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What's the Buzz on Rhode Island's Pollinators?

By Dr. Katie Burns, Pollinator Entomologist, DFW

The hum of insects and the sight of busy bees, butterflies, and hummingbirds flitting between the flowers are welcome signs of summer. Now that our meadows, hedgerows, and gardens are in full bloom, it's almost impossible not to take in the colorful diversity of Rhode Island's floral visitors! These flower visitors are much more than just a delight to the eye. Many of these insects and birds also carry out the very important ecosystem service of pollination, which is essential for both our survival and for supporting the health of our environment.

Almost 90% of plants require an animal pollinator to help them reproduce.

The Division of Fish and Wildlife Mission Statement

Our mission is to ensure that the freshwater, wildlife, and marine resources of the state of Rhode Island will be conserved and managed for equitable and sustainable use.



This Issue Features:

What	'S THE BUZZ ON RI'S POLLINATORS?
	DFW NOW HAS A DEDICATED BIOLOGIST WORKING ON RHODE ISLAND'S POLLINATOR ATLAS. LEARN MORE ABOUT THIS PROJECT AS IT DEVELOPES.

FOR OUTDOOR RECREATION.

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PROTECTIONS FOR RI'S REPTILES & AMPHIBIANS......6

DFW HAS CREATED A 2 PAGE INFORMATIONAL DOCUMENT OUTLINING LEGAL PROTECTIONS FOR HERPS IN THE STATE.

SPECIES SPOTLIGHT: RIVER OTTER......10

HOW TO PROTECT NATIVE POLLINATOR BEES AS WELL.



LEARN MORE ABOUT ONE OF RI'S AQUATIC MAMMALS AND HOW WE MONITOR THEIR POPULATIONS ACROSS THE STATE.



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RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT Terrence Gray, *Director*

> Dr. Jason McNamee, Deputy Director

RIDEM, DIVISION OF FISH & WILDLIFE Phil Edwards, Chief

Sarah M. Riley, WRI Editor/Designer Chief Implementation Aide

Veronica Masson, WRI Editor Federal Aid Coordinator

Mary Gannon, WRI Editor Wildlife Outreach Coordinator

Gabby DeMeillon, WRI Editor Outreach Technical Assistant

Lily Fitzgerald, Assistant Editor Seasonal Technical Support Intern

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Featured State Land:

Buck Hill Wildlife Management Area

By: Mary Gannon, Wildlife Outreach Coordinator, DFW

The wind whispers through the hemlock branches as the croak of a raven echoes overhead...There are very few places in Rhode Island where you can be completely immersed in the sounds of the forest, uninterrupted by the distant sounds of the road. Buck Hill Management Area in Burrillville is one of those places! At just over 2,200 acres, Buck Hill is a hidden gem, tucked up in the northwest corner of the state.

This unique property was pieced together over time. In 1958 RIDEM worked through a federal grant to obtain 40 privately owned parcels by eminent domain specifically for the "Buck Hill Wildlife Reservation." This encompassed the entire western portion of the modern day Buck Hill Management Area. In 1979, the Department of Mental Health, Retardation, and Hospitals (MHRH) transferred 260 acres on the western side of Wallum Lake to add to the management area. Later that year, RIDEM purchased 470 acres from the Wallitsch family to fill the gap between the original block of parcels and this transfer. Jumping ahead to 2012, RIDEM purchased 190 acres on the southern side of Buck Hill Road from the R.I. Boy Scouts with federal funding for the purpose of permanent protection of wildlife and wildlife habitats. A final 20 acres was purchased in 2016, abutting the southeastern portion of the Boy Scouts parcel to expand this protected area.

Buck Hill is a beautiful place to spend the day, with well defined trails for hiking and diverse habitats to support a variety of game species for hunters. A short walk from the parking lot will bring you to a panoramic view of the waterfowl impoundment, home to breeding wood ducks and hooded mergansers (see if you can spot the nest boxes). Keep on the lookout for signs of beavers; these industrious rodents have taken down a few large trees, and a lodge is visible towards the middle of the impoundment. There is a trail that loops around the water, leading you further up into the forest where you can take several routes. If you choose to walk the gravel road, you'll pass several small meadows, a young forest patch created in 2008, and vernal pools.

One of the most unique aspects of Buck Hill is the opportunity to stand in three places at once! The tri-state



marker, accessible by a hiking trail, marks the spot where Connecticut, Massachusetts, and Rhode Island meet. If you choose to visit the tri-state marker, you can also walk along the border of Massachusetts and Rhode Island as you head back to the trailhead. As you visit this northernmost section of the management area, you might feel like you're not in Rhode Island anymore! This portion of the trail winds through stands of Eastern hemlock trees, and can get a little mucky (wear sturdy shoes). Keep an eye out for rectangular cavities in the trees, a sure sign of pileated woodpecker activity. Our largest woodpecker in Rhode Island, the pileated woodpecker prefers mature forest habitat, and actively excavates perfectly rectangular cavities in trees for nesting. Listen for its loud *Kik-kik-kik* call and look for the flash of its black and white wings!

Hemlock forest is a unique forest type in Rhode Island, and is therefore important to protect to ensure forest diversity across the state. Hemlock stands are particularly important food sources for porcupines, which have occasionally been spotted in northern Rhode Island. The Division of Fish and Wildlife keeps sighting records of these prickly mammals, so if you spot one while hiking Buck Hill, let us know.

For your next outdoor excursion, make the trek to the wild northwest of Rhode Island and soak in all the beauty of Buck Hill!

Buzz About Bees continued from page 1



Pollinators assist plants in their reproduction by carrying pollen from one flower to another, in an act called "pollination," which allows the plant to produce seeds and fruits. These animal-pollinated plants account for about 35% of global food production, which comprises the majority of our Vitamin C, Vitamin A, and Calcium intake. These crop pollination services are worth up to \$530 billion per year and wild pollinators do it for free!

Pollinators are not only vital for supporting our health and our food security, but they are also essential for supporting healthy food webs and the health of the environment. By helping plants produce seeds and fruits, pollinators not only provide food for many species of mammals, birds, and insects, but also provide food for carnivores that eat these herbivores. In this way, they help keep our beautiful planet in balance.

There are many animals who carry out the ecosystem service of pollination, such as birds, bats, monkeys, and lizards, but most pollinator species are insects. North America is home to over 4,000 bee species, 750 butterfly species, 12,000 moth species, 850 flower fly species, and 2,800 wasp species, many of which are important pollinators. Out of these insects, bees are the most important pollinators due to the fact that they feed on plant material (nectar and pollen) at every stage of their life cycle and therefore regularly visit flowers. In

Rhode Island, there are an estimated 250 species of bee, most of which are solitary bees that don't have a queen or make honey.

Unfortunately, insect pollinators are experiencing global declines, including our North American pollinators. For example, about one third of North America's bumblebee populations are in decline and almost 20% of North America's butterflies are facing extinction. These declines are due to threats such as habitat loss, disease spread, pesticide use, and invasive species. Many of these pressures are a direct result of land use changes caused by increased urbanization and agricultural intensification. Luckily, there are many actions we can take to protect these insect pollinators and the services that they provide for future generations.

In 2021, RIDEM caught the "buzz" on pollinators and launched an exciting new initiative called the Rhode Island Pollinator Atlas. The Pollinator Atlas is an effort to inventory Rhode Island's pollinating insects and to gather data that will inform future conservation plans to protect our insect pollinators. Conducting an inventory of our pollinators helps us to determine which species need our help, how their populations are doing, which habitats are most important to our pollinators, and what activities are threatening their survival. All of this information will help us build management plans to promote and protect

How can I help pollinators?

- Allow RI native wildflowers, such as wild violets, milkweeds, and asters, to grow on your lawn or in your garden!
- Avoid using weed killers and insect sprays on your lawn and around your home!
- Advocate for pollinators in your neighborhood by talking to your community about their importance!
- Join a local Community Supported Agriculture (CSA) initiative!
- Become a community scientist by joining projects like the Rhode Island Bumblebee Survey!

Interested in joining the Rhode Island Bumblebee Survey (RIBS) in Spring 2023?

If you are interested in joining the RIBS project, subscribe to our **monthly e-newsletter** to receive updates by visiting our RIDEM "Outreach" webpage:

www.dem.ri.gov/wildlifeoutreach

Want to learn more about RI pollinators?

Check out our wildlife fact sheets on the RIDEM "Wildlife & You" webpage!

- Bee fact sheet: www.dem.ri.gov/programs/bnatres/fishwild/pdf/bees.pdf
- Wasp fact sheet: <u>www.dem.ri.gov/programs/bnatres/fishwild/pdf/wasps-response-guide.pdf</u>

current and future pollinator populations. One of the first steps in this important effort is the launch of a brand-new community science project: The Rhode Island Bumblebee Survey (RIBS)!

Bumblebees are important pollinators that visit a wide range of plants and pollinate many foods that we like to eat! They also carry out a special type of pollination called "buzz pollination," in which a female bee vibrates her wing muscles to help the flower release its pollen. Several important crop plants benefit from buzz pollination, including cranberries and blueberries. Rhode Island is historically home to about 11 species of bumblebee, however preliminary surveys undertaken by Dr. Howard Ginsberg and Dr. Steven Alm's research groups at the University of Rhode Island (2014-2021) revealed that almost half of these species may have disappeared from the state.

Given their declines, it's important that we determine the status and distribution of Rhode Island's bumblebees, as well as the floral species and habitats

associated with these species, so that we can better protect them. To do this, the RIBS project is engaging community scientists to document bumblebee species and their habitats around the state. For this year's pilot season, a small group of volunteers is assisting with the RIBS project, but in Spring 2023 we will be welcoming as much public participation as possible! All you need is a love of nature, a smartphone, a lunchbox, and an insect net.

As of June 2022, our pilot volunteers have already observed all six of Rhode Island's known bumblebee species, including the rare golden northern bumblebee (*Bombus fervidus*). We have also received reports that a new bumblebee species, *Bombus auricomis*, may have recently arrived in Rhode Island! This just shows that there is still so much more to be discoved about our state's pollinators. So, make sure you sign up for our e-newsletter and follow us on social media to stay informed on how you can get involved with this important effort!

A world without insect pollinators is one that we would not like to see. Given the decline of insect pollinators both worldwide and here in Rhode Island, it is essential that we conserve these important critters and the services that they provide through informed management. Luckily, there is so much we can all do to help pollinators, whether you're a gardener, a community scientist, an educator, or simply a person who appreciates nature! The Rhode Island Pollinator Atlas is a key effort in this fight to save our pollinators and we are so excited to work together to save our buzzing neighbors.



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Rhode Island Reptile and Amphibian Rules and Regulations

POSSESSION OF NATIVE SPECIES

Possession or removal from the wild of any <u>native</u> reptile or amphibian is illegal*

This prohibition applies both to live animals and animal remains. Why? Rhode Island's reptiles and amphibians face pressure from numerous threats. For many species, removal of even a single adult individual from the wild can lead to local extinction. It is illegal to sell, purchase, or own/possess native species in any context, even if acquired through a pet store or online.

Animals that have been held in captivity can transmit deadly pathogens to wild populations. Under no circumstance should a captive animal, whether native or non-native, be released into the wild. If you have questions about animals currently in your possession, email the RIDEM Division of Fish and Wildlife at DEM.DFW@dem.ri.gov or call at (401) 789-0281.

*Permits are available for hunting, scientific collection, and professional exhibition (details outlined below). For a list of all reptile and amphibian species native to Rhode Island, see RIDEM regulation <u>250-RICR-40-05-3.17</u> sections A3 & A4.

COMMERCIAL TRADE IN NON-NATIVE SPECIES

Rhode Island law offers the opportunity to own a variety of non-native reptiles and amphibians as pets. Some species require special permits issued by the Division of Agriculture. For detailed rules and regulations regarding possession of non-native ("exotic") reptile and amphibian species, see RIDEM regulation 250-RICR-40-05-3.17 sections A3 & A4.

Federal law prohibits the sale of viable turtle eggs or any live turtle with a carapace length shorter than four inches. This regulation applies regardless of species or geographic origin, as small turtles are associated with an increased *Salmonella* risk for young children.



It is illegal to sell any turtle smaller than four inches!

COMMERCIAL TRADE IN NON-NATIVE SPECIES

Possession of native species for valid research and exhibition purposes is allowed with a permit. Individuals requesting permission to use native reptiles or amphibians for <u>research</u> or <u>professional exhibition</u> should submit a permit application to the RIDEM Division of Fish and Wildlife. Permit applicants are required to pay a processing fee of \$25 per permit.

HUNTING & TRAPPING

Snapping turtles, bullfrogs, and green frogs can be legally hunted in Rhode Island.

A current fishing, hunting, or trapping license is required to harvest these species and hunting/trapping must be conducted in compliance with season and size regulations (see table below). All animals harvested must be killed immediately following capture—possession of live turtles or frogs is illegal.

SPECIES	SEASON	SIZE LIMIT	BAG LIMIT	LEGAL TAKE
Common snapping turtle (Chelydra serpentina)	Year round, excluding May 15 - July 15	13 inch minimum carapace length	6 per season	Hand, dip net, turtle traps*, snagging, bow and arrow
Bullfrog (Lithobates catesbeianus)	Year round, excluding June 1 - July 31	None	20 per day (both species combined)	Hand, dip net, spearing, hook and line, bow and
Green frog (Lithobates clamitans)			combined)	arrow

^{*}Turtle traps must be marked with the trapper's name and address, checked every 24 hours, and set in a manner that will allow turtles access to air. All bycatch must be released immediately at the location where the trap was set.

SPECIAL CASES

A few additional general prohibitions are in place to prevent the spread of invasive species and zoonotic disease:

- Red eared slider turtles (*Trachemys scripta*) and non-native amphibian species must be kept indoors (outdoor enclosures are prohibited).
- Importation or possession of mudpuppies (*Necturus spp.*) is prohibited.
- Possession of live bullfrogs (*Lithobates catesbeianus*) is prohibited but cooked or frozen flesh can be imported for human consumption.

For a more detailed explanation of the relevant laws, see RIDEM regulation 250-RICR-40-05-3.7.

HELP PROTECT RHODE ISLAND WILDLIFE!

Witness illegal possession or sale of native reptiles or amphibians?

Report Violations to the RIDEM Environmental Police by calling 401-222-3070

See native reptiles or amphibians in the wild?



Join RIDEM's Division of Fish and Wildlife as a community scientist by downloading our free Herp Observer app! By submitting your observations of wild reptiles and amphibians directly to our secure databases, you can help us understand where species are found throughout the state. This information is essential for effective conservation and management of our slimy and scaly neighbors. We welcome observations of all species, whether common or rare!

Honeybees: Queens of "Save the Bees" Campaigns.

By: Dr. Katie Burns, Pollinator Entomologist, DFW

Despite the fact that there are over 4,000 wild, native bee species in North America and an estimated 250 species in Rhode Island, most people know about just one! The European honeybee (Apis mellifera) became a media star in the early 2000s when beekeepers began reporting unexplained mass die-offs of their colonies. These die-offs are now referred to as Colony Collapse Disorder (CCD), which is thought to have been caused by a combination of parasites, diseases, and pesticide exposure. Luckily, while once thought to pose a major long-term threat to honeybees, reports of CCD have declined substantially over the last five years, which is great news for beekeepers! However, honeybees remain the queens of "Save the Bees" campaigns which, unfortunately, has led to the spread of misinformation about bee conservation as a whole.

The honeybees in North America are not wild bees!

This may come as a surprise, but honeybees are actually a livestock species in North America! Managed honeybee colonies were brought over by European colonists in the early 17th century and, while feral populations do exist in the wild today, these bees are not native to North America and remain a primarily managed species. Today, they are used for both large-scale crop pollination and honey production, as well as smaller-scale backyard

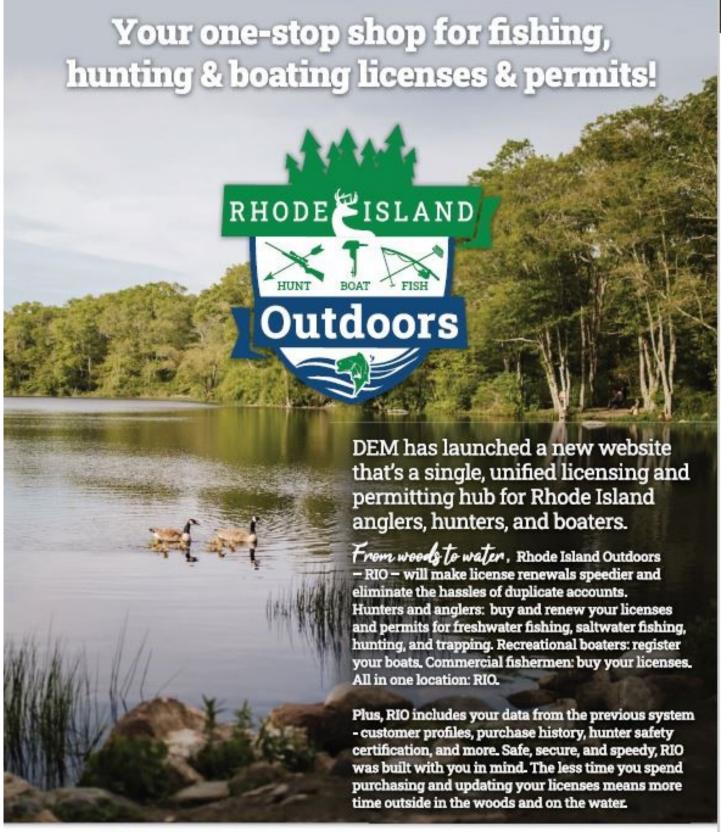


beekeeping. Since they are a livestock species, like chickens or cows, they are highly unlikely to go extinct since they are actively bred for their services and because their beekeepers provide them with care.

Responsible backyard beekeeping.

Managed honeybees provide Americans with tasty honey, however, they do not play a role in our native bee conservation efforts. As any livestock species, honeybees are kept in large numbers, which leave them prone to diseases and parasites. If not properly managed, these pathogens can be spread to wild bees, such as bumblebees and solitary bees, who don't have the same support system as honeybees. Additionally, in areas with high populations of honeybees, these managed bees can outcompete wild bees for food. Since wild bees are already experiencing declines due to other threats, this can put unnecessary pressure on their populations. Therefore, if you do keep bees for honey or pollination services, it's important to practice responsible beekeeping to reduce the potential impact on our wild, native bees. Luckily, there are lots of ways for beekeepers to do this!

- Register your apiary with the RIDEM Division of Agriculture to help track potential disease outbreaks
- Request regular inspections of your hives
- <u>Join a local beekeeping community</u> to stay up to date with the latest protocols on how to monitor and protect your hives from diseases and pests
- Try not to place your hives in or near conservation areas to avoid resource competition with wild bees On behalf of our buzzing neighbors, thanks for giving all of our bees a helping hand!





Register and start your adventures today!

RIO.RI.GOV

River Otter in Rhode Island

By: Charlie Brown, Retired DFW Wildlife Biologist

The river otter (*Lontra canadensis*) is a member of the weasel family, Mustelidae, which also includes several other furbearers native to Rhode Island - minks, fishers, and long-tail weasels. All mustelids possess anal musk glands that contain a pungent liquid that is released when they are disturbed, used to mark territories or to convey various messages to other animals.

River otters are adapted for an aquatic lifestyle. Their bodies are long, streamlined, and muscular. They have broad, flattened head with a stout neck and small ears and have a long, tapering tail which is about one-third of the total body length. They have short legs and webbed feet which they use to propel themselves through the water. Their hair is short and very dense. Their thick under fur provides waterproof insulation against cold waters. They are typically dark, glossy brown in color, but can vary from lighter shades of brown to almost black. They have long, sensitive facial whiskers which they use to hunt prey underwater. Adult male otters on average weigh about 20 pounds but may exceed 25 pounds. Females are smaller, averaging about 15 pounds as adults.

Habitat and range.

River otters range throughout much of North America north of Mexico, with the exception of the desert southwest and arctic regions. They can be found in freshwater, brackish, and saltwater environments where there is abundant prey and ample vegetative cover along the shoreline. Their range was greatly reduced in many parts of the United States at one time due to destruction and loss of habitat primarily due to pollution of the aquatic habitats in which they live. Protection, regulated harvests, and improvements in water quality have allowed otter populations to recover in most areas. Otters have been successfully reintroduced by wildlife managers into many parts of their former range. Otters never disappeared from Rhode Island but are more abundant today due improvements in water quality and the establishment and spread of beavers, which create wetland habitats favorable



to otters. Today, river otters can be found in all of our states major watersheds and coastal areas including the larger islands of Narragansett Bay. They do not occur on Block Island.

Diet.

Otters are primarily carnivorous, their diet consisting of a wide variety of fish species, crayfish, crabs, amphibians, and reptiles. They may also occasionally consume birds, insects, and mammals. Fish are the main food of otters, with slow moving, and schooling species most commonly taken. Otters can cause a great deal of damage in fish hatcheries or stocked ponds where fish are unable to escape capture.

Reproduction and life history.

Breeding season occurs in early spring. The gestation period may range from 290 to as much as 380 days. Like other mustelids, otters have delayed implantation, a process where the fertilized egg does not immediately implant in the uterus but remains dormant for an extended

period. Once implanted, the embryos develop quickly. Females mate again following the birth of their litter. Female otters have one litter per year with the average litter consisting of two to four young. Born helpless and blind, young otters remain in the den for the first two months of their lives. Maternal dens may be located in an abandoned beaver or muskrat lodge or some type of natural cavity. Young otters will stay with their mother for seven to nine months. Adult males do not participate in raising the young. Females are capable of breeding at one year of age. Males, however capable, generally do not have an opportunity to mate until they are at least several years old and have successfully established their own territories. Otters have been known to live up to 16 years in captivity, but on average it is probably less in the wild. The oldest wild otter age recorded in Rhode Island was 15 years.

Adult otters generally lead solitary lifestyles, with the exception of mothers with their young. Otters are territorial and will defend their territories from other otters of the same sex. Males generally have larger home ranges will attempt to maintain a territory that includes the territories of several females.

Otters are shy and secretive, and despite their large size not frequently seen. They do however leave recognizable signs of their presence. Otters create "latrine" or "haul-out" sites which they utilize for defecating, preening, feeding, playing, and scent marking. These latrine sites are often located at specific landscape features such as large conifers along the shore, stream inlets or outlets, on dams or on islands. Otters will scrape the

ground clear of leaves and pine needles, often forming small mounds onto which they defecate and deposit musk. Any otter passing through the area will visit these sites. Surveys for otters are often directed at locating these sites, which in some cases are used over many years by successive generations of otters.

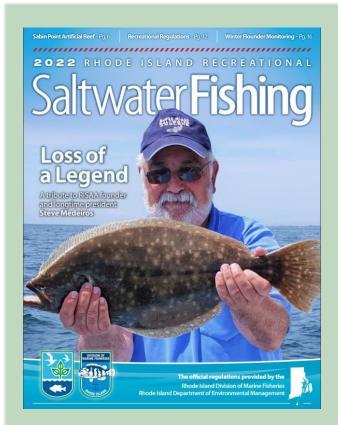
Management.

In Rhode Island, river otters are classified as a protected furbearer under general law 20-16-1. The statute dictates that no "furbearer" shall be hunted or trapped unless done so in accordance with regulations promulgated by the Department of Environmental Management. In 1970, following a well publicized incident in which a person shot an otter (an illegal activity), the state legislature passed general law 20-16-17, which makes the killing, trapping or taking of river otters illegal in Rhode Island. Today, Rhode Island is the only state in the northeast that does not allow a regulated trapping season for river otters.

The Division of Fish and Wildlife collects biological information from river otters obtained as road-kills. Although it is a small sample size, it provides us with important life history information such as age, diet, and reproductive history. We are also collecting various tissue samples for later analysis of environmental contaminants. The DFW also keeps a record of known latrine locations throughout the state and monitors these sites for activity.

For more information go to www.dem.ri.gov or email DEM.DFW@dem.ri.gov.





2022 SALTWATER FISHING REGULATION GUIDE IS AVAILABLE NOW

Pick up a copy at bait & tackle or sporting shops around the state, at RIDEM Offices, or online using your computer or mobile device.

Stay informed of fishing season dates, changes to laws, improvements to fishing areas, and much more.

GET THE REGULATIONS GUIDE ONLINE: WWW.EREGULATIONS.COM/RHODEISLAND

