

Island Conservation continued from front page

Tetiaroa Atoll

Rats have been dominating Tetiaroa Atoll for hundreds of years. After a failed attempt to rid the island of invasive rats in 2012, conservationists are ready to try again, but this time with the help of drone technology. For decades helicopters have been the primary tool for distribution of pelleted rodenticides on remote islands, but drones are cheaper, smaller, lighter, and can be easily transported and reassembled. Also, fewer people are required for operation. Drones are programmed to fly along a predetermined path, dropping

bait so precisely that the application avoids non-targets. There is no need to hire and fly in an international helicopter pilot when local experts can be trained to fly these drones through an automated process. Efforts to eradicate these invasive rodents from the island will begin early next year. ■



Photo Credit: Carol Raydon & Tetiaroa Society



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BRINGING BACK

Native Birds

with RODENT CONTROL

Photo Credits: Jose Luis Herrera and Island Conservation

Off the west coast of Puerto Rico, you will find a tiny island, Desecheo Island. This island was once home to one of the largest colonies of birds in the Caribbean before it was overrun with roof rats (*Rattus rattus*). It took many years to rid the island of this invasive mammal. With the help of Island Conservation teams and the use of Bell Laboratories Island Restoration Bait, Desecheo Island was declared rodent free in 2017. But conservation efforts didn't stop there, the new task was to repopulate the island with the previous seabird species, such as brown noddies, brown boobies, red-footed boobies, and bridled terns.

Bird decoys (made from pvc plastic) and sound system speakers were chosen as the solution. Triangular mirrors were also put up next to these decoys to create the illusion of

more birds than were actually present. This made it seem as if the island was crowded with birds, making it appear to be a safe and optimal nesting area. The speakers were placed strategically around the island and played sounds of seabirds to attract those flying overhead. Within the first year, conservationists observed that these tactics were producing good results, that is until a huge storm hit the island, causing massive destruction to all of the decoys, mirrors, and speakers. Luckily, some bridled terns still made it to the island in time for breeding season. Once the researchers receive more tools, they believe additional migrating seabirds will find their way back to Desecheo Island. The techniques used on this island have proven successful and can be repeated on other Caribbean islands in order to bring back their lost seabird populations.

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RODENT STORIES

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Keeping Up With
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BELL SPONSORS 2021 NATIONAL PEST AWARDS IN LONDON

Bell is proud to have been a sponsor of the 2021 National Pest Awards, which was held in London at the House of Commons. A wonderful time was had by all who attended the event on Thursday, September 9. The evening was filled with a wonderful reception, with a variety of awards given out to deserving recipients. A special congratulations to Graham Pest Control on winning Large Company of the Year!

“The National Pest Awards in London was an amazing event in which the Pest industry reconnected again in the UK” commented Michael Sims, UK-ROI-Sub-Saharan Africa Regional Manager. “Overall, it was great to see and reward the industry in person after such a long 18 months.”



Photo Credits: Naomi Gabrielle

NORTH AMERICA

Teslas are being chewed up by rodents, and vehicle owners are outraged by the lack of help they are receiving from the billion-dollar company. As the popularity of the brand rises, so does the number of complaints from customers about finding rats in their cars, both dead and alive. It seems that rodents are more attracted to the internal wires when they are insulated with soy rather than with oil. It is common for soybean to be found in newer vehicle's wire insulation. Soy insulation costs less and is better for the environment, which is why majority of electrical cars are following this new trend. Since there is no defect in design or use, Tesla is able to refuse the cost of damages created by rodents. Vehicle owners are livid because repairs are taking over a month to be completed and typically costing well over \$5,000 per Tesla. Soy wiring isn't the only thing rodents like to chew on, some say that their brake cables were also gnawed on, resulting in safety concerns about car operation.

Over the summer, fleas in the USA were found to carry the Bubonic Plague, also known as Black Death. Humans can be exposed to this plague if they are directly bitten by a flea or if they have come into contact with an already infected animal, such as a rodent. The disease is treatable if caught early, so being aware of the symptoms is key for survival. Unfortunately, the plague has already caused the death of a 10-year-old boy. According to lab tests completed by Colorado's Department of Public Health and Environment, a selection of fleas from the county where the boy resided tested positive for the plague. After this tragedy occurred, state residents were advised to avoid all contact with rodents and to call up their local pest professional company to inspect the areas around their homes, which is an especially important step for those families with pets.

LATIN AMERICA

As scientists were screen-washing sediment collected from a river near San Sebastian, they came across a fossil that could change everything. A large representation of rodents once lived on the Caribbean islands, but the teeth that were excavated belonged to an unknown rodent species. This unknown creature was about the size of a mouse, weighing less than a quarter pound, making it the region's smallest and oldest rodent, dating back 29 million years. This is the first rodent discovered in the Caribbean with North American lineage, complicating the idea that land-dwelling mammals from South America were the only ones to colonize the islands. The presence of this rodent species in the Caribbean suggests that there must have been a type of pathway to get across the water from North America to the islands, leading them to believe that more animals may have taken a similar route. Fossil and molecular evidence points to the possibility that these rodents arrived in multiple waves over time. These teeth open up the idea that Caribbean mammals with North American origins are not as unique as originally thought.

AFRICA

Archaeologists were searching for ancient scrolls inside a cave located in the southern Judean desert when they came across hundreds of bones instead. These bones happen to be the remains of rats. After testing the bones with the carbon-dating method, only one could be analyzed and was found to be roughly 42,000 years old, leading archaeologists to believe that the rest of the bones were over 50,000 years old. With this outcome, these extracted remains are now the earliest genetic sample ever found in the region. These rats were quite large, weighing about 1 kilogram. Researchers found that this species of rodents had developed special characteristics in order to better protect themselves against predators, such as an extra thick skull and the ability to poison their own fur by chewing on toxic bark and spreading it over their body's absorbent hairs. Further analysis revealed that this rodent species' modern equivalent currently lives in East Africa today, in areas with a lot of rainfall and green vegetation. The discovery of this rat's remains points to the possibility of a corridor with a similar damp climate that could've allowed the species to migrate safely from the land of East Africa to Israel. This ancient corridor could also help prove that humans likely traveled on the same path to Israel.

AUSTRALIA

The mouse plague in Australia doesn't seem to be getting any better. Mice can reproduce at such a fast rate that even when people are baiting, they can't keep up. Due to the high demand for rodent bait, farmers are struggling to even get their hands on any, forcing some to give up on their entire summer crops. With the absence of bait available, the mice are overtaking farms and houses by crawling over the residents at night while they're sleeping. Mice feces have even been found in babies' cribs. On top of that, everyone is figuring out their financials between having their machinery and infrastructure damaged, losing lots of grain, hay, and crops, to trying to afford bait with the price increase. One man had a near death experience due to LCM (lymphocytic choriomeningitis) which he contracted from the mice presence around his home. It is common for mice to carry over 35 diseases, leaving people who encounter them at high risk. The hope is that winter will help calm things down, but in the meantime, scientists are working on possible new solutions to gain back control.