



## Roger Williams Park Zoo Animal Conservation Projects

### A Local Connection

Roger Williams Park Zoo is committed to providing the highest quality of care for the animals in its collection and seeks to serve the local and regional community as a responsible environmental steward. In this vein, the Zoo participates in fieldwork in several sites throughout New England as part of five important conservation projects aimed at saving endemic endangered species: New England cottontail rabbit, timber rattlesnake, Eastern box turtle, Eastern spadefoot toads, and American burying beetle. The Zoo also continuously develops and teaches environmental education programs that reach a variety of different audiences with a message of conservation to inspire action and involvement.

### A Global Reach

Conservation Research Funding: On the national and global level, Roger Williams Park Zoo has consistently been a participant in and supporter of large-scale partnerships, collaborations and organizations that work to promote wildlife and habitat conservation. In addition to our own conservation and research initiatives, Roger Williams Park Zoo also supports fieldwork in conservation and environmental education by annual donations and others through the Sophie Danforth Conservation Biology Fund (SDCBF). The Fund awards annual grants to conservation projects around the world. Since 1989, the SDCBF has awarded over \$300,000 to worthwhile projects, many of which have continued to grow and succeed.



### American Burying Beetle Recovery Program

Most people tend to think about conserving big fluffy animals, but preserving the web of life requires, in the words of Aldo Leopold, "Saving all the pieces." One of the pieces Roger Williams Park Zoo is trying to save is the endangered American burying beetle (*Nicrophorus americanus*), an endangered two-inch-long black insect with red-orange markers. Known as nature's most efficient and fascinating recyclers, burying beetles are important scavengers that are responsible for recycling decaying animals back into the ecosystem.

In 1994, the U.S. Fish and Wildlife Service and Roger Williams Park Zoo established a breeding program for the American burying beetle (ABB). Once residing in 35 states, the American burying beetle has

drastically declined in numbers and range. In fact, Block Island, Rhode Island, is the home of the last known naturally occurring population of American burying beetles east of the Mississippi River. These beetles are now found to occur naturally only in Rhode Island, Arkansas, Oklahoma, Nebraska, Kansas, South Dakota and Texas.

Since 1995, RWPZ has successfully reared multiple generations of beetles starting with 19 male and 11 female beetles taken from Block Island and released 2,923 beetles to their historic habitat on Nantucket. The RWPZ continues to monitor the reintroduced population and supplements it with captive-raised beetles annually. Conservation partners include the U. S. Department of Fish & Wildlife, the Rhode Island Department of Environmental Management, the Massachusetts Division of Fisheries and Wildlife, the Maria Mitchell Association, Nantucket Conservation Foundation, and the Massachusetts Audubon Society.



### **New England Cottontail Rabbit Repopulation Project**

The rare New England cottontail, a threatened species of native rabbit once abundant throughout the New England region, is getting much-needed help. Biologists from the New England Cottontail Captive Breeding Working Group (NECCBWG) have teamed up to restore populations by breeding these rabbits in captivity and releasing them in natural habitats. This program has made promising progress toward boosting cottontail numbers while the partners also work to protect and restore habitat throughout the range of this species.

In the 1930s, non-native Eastern cottontail was introduced from Missouri primarily to benefit hunters when the native cottontail populations began to decline. While the non-native Eastern cottontail population is widespread and abundant, the native New England cottontail has declined perilously since that time. Currently, the species is believed to be extirpated from Vermont, with sparse populations throughout the rest of New England. Recent population surveys conducted by staff wildlife biologists from RIDEM's Division of Fish and Wildlife and USFWS so far have documented only two occurrences of a New England cottontail in Rhode Island.

Zoo scientists together with regional partners formed the Captive Breeding Working Group as one potential solution for saving the New England cottontail. The NECCBWG membership continues to inform and guide the process of transition from the breeding phase through repopulation efforts.

By 2010, Roger Williams Park Zoo had dedicated space, staff and veterinary care for the breeding program and continues to provide expertise to sustain a supply of healthy captive-born rabbits for the reintroduction and population augmentation initiative. Partners in Massachusetts, Connecticut, Maine, New Hampshire, and New York continue to provide wild adult cottontails for the breeding program. These are the "founder" rabbits that produce the offspring for reintroduction efforts and population

augmentation. Genetic testing is performed to confirm they are indeed New England cottontails before they are added to the breeding program.

“To try to rebuild a species, we first needed to learn if we could keep healthy individuals in captivity,” said Lou Perrotti, Director of Conservation Programs at Roger Williams Park Zoo. “We’ve learned that we can. We’ve also learned that we can successfully breed wild animals in captivity and raise the young from birth through weaning. Now, we are testing whether the captive-born babies can be released to a wild setting and survive the winter and produce self-sustaining and growing populations.”

The Working Group partners aim to expand and manage the early successional habitat needed for this species, working in some cases with private landowners. Also, the captive breeding program continues; to date, 300 young rabbits were introduced to the wild in Rhode Island, New Hampshire and Maine. With the help of the Rhode Island Foundation, which provided \$15,000, in addition to federal funding through the Pittman-Robertson Federal Aid Wildlife Restoration Program, the breeding facilities were expanded in 2014. In addition, the team partnered with the Queens Zoo in 2015 as a second breeding facility. Perrotti hopes this larger capacity will result in a significantly higher birth rate each year as we advance.



### **Timber Rattlesnake Recovery Program**

The Zoo has agreed to receive and hold Timber Rattlesnakes (*C. horridus*) from endangered New England populations. This species is seriously threatened in all New England and conservation action is needed. In addition, some are being affected by a fungal disease that is a new and serious concern. State biologists feel a protected genetic reservoir from the most threatened populations in the northeast should be established in captivity until a solid conservation initiative develops; this now continues to involve captive rearing wild-caught young. Starting in 2014 the Zoo veterinary and conservation departments, in partnership with state biologists, finished a two-year federally funded study to research and learn more about the fungus and determine how prevalent the fungus is in New England Populations. The Zoo and its partners have demonstrated success in releasing head-started individuals, a first of its kind for this species in New England and continue to do so. This work was featured on “Ocean Mysteries” with Jeff Corwin in November 2014.

Partners include the Massachusetts Division of Fisheries & Wildlife, the Connecticut Department of Environmental Protection Wildlife Division, New Hampshire Fish & Game Department, Vermont Fish & Wildlife Department, Tufts University Wildlife Clinic, Cummings School of Veterinary Medicine, and IDEXX Laboratories.



### **Operation Spadefoot Rhode Island**

Meet the state's rarest toad – the Eastern spadefoot. In Rhode Island and much of New England, populations of this species are dwindling drastically due to the loss of breeding habitat. But today there is hope! RWPZoo director of conservation, Lou Perrotti, had the pleasure of creating the Zoo's first head-start program for this species. In 2019, 800 tadpoles were raised and released into select sites across Washington county - a ground-breaking moment for the conservation of endangered species here in New England.

In April 2020, the Zoo joined up with conservation partners to build new vernal habitat pools as part of Operation Spadefoot RI, a habitat restoration project aimed to repopulate the endangered eastern spadefoot toad. Volunteers and team members onsite dug, lined and seeded two pools on land owned by the South Kingstown Land Trust.

After heavy rains during hurricane Henri in late August 2021, spadefoots bred at one of the pool sites. As the pool dried up, nearly 1000 tadpoles were rescued and then raised under the thoughtful eye of Lou Perrotti until they were fully morphed. Over 300 were released to the site they came from, and the rest were introduced to two other artificial breeding sites in efforts to expand the range of this state endangered species in Rhode Island.

Operation Spadefoot RI was created through the expertise and resources from Rhode Island Department of Environmental Management, your RWPZoo, University of Rhode Island, U.S. Fish and Wildlife Service Northeast Region the Rhode Island Natural History Survey, the Richmond Rural Preservation Land Trust, and the South Kingstown Land Trust, along with the help of over 80 volunteers who spent a combined 340 hours assisting with the construction of the newest wetland. The Nature Conservancy and the Natural Resources Conservation Service have lent support to the project as well.

### **Eastern Box Turtle Breeding Program**

Starting in 2019 a cooperative program between RIDEM Division of Fish and Wildlife and the Roger Williams Park Zoo was started to house and breed eastern box turtles (*Terrapene c. carolina*), a Rhode Island native species.

The scenario in which box turtles are taken from the wild to keep as pets and subsequently surrendered to wildlife clinics is common. It is usually challenging to justify releasing these animals for various reasons (e.g., unknown areas of collection, the potential for disease, etc.). However, the possibility exists in many cases for these individual turtles to serve as breeders for conservation programs.

The Division of Fish and Wildlife would like to explore the possibility of creating a program in which "unreleasable" box turtles are housed and bred by the Roger Williams Park Zoo at their facilities with the ultimate intent of "head-starting" and releasing young turtles with a genetic heritage of Rhode Island origin into the wild.

### **Chilean Amphibian Conservation Program**

Roger Williams Park Zoo has been a supporting partner of The Chilean Amphibian Conservation Center Spearheaded by the San Antonio Zoo since 2018. In 2019 members of both zoos traveled to Valdivia, Chile, to install the first of a series of labs as breeding facilities for the endangered amphibians and one for invertebrates used as feeders. The Center receives support from several other academic institutions and international conservation organizations. The Center focuses on the research, captive management, and conservation of endangered and threatened Chilean amphibians. A primary goal is to ensure that the people of Chile continue to manage these local endangered populations into the future.

### **Saving Animals from Extinction**

One of our most powerful tools to help threatened and endangered species is Saving Animals From Extinction (SAFE), a new program introduced by the Association of Zoos and Aquariums (AZA) in 2015. SAFE is featured at all 229 AZA-accredited institutions, including RWP Zoo, with the goal of engaging and educating visitors about our conservation initiatives and how they impact local, regional and global environments.

Today, visitors to the Zoo can learn about over 100 different species, with many found on the International Union for Conservation of Nature's (IUCN) Red List, ranging from "Critically Endangered" to "Near Threatened."

### **FrogWatch**

Data collected in Rhode Island will be added to a national FrogWatch USA database (there are 30 FrogWatch USA chapters in 22 states) and will also be shared with the Rhode Island Natural History Survey. In 2014 alone we trained over 130 volunteers and have been consistently recognized by the AZA as the state with the most active FrogWatchers. Since 2008 we have trained over 700 volunteers to monitor frog and toad populations in all 5 counties in RI.

The success of the program continues! During the 2021 FrogWatch season, the Roger Williams Park Zoo chapter: trained 78 Frog Watchers; monitored 58 separate sites; submitted 936 data observations to FrogWatch USA; and spent 46.8 hours listening to frogs/toads.

### **Conservation Partnerships**

In 2006, Roger Williams Park Zoo and seven other New England conservation organizations formed the New England Zoos and Aquariums Conservation Collaborative (NEZACC), the first such conservation-orientated collaboration group in New England. The group continually works together to explore how to make a greater impact on the region's environment by forming new partnerships for ongoing conservation efforts.