



Start Download

Search Videos w/ HowToSimplified™ On How to Do it Yourself - Free!



https://www.sciencedaily.com/releases/2016/05/160523125907.htm

Science News

from research organizations

Print Email Share

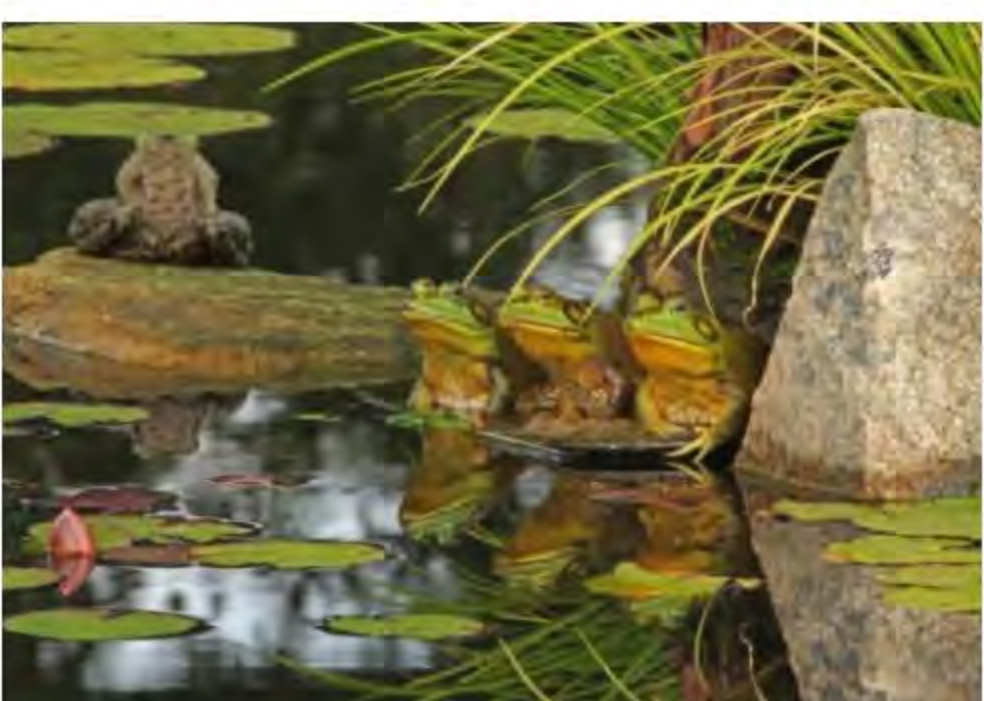
New research confirms continued, unabated and large-scale amphibian declines

Local action key to reversing losses

Date: May 23, 2016
Source: US Geological Survey
Summary: New research suggests that even though amphibians are severely declining worldwide, there is no smoking gun -- and thus no simple solution -- to halting or reversing these declines.
Share: Facebook Twitter Google+ LinkedIn + Email

RELATED TOPICS FULL STORY

- Plants & Animals
- Frogs and Reptiles
 - Extinction
 - Endangered Animals
- Earth & Climate
- Global Warming
 - Environmental Issues
 - Environmental Awareness
- RELATED TERMS
- Amphibian
 - Decline in amphibian populations
 - Frog zoology
 - Timeline of evolution
 - Macromolecule
 - Frog



These are American bullfrogs at the Atlanta Botanical Garden, Georgia.
Credit: Photo courtesy of Alan Cressler, USGS

New U.S. Geological Survey-led research suggests that even though amphibians are severely declining worldwide, there is no smoking gun -- and thus no simple solution -- to halting or reversing these declines.

"Implementing conservation plans at a local level will be key in stopping amphibian population losses, since global efforts to reduce or lessen threats have been elusive," said Evan Grant, a USGS research wildlife biologist who led the study published in *Scientific Reports* today. "This research changes the way we need to think about amphibian conservation by showing that local action needs to be part of the global response to amphibian declines, despite remaining questions in what is causing local extinctions."

The evidence shows that though every region in the United States suffered declines, threats differed among regions.

They include:

- Human influence from the Mississippi River east, including the metropolitan areas of the Northeast and the agricultural-dominated landscapes of the Midwest
- Disease, particularly a chytrid fungus in the Upper Midwest and New England
- Pesticide applications east of the Colorado River
- Climate changes across the Southern U.S. and the West Coast

Amphibian declines are a global phenomenon that this new research demonstrates has continued unabated in the United States since at least the 1960's, and which are occurring even in protected national parks and refuges. Scientists have broadly linked declines to environmental factors like climate, human influence such as land-use change, and contaminants and disease, but have not been able to use actual scientific data on a large scale to discern causes of the ongoing disappearance of amphibian populations.

The new study is the first to test this linkage at a continental scale, and finds that the presence and intensity of the four main threats -- human influence, disease, pesticide application, and climate change varies substantially across the US. The causes of the declines are more variable -- and more locally driven -- across the United States than had been assumed.

For example, the research provides evidence that the average decline in overall amphibian populations is 3.79 percent per year, which supports previous USGS-led research findings from 2013 that showed a similar rate of loss, though the new research finds that the decline rate is more severe in some regions, such as the West Coast and the Rocky Mountains. If this rate remains unchanged, these species would disappear from half of the habitats they occupy in about 20 years.

"Losing 3 or 4 percent of amphibian populations might not sound like a big deal but small losses year in and year out quickly lead to dramatic and consequential declines," said USGS ecologist Michael Adams, a study coauthor and the lead for the USGS Amphibian Research and Monitoring Initiative, which studies amphibian trends and causes of declines.

David Miller, a professor at Penn State University and the lead biometrician in the study, summarized the extent of the effort.

"This study involved a truly comprehensive and collaborative effort to bring together data from researchers across the United States," Miller said. "We combined nearly half a million actual observations of 84 species across 61 study areas to answer questions about the causes of wide-scale amphibian declines."

Story Source:

The above post is reprinted from materials provided by **US Geological Survey**. *Note: Materials may be edited for content and length.*

Journal Reference:

- Evan H. Campbell Grant, David A. W. Miller, Benedikt R. Schmidt, Michael J. Adams, Staci M. Amburgey, Thierry Chambert, Sam S. Cruickshank, Robert N. Fisher, David M. Green, Blake R. Hossack, Pieter T. J. Johnson, Maxwell B. Joseph, Tracy A. G. Rittenhouse, Maureen E. Ryan, J. Hardin Waddle, Susan C. Walls, Larissa L. Bailey, Gary M. Fellers, Thomas A. Gorman, Andrew M. Ray, David S. Pilliod, Steven J. Price, Daniel Saenz, Walt Sadinski & Erin Muths. **Quantitative evidence for the effects of multiple drivers on continental-scale amphibian declines**. *Scientific Reports*, 2016 DOI: 10.1038/srep25625

Cite This Page:

MLA APA Chicago

US Geological Survey. "New research confirms continued, unabated and large-scale amphibian declines: Local action key to reversing losses." ScienceDaily. ScienceDaily, 23 May 2016. <www.sciencedaily.com/releases/2016/05/160523125907.htm>.

Share This Page:



See Also

- | | | | |
|---|------------------------|---|------------------------------|
| 1 | Environment Research | 4 | How To Stop Smoking |
| 2 | About Climate Change | 5 | Environmental Issues |
| 3 | Info on Global Warming | 6 | A List Of Endangered Animals |

Recommended Articles

- | | |
|--|---|
| Invasive amphibian fungus could threaten U.S. salamander populations
United States Geological Survey, ScienceDaily, 2016 | Improving the Quality of Health Care: Who Will Lead?
Medscape, 2001 |
| Strong effects of climate change on common bird populations in both Europe and the USA
Durham University, ScienceDaily, 2016 | Resveratrol Stabilizes Amyloid in Alzheimer's
Pauline Anderson, Medscape, 2015 |
| Greenhouse gas emissions remain primary threat to polar bears
U.S. Geological Survey, ScienceDaily, 2015 | Childhood Vaccine Finance and Safety Issues
Robert Giffin; Kathleen Stratton; Rosemary Chalk, Medscape, 2004 |
| Climate Change Drives Widespread Amphibian Extinctions: Warmer Temperatures Enhance Growth Conditions Of Fatal Fungus
National Science Foundation, ScienceDaily, 2006 | Globalization and the Challenges to Health Systems
Julio Frenk, Octavio GÃmez-DantÃs, Medscape, 2002 |
| Amphibians In Dramatic Decline: Study Finds Nearly One-Third Of Species Threatened With Extinction
Conservation International, ScienceDaily, 2004 | State Trends in Uninsurance Among Individuals Aged 18 to 64 Years: United States, 1992-2001
David E. Nelson, MD, MPH; Julie Bolen, PhD; Henry E. Wells, MS; Suzanne M. Smith, MD, MPH, MPA; Shayne Bland, MS, Medscape, 2004 |

Powered by Trend MD

Free Subscriptions

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

- Email Newsletters
- RSS Feeds

Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

- Facebook
- Twitter
- Google+
- LinkedIn

Mobile Apps

Get the latest news from ScienceDaily via our free mobile apps, available for download on the following platforms:

- iPhone/iPad
- Android

Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

- Leave Feedback
- Contact Us

See fewer ads and support this site.

Contributor works on millions of sites and all of your devices.



Related Stories

[Cure for Chytrid: Scientists Discover Method to Eliminate Killer Fungus](#)

Nov. 18, 2015 — The first-ever successful elimination of a fatal chytrid fungus in a wild amphibian has been revealed by scientists, marking a major breakthrough in the fight against the disease responsible for ... [read more »](#)

[Early-Life Exposure of Frogs to Herbicide Increases Mortality from Fungal Disease](#)

Oct. 23, 2013 — A new study shows the herbicide atrazine increased mortality from chytridiomycosis, a disease causing worldwide amphibian ... [read more »](#)

[Bullfrogs May Help Spread Deadly Amphibian Fungus, but Also Die from It](#)

June 17, 2013 — Amphibian populations are declining worldwide and a major cause is a deadly fungus thought to be spread by bullfrogs, but a two-year study shows they can also die from this pathogen, contrary to ... [read more »](#)

[Predicting Future Threats for Global Amphibian Biodiversity](#)

Nov. 16, 2011 — Amphibian populations are declining worldwide, and their declines far exceed those of other animal groups: more than 30% of all species are listed as threatened according to experts. Multiple factors ... [read more »](#)

BOOK NOW

Book: 21 May - 24 May 2016
Travel: 22 May - 30 June 2016

malaysia

Strange & Offbeat

PLANTS & ANIMALS

In Changing Oceans, Cephalopods Are Booming

Sexual Conflict Can Cause Genitals to Change Shape, Beetle Study Shows

Human-Eating Monster Crocodile May Be Florida's Newest Invasive Species

Using Static Electricity, Microrobots Can Land and Stick to Surfaces

EARTH & CLIMATE

Mighty Mealworms: Solution for Food Insecurity, Pollution

Big Thinking in Small Pieces: Computer Guides Humans in Crowdsourced Research

New Evidence Connects Dung Beetle Evolution to Dinosaurs

Endangered Venomous Mammal Predates Dinosaurs' Extinction, Study Confirms

FOSSILS & RUINS

New Horned Dinosaur Species With 'Spiked Shield'

Ancient Irish Musical History Found in Modern India

Medieval Women Better Dressed Than Men

Do Bearded Dragons Dream? Reptiles Share Sleep Patterns With Mammals and Birds

See fewer ads and support this site.

Contributor works on millions of sites and all of your devices.



Print Email Share