

# •Axolotls and the Environment

•by Sharel Gaskey

## •Introduction

•Every one organism affects our future and our environment's future! When one group of organisms die off another group also might die unless they can rely on one another for food. When an animal becomes extinct our whole world's future changes because it has to adapt to the loss. There are many types of animals that need our help to survive. They are in this situation because sometimes we as humans are causing the problem. There are many extinct and endangered animals at the moment, but right now one specific animal is going to be the focus, The Axolotl. The Axolotl is related to the Tiger Salamander. The Axolotl plays an important role in Mexico's life style and survival. Before they were endangered they were a valuable food source for the people of Mexico. Sadly because of people's hunger for fried salamander and other fish, it has tremendously contributed to the loss of numbers in the wild.

•Inhabitants are slowly destroying the axolotl's habitat.

•There are problems we are causing that we can also fix.

## •About this amazing Creature

•The Axolotl or *Ambystoma mexicanum* or some refer it as the Mexican Walking Fish, though the Axolotl (pronounced Ach Suh Lah tuhl) is not a fish but an amphibian, a salamander, part of the order Caudata/Urodela. They are found in Lakes Chalco and Xochimilco of the Valley of Mexico. Lake Chalco is drained so the only place they are found today is in Lake Xochimilco. As adults they get about 16 cm long and live about 12 to 15 years. Axolotls are neotenic, which means they attain sexual maturity without metamorphosing from their gilled larval stage to the terrestrial adult stage. They are born from eggs which are laid one day after indirect fertilization which hatch two to three weeks after. Female Axolotls can lay about 300 to 1000 eggs at a time and can mature as early as 6 months to a year. Even though Axolotls are one of the few types of salamanders that are fully aquatic, there have been some cases where they can morph like most salamanders into terrestrial form (as seen under photos)

•Their adult size compared to a tea cup.

•The only location Axolotls are and were found.



## •Problem

•Many salamander species in Mexico and Guatemala have suffered dramatic population declines since the 1970s, driven to the brink probably by a warming climate and other factors. Two of the most common species of salamanders in the areas 40 years ago are extinct, and several others have experienced large drops in number. All around the world human influences have changed the environment.

•When one animal becomes extinct others start to disappear!

Category	Total	U.S. only								
Endangered Species	599	316	253	78	20	82	22	64	18	39
Threatened Species	598	316	253	78	20	82	22	64	18	39

## •Why They are so Important

•Wake says salamanders' effects in ecosystems do not go unnoticed, however; in forests, salamanders account for a large amount of biomass. Certain species even depend on salamanders for their own survival, such as the salamander-eating snake, which, according to Wake, is also showing signs of population decline. Because they have the ability to regenerate lost body parts, axolotls are probably one of the most scientifically studied salamanders in the world. Salamanders eat insects, small invertebrates, and fish.

## •Causes

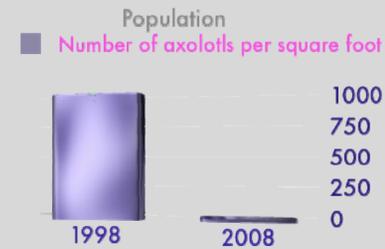
•Axolotls and other salamanders around the world are becoming or are extinct due to factors such as pesticides, predators and habitat destruction. Pesticides and even herbicides that are put on surrounding soil can run off into the water causing problems in a whole different area. When silt and other suspended solids, such as soil, wash-off plowed fields, construction and logging sites, urban areas, and eroded river banks when it rains. Under natural conditions, lakes, rivers, and other water bodies undergo eutrophication, an aging process that slowly fills in the water body with sediment and organic matter. The major sources of water pollution can be classified as municipal, industrial, and agricultural.

•Wake says that warming temperatures on the steep, forested slopes of Guatemala's volcanoes are forcing the salamanders up to higher, less hospitable elevations. Because of rising temperatures caused by "Global Warming" one of the problems causing death is a fungus starting from stress from high temperatures.

•Their original habitat was destroyed except for what is left now, canals.

•Non-native animals such as tilapia were introduced into their home and are a big impact on them being endangered.

## •Graphs / Facts



•In Ten Years the Amount Per Square foot went from about 1000 to 25.

•Other species Threatened, Vulnerable, and Endangered just in Texas include:

- Salado Salamander
- Cascade Cavems Salamander
- San Marcos Salamander
- Georgetown Salamander
- Texas Blind Salamander
- Barton Springs Salamander
- Jollyville Plateau Salamander
- Comal Blind Salamander
- Austin Blind Salamander
- Black-Spotted Newt



## •Photos

•My Pet Axolotls (right are my males, a wild type and a leucistic) First batch of babies (Below is my White albino Female and eggs)



•Tiger Salamander close relatives to the Axolotl



•Same animal Before and after Morphing



## •Solution

•Make a sanctuary and maybe a man made lake in a better spot. Reintroduction of lab bred axolotls might not be a good idea. A pilot sanctuary is planned to open in Mexico City in 2009.

•The federal Endangered Species Act of 1973 (ESA) (16 U.S.C.A. §§ 1531 et seq.) was enacted to protect animal and plant species from extinction by preserving the ecosystems in which they survive and by providing programs for their conservation.



## •Conclusion

•Over the past 30 years, the salamanders that used to thrive in the tropical cloud forests of Mexico and Guatemala have been disappearing, and until now no one had even noticed that the stealthy amphibians may be spiraling downward towards extinction. No matter the cause we are losing many of God's precious creatures causing more problems in our earth and ecosystem. Because of what we have already done in the past we need to change to do something about our future. Not just ours, but our neighbor's as well. From what we understand so far, five great extinction events have reshaped earth in cataclysmic ways in the past 439 million years, each one wiping out between 50 and 95 per cent of the life of the day, including the dominant life forms; the most recent event killing off the non-avian dinosaurs. Speciations followed, but an analysis published in Nature showed that it takes 10 million years before biological diversity even begins to approach what existed before a die-off. Here, in a nutshell, is all that's wrong with our treatment of nature. Amid all the moral, practical, and legal issues with the border fence, the biological catastrophe has barely been noted. It is as if extinction is not contagious and we won't catch it.

## •Acknowledgements

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•www.axolotls.org

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•www.indiana.edu/~axolotl/

• U.S. Fish and Wildlife Service, Threatened and Endangered Species System, Summary of Listed Species, 2003.

•<http://www.rosamondgiffordzoo.org/animals/Amphibians/Axolotl.pdf>

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•<http://www.umich.edu/~qs265/society/waterpollution.htm>