

Don't Set Them Free!

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Many of us love animals, and we love nature. Many of us keep wild species of reptiles and amphibians, which is for the most part a harmless, educational, and satisfying hobby. But one side-effect of the interest in reptiles is unwanted or escaped pets, when that cute turtle outgrows its tank or when that snake that we just “had to have” loses its attraction to us. Another side effect is the release of unwanted or rescued reptiles or amphibians (herps) into a local pond or woods. In these situations, animals may end up living in places where they don't belong and where they will do real harm.

If a turtle we hold in our hands needs a home, it seems to make sense to turn it loose in an area where we know similar turtles live successfully. Recently, the DFW Herpetological Society was approached about helping remove introduced turtles from a large pond in Dallas, and one of the solutions proposed was to release them into the nearby Trinity River. There are some powerful reasons why we should say “no” to releasing these turtles into the wild. Most of those reasons are also given by Partners in Amphibian and Reptile Conservation (PARC) and other groups of herpetological professionals.

There are at least five reasons not to release herps into the wild:

1. They may not adapt and survive in the new location
2. They compete with local herps for resources
3. Released herps are extra predators, perhaps reducing local populations
4. Released animals may spread parasites and diseases
5. The genes they contribute may harm the population

Do released herps adapt and survive?

If you rescue a Texas rat snake from a field that is about to be developed, and you release it a few miles away, does it live out its life happily? If you want to re-start a population of turtles in a place where the turtles no longer live, will it work? If you are silly enough to want to start a population of green tree pythons in the woods around Lake Worth, will that work?

Biologists have been studying what happens to herps that are relocated (like the Texas rat snake) or released to repopulate an area (like the turtles). They generally find that herps do not do well in these situations. There are stories of rattlesnakes failing to find suitable hibernacula in new localities, and box turtles wandering off from perfectly good habitat no matter how many times they are brought back. Biologists Michael Plummer and Nathan Mills released eastern hognose snakes into suitable habitat and radio-tracked them, along with hognoses that were already living there. The released snakes wandered a great deal and their survival was much lower than resident snakes.

Resident herps tend to establish a “home range,” which is an area within which they tend to stay and become familiar with landmarks and habitat. If moved a short distance, many have been shown to have some homing ability. Moved farther away, they may spend their time

searching for landmarks and run into various dangers or simply use up too much energy in a fruitless search. Relocating a rescued turtle or snake may be a death sentence.

A different sort of problem often occurs when an exotic species is released, such as our hypothetical green tree pythons in the woods around Lake Worth. Exotic species are often adapted to specific temperature ranges or rainfall amounts, or specific habitats and prey species. Released where they don't belong, our green tree pythons would succumb to winter cold, or dehydrate, or fail to find suitable prey, or be killed by parasites to which they have no defense.

Competition for resources

In the Trinity River, populations of turtles already exist. What controls the population size, keeping their numbers at a fairly even level? One of the limits to their population size is the amount of local resources. There must be food to eat, places to bask, and protected areas to overwinter, among other things. If we dump 50 more sliders into the Trinity, those are 50 more turtles competing for the same prey, the same basking spots, and so on. If there are not enough resources, some of the turtles may die or have to disperse.

We usually do not know for certain the population size in an area, nor do we know everything about the resources they need (we still have a lot to learn about the natural history and ecology of most species). Maybe released animals will be absorbed into the population, but we cannot know if we are placing a hardship on animals already living there.

Predation on other species

What about the "resources" these released herps are competing for? Resources include the other animals that are eaten, and those can include local hatchling turtles, or local frogs, snakes, or lizards. Releasing one species means a greater number of other species killed and eaten.

The bullfrog is a good example. This is a very large, adaptable frog species, and it has established itself in a number of places where it has been released. Adult bullfrogs eat anything they can get into their mouths, including other frogs, snakes, and according to one story, even a baby alligator. Letting these frogs go where they don't belong may damage other herp species that we care about.

Many of the invasive species that we think about are exotics, like the brown tree snake that was introduced on Guam. It was very adaptable, and on Guam it faced no predators, and so it was soon out of control. Brown tree snakes have done a great deal of damage to the birds of Guam and been a nuisance to people. Other invasive species horror stories include the cane toad in Australia and the fire ant in the U.S.

And let's not be so self-centered that we only care about the species we think are "cool." Our forests and marshes and prairies are composed of many species, and if we knock down a few of them, this can have ripple effects on a great many more. None of them are dispensable.

Parasites and diseases

Released animals spreading diseases or parasites can be a nightmare scenario. In various places over the world, we are losing amphibian species for a number of reasons. One culprit is the chytrid fungus, which easily takes hold and spreads in captive collections. Recently, this

pathogen was found in Japan, apparently the result of importation for the pet trade. If it gets into the wild, many irreplaceable Japanese amphibians will be at risk.

In the U.S., native tortoises can fall victim to a respiratory virus that has been spread by release of captive tortoises. And a few years ago, there was a brief scare when imported tortoises were found to have ticks that could have wreaked havoc on hoofed mammals, if the ticks had come into contact with them.

It is odd that we can be obsessive about quarantine protocols when it comes to new animals being added to our collections, but we can be so thoughtless about releasing animals into the wild. The released animal goes through no quarantine and immediately contaminates water and habitat if it carries disease or parasites.

New genes in the gene pool

Some southern forms of the box turtle, *Terrapene carolina*, often lay more than one clutch of only a few eggs during the year. When warm climates allow a long activity season, this can work well, since there is time for multiple clutches to hatch. Let's suppose that this is a genetic adaptation, and a group of box turtles from the south are released in a northern location. Let's also say that a number of these released turtles mate with resident northerners. The genes contributed into this population will not be very adaptive, because the shorter activity season allows time for only one clutch of eggs. In this scenario, a local population of turtles will tend to have a maladaptive trait, and since box turtles are under a lot of pressure anyway, this could be "straw that broke the camel's back." A slightly lower rate of reproductive success might spell the end of the population at this locality.

This is a hypothetical example, but it illustrates how maladaptive genes could be harmful if widespread enough. It seems less likely that a single released animal could do much damage, and in fact populations can benefit from a little genetic variability brought in by animals from nearby populations. The issue here is groups of released animals that are not from nearby localities.

The bottom line

The bottom line is this: releasing captive herps into the wild can do a lot of harm. The released animals often don't survive. If they do, they compete with existing animals and eat others. They may spread disease or parasites, killing off animals in a locality. They also may make populations less genetically adapted to local conditions.

Sometimes there are no good solutions. Where will the turtles from the Dallas pond go? There are only so many people willing to adopt red-eared sliders and other large aquatic turtles. However, if released into the Trinity, they could be harmful. We cannot simply turn them loose and enjoy watching their moment of freedom, ignoring the consequences of our actions.