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Endangered Salamander Spotlights Risks of Common U.S. Pesticide

AUSTIN, Texas, August 26, 2005 (ENS) - Endangered salamanders that live in Texas' capital city might get a break from pesticide exposure. Conservation groups achieved a settlement agreement this week that requires the U.S. Environmental Protection Agency (EPA) to consult with the U.S. Fish and Wildlife Service on impacts of the pesticide atrazine on the endangered Barton Springs salamander.

The Barton Springs salamander, *Eurycea sosorum*, is found only in Barton Springs, in Austin, Texas.

Scientists with the U. S. Geological Survey (USGS) have found six pesticides in the Barton Springs aquifer of concern to human health and to salamanders, since amphibians are particularly sensitive to contaminants. Atrazine is the most heavily used herbicide in the United States, according to the EPA.

Water quality at Barton Springs, a tourist attraction near downtown Austin, is a critical issue for the capital city, which relies on the springs for part of its municipal water supply. Barton Springs is the largest spring fed, natural bottom swimming hole in the country, and is utilized by over 340,000 people every year.

The agreement to consult resulted from a lawsuit filed against the EPA under the Endangered Species Act in January 2004 by the Center for Biological Diversity and Save Our Springs Alliance for failure to consider the effects of EPA registered pesticides on the salamander.

The consultation and an EPA effects determination must be completed within one year for atrazine and within 25 months for five additional pesticides.

The EPA, which authorizes pesticide use throughout the United States, is required to consult with the Service to ensure pesticide use does not jeopardize the existence of species listed under the Endangered Species Act

But the environmental agency has shown what the conservation groups call "an ongoing recalcitrance" to address the impacts of authorized pesticide use on federally listed species.

"The science is clear and consultation by the EPA should result in federal restrictions on the use of atrazine in particular and other pesticides harmful to Barton Springs salamanders," said Jeff Miller, wildlife advocate with the Center for Biological Diversity.

John Fritschie, attorney for the Save Our Springs Alliance, said, "Atrazine has been found in Barton Springs at levels known to be toxic to the salamander's prey species. We ask that distributors, retailers, and local governments take initiative in eliminating the use of atrazine, found in Vigaro and Scotts Weed and Feed, in the Barton Springs watershed, where recreational and ecological resources are particularly vulnerable."

Although scientific studies have linked pesticide use with developmental, neurological and reproductive effects on amphibians, the EPA had refused to consult with the Fish and Wildlife Service regarding the impact of pesticides on the Barton Springs salamander.

In 2002, the Service requested that the EPA enter into consultation regarding the impact of atrazine on the salamander because atrazine has been documented in Barton Springs at levels that warrant concern for the survival of the salamander and possibly public health.

The Service also mentioned concerns about other pesticides - diazinon, prometon, metolachlor, carbaryl, and simazine - which the USGS found in the Barton Springs watershed in 2000 and 2001.

Atrazine and carbaryl have been found to impact amphibians, including salamanders, at very low concentrations. The USGS scientists found atrazine at levels five to 10 times greater than concentrations shown to cause disruption of sexual development in frogs.

The conservationists point to studies by Dr. Tyrone Hayes at the University of California that have strengthened the case for banning atrazine.

Dr. Hayes demonstrated that atrazine is an endocrine disruptor that chemically castrates and feminizes male amphibians.

In humans, atrazine has been linked to increased prostate cancer and decreased sperm count in men, as well as higher risk of breast cancer in women.

Dr. Hayes first conducted his studies showing atrazine is an endocrine disruptor while employed by pharmaceutical giant Syngenta, maker of atrazine.

"Syngenta subsequently halted his research and paid for other studies that supposedly contradict his results," the conservationists said.

In the December 2004 issue of the professional journal BioScience, Dr. Hayes examined 16 studies on the endocrine disrupting effects of atrazine. He found that 100 percent of the seven negative studies were funded by Syngenta whereas the nine studies that determined atrazine had measurable harmful effects on various species of wildlife were funded by governmental agencies or independent sources.

The EPA recently banned the residential use of another pesticide diazinon - not in direct response to any single lawsuit, the conservationists said, but because of the growing nationwide protest against its use from environmentalists and public health advocates.

Atrazine, however, remains available for both agricultural and residential use in the United States. Several European countries, including Switzerland, home of Syngenta, have banned atrazine.

"It is time for the EPA to acknowledge the overwhelming science regarding impacts of pesticides on amphibians. Their consultation process must ensure that the use of pesticides does not jeopardize the survival of listed species," said Brian Litmans, attorney for the Center for Biological Diversity and Save Our Springs Alliance.

The EPA has already acknowledged the harmful effects of atrazine on drinking water. In January 2003, Stephen Johnson, now the EPA administrator was the agency's assistant administrator for the Office of Prevention, Pesticides, and Toxic Substances. He issued an atrazine alert.

"After the most extensive analysis ever conducted on atrazine, EPA has designed a protective, early alert system to implement rigorous monitoring and fine-tuned safeguards to protect drinking water in the communities where atrazine is used," said Johnson on January 31, 2003.

“For the most vulnerable watersheds, if the testing shows higher levels of atrazine than we consider acceptable, use of the product will be prohibited in that area,” Johnson said.

"The Agency is continuing to evaluate the potential effects of atrazine on amphibians, which continue to be the subject of additional research and analysis," Johnson said then.

"EPA intends to submit the issue of atrazine effects on amphibians for independent scientific peer review by the FIFRA Scientific Advisory Panel in June, and the Agency anticipates completion of an amended IRED [Interim Reregistration Eligibility Decision], including consideration of effects on amphibians, by Oct. 31, 2003."

The Interim Reregistration Eligibility Decision that the EPA completed on October 31, 2003 was required under terms of a September 2001 consent decree between the Natural Resources Defense Council and the agency.

The agency was required to monitor atrazine levels in watersheds and to consider new studies on potential amphibian risk and the potential association between atrazine exposure and the incidence of prostate cancer or other cancers in humans.

To fulfill the new monitoring requirements for the EPA and Syngenta identified 40 U.S. indicator watersheds that the EPA says are "representative of more than 1,100 other indicator watersheds across the nation."

Syngenta is required to monitor "at key sites within these watersheds over a two-year period to determine if a level of concern is exceeded," the EPA said.

The two year period is almost complete, and the EPA has said that if the level is exceeded, "the watershed will be subject to remedies consistent with EPA's total maximum daily load program and the Federal Insecticide, Fungicide, and Rodenticide Act."

Back at Barton Springs, the conservationists are worried that atrazine and the five other pesticides of concern pose a risk not only to the salamanders but also to the people who swim at the springs.

“Barton Springs is a source of life for people, salamanders and other wildlife in Austin," said Fritschie, the attorney who represents the Save Our Springs Alliance. Headquartered in Austin, the Alliance seeks to protect the Edwards Aquifer, its springs and contributing streams, and the natural and cultural heritage of its Hill Country watersheds, with special emphasis on the Barton Springs segment of the Edwards Aquifer.

"The Barton Springs salamander is our canary in the coal mine." Fritschie said. "As goes the salamander, so goes human health. It is imperative that atrazine be banned in the Barton Springs watershed and that other pesticide use is also re-examined."



Barton Springs is a popular swimming spot in Austin, Texas.
(Photo courtesy [USGS](#))



Barton Springs salamanders are federally listed as endangered. (Photo by W. Meinzer courtesy [USFWS](#))



Atrazine may affect pregnant women by causing their babies to grow more slowly than normal, according to the federal Agency for Toxic Substances. Birth defects and liver, kidney, and heart damage have all been seen in animals exposed to high levels of atrazine. (Photo courtesy [Kansas State U.](#))