

A Conversation With My Son Jonathan  
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Dad, don't you know how to fly that drone, you just landed it in the ocean! Apparently not Jonathan, but I now know that it floats. And, why are we out here flying a drone instead of trapping mongoose dem? Well Jonathan, we don't have our traps yet because Mike (Sandy Point National Wildlife Refuge Manager) is still stateside.



I called Mike several weeks ago and he assured me that Toby (nuisance wildlife expert on loan from the USDA) would be around to help us get our stuff that is stored at the Refuge headquarters.



Unfortunately, the lock to the container with our traps was rekeyed and Mike neglected to give Toby a new key. Toby also doesn't have an extra gate key for us (the Refuge is home to the largest sea turtle nesting beach in the US and is locked most of the time to reduce human impact on nesting turtles). You know how things work down here. Toby did offer to let us use a few traps he has kicking around his house, but I have to go pick them from Plaza West. Plaza West? Dad, that's where we buy the chicken feet we use to bait the traps. They don't have traps there. Right again, but Jen, Toby's significant other, agreed to meet me there with the traps on her way to Yoga at 5:00 pm today. Ok Dad, whatever, you go get some traps and set them; Brad and I are going swimming.

I picked up nine old, rusty traps and set them out Thursday evening with little hope of capturing a mongoose in time for my Friday morning Skype sessions with my WSU classes. My instincts were correct - no mongoose.

Dad tell me again why I'm crashing through the bush and getting all scratched up by these thorns. Well Jonathan, it all started in the late 1970s when my undergraduate advisor asked me if I wanted to help him trap mongoose in St. Croix. Was that when you had more hair and a smaller belly? Yes Jonathan you too will experience the ravages of time. Anyway, my advisor was invited to St. Croix to investigate the ability of these small diurnal carnivores to live in environments ranging from desert scrub, where there is no free water, to rain forest, where water is abundant. There are very few mammals that can tolerate such extreme environmental differences, let alone thrive in them. We have captured mongoose from sea level grasslands to Kipukas at 7,000 feet elevation in Hawaii, from the dry coastal scrub to the rain forest on St. Croix, from the sugar cane fields to the cockpit country in Jamaica, and from the mangrove swamps to the Elfin forests on the slopes of El Yunque in Puerto Rico.

But you know, of all the different islands where I have trapped mongoose, I like St. Croix the best. It's a quirky little backwater of an island that is relatively safe and has lots of mongoose. And, Cottages by the Sea is a great place to stay and bring students. Yeah I know Dad, this is my 13th trip with you and I'm only ten years old. That's right Jonathan, you started handling mongoose when you were only 8 months old and you haven't been bitten yet! Dad, how many times have you been bitten? Just a few battle scars over the past 35 years.



Have any of your students had the pleasure of ivory penetrating flesh? Nope, 18 students have accompanied me 26 times since March 2009, and not a single bite. Wait a minute Dad, how can 18 students be here 26 . . . never mind, I know Matt, Chad, and Alyssa have been here at least three times and Brad has been here twice. But, I've been here 13 times. Yes, you already mentioned that fact. That's a great deal, Dad, you provide the students with a free place to stay and they sweat their fannies off in the tropical heat, get scratched by thorns, and bitten by ants just to catch your mongoose. Jonathan, you know I sweat my \*!# off and get scratched too. Besides, many of the students have earned credit and presented the results of their work at the UMass-Amherst Undergraduate Research Conference. This year Dianne DuBois, Brad Ellis, and Brenda Lopez presented the results of their work on St. Croix at the Massachusetts Undergraduate Research Conference. Diane told her audience that there is more microplastic pollution in Great Salt Pond than there is on the ocean beach. Brenda reported that the diversity of little critters decreased in the five salt ponds on the Refuge as the salinity increased.



All that is new information that has not been reported before. Cool, huh? Yeah, yeah, Dad I'm going swimming.

Brad measured 26 different characters on a 120 mongoose skulls from five islands and demonstrated that there only the upper right shearing tooth in males from Oahu were significantly different in size than the same tooth on the left size.





Why are we checking traps in the hottest part of the day, Dad? Don't you remember, I told you that mongoose are most active in the morning and late afternoon when it's cooler. So you're telling me that mongoose are smarter than us. I suppose you can look at it that way. But I prefer to believe that we are having less influence on mongoose behavior by setting and checking traps during the hottest part of the day. You have to rationalize everything, don't you Dad. Yep, biology trumps human comfort in field research. Just be happy that I don't study bats like George's dad Gary. But I like netting bats with Gary. Yeah, once or twice, but if you had to go out every night until the wee hours of the morning, you would grow tired of it. Also, don't you love jumping in the ocean when you are hot, sweaty, and scratched? The ocean is therapeutic you know. I thought you told me that beer was therapeutic Dad? Well Jonathan, just as there is more than one type of mongoose on this planet, there is more than one kind of therapy.



Ok Dad, we set 40 traps yesterday, how many mongoose do you think we will catch? Well, considering this is the first full day of trapping, I predict we will capture 10 animals, seven males and three females, two of which will be recaptures from last summer. Ok, so how did you come up with those numbers? Experience! We generally capture 30-50 mongoose on these 10-day trips, and we capture more males than females in the first few days and more females than males in the last few days; the overall sex ratio ends up being 50:50. So, why do we capture more males at first? I think males move farther than females, so if we leave traps in the same locations for 6-8 days the males are more likely to encounter the traps during the first few days. Later the females find the traps and a free lunch, and if they are in the traps, males can't enter them. Dad, you need to put clocks on the traps so you know when they get caught. I agree and I'll put you in charge of developing that technology.



Hey Dad, I just checked five traps and three of them were not sprung but had the chicken feet missing, one was tipped over and sprung, and one was sprung without a chicken foot. So, Mr. Mongoose expert, how do you explain that? You know Jonathan we set out trail cameras next to several different traps over the past few years and recorded lots of fascinating videos.

There are dogs and cats on this refuge that mess with the traps. There are also mongoose that reach through the sides of the traps to get the chicken feet, step over the trip mechanism and steal the chicken foot, and even sit on top of the traps! Dad, have you ever caught something other than a mongoose? Yes, we have caught rats, cats, land crabs, hermit crabs, and once we caught a Zenaida Dove.

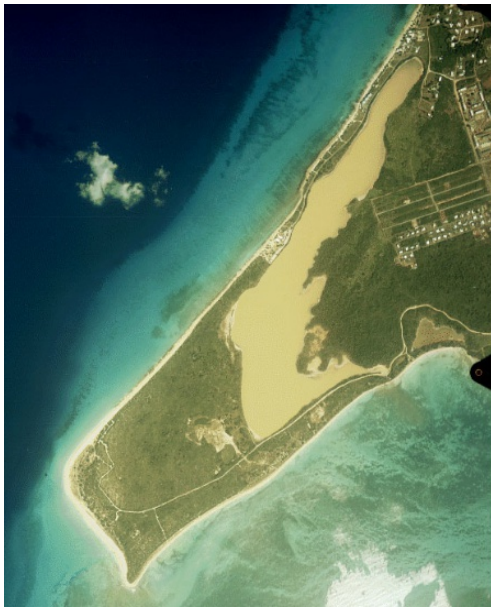


So, unless I place a trail camera at each trap (something I can't afford), I just accept the fact that traps that are missing chicken feet or are disturbed are do to a cause unknown to me.

Ok, so we all know that mongoose are fascinating creatures and that St. Croix is a great place to bring students, but does anyone else benefit from your mongoose research? Sure, anyone who reads our scientific papers or visits our web site. We also provide all our data to the US Fish and Wildlife Service. What do they do with it? Nothing yet. But, our results indicate that the mongoose population on the Refuge is not sustainable without recruitment of individuals from off the refuge.



So, if they could devise a method to prevent mongoose from entering the Refuge, the population would soon crash and no longer be a threat to the nesting sea turtles.



Oh, like having a bunch of dogs patrol the border. Not exactly, dogs on the refuge attack adult turtles and dig up nests. And dogs with their handlers would be prohibitively expensive. Actually I was thinking along the lines of an exclusion fence. Remember, the Refuge is on a peninsula and the Great Salt Pond occupies 95% of land near the base of the peninsula. So, there are only two corridors to access the turtle nesting beach that are less than 50 meters wide.



Also, didn't I tell you that mongoose don't swim because they would rapidly lose too much body heat and die. C'mon Dad, the ocean is warm and I can stay in it for hours, so why couldn't a mongoose swim in the ocean for ten minutes? Oh Jonathan, how quickly you forget. The key rests in that classic surface-to-volume ratio I have told you about many times. Yeah, I remember something about how you don't get cold as quickly as I do because you have a lower surface to volume ratio than I do. Correct! Surface area increase with the power of two (length x width) whereas volume increase with the power of three (length x width x height). So, if you have two objects of the same shape the smaller of the two will have a greater surface area relative to its volume than the larger one. In short, mongoose will very quickly lose body heat and stop functioning even in 80 degree water because they are long and skinny, have no body fat (it is mostly along the tail), and have no underfur to conserve heat like otters and mink. Ok Dad, class is over, I'm going swimming despite that surface to whatever you were talking about. Before you go, I forgot to mention that I ran into Calvin's Dad at the grocery store earlier today. You do remember Calvin don't you? Yes, Dad, I remember Calvin. Are we going to go visit him again this trip. Unfortunately, I don't think we have the time, but we will definitely see him this summer.



Hey Jonathan it's our last night on St. Croix, lets go look for the green flash. C'mon Dad, you now the green flash doesn't exist. Not true, I have seen it three times in the last 35 years!

