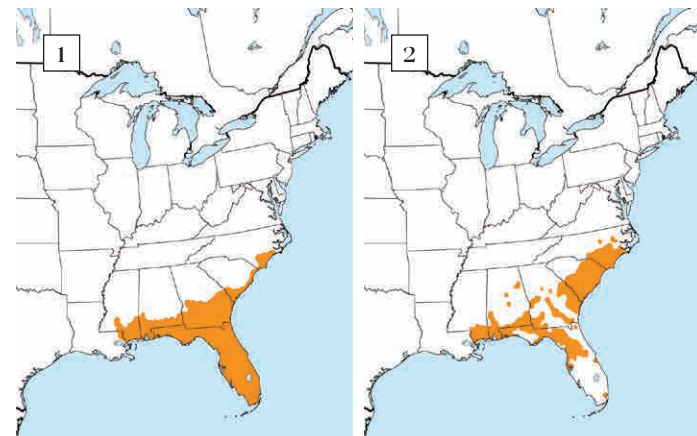
Persecution, road mortality, and habitat loss

## HABITAT

Pine savannas with sandy soil

## SPECIES DISTRIBUTION

Southeastern United States



# EASTERN MASSASAUGA<sup>1</sup> & BLANDING'S TURTLE<sup>2</sup>

## SPECIES FACTS

The eastern massasauga is a threatened species and one of the least common rattlesnake on military lands. It is found on only one military installation—Camp Grayling Joint Maneuver Center located in Crawford and Kalkaska counties, Michigan. The name “Massasauga” comes from the Native American Chippewa language, meaning “Great River Mouth”. The snake got its name by being found near rivers and lakes. This venomous pit viper has heat-sensing pits on each side of their head. When an eastern massasauga rattles, it sounds like the buzzing of an insect.

Blanding's turtle is a Department of Defense Mission-Sensitive Species and is found on 10 military properties. Their upper shell is usually black or dark brown but their uniqueness lies in their bright yellow chin and throat. Their lower shell is yellow too. They may live 60 years or more. Blanding's turtle are omnivores and eat fish, frogs, invertebrates, and also nuts, seeds, and vegetables. Both the massasauga and the Blanding's turtle share habitat in wet prairies, marshes and other wetlands.

## THREATS

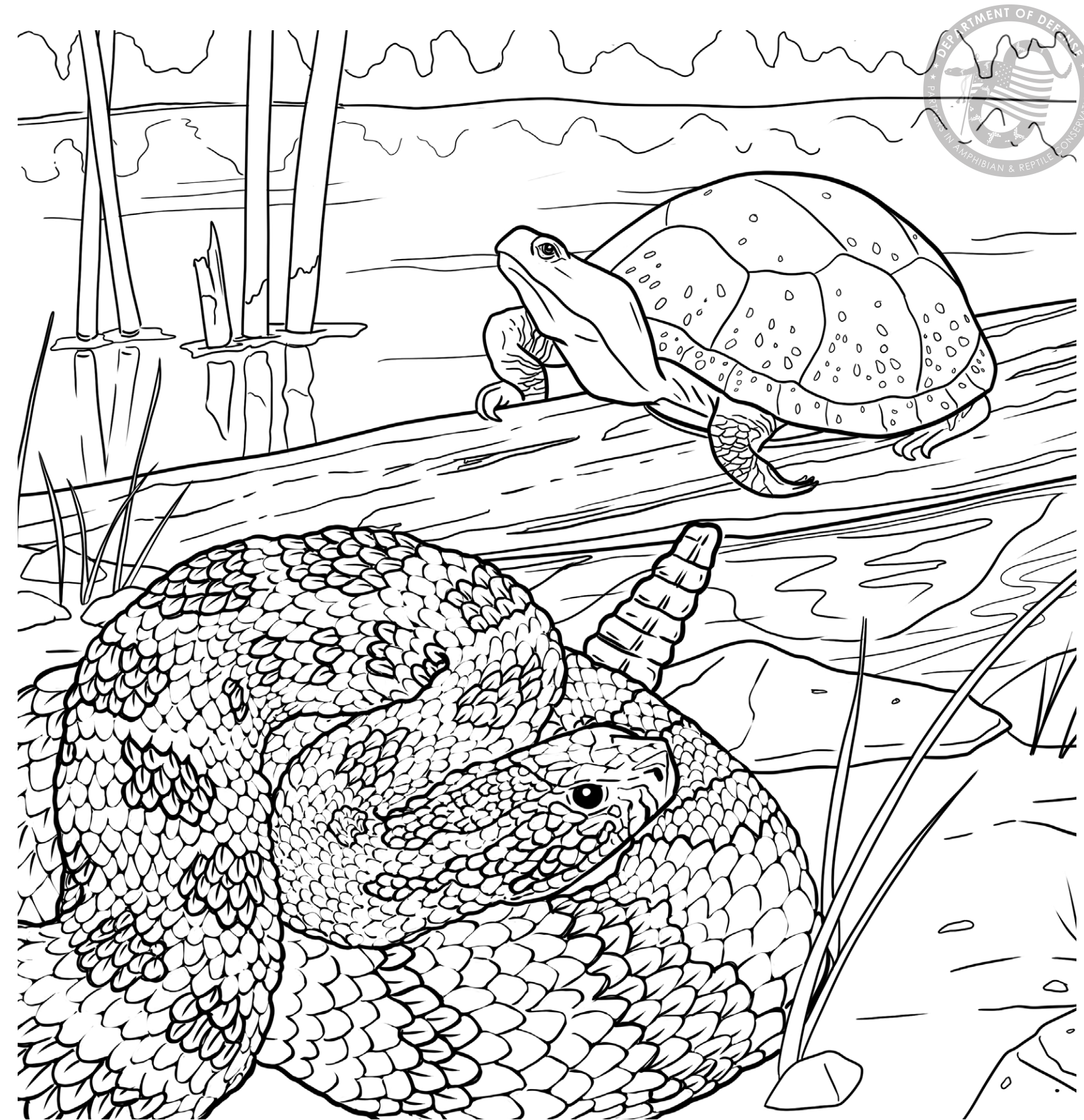
Habitat loss and fragmentation, and poaching

## HABITAT

Wetlands

## SPECIES DISTRIBUTION

Primarily in the Midwestern United States





# GILA MONSTER

## SPECIES FACTS

The Gila monster is found on several military properties in Arizona. Their orange and black coloration helps them to blend into the desert environment, making them difficult to see. It is the largest, and only venomous lizard species in the United States. Another incredible fact is that they have tiny beads of bone in their skin called osteoderms, which give them basically built-in-armor. As carnivores (meat eater), Gila monsters raid nests to prey on small birds and eggs. They also catch small mammals, lizards, frogs, and insects. They can live up to 20 years in the wild and even longer in captivity.

## THREATS

Habitat loss, road mortality, invasive grasses, and poaching

## HABITAT

Foothill grasslands and desert scrub

## SPECIES DISTRIBUTION

Southwestern deserts



Source: Travis W. Taggart



Photograph by James Atki



# FLAT-TAILED HORNED LIZARD

## SPECIES FACTS

The Flat-tailed Horned Lizard is found on several military properties in California and Arizona. This species has been actively protected for decades by the partner efforts of the military with several other state and federal government agencies. Only because of their conservation actions for the species does it still occupy large areas of the Sonoran Desert. The Flat-tailed Horned Lizard has the longest horns of any species of horned lizard. It lives in flat, open Sonoran Desert habitats in some of the lowest and driest parts of North America. It is well adapted to the extreme temperatures, and primarily eats ants. To avoid predators, they have the ability to squirt blood from their eyes when handled, so a potential predator would spit them out of their mouth instead of eating them!

## THREATS

Habitat loss, road mortality, invasive grasses, and poaching

## HABITAT

Sandflats, mudflats, desert scrub

## SPECIES DISTRIBUTION

Southwestern deserts of California and western Arizona.



Source: Travis W. Taggart



Photograph by Rob Lovich



# CALIFORNIA TIGER SALAMANDER

## SPECIES FACTS

The California Tiger Salamander is found on several military properties in California. This endangered species is found in upland areas with ponds and pools that they can breed in. It is a large and very colorful animal. The California Tiger Salamander has a black body with large and bright yellow or white spots. It spends most of the time underground in burrows made by other species, like California Ground Squirrels. During the fall and spring when rains fall, they migrate to pools to breed. They mostly eat insects and other invertebrates. To avoid predators, they secrete toxins from their skin so other animals don't eat them.

## THREATS

Habitat loss, road mortality, collection as pets

## HABITAT

Grasslands and open woodlands near ponded waters

## SPECIES DISTRIBUTION

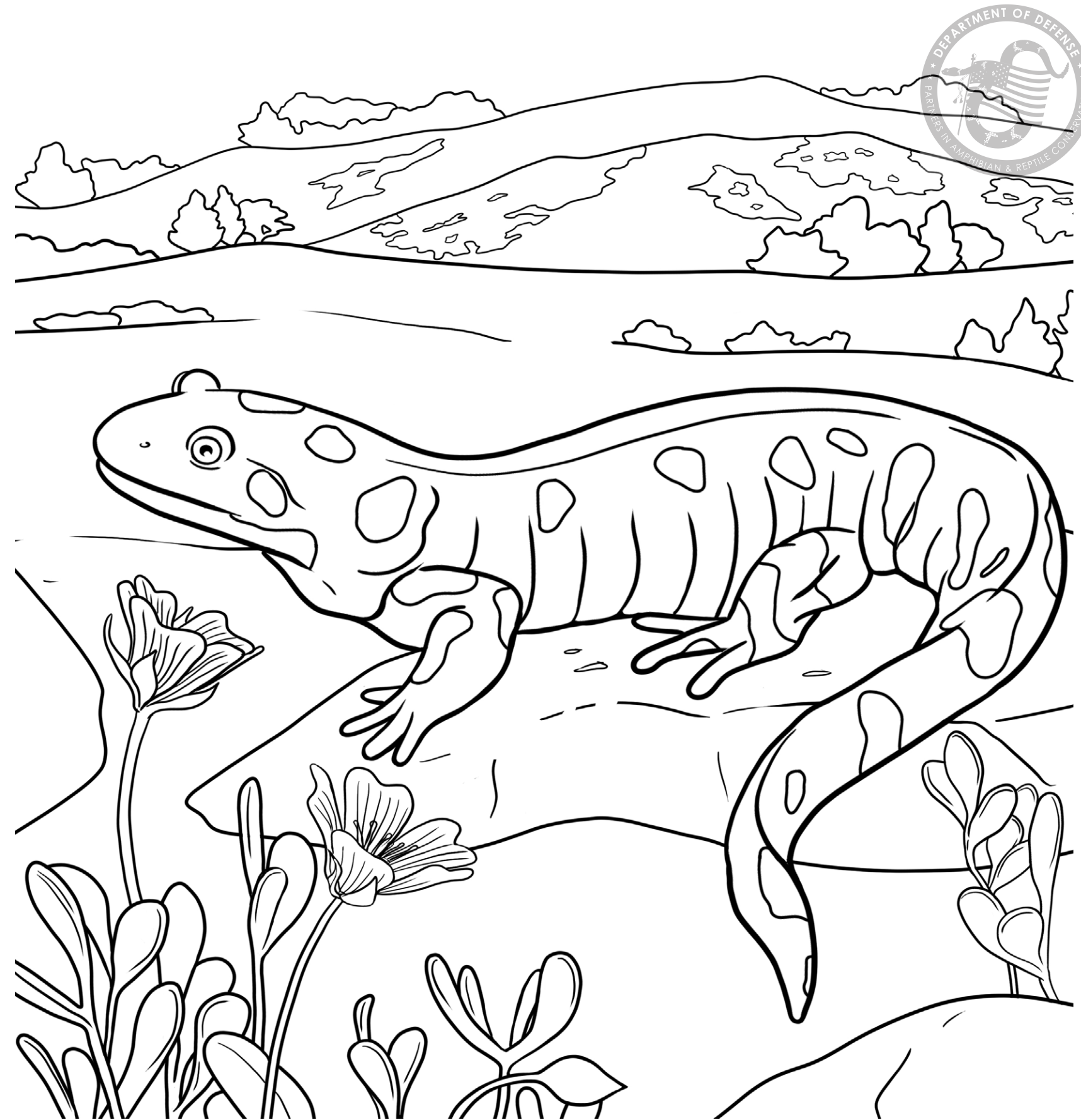
Central and northern California



Source: Travis W. Taggart



Photograph by David Muth



# WESTERN SPADEFOOT

## SPECIES FACTS

The Western Spadefoot is a Department of Defense Mission-Sensitive Species and is found on several military properties in California. It is named after the spade on its rear feet for digging into the ground. It is a large colorful toad that is green, brown, or gray with dark spots on their backs. They have vertical pupils in their eyes. They are active during the rainy season and breed in slow streams, ponds, and pools after rainfall. They stay on land unless they are breeding, and if handled they smell like peanuts. Their call sounds like a person snoring! They mostly eat insects and other invertebrates.

## THREATS

Habitat loss, road mortality

## HABITAT

Grasslands and open woodlands near ponded waters

## SPECIES DISTRIBUTION

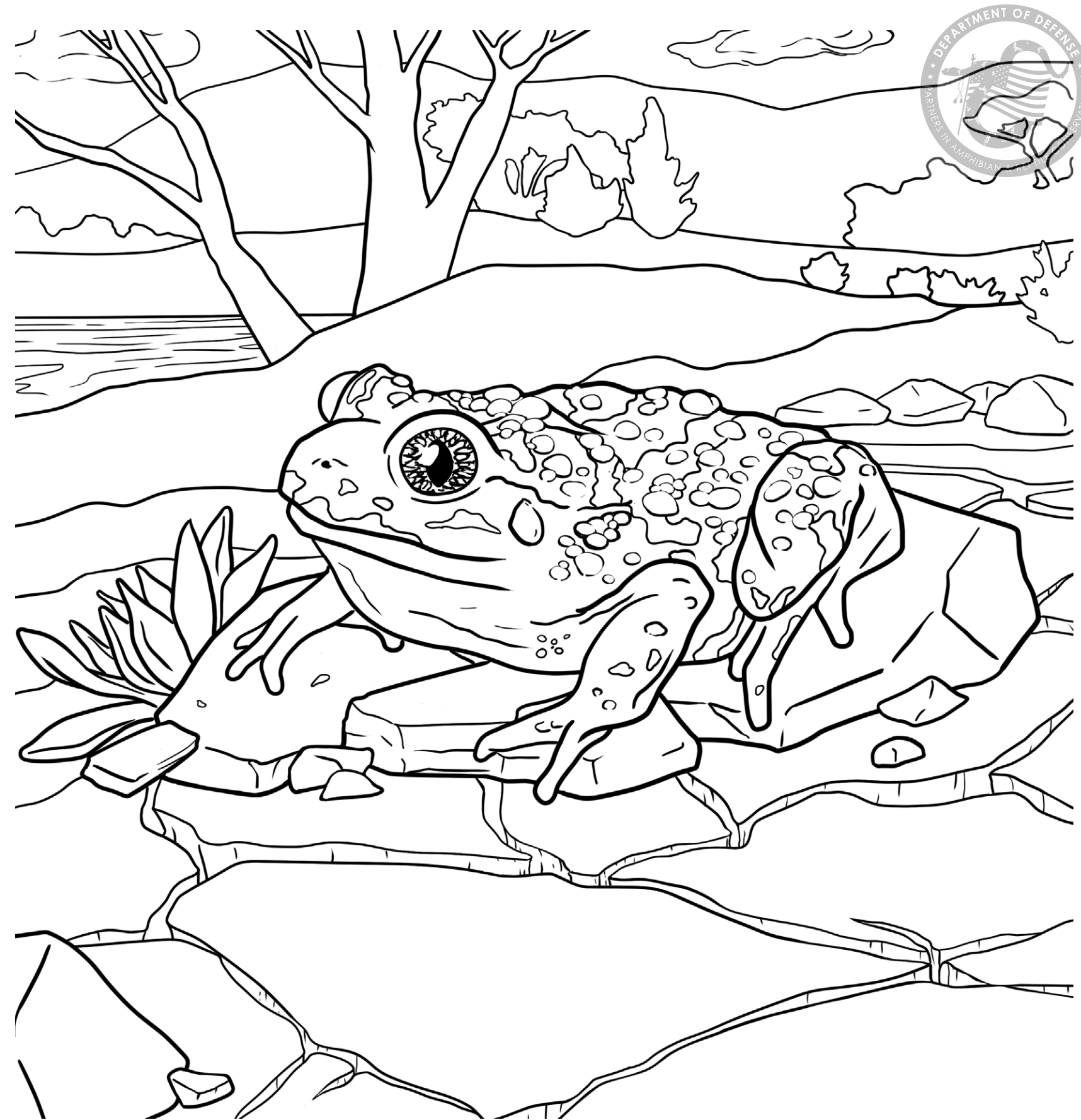
Central and northern California

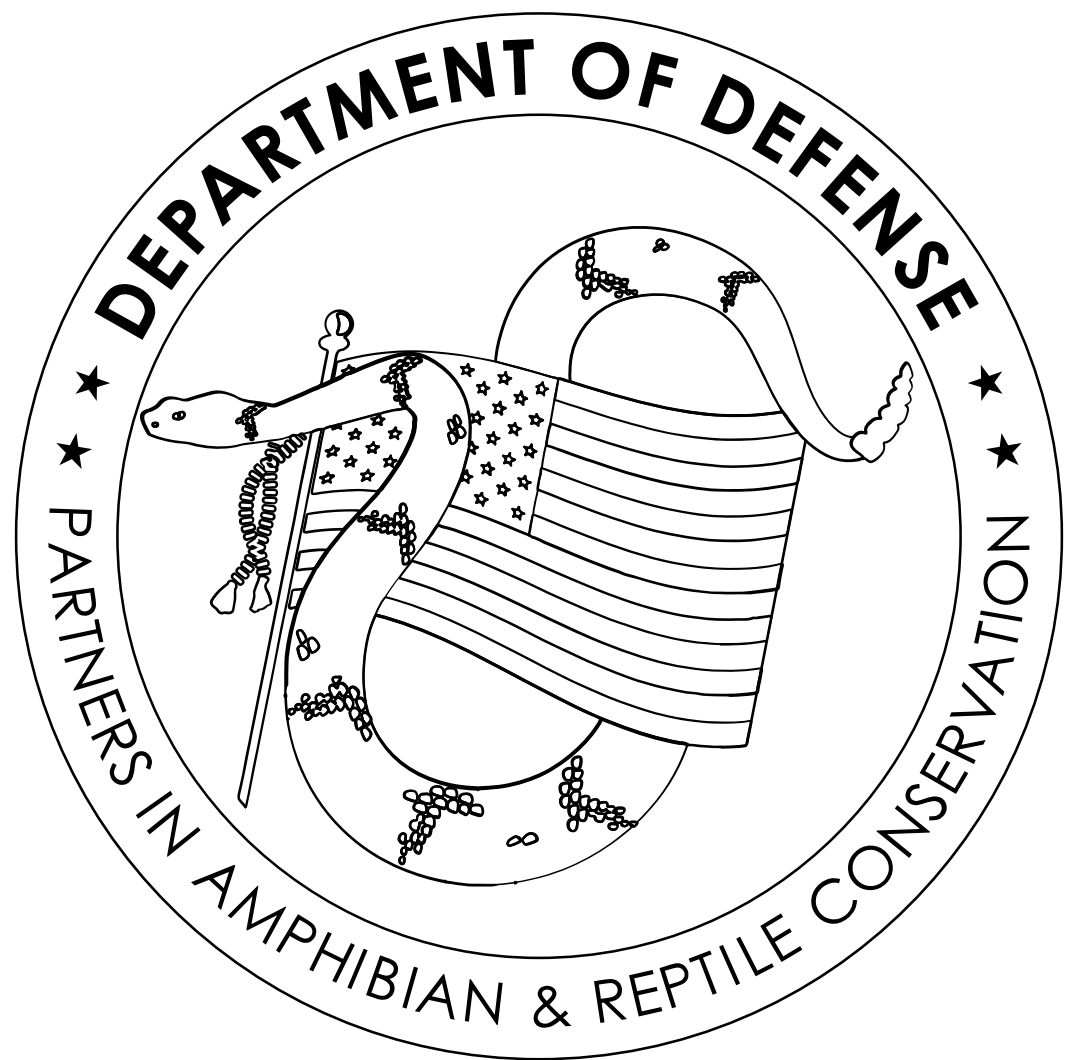


Source: Travis W. Taggart

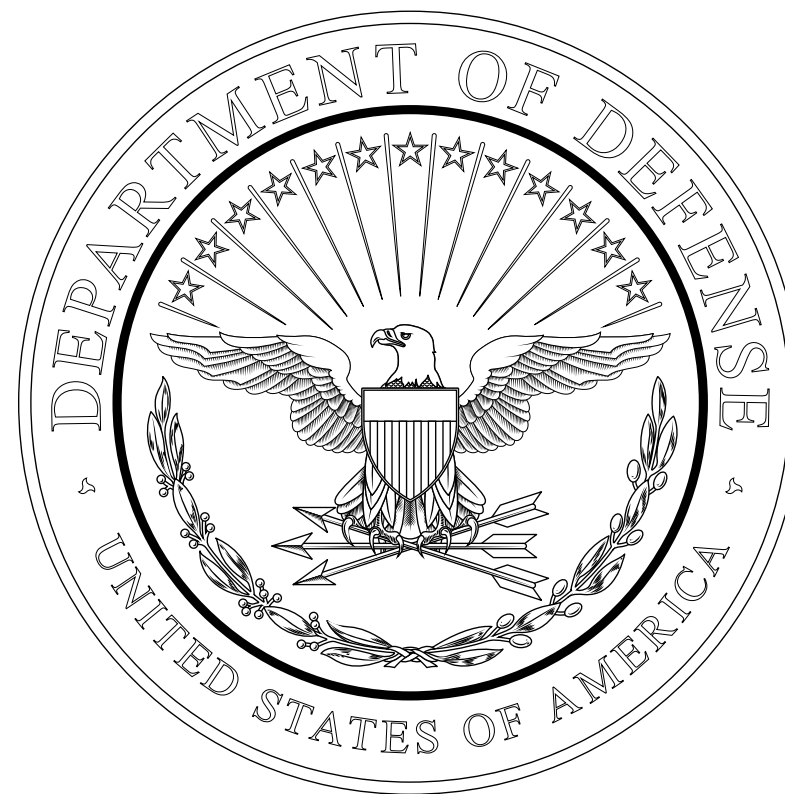


Photograph by Kyle McCann





How would you color our logo?



How would you color our logos?







Funding provided by the Department of Defense  
Legacy Resource Management Program  
produced in partnership with ARC

