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EcoFocus: Study the source to sift sound science from bias

By William H. Schlesinger

I have written a number of columns in the Poughkeepsie Journal and elsewhere about the current scientific understanding of climate change, mercury pollution, the ozone hole and vernal pools.

Before writing each piece, I reviewed recent articles published in scholarly journals. The information in these articles has withstood peer review, a process in which a panel of impartial experts has scrutinized the work's academic merit.

Often, I send an early draft of my columns to other scientists for their comment and opinion. My goal is to tell the story the best I can with all the knowledge we now possess in less than 800 words. I love a good debate on all issues of science, and I hoped the growing popularity of blogs, Web sites and reader comments would facilitate constructive interaction.

Unfortunately, I am increasingly frustrated by how these forums are used.

All too frequently, articles based on sound science are countered with misinformation posited as fact. Climate change is one example. Reports generated by the Intergovernmental Panel on Climate Change have unequivocally linked human activities to the changing climate. Conclusions were based on input from 2,500 scientific expert reviewers, more than 800 contributing authors and more than 450 lead authors.

Yet articles on climate change are magnets for comments about how the Earth is naturally cooling, how volcanoes are the major source of rising carbon dioxide in Earth's atmosphere and how the Greenland ice sheet just isn't melting (despite NASA's extensive documentation).

While these views can be traced to partisan Web sites, political think tanks and ideological groups, they are not based on facts.

When weighing the value of information read online, I would encourage readers to turn a skeptical eye to the source. There are hundreds of agenda-driven outlets in the blogosphere; even the Flat Earth Society still has its advocates. I recently stumbled on a list of 31,000 scientists against global warming, but a careful examination of the list showed it to contain the names of cell biologists, animal nutritionists and others lacking the credentials to evaluate the science of the issue at hand.

Research into environmental change is challenging; I have been researching human effects on the planet for nearly 40 years and have published more than 100 papers on the topic. Scientists often must look back into the geologic record, where cause-and-effect is obscure and experimentation impossible.

The best science survives only after careful scrutiny by a wide circle of scientists whose expertise cuts across relevant disciplines.

When educating yourself about environmental issues, how should you decide what is good science and what is junk science?

First, I recommend reading long-established publications that report science to the public. Start with Discover, National Geographic, Scientific American, Science News or the science pages of The Economist. If you are hardy, move onto Science Magazine, the New Scientist or Nature.

Second, I'd write (e-mail is fine) scientists at your local colleges and universities to ask their opinion on specific questions in their area of expertise (check their department's Web site). Don't bias their response by telling them what you think; merely ask them what they think about something specific. You'll be surprised at how many of them will respond to a question asked without bias.

Third, I'd avoid getting information from Web sites and newsletters from groups with an obvious agenda.

Land developers are not likely to favor the protection of vernal pools, electric utilities are not likely to report on the connection between global warming and coal and fishermen are not likely to advocate limits on their catch. Those who have no vested interest in whether mercury is removed from the atmosphere are apt to give you the best opinion on the problems mercury might cause in the environment.

Fourth, I'd avoid getting information from blogs or newspaper comment pages if they contain political undertones, personal attacks, profanity and capitalization for emphasis. A comment should be signed with the full name of the person posting the material; if they need to hide behind an Internet signature, it's probably not worth reading.

Finally, think about the environment. What has happened to the Earth in your lifetime - places you remember and the nature you once enjoyed? What type of environment do you want to leave for the future?

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