

The Year of the Frog and the Era of Extinction

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The house is on fire. Figuratively speaking, that is. The house is on fire, and we're not sure how to put it out. The city council isn't sure if the fire department should bother to put it out. Some even argue about whether that smoke and those flames are really a fire.

The "house" of amphibians and reptiles has been at risk for years, as forests and wetlands are destroyed, pesticides and other chemicals are found everywhere, the climate changes, we introduce foreign species where they don't belong, and we kill or collect excessive numbers of these animals.

Amphibians are in particular trouble. It has been estimated that somewhere between 9 and 122 amphibian species have gone extinct since 1980, with something like 1,700 to 2,000 additional species at imminent risk for extinction (Global Amphibian Assessment, cited in McCallum, 2007). A few might say that since extinction is a normal biological process, "what's the fuss?" Malcolm McCallum estimated the "background" rate of amphibian extinction – what we would expect the rate of extinction to be, based on the fossil record. Then, looking at the number of amphibian species at imminent risk of extinction, he calculated that amphibians are on the verge of going extinct at about 30,000 times the rate that they "should" be going extinct! He concluded, "it is difficult to speak of amphibian declines and much more accurate to refer to this die-off as a global amphibian extinction event" (McCallum, 2007).

The year 2008 was designated as the "Year of the Frog" by the Amphibian Ark (a project of the International Union for the Conservation of Nature (IUCN) and zoo and aquarium groups). It was intended as a public awareness campaign, and we can all continue to spread the word: the amphibian house is on fire.

And not only amphibians are in trouble. In 2000, Whit Gibbons and his colleagues made the case that reptiles are in substantial danger, too (Gibbons, et al., 2000). At that point, almost eight years ago, the estimated number of reptile extinctions exceeded that of amphibians, and the article discussed six categories of threats to reptiles as well as amphibians:

1. Habitat loss and degradation
2. Introduced invasive species
3. Environmental pollution
4. Disease and parasitism
5. Unsustainable use
6. Global climate change



Human activity is significantly linked to each of these threats. Even the threat from disease has a human connection, as human activity has at times been responsible for transporting disease organisms (such as chytrid fungus) to new, vulnerable populations of reptiles and amphibians. Needless to say, convincing people to change what they do in order to save reptiles and amphibians is a big challenge. Developers fight for the opportunity to destroy habitat, because that is how they make their living. Chemical producers

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minimize the potential damage their products may cause and fight regulation of their activity, for the same reason. Some of us urge our lawmakers to fight regulation of gas mileage, or coal-burning power plants, and so on, because we want what we want, preferably at cheap prices.

So, the house is burning down, but putting out the fire is in conflict with our way of life. That conflict tempts us to argue that maybe the smoke is really just someone's backyard barbecue. No need to send the fire department. It's not our house.

But it is our house, in the long run. In many places, amphibians are the group constituting the greatest "biomass" – meaning that when you put them all together, they take up more space than other kinds of animals. That's a lot of weight to throw around, making amphibians a key player in the food chain. If they disappeared, how would that affect the animals that depend on them? How far out would that ripple effect go?



It is hard to single out any one species, like the cricket frog, and make a case that it would be a catastrophe for humans if there were no more cricket frogs. They're too small for us to eat, and you can't sell 'em, so how important are they, anyway? However, we can make a case for the importance of biodiversity. It is good when an ecosystem contains a large number of species, because such a system is more stable. A complete forest is stronger and more stable than a cornfield, because if the corn fails, there's not much of anything left. Whatever is left will probably fail, because it had to be dependent on the corn. The forest, because of its complexity, won't collapse if a particular kind of plant or bird or frog disappears. Because of its biodiversity, there are more ways for everything else to keep going. It won't collapse like a house of cards.

What we must realize is that all those species out there, all those ecosystems, are our life support system. That system provides the oxygen for us to breathe, and ultimately the food we eat. It helps regulate the water that is essential for all of us, it provides new medicines, and it helps regulate our climate. That support system is our "house." The more we whittle away at the number of species, the weaker the support system becomes. How long can we let our house burn down before we start fighting the fire?

References

Amphibian Ark – online: www.amphibianark.org

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