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Tutorial

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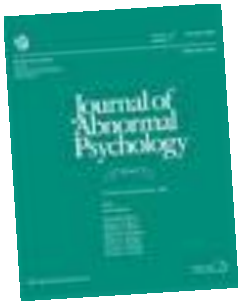
Academic Journals, Popular Magazines and Trade Journals

How are they different?



Different Levels of Information

Academic Journal – Environmental Applications

Ecological Applications, 11(2), 2001, pp. 464–479

DECLINES OF THE CALIFORNIA RED-LEGGED FROG: CLIMATE, UV-B, HABITAT, AND PESTICIDES HYPOTHESES

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Abstract. The federally threatened California red-legged frog (*Rana aurora draytonii*) has disappeared from much of its range for unknown reasons. We mapped 237 historic locations for the species and determined their current population status. Using a geographic information system (GIS), we determined latitude, elevation, and land use attributes for all sites and analyzed the spatial pattern of declines. We then compared the observed patterns of decline to those predicted by the climate change, UV-B radiation, pesticides, and habitat alteration hypotheses for amphibian decline. Declines were not consistent with the climate change hypothesis but showed a strong positive association with elevation, percentage upwind agricultural land use, and local urbanization. These results apply to patterns of decline across the entire range of *R. a. draytonii* in California, as well as within geographic subregions. The elevational gradient in declines is consistent with the UV-B hypothesis, although the UV-B hypothesis also predicts a north-to-south gradient in declines, which we did not observe. The association of declines with the amount of upwind agricultural land use strongly suggests that wind-borne agrochemicals may be an important factor in declines. This association was most pronounced within the Central Valley–Sierra region, where other studies have documented both transport and deposition of pesticides to the Sierra Nevada and the presence of pesticide residues in the bodies of congeneric (*Rana muscosa*) and more distantly related (*Hyla regilla*) frog species.

Key words: *amphibian decline; California red-legged frog; climate change; declining amphibians; geographic information system (GIS); habitat alteration; pesticides;* Rana aurora draytonii; *spatial analysis; upwind agricultural land use; UV-B; wind-borne agrochemicals.*

TABLE 2. Logistic regression models.

Variable	*B*	1 SE	*P*	exp(*B*)
Statewide reduced model†				
Latitude	0.0599	0.0127	<0.0001	1.0618
Elevation	−0.0213	0.0068	0.0017	0.9789
Percentage upwind AG	−0.0898	0.0169	<0.0001	0.9141
Percentage urban 2-km circle	−0.0549	0.0123	<0.0001	0.9465
Statewide reduced model with regions‡				
Region			<0.0001	
Central Coast vs. Central Valley–Sierra	−2.4491	0.6798	0.0003	0.0862

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Bari... all the froggies gone? Science ...

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Trade Journal – Chemical Week

regulatory

DATA QUALITY ACT

OMB Disputes Allegations Over Atrazine

The White House Office of Management and Budget (OMB) is defending its role in EPA's decision to reregister the weedkiller atrazine, a response to a *Washington Post* article claiming that Syngenta used a challenge to the Data Quality Act to help smooth the way for EPA to approve atrazine use for another five years. John Graham, OMB director of the Office of Information and Regulatory Affairs, says the *Washington Post* story incorrectly attributed the atrazine approval to a challenge filed by a Syngenta consultant under the Data Quality Act, which requires that OMB ensure all information released by federal agencies be reliable.


Graham: Data quality had no role in decision.

At issue is the pesticide reregistration of atrazine, which EPA approved last year despite assertions from some scientists and environmental groups that low doses of atrazine can cause hormone disruption in frogs (*CW, Nov. 12, 2003, p. 41*). The European Union will begin phasing out atrazine next year, in response to concerns that it could cause cancer, and that it is possibly responsible for frogs born with both male and female traits.

The possible link between atrazine and hormone disruption in frogs had threatened to derail Syngenta's application for reregistration with EPA, which was finally approved on the condition that Syngenta track the buildup of atrazine in a sampling of drinking water and groundwater supplies.

EPA dismissed the concerns about hormone disruption in frogs on the grounds that hormone disruption cannot be used to restrict a chemical because the government has no officially sanctioned test for measuring such disruption. It was this part of EPA's decision that the *Washington Post* article suggests was the result of industry's assertion that the frog studies cannot be included in EPA's review of atrazine because they do not pass muster under the Data Quality Act. Right-to-know advocates say the act is increasingly being used by industry to force the government to reject tighter regulations (*CW, Aug. 4, p. 29*).

The Center for Regulatory Effectiveness (CRE; Washington) had requested that the frog deformity studies be rejected because they did not conform to the information quality requirements. Syngenta helps fund CRE, but says it does not dictate CRE's agenda. Syngenta also says EPA's atrazine approval was based on a 10-year review, involving hundreds of studies. Graham, in a letter to the *Washington Post* editorial page, says the Data Quality Act had nothing to do with atrazine's reregistration.

"First, EPA did reregister the weedkiller atrazine on an interim basis, despite scientific reports that this chemical disrupts the hormones of frogs. However, the decision was not based on, or even influenced by, the information quality complaint filed by the Center for Regulatory Effectiveness," Graham says. "Second, the story gave the impression that the law, with its new tools to challenge weak regulatory science, will favor industry over pro-regulation activists because evidence is necessary to support new rules. However, evidence is also necessary to support acts of deregulation, and some groups are beginning to use the law to challenge the quality of evidence used to deregulate, to limit rules, or to decide against regulation," he says. —KARA SISSELL

CSB Cites Hazard Analysis Error in Isotec Blast

The U.S. Chemical Safety and Hazard Investigation Board (CSB; Washington) says a September 2003 blast at Sigma-Aldrich subsidiary Isotec's Miamisburg, OH plant stemmed in part from failure to conduct an adequate process safety analysis. The accident caused the evacuation of 200 residents, and injured one worker.

Isotec uses nitric oxide to make isotopes for medical and agricultural research. The blast occurred as operator ... system after a nitri... "Isotec managers kne...

Sissell, K. (2004, September 1). OMB Disputes Allegations Over Atrazine. Chemical Week, 29.

Different Levels of Information

Popular Journal - Science News

Wafting pesticides taint far-flung frogs

Federal researchers have added new evidence to the growing case that agricultural pesticides blowing into California's wilderness areas have played a role in mysterious declines in frog populations.

Traces of the common pesticides Diazinon and chlorpyrifos showed up in more than half the Pacific tree frogs sampled in Yosemite National Park, but in only 9 percent of the frogs tested at sites upwind of agricultural areas, report U.S. Geological Survey scientists Gary Fellers and Donald Sparling.

Fellers, based at the Point Reyes National Seashore in California, and Sparling, at the Patuxent Wildlife Research Center in Maryland, spoke at a USGS symposium on amphibian declines held last week in Reston, Va.

Parts of California that may look like frog heaven have been anything but that during the past 15 years. The California red-legged frog now ranks as a threatened species on the U.S. list; the mountain yellow-legged frog and Yosemite toads have been proposed for listing.

The idea that drifting pesticides might somehow be harming frogs isn't new, and studies have already confirmed parts of the scenario (SN: 9/5/98, p. 150). For instance, Fellers and his coworkers last year reported that air currents can transport pesticide residues into remote areas. Just what those low exposures might be doing to frogs has remained a troubling question, Fellers says.

Now, he and Sparling have checked Pacific tree frogs at six locations scattered around California. The researchers chose tree frogs as a proxy for rare species. Along the coast upwind of inland farms, "the frogs seem to be doing rather well," Fellers says. In contrast frogs in wilderness areas downwind of heavy agriculture were contaminated with low concentrations of pesticide.

The researchers report the first evidence in California that sublethal pesticide doses affect frogs: Tissue samples showed hampered activity for the enzyme cholinesterase, which keeps nerve cells firing normally. Fellers speculates that frogs with this condition might not be hopping, fleeing, or mating in top form. Details of the work will appear in a future ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY.

"It's an important study," comments Carlos Davidson of the University of California, Sacramento, who studies the geographic distribution of amphibian declines in California. "Just because we have evidence for one cause doesn't mean the other ones are wrong," he cautions. For example, he says he's convinced that the practice of stocking waterways with trout is devastating native amphibians in some spots.

At the USGS symposium, veterinary pathologist Carol Meteyer of the Wildlife Health Research Center in Madison, Wis., described what she calls the first systematic comparison of deformed frogs from different sites. Other researchers have blamed the deformities on widespread environmental contaminants, parasites, or even predators that mutilate frogs. However, Meteyer says, her high-detail X-ray study reveals that frogs lacking a leg or two are also missing pelvis parts. That wouldn't come from a survivable predator attack, she says.

She also notes that deformed frogs at four Vermont sites are usually missing limbs, but those in Maine have extras. Says Meteyer: "To me, this says there are different agents out there," including, possibly, mixes of pesticides.
—*S. Milius*

USGS

Pacific tree frogs downwind from agricultural hotspots contain pesticide frogs

Travis, J. (2000, December 16). Wafting pesticides taint far-flung frogs. Science News, 158(25), 391 - 391.

What are Scholarly or Academic Journals?

- Scholarly journals are also known as academic journals or *peer-reviewed journals.
- All contain articles which explore topics in-depth, and….

*Peer review is a process in which articles are reviewed by other experts for validity, usually resulting in more accurate information.

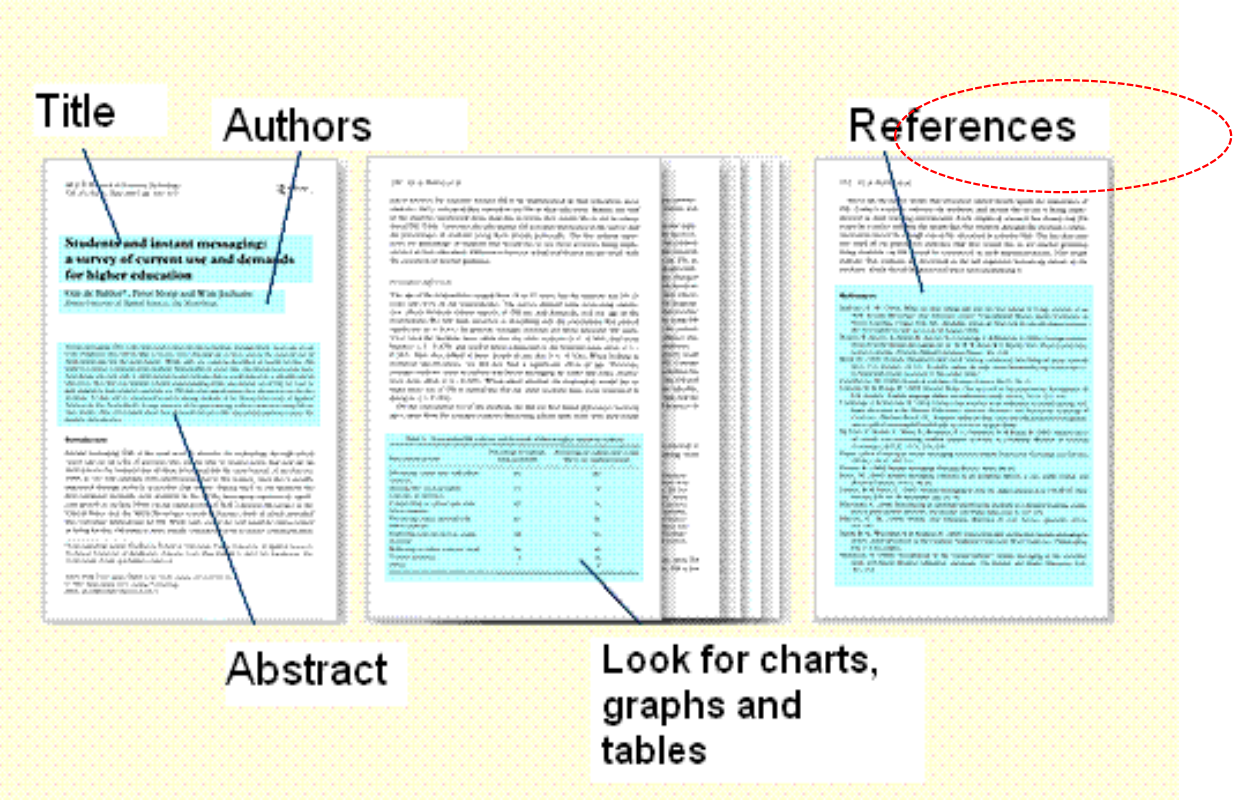
Academic Journals Contain:

- An abstract, or summary of each article
- Articles written by scholars/experts in a field
- Author credentials
- A technical or specialized vocabulary
- Charts and graphs
- Article length of at least 10 pages
- A bibliography or list of references

Example of an Academic Journal Article

Look for:

- Abstract/Summary
- Author Credentials
- Tables, graphs
- Reference List/Bibliography
- A serious appearance



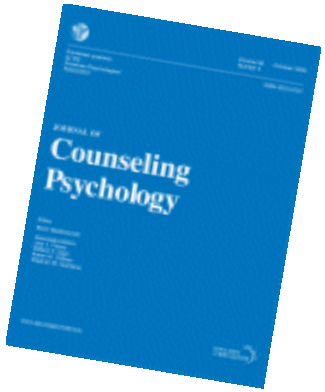
Graphic from Edinburgh Napier University

The Main Purpose of an Academic Journal

To inform, to educate and to disseminate information to a scholarly audience

Examples of Academic Journals

- Global Marketing
- Sociological Inquiry
- Journal of Education for Business
- Journal of American History
- Journal of Counseling Psychology



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Characteristics of Professional or Trade Journals

- Often have glossy pages and color illustrations
- Contain advertisements and job postings specific to the industry
- Written by industry experts, journalists with subject knowledge
- Author credentials sometimes given
- Technical or specialized jargon
- Sources sometimes cited
- Article length often short, between 1-7 pages

Main Purpose of Trade and Professional Journals

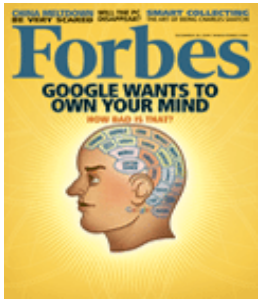
To inform trade and industry members about current issues relevant to the field

Examples of Professional or Trade Journals

- Advertising Age
- HR Magazine
- Teaching Mathematics in the Middle School
- Library Journal
- Workforce Management
- Law and Order

Characteristics of Popular Magazines

- Visually appealing, glossy pages
- Prominent advertisements
- No bibliography
- Written by staff or freelance writers and reviewed by magazine editors
- No author credentials given
- Short articles written in accessible language – at about a 12th grade reading level.



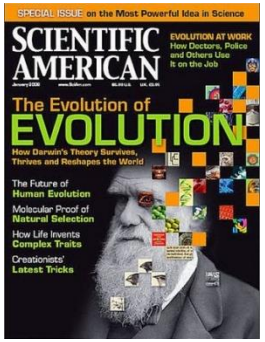
Main Purpose of Popular Magazines or Journals

Written to entertain, sell to and inform a broad audience

Examples of Popular Periodicals

- Psychology Today
- Newsweek
- PC World
- Scientific American
- Sports Illustrated

Note that newspapers are also considered popular periodicals.



	Academic or Scholarly Journal	Trade or Professional Journal	Popular Periodical
Examples	Journal of Business Strategy, Journal of Clinical Psychology, Social Psychology Quarterly	Advertising Age, Computer World, HR Magazine, Chronicle of Higher Education	Time, Newsweek, Science News, USA Today, Wall Street Journal,
Authors	Researchers, scholars, professors	Industry experts, journalists with subject knowledge	Staff writers, journalists some subject experts
Purpose	To inform, to educate, to disseminate information to a scholarly audience	To inform trade members about issues relevant to the field	To inform, entertain, persuade and sell to a broad audience
Audience	Scholars, researchers, scientists, students	Trade professionals	General public
Language & Length	Complex sentences using a specialized or scientific vocabulary; often 10+ pages in length	Some technical jargon; length varies considerably, but often less than 7 pages	Accessible language, often written at a high-school reading level; length varies, but often less than 5 pages
Sources	Source material heavily documented with in-text citations, footnotes & bibliography.	Sometimes cite sources	Sometimes cite sources
Published by	Universities, scholarly publishing houses, professional research organizations	Trade organizations	Commercial publishers
Visual Characteristics	Serious look with charts, graphs, statistics, few advertisements	Often glossy pages, some trade-specific advertisements, charts & graphs, photographs	Glossy pages, prominent advertisements, photographs

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