

Natural Ecological Evolution



By Roy DuVerger

I Define ***Natural Ecological Evolution*** as the study of flora and fauna in a way that explicitly considers the behavioral changes of individual species that occur with the introduction of non-native species over extended time periods within specific or isolated areas. It further considers what effects the removal of a non-native species has in a specific environment based on the behavioral changes that have occurred over time and projects species' survival rates after potential natural catastrophic events. Each situation, no matter how small the affected area, has to be evaluated independently.

Throughout my articles and books you will see me use the term "Natural Ecological Evolution".

Here I am going to provide you with a real life example of why Natural Ecological Evolution is a critical study that must be undertaken when determining steps to correct what seem like problems with our ecosystems. Especially when it comes to non-native flora and fauna.

I have a house on St. Thomas in the U.S. Virgin Islands on what is called the Northside. I spend a significant amount of time here as the peaceful surroundings help me concentrate on my work. In 2017 I had the opportunity to observe what happened when two category 5 hurricanes (Irma and Maria) struck our 4-mile-wide, 15-mile-long island within a 12 day period.

Chickens - the much misunderstood, maligned chicken arrived, according Australian anthropologist Alice Storey and colleagues, based on DNA investigation of archaeological chicken bones from sites in Haiti and Florida, for example, suggests that the introduction of chickens in this area of North America came in the 1500s and 1600s, and that these animals share genetic similarities with chickens from archaeological sites in Spain dating to the same period.

This means the ecology of St. Thomas has had 500 +/- years to evolve to meet the specific habits of this non-native animal prior to the arrival of Hurricane Irma.

On the morning after Hurricane Irma's arrival, I cleaned up what was necessary and started an assessment of the effects the storm had on the island's wildlife in my local area. When it came to the chickens I was astonished to say the least.

There was a flock of wild chickens that lived in the area some 30 strong, that I would feed in the mornings. This particular morning I was not sure what I would find, however I was greeted normally when I walked down the driveway to retrieve their food, as if nothing had happened. As I threw the food out across the yard I was amazed to see that every one of the flock had survived. I was even more surprised to see that a mother hen along with her 11 three-week-old chicks came through without a scratch!

Our island is also home to 3 raptor species, 2 of which live on our side of the island, the Red-tailed Hawk and the American Kestrel. The Red-tailed Hawk has picked up the nickname "chicken hawk" because when the Europeans introduced domestic fowl to the American mainland it developed a taste for picking one off now and then. However, here on our island the story is a little different.

Here on St. Thomas we have virtually no fresh water ponds, rivers, streams, creeks or whatever you might call them. Water is a rarity! So we established a small manmade pond in our front yard that we keep filled with fresh water for all the local wildlife to drink from. What we witnessed after Hurricane Irma was the routine assault by the Red-tailed Hawks on the chickens coming for a drink. They were the Red-tails' only food source after the hurricane had killed nearly everything else. It was the same for the American Kestrel as most of its food sources had not survived the hurricane; the young chicks became a prime target.

Now if the islanders had followed the non-native thinking and decimated the chicken population, what would have been the raptors'

fate? Would they have stayed in hopes of finding food and starved to death, or would they have left hoping to find food somewhere else among the hurricane ravaged islands and in the end met the same unhappy fate?

Here in St. Thomas the raptors have evolved so that these non-native chickens, both young and old, are one of their primary foods. Subsequent to this catastrophic event they turned out to be their only food source while the environment healed itself.

This is just a synopsis of a basic study that shows why Natural Ecological Evolution studies must be conducted in each area before any sort of culling action takes place, no matter how small that area may be. These studies must include future event predictions so, as in the case of the Raptors here in St. Thomas, we don't inadvertently make things worse than they need to be.

If you would like to know more about our findings, watch for my new book coming out in mid-2025, "Exotics, Have We Gone Over the Edge of the Cliff?"

Pre-Columbian chickens of the Americas: A critical review of the hypotheses and evidence for their origins, January 2011, Alice A. Storey, Daniel Quiroz, Nancy Beavan and Elizabeth A. Matisoo-Smith

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