

**Project Perch's mission is to protect and nurture the Burrowing Owl in SE Florida.
A real life HOOT, join now!**



Project Perch's BuOw Blog 10

Friday, October 17, 2013

The Fire Ants Arrive

Sunday September 22, the text came in, "Dirt in foreground. Ants? Too far from burrow for owls." The grass was long and there was some extra dirt in the foreground, but on camera it was hard to see. It was even harder to tell that the extra dirt was ant mounds. Sure enough, it was not just ants, but fire ants. On September 27, the text said "Male standing very close to fire ant mound." We had already been working on what to do.

We read up on fire ants and control methods. Then we sent e-mails to fire ant specialists in Florida and Texas and then to our local wildlife experts. With each day, the ant mounds grew. We were waiting for answers when the custodian let us know that there had been fire ants 2 weeks earlier just a couple hundred yards away from the burrows. They had been treated by a contract pest control company using a spray toxin. Not what we wanted for the owls, but what did we want?

The Expert Advice

First we heard from Drs. Gold and Ragsdale, the Department of Entomology at Texas A&M University. Dr. Gold recommended Amdro fire ant baits and described them as "least risk pesticides".¹ He told us the baits are applied as a dispersed treatment; do not apply granules directly to the mounds, but evenly over the landscape.¹ He indicated that it would be impossible for students to be exposed to sufficient numbers of granules to cause any adverse effects.¹ It would take at least 5 days for the granules to be picked up by the workers and for the chemicals to kill the queen(s), after which the colony would decline.¹

Then Dr. Porter, a researcher at the USDA – ARS Center for Medical, Agricultural and Veterinary Entomology in Gainesville, Florida called. Dr. Porter has specialized in the behavior and ecology of fire ants for more than 20 years. Dr. Porter also recommended Amdro because of its "low vertebrate toxicity".² His advice included using baits and if we couldn't find them, we could just make our own baits and put in just a couple of teaspoons of the granules. We talked about the right conditions for putting bait out, not too wet or too cold or too hot, 75-90 degrees and dry, avoid the morning dew.² He told us the ants would get most of the bait in a couple of hours and he also suggested a lure, like a piece of hotdog, to attract the ants and speed up the process and then switch it out for the bait.² We asked Dr. Porter if the owls would eat the bait and he indicated the bait was oily. He did not think they would bother it, but said no one knows for sure.²

He recommended a two step process that would include another bait product, methoprene, and that would be safe to just distribute evenly in the area.² Considered safe in drinking water supplies, it is a non-toxic juvenile hormone for the insects that stops reproductivity.² It takes longer to work because the ants live out their lives and just can't reproduce.² He recommended the Amdro first for the specific mounds and then methoprene the area.² This would be a longer term solution given that we were headed into the owl's nesting season and could have owlets in the near future. When we told him the school's standard way of treating involved a spray, he felt it would be much less effective on the ants and would be most harmful to the owls.²

We were very worried about the exposure to the owls, so we also sent e-mails into the local wildlife care centers. The South Florida Wildlife Care Center contacted their pest control company and they recommended a granular pesticide for the ants.³ If there were owlets they could make a cylinder for the granules that would go in the ground, so the ants could enter but the owls could not get to it.³ One of the veterinarian's personal bug guys also recommended Extinguish, the brand name for methoprene as it would be safe for owls.³ The Sawgrass Nature Center's bug guy contacted the manufacturer of Amdro who said fire ants have many entrances and exits and we should be able to control the ants around the burrow from 5 – 10 feet away and so recommended staying at least 5 feet away.⁴

A big thank you to everyone that found us answers and who gave us advice. We felt really good that our expert advice was very consistent and was focused on ways we could keep it as safe as possible for the owls. Everyone had great suggestions to help us put together our solution. Now we just had to try and execute it.

Our Treatment Protocol

We couldn't find Amdro in baits commercially and we also couldn't find Extinguish at all. So we bought the Amdro granules and then had to fashion homemade baits. We started with plastic fruit fly traps but finally settled on cutting off the bottoms of used plastic cups and the putting them together like a Petri dish with holes in their sides. We used only 50% of the amount recommended by the manufacturer and included a small piece of pepperoni as a lure. We made 3 baits.

We waited for good weather and on October 6, around 3:30pm we buried the baits. One of the baits had a hole on top and so we put it upside down to keep it from filling with dirt or moisture. When we got to the burrows we found 4 ant mounds instead of 2. One ant mound was south east of the burrow and we buried one of the baits there. The 3 remaining ant mounds formed a U shape on the north side of the burrow. With 2 baits left, we decided to bury them in the spaces between the mounds in hopes that ants from all 3 mounds would find them. The male owl came out and checked up on our work and then went back in the burrow.



Native Versus Red Imported Fire Ant ("RIFA")

There are two species of fire ants in Florida.⁵ *Solenopsis geminate* is the tropical or native fire ant but more common is the red imported fire ant ("RIFA") or *Solenopsis invicta* Buren.⁵ The way to tell the two apart is to look at the worker's heads to see if they are square and larger in proportion to the rest of their body and if it is, then this is the native fire ant.⁵ RIFAs came from Brazil and were introduced into the US between 1933 and 1945 and are in almost all of the southern states.⁵ Dr. Porter said we were almost certainly dealing with the RIFA, but do check.² Either way it would not change the method of removal or the need to remove them from the owl's home. When we buried the baits, we took some close up pictures of the ants and confirmed they were RIFAs.



The Impact of Imported Fire Ants

In Dr. Porter's work, he indicates that "fire ant population densities in the United States are unusually high because fire ants have escaped natural biocontrol agents that were left behind in South America".⁵ Red imported fire ants have been reported to reduce ground-nesting populations of rodents and birds.⁶ In certain instances, the RIFA may completely eliminate ground-nesting species from a given area.⁶ Because there is a 10 to 20 year lapse before reductions in bird populations are observed, it has been suggested that actual effects of the RIFA on animal populations may be underestimated.⁷ RIFA's are a serious problem for today's Burrowing owl.

Fire Ants and Burrowing Owls

In the weeks leading up to the ants, the owls had been mating constantly and there was the possibility that eggs could be laid in the burrow to be followed by owlets. We needed the least harmful method of treatment, because we didn't want to kill all the bugs in the area either. Not treating the mounds could result in injury to the adults, the owls abandoning the burrow and in the worst case scenario, death of an owlet. The owls were being circled by fire ants. We hoped this solution would work and work fast. We had 5 – 10 days to wait.

When Myrkalo studied Burrowing owls in a rural environment in western Florida, he documented that "One juvenile owl, not wearing a transmitter, was found dead and covered in fire ants (*Solenopsis invicta*) in the entrance of a burrow. The cause of death was unknown."⁸ The Wildlife Center of Texas had an adult burrowing owl admitted that had a severe head injury but also suffered total paralysis in the legs and talons that responded to anti-inflammatory medication.⁹ Which injury came first is unknown, but the center wrote that "habitat destruction, subsidence and fire ants are suspected for the decline" in Burrowing owls in the Houston area.⁹ In the Field Guide to the Rare Animals of Florida, in the Burrowing owl section it states that "predation by fire ants is also implicated in owl mortality".¹⁰ Those were the references to be found.

Did It Work?

On October 7, it rained heavily and the ants brought the mounds to the surface. The mounds looked huge and it seemed there was no way the owls could avoid them. Then on October 10, the lawn crew arrived and trimmed the grass. They seemed to bring the grass right down to the dirt around the burrow's entrance. We weren't sure if this was because they were aware of the ants in the area or the person trimming that day was just very aggressive. The ant mounds were gone. There was nothing left at the surface, so it was easier to look for the resurgence of fire ant activity. It has been more than 10 days now, and so far we have not seen any new mounds or ants in the area.

We are in the process of getting a not so local distributor of Extinguish to send it to a local feed store so we can buy it and apply it to the area. When we go out to apply that, if we can find them, we will also dig up the baits. We checked the other owl burrows to make sure there were no ants or mounds near them and all of the other burrows look good. These owls continue to teach us about the lives they lead and the dangers they face. We watched them lose their young when their burrow flooded in Tropical Storm Andrea. We've watched them evade the relentless Coop and stay vigilant to aerial predators and now this. We were joking about what else could possibly go wrong and hoping what we witness next is things going right. We're hoping again for owlets in the near future.

Sources:

¹ Drs. Gold and Ragsdale, Department of Entomology, Texas A&M University. 2013. Personal Communication.

² Dr. Sanford D. Porter, Research Entomologist for the USDA's Agricultural Research Service, Gainesville, FL. 2013. Personal Communication.

³ Dr. Renata Schneider, Veterinarian for the South Florida Wildlife Care Center, Ft. Lauderdale, FL. 2013. Personal Communication.

⁴ Robin Reccasina, Director, Sawgrass Nature Center, Coral Springs, FL. 2013. Personal Communication.

⁵ Collins, Laura and Rudolf H. Scheffrahn. Featured Creatures: Red Imported Fire Ant, The University of Florida Entomology and Nematology Department, January 2013, http://entomology.ifas.ufl.edu/creatures/urban/ants/red_imported_fire_ant.htm

⁶ Vinson, S.B. and A.A. Sorenson. 1986. Imported Fire Ants: Life History and Impact. The Texas Department of Agriculture.

⁷ Mount, R.H. 1981. The red imported fire ant, *Solenopsis invicta* (Hymenoptera: Formicidae) as a possible serious predator on some southeastern vertebrates: direct observations and subjective impressions. Journal of the Alabama Academy of Science 52:71-78.

⁸ Mrykalo, Robert. 2005. The Florida Burrowing Owl in a Rural Environment: Breeding Habitat, Dispersal, Post-Breeding Habitat, Behavior and Diet. Master's Thesis, University of South Florida.

⁹ Wildlife Center of Texas, Burrowing Owl Entry from August 22, 2009, <http://www.wildlifecenteroftexas.org/2009/08/burrowing-owl/>

¹⁰ Field Guide to the Rare Animals of Florida, *Athene cucularia floridana*, Florida Natural Areas Inventory, 2001 http://www.fnai.org/FieldGuide/pdf/Athene_cucularia_floridana.pdf