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for Marine & Environmental Reporting

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Environment Writer

INSIDE this issue

New Law Could Cloud Access to EPA Information

Joseph A. Davis

Over the next few months, a potentially landmark battle over EPA's ability to disseminate information—and the press's ease of access to it—may be won or lost in legal wrangling while the environmental media pay scant attention.

The so-called "Data Quality Act" (not an official title), an industry-written rider slipped almost unnoticed and without hearings into a massive last-minute omnibus appropriation bill more that a year ago, is said to be aimed at "ensuring and maximizing the quality, objectivity, utility, and integrity of information" disseminated by all federal agencies.

But environmentalists, progressive activists, and open-government advocates worry that it will give industry a virtual veto over much of what EPA and other federal health and safety agencies publish. They fear it will create a new layer of litigation that will prevent EPA from issuing regulations aimed at protecting public health.

The law takes effect on October 1, 2002. That is also to be the date EPA finalizes its guidelines for carrying out the new law. After a period for public comment on draft EPA guidelines, slated to end June 14, the struggle over how to implement the law will go behind the scenes in the so-called *ex parte* stage of rulemaking.

Most of the basic background documents on the law can be found on EPA's Web site (http://www.epa.gov/oei/qualityguidelines/). The underlying 27 lines of legislative language are in section 515 of P.L.106-554, the Treasury Appropriations bill for fiscal 2001. The provision was included with little fanfare or apparent Congressional attention in an omnibus funding bill cleared by Congress December 15, 2000, and signed by President Clinton six days later.

The Office of Management and Budget (OMB), given authority to carry out the law, published proposed guidelines for federal agencies in the *Federal Register* June 28, 2001, and finalized them

—see Data Quality, p. 3

View from Metcalf

My grandmother, a UC Berkeley professor for many years, used to say that education was the sum of all the things you've forgotten. What she meant, of course, was that knowledge is the key to understanding the world, that while people may not retain all they learn, what is important is that they learn.

The Metcalf Institute was created in 1998 exactly for this reason, to provide journalists with a better understanding of the science underlying the environmental news that they write about. The Metcalf Institute sponsors workshops that give reporters and scientists time to work together informally in the field and lab. Our programs work to give journalists a better understanding of the processes of science and, at the same time, offer scientists a glimpse of the challenges of journalism.

That's why joining Bud Ward in his efforts to bring insight to critical environmental issues, through publications such as *Environment Writer,* is an excellent fit. Bud Ward and the Metcalf Institute have a clear mission to provide information to journalists to help them cover environmental issues with accuracy and clarity.

The Metcalf Institute is pleased to begin this new relationship and to support *Environment Writer.* I foresee collaborating on other projects in the future, combining Ward's years of experience in environmental journalism with the Metcalf Institute's commitment to science and journalism.

Jackleen de La Harpe
Executive Director, The Metcalf Institute

JUST THINKING

We're back. Like the battery-powered bunny in the TV commercial, we're back, still running.

Not in exactly the same form, you understand. Different. But, we hope, better.

After, let's call it, a three-month interregnum, we're back and we're committed to making the publication better.

First, A word of thanks. So many to thank here.

First to the nonprofit, nongovernmental National Safety Council, which for 14 years dutifully supported *Environment Writer.* Sincere thanks. That it could no longer do so—that it decided, alas, to return to "core capabilities" that don't exactly include environmental journalism—does not detract from the credit the group deserves for 14 years of nurturing. It gave the pub a fair run, a more than fair trial. I hardly ever sought to "interfere" or question or dampen editorial content, playing to the hilt its honest role as business publisher, not an editor or content overseer. And doing so, dare say, perhaps better than most nonjournalism organizations (read owners) usually do in regard to their own journalistic progeny.

Thanks, National Safety Council. Thanks so much.

Thanks, too, to the William and Flora Hewlett Foundation of Menlo Park, California. They're the folks whose generous financial support for environmental journalism had helped sustain Environment Writer over the past few difficult years. They're the folks who do so much to support responsible environmental journalism work. (Particular thanks, if you will, to Michael Fischer, Joe

—see Point Source, p. 2

JUST THINKING (from p. 1)

Speidel, Hal Harvey, Wendy Sheldon, Bobbie Green, and Karen Andrews of the Foundation staff.) Let's just leave it at this: It couldn't have been done without each of them. And they're the folks who had the patience and the forbearance to keep right on supporting during this unexpected transition of affiliation from the Safety Council to the Metcalf Institute for Marine and Environmental Reporting.

And there's another cause for thanks. Thanks to the Metcalf Institute for Marine and Environmental Reporting, part of the University of Rhode Island's world-renowned Graduate School of Oceanography (GSO) at the Bay Campus in Narragansett, Rhode Island. Thanks, too, to the folks at GSO's Coastal Institute, which did much to encourage and ease the affiliation now just getting underway. And thanks to the University's journalism program—including veteran environmental journalist, Peter Lord, of *The Providence Journal*—for their interest and support in helping to firm up this new relationship.

Thanks to the Radio and Television News Directors Foundation and, in particular, to the Society of Environmental Journalists (SEJ). The two for years have been "partners in crime," producing and distributing the biweekly "Tip Sheet" along with the Safety Council's Environmental Health Center (EHC), now moving in new directions. The Metcalf Institute will replace EHC as a co-partner in that noble effort, although no one could replace the strategic role those two groups, and in particular SEJ, played in steering us through choppy seas and into safe harbor.

Thanks, finally, to those whose e-mailed words of support, concern, and encouragement in light of the publication's "interregnum," gave comfort and assurance that some, at least, would mind—and mind deeply—if this periodical were never to resurface at all. Those words overcame the coldness of the e-mail medium and, as a former *Toledo Blade* and Penn State journalism professor used to put it, "warmed the cockles of the heart." Thanks.

Enough.

Change. It can sometimes be bad. It can often be good. It can most times be tough in either event. Here, we see pluses.

The new newsletter will be, as mentioned, "different" from its immediate predecessor. It will NEED to move aggressively toward electronic distribution. It will probe, cajole, tease, reward as in "laurels," and demand more in "darts." It still won't make news, but instead will try to help you become even better at making environmental news understandable and meaningful to your audiences. It will bite, but won't snap.

This can be a better publication than it's been, better than it is. You, too, can be a better reporter and your audiences, as a result, better involved citizens.

Big order. No time to lose. Let's get started. And again...thanks.

Bud Ward

BOOK REVIEW

Sacred Cows… Good Hamburgers. Problem Solving for E Journalists?

Turning Numbers into Knowledge wasn't written specifically for environmental journalists.

But it could well have been.

Author Jonathan G. Koomey, Ph.D., provides some practical insights on critical thinking that many environmental reporters will find useful, at least as a refresher on critical thinking.

"There are some 'scientists' who announce their results to the media but do not publish in peer-reviewed journals," Koomey write. "Usually, such announcements are funded by particular organizations with an axe to grind and have little to do with science."

He points to two Web sites that could help reporters (http://adswww.harvard.edu/abs_doc/refereed.html), a long forever incomplete list of peer-reviewed journal's, and the Institute for Scientific Information's Science Citation Index (http://www.isinet.com), an annual listing of "the importance of different journals in virtually all scientific fields."

For a "beautiful compilation of hundreds of ways to calculate numbers important to daily life," Koomey leans toward Darrell Huff's *Complete Guide to How to Figure It.* For a large collection of practical quotations, Koomey is into http://www.cybernation.com/victory/quotations/quotes_menu.html.

Koomey uses a quote by Mark Twain to open chapter 14, "Sacred cows make the best hamburger." This chapter outlines criteria from William Hughes' 1997 *Critical Thinking:*

- The authority must be identified.
- The authority must be generally recognized by the experts in the field.
- The particular matter in support of which an authority is cited must lie within his or her field of expertise.
- The field must be one in which there is genuine knowledge.
- There should be a consensus among the experts in the field regarding the particular matter in support of which the authority is cited.

A question Koomey likes to see considered: "'How truthful can we expect the expert to be here?' By asking whether the authority figure (or the institution providing funding) stands to benefit from the advise she is supplying, we gain insight into the trustworthiness of that advise."

In a "How Guesses Become Facts" chapter, Koomey urges that "all data should be treated with skepticism."

"It is a common rhetorical trick to link an ostensibly demonstrable fact with a value judgement," he writes. "Such statements are of the form 'Fact A is true, therefore we should take Action B.'"

His advise: "Let the reader beware: Fact A may or may not be true, and Action B may or may not be a good idea whether Fact A is true or not. Too often these glib statements are allowed to pass without proper scrutiny."

Turning Numbers into Knowledge: Mastering the Art of Problem Solving, $34.95 hardcover, 221 pp, ISBN 0-9706019-0-5, Analysis Press Oakland, Ca.

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Metcalf Institute for Marine & Environmental Reporting

Data Quality (from p. 1)

February 22, 2002 (67 Fed. Reg. 8452). EPA proposed its own guidelines in February and has been accepting comments since then.

OMB's application of the law has been spearheaded by John D. Graham, head of OMB's Office of Information and Regulatory Affairs (OIRA). As interpreted by Graham's guidelines, the law requires agencies to establish administrative mechanisms "allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency" if it does not meet OMB's quality guidelines.

But the Data Quality Act is about more than fixing typos and misplaced decimals. One of the chief proponents of the Data Quality Act has been Jim J. Tozzi, who himself headed OMB's OIRA at a time when Washington insiders considered him to be among the most influential people in the United State in shaping federal environmental policy. He now heads the Center for Regulatory Effectiveness as a well-connected industry lobbyist and one widely known to be working behind the scenes.

OMB guidelines go beyond the explicit requirements of the law by requiring agency information to meet OMB quality standards before it is disseminated. Because EPA publishes a bulletin listing forthcoming "information products," outside interests could delay publication by raising objections.

But OMP may also interpret the Act to require some agencies to "unpublish" some documents. That seems to be the intention of Tozzi, a principle architect of the law. In a February 11, 2002, letter to the White House, Tozzi cited the Data Quality Act, which has not yet taken effect, in demanding withdrawal of the peer-reviewed, Clinton-era Climate Change Impacts on the United States, known as the "National Assessment."

The whole subject had gotten little visibility until March 21, 2002, with a front page story in *The New York Times* by Andrew C. Rivkin. He quoted James M. Jeffords (I-VT), chairman of the Senate Environment Committee, who said, "Opponents of government action to protect the public's health and the environment have latched onto the Data Quality Act and are attempting to misuse it to prevent the public from getting valid information about threats to their well being and quality of life."

While few question that agencies should correct errors and publish accurate information, a major battle looms over interpretation of the law. Industry commentators have already hammered EPA for its interpretation of OMB's guidelines.

OMB's guidelines cover any kinds of information in many media, such as Toxic Release Inventory Data and EPA's Web site. They specifically exempt press releases, hyperlinks, or unofficial information or opinion marked with disclaimers. They also exempt information provided in response to requests from the press or public under the Freedom of Information Act, the Privacy Act, or the Federal Advisory Committees Act.

OMB has taken a hard line on some points allowing, for example, that industry lobbyists might claim, or agency bureaucrats decide, that they did not consider the information to be of high enough quality just because it had been published in a peer-reviewed scientific journal.

EPA, while hewing to the letter of OMB's guidelines, has cut itself considerable slack in its own proposed guidelines, noting that they do not have the effect of regulation and are not legally enforceable.

Some of the key points in the coming debate will include the following:

• whether and how the guidelines apply to information from states, companies, and others outside EPA;

• the process for resolving complaints and appeals of initial agency decisions and how much time those decisions would take;

• whether, when, and how agency decisions on data quality could be reviewed by courts;

• whether and how the new guidelines would supplant of duplicate the extensive data-quality, peer-reviews, and error-correction programs already in place at EPA;

• whether and how the data quality review process meshes with existing environmental law and the law and procedures governing regulatory activity, such as the Administrative Procedures Act;

• and to what degree do the guidelines apply not just to factual and numerical data, but to the analysis and interpretation of that information and agency decisions about what constitutes an acceptable level of risk to public health and the environment.

While the Data Quality Act nominally applies to all government agencies, the industry groups behind it have been especially focused on applying it to environmental information and EPA. OMB guidelines specifically cite and apply quality principles set in the 1996 Safe Drinking Water Act Amendments to "analysis of risks to human health, safety, and the environment." That law calls for EPA to base decisions on "the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices."

OMB adds: "Agencies responsible for dissemination of vital health and medical information shall interpret the reproducibility and peer-review standards in a manner assuring the timely flow of vital information... to medical providers, patients, health agencies, and the public."

In the name of transparency and objectivity, OMB guidelines require experts conducting peer-review to disclose to the agency prior technical and policy positions they may have taken on the issues at hand, and also their personal and professional financial data. The OMB guidelines do not require persons or groups filing complaints about data quality to make similar disclosures. Nor do they impose any requirements on the quality of data about their own activities which companies report to EPA.

The National Academy of Sciences, which held a public workshop March 21 to examine the Act's implications for science, expects to issue a report on it during the summer. The Environmental Council of the States is expected to hold a forum on the information guidelines in July.

BACKGROUNDER (Prepared with support of the National Centers for Coastal Ocean Science)

Covering Harmful Algal Blooms

Why Cover Harmful Algal Blooms?

Incidents of harmful algal bloom (HABs) along America's coasts appear to be increasing, and impacts on local economics and health—let alone tourism and recreation—can be substantial. For some, it's primarily a public health concern, for others it's the economic impact, and for practically everyone, there are issues of aesthetics. Coastal areas are not only magnets for tourism, they accommodate the nearly two-thirds of the world's population that lives 10km of the coasts. With a heads up on what to expect, people living near or visiting the shore and those planning to enjoy a seafood meal can take precautions without becoming unduly alarmed. Individuals also can play a pivotal role in early detection and reporting if they know what to look for and what authorities to contact.

A growing body of evidence suggests harmful algal bloom incidents are increasing around the globe. Opinions differ on why: Heightened awareness and surveillance may be a factor, but natural phenomena like storms and currents change or "all of the above," to varying degrees.

HAB events can have serious consequences for human health, the environment, and local economies. Some species release extremely potent natural poisons known as biotoxins that can cause illness and even death in humans. Others can result in massive mortality to wild and farmed fish, marine mammals, seabirds, and protected species. Some produce massive "blooms" of cells that discolor large of water, such as Florida's toxic "red tides." Certain species threaten marine life and human health even when they are not visible in the water. Some nontoxic HABs cause harm by irritating of damaging fish gills, causing murky water that shades of other marine plants, or reducing dissolved oxygen levels when they die off and decay.

Local economies suffer when these events disrupt seafood harvesting, and depress recreation and tourism. Perceptions—and sometimes misperceptions—about risk can further magnify economic losses, in what is known as the "halo effect." Consumers opt to switch to other foods or other recreational activities because of concerns about possible contamination. In Maryland's 1999 *Pfiesteria* case, the economic impacts were substantial. Good reporting can help avoid unwanted fears and help citizens and experts focus on actual concerns.

Story Ideas

1. Where public advisories on harvesting and eating shellfish are common, media can monitor regional Web sites and other sources for advisories. Offer readers and viewers counsel on safe seafood handling and consumption. Cite hotline telephone numbers, e-mail addresses, Web sites, and other ways for visitors and residents to report problems and get current information on beach closures and shellfish beds.

2. Find out what HAB events affect your region, how often and when they have occurred. Which blooms are hazardous to public health in your area? What local industries could potentially be affected and at what cost? From national and regional Web sites, stay apprised of research progress on early detection and prediction. Establish contacts with state and local officials and, in particular, shellfish sanitation programs.

3. TV and newspaper kids' features can present the HAB issue in a way that reinforces biology class lessons. Encourage volunteer field monitoring as an individual or classroom-related activity. California, Maine, and Rhode Island have had successes with these volunteer monitoring networks. Other states have efforts underway. FDA offers technical assistance at the national level and has plans to develop formalized observation manuals and other training materials. For a list of equipment needed for field observation and related fact sheets, contact Sherwood Hall. (202) 205-4818.

Background and Context

Only a few dozen among the thousands species of microscopic algae are known to be harmful. Among these, dinoflagellates, are the most well-known group. Within this group are species that form "red tides." Less common groups include diatoms *(Pseudonitzschia)*, organisms associated with brown tides *(Aureococcus* and *Aureoumbra)*, and bacterial-like blue-green algae (cyanobacteria). Historically, the term "red tide" has been applied to all types of harmful blooms. Because blooms come in many colors and can vary in toxicity by species, the scientific community now uses the term "harmful algal bloom" or HAB to describe them. (Broadcasters note: The "g" in algal is pronounced hard as in "big" and not soft as in "large.")

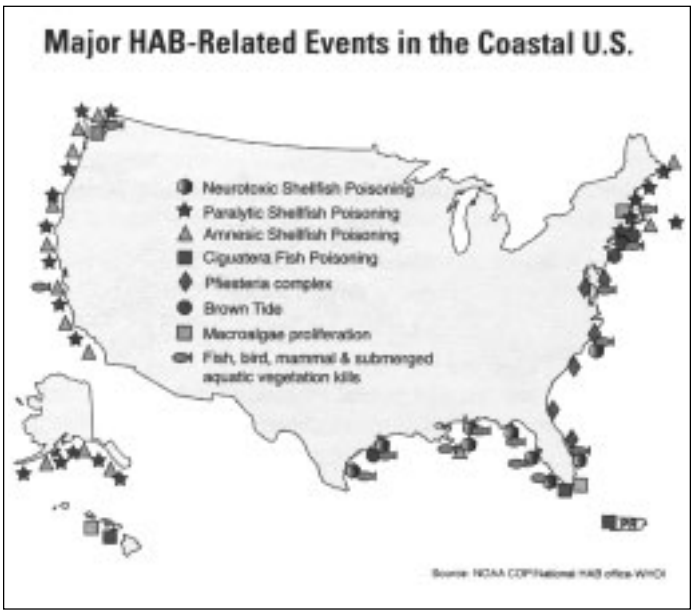
Human health consequences of eating tainted seafood have been recognized since ancient times. As they filter water for food, shellfish such as clams, mussels, and oysters can accumulate toxins in their tissues. A single clam can harbor enough toxin to kill a human or large marine mammal. Moreover, certain of the more lethal HAB toxins are not affected by cooking or preserving methods and have few effective antidotes.

Paralytic Shellfish Poisoning (PSP) is a significant problem on the East and West Coasts of the United States. It is caused by toxins from a species of dinoflagellates in the genus Alexandrium that are accumulated by filter-feeding shellfish and other grazers. Ingestion of contaminated shellfish can be fatal to humans. There is no known antidote. Health risks are controlled by monitoring and closing areas to harvesting once toxins are detected.

Amnesic Shellfish Poisoning (ASP) known as Domoic Acid Poisoning (DAP), affects mostly the West Coast. It is caused by diatoms in the genus *Pseudonitzschia*, which produce a potent toxin called domoic acid. Asp is associated with permanent loss of short term memory and can be fatal to humans, marine animals, and birds.

Neurotoxic Shellfish Poisoning (NSP) is prevalent in HAB events in waters of the eastern Gulf of Mexico. Toxic substances produced by the dinoflagellate *Gymnodinium breve* are harmful to humans and marine mammals. Risks to humans include respiratory irritation and severe gastrointestinal and neurological reactions when consumed. However, full recovery usually occurs within several days.

Ciguatera Fish Poisoning (CFP) cases have been documented in tropical and subtropical waters of Florida, the Caribbean, and Hawaiian islands. It is associated with dinoflagellate toxins that accumulate in fish, with the highest concentrations in the flesh of top predators. Human consumption can result in long-term nonlethal but debilitating illness. CFP is the most frequently reported nonbacterial illness associated with fish consumption in the United States and its territories.



Pfiesteria-related illness has been reported in connection with fish kills and contaminated waters in North Carolina and Maryland's Eastern Shore. Lab workers exposed to lab cultures of *P. piscicida* cite respiratory irritation and problems with concentration and memory. Federally sponsored research is underway to confirm whether this species causes illness in humans.

Harmful cyanbacterial blooms in freshwater systems throughout the United States have been linked with poisoning and death in humans, birds, fish and other animals.

Other major regional HAB events include macroalgae blooms in Florida, brown tides in Texas, Southern New England, and the mid-Atlantic, and massive HAB-related fish kills.

Players and Sources

NOAA, EPA, CDC, FDA, USGS, and USDA support research, analysis, and policy guidance nationally. Responsibility for implementation rests largely with state and local environmental, public health, and coastal management programs.

The Harmful Algal Page (www.redtide.whoi.edu/hab/), cosponsored by NSF and NOAA grants to the Woods Hole Oceanographic Institution, is a useful launching point for further research by region or subtopic. It includes background about the national scope of the problem, maps showing regional distribution, illustrative graphics and pictures, and other pertinent information.

See also the *National Assessment of Harmful Algal Blooms in U.S. Waters*, October 2000, a report jointly sponsored by NOAA and the National Science and Technology Council (www.habhrca.noaa.gov).

There are many regional sites affiliated with universities, health departments, and various coastal programs. The Washington State Department of Health Biotoxin site (http://www.doh.wa.gov/ehp/sf/BiotoxinProgram.htm) is an example of a regional site offering practical advise on seafood safety, much of which could be adapted to other regions. Here is what that site has to say about the commonly held view that "R" months are safe for harvesting shellfish:

"This is a common misconception. The fact is, shellfish can be toxic (or safe) at any time of the year. This misconception was actually law at one, enacted by the New Jersey legislature in 1719, in an attempt to address a spoilage issue. In the warm summer months (those without an "R" in them), shellfish would spoil on the way to market due to a lack of refrigeration during transport. (Imagine horse-drawn oyster wagons heading to town on a hot summer day!) Although modern refrigeration methods make this law obsolete, the misconception remains to this day."

HAB Contacts

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READING RACK

"Offshore Oil Pollution Comes Mostly as Runoff, Study Says," *The New York Times,* May 24, 2002, and "Little Petroleum Spills' Big Effects," *The Washington Post,* May 24, 2002: These are the kind of environmental stories that Exxon Mobil love. Not to mention Pogo. The Times' Andrew Revkin and the Post's Eric Pianin report on a new National Academy of Sciences report confirming Pogo's suspicion about meeting the enemy in the mirror. Nearly 85 percent of gas and oil spills come from land-based vehicles, airplanes dumping fuel, and boat and personal watercraft, Pianin writes of the 29 million or so gallons of petroleum escaping into North American waters each year. The headline-grabbing tanker oil spills and those from pipelines, by contrast, comprise about 8 percent annually of the manmade petroleum pollution, with oil exploration and extraction making up another 3 percent. The East Coast corridor, from Virginia to Maine, is home to more than half the oil runoff, Revkin reports, reflecting "the density of people, vehicles, and other sources in the corridor from Washington to Boston." Spills from tank vessels have gone down substantially in recent years, both report. "We've all seen the sheen on the streets," Revkin quotes an Academy report author as saying. "That eventually is going to run off and end up in a river." So goeth Pogo: "We have met the enemy, and it is us." (Or is it "we"?)

"'Big Coal' Swayed Bush," *The Washington Post,* May 23, 2002: It was, after all, a Clinton appointee whose March 2001 resignation from the Bush Administration's National Coal Council that was at the heart of this story. Clinton Appointee Jane Hughes Turnbull, described by Eric Pianin as "an executive of a California renewable energy concern," pointed to President Bush's shunning of the Kyoto Protocol as a "monumental mistake...an obvious and expedient re-

—see Reading Rack, p. 8

BACKGROUNDER (This Backgrounder updates one orginally published in EW in June 2000.)

Covering Drought

When one Good Rain Isn't Enough

- On March 26, 2002, New York City Mayor Michael Bloomberg declared a stage one drought emergency affecting some nine million area residents. Car washing was banned and severe limits placed on watering lawns and golf courses.
- At the end of May 2002, Agriculture Secretary Ann Veneman declared all 64 counties in Colorado agriculture disaster areas, making farmers eligible for aid in the form of low-interest loans. Drought there is the worst it has been in decades.
- In May, Denver reservoirs reached their lowest level since 1982. But even while utilities were calling for water conservation, regional planners were warning that the area's growing demand for water was rapidly outpacing available long-term supply, according to the *Rocky Mountain News.*
- Because of fire risk, authorities closed the 1.8 million acre Santa Fe National Forest to all hikers and campers for the first time since 1975. Similar warnings and controls were in effect for most of the Southwest and Rocky Mountains.
- Because of heavier-than-average precipitation in February 2002, water levels in the Great Lakes, which had been at record lows since 2000, began rising.
- In March, hundreds of people in Eastern Kentucky were left home less by what some have called the worst floods in 25 years. May floods in West Virginia caused hundreds of people to evacuate their homes, resulted in several deaths, and cost millions of dollars in damages.

Why Cover It?

Drought has many serious effects on people's lives. The costliest weather disaster in U.S. history, in terms of economic damage, was not a hurricane, flood, or tornado. It was the drought of 1988, which caused an estimated $40 billion in losses.

Farmers, of course, are often the hardest hit by drought. Crop failers translate into farm auctions and permanent loss of a way of life. Droughts can mean low-water levels that disrupt or halt shipping of key commodities. Droughts can dry up municipal water supplies, leaving homeowners and industries paying higher bills or making do with less. Drought can change the balance of fresh and salt water in estuaries, disrupting ecosystems and severely impacting the catch of commercially important seafood species.

Story Ideas

1. What is the drought outlook for your particular area or region? Is the outlook affected by a chronically arid climate, cycles such as El Niño/La Niña, or other seasonal weather? How do current drought conditions measure up to historical standards in your region?

2. What industries in your area are most vulnerable to drought? Which agricultural crops or livestock? Which modes of shipping? Which commodities? Which areas are vulnerable to wildfire and which of these contain vulnerable buildings? How about tourism mainstays like rafting, boating, and fishing?

3. How "drought-resistant" are your local municipal and industrial water supplies? How adequate are dams and reservoirs, the placement of water intakes, the depth of wells, water conservation and drought contingency planning?

4. Have zoning and economic development policies in your area adequately addressed potential drought hazards and the natural limits of water resources?

5. If your community or region is dependent on groundwater, is it using that resource faster than it is being recharged? Will it soon be doing so? Are the aquifers being recharged at all? What are the implications for the long-term economic future of your region?

6. How much federal agricultural disaster aid have farmers in your area received because of drought during the past decade? What has been done to reduce the need for it? From a farmer's perspective, what are the pros and cons of crop insurance?

7. Can you find any "success stories" of farmers or industries that have changed practices to better adapt to drought-prone water supplies?

8. What effects do droughts have locally and regionally on fish and wildlife? Have human changes to the water regime made fish and wildlife more vulnerable to drought?

The Drought of 2002

During the spring of 2002, it became clear that two large regions of the United States were facing serious droughts: the Eastern Seaboard from Florida to Maine, and much of the Rocky Mountains and High Plains, stretching from Texas to Montana.

Television news featured pictures of forest fires raging in Colorado at a time of year when spring floods would normally occur. Snow pack in Colorado and elsewhere had been below normal during the 2001–02 winter.

Montana had seen four successive years of drought, and the effects were cumulative—thousands of wheat farmers were calling it quits.

Parts of the East experienced days of rain during May. That helped some. Flow in some streams approached normal, and soil moisture in many places had farmers smiling. But the drought warnings and restrictions that had been declared in many eastern states and cities remained largely in effect.

The simultaneous flash flood watches and drought conditions in parts of Maryland in May underlined some of the paradoxes and enigmas of weather. While sudden rains may quickly increase local stream flows, it takes a lot longer to raise major municipal reservoirs to their full storage capacity—and longer still for persistent soaking rains to recharge depleted groundwater.

Background and Context

To some farmers, "the drought" is something that comes regularly each July. "Drought is a normal, recurrent feature of climate, although many erroneously consider it a rare and random event," an analysis by the National Drought Mitigation Center said. News media, geared to respond to extreme weather and disaster, sometimes miss that point.

Still, bigger droughts make bigger news. The Dust Bowl drought of the 1930s, which lasted a decade and ruined tens of millions of acres of farmland, is the benchmark against which others are judged. Yet government paleoclimatologists recently reported that much worse "megadroughts" have likely occurred in the past 400 years. Droughts, in fact, have been responsible for the end of numerous civilizations in the course of history.

In some ways, such droughts are perfectly natural and are expected in the course of climate variability. But many of those catastrophic magadroughts—the Dust Bowl is an obvious example— were, in fact, made worse by human actions such as soil-depleting farm practices.

Despite vast improvements in soil conservation practices, a landscape dotted with farm ponds, and an epic system of dams, reservoirs, and canals built by federal agencies, the United States has still not engineered immunity from drought: droughts cause an average of $6 billion in economic loss each year in the United States. The multi-year drought that culminated in 1988 set a 50-year record for economic loss, drawing down the Mississippi River so low that barge traffic had to stop. More than four million acres were consumed by wildfire that year.

Get far into the subject of drought, and you discover many ways of defining a drought and its severity. The many different drought indexes in use reflect this phenomenon: Drought can be lack of snow and rainfall. Or it can low stream flows. Or low soil moisture and low water levels in groundwater storage aquifers. Or insufficient water for crops and vegetation. In the end, we often measure drought by the amount of economic loss to people.

Drought indicators found on Web sites below offer many such measures. One of the best is the Palmer Drought Severity Index, which is calculated from both rainfall and temperature and is standardized to local climate.

The National Drought Policy Commission identified approximately 47 federal programs that include drought-related relief, primarily for farmers and ranchers, although it did not quantify costs. In its recommendations, the Commission said U.S. policy should "favor preparedness over insurance, insurance over relief, and incentives over regulation."

Issues

- Are farmers making informed decisions on crop selection, cultivation methods, and water and moisture management to minimize risks of drought-related crop failure?
- Should the federal government (taxpayers) subsidize unsustainable agriculture?
- What are the limits of "Sustainable" municipal and industrial growth, from a water-resources perspective? Are we exceeding them? Where?
- Does efficient water use mean "going without?" Can it also mean "getting more" from available resources?
- How has technology made people's ability to cope with drought better and how has technology made things worse?

Key Players

- Local/regional offices of Army Corps of Engineers (http://www.usace.army.mil/where.html#State), Bureau of Reclamation (http://usbr.gov/main/news/index.html), Federal Emergency Management Agency (http://offices.fws.gov/)
- Local water utilities (http://www.awwa.org/Links/utility.cfm) and sewerage authorities
- Local irrigation district or conservation districts (http://www.nacdnet.org/directory/index.htm, http:www.nacdnet.org/pubaff/media.htm, and http://www.nacdnet.org/resources/cdsonweb.html)
- Drainage and mosquito control districts
- Local office of the USDA's Farm Service Agency (FSA) and National Resources Conservation Service (NRCS). (http://offices.usda.gov/scripts/ndISA.dll/oip_public/USA_map)
- County extension agents (http://www.reeusda.gov/)
- State water resources agency/agencies (http://www.ctic.purdue.edu/KYW/wspartners/statewscontacts.html)
- Local ports and state transportation agencies.

Information Sources

• National Drought Mitigation Center. Based at the University of Nebraska at Lincoln, this center offers a broad and media-friendly array of information resources related to drought. Partnering with federal agencies, it emphasizes reduction of drought vulnerability by planning rather that reaction to crisis. Co-publishes Drought Monitor (http://www.drought.unl.edu/dm/index.html), a good update on national drought conditions, and also drought impacts in the U.S. (http://enso.unl.edu/ndmc/impacts/us/usimpact.htm), a great state-by-state summary of drought-related news and disaster declarations. Main phone: (402) 472-6707. Main site: http://enso.unl.edu/ndmc/. Press phone contacts: http://enso.unl.edu/ndmc/media.htm

• U.S. Geological Survey. Real-time stream flow conditions map: http://water.usgs.gov/dwc/. Monthly water conditions report: http://water.usgs.gov/nwc/. General water resources info: http://water.usgs.gov/ General press contact: Butch Kinerney, (703) 648-4732 (bkinerney@usgs.gov) USGS has lots of drought information in state and regional offices. Check with USGS media relations staff for local contacts in each state. Historical background on drought in Southwestern states: http://geochange.er.usgs.gov/sw/impacts/hydrology/state_fd.

• National Oceanic and Atmospheric Administration Drought Information Center. This Web site (http://www.drought.noaa.gov/) offers a roundup of the wide ranging NOAA resources related to drought. Includes latest national and regional drought updates, indexes, and forecasts and background, agency links, and news releases. Scott Smullen, NOAA Public Affairs, Washington, DC (202) 482-6090, or Curtis Carey, NOAA's National Weather Service Public Affairs (301) 713-0622. Seasonal U.S. Drought Outlook in map form from NOAA's Climate Prediction Center. (http://www.cpc.noaa.gov/products/expert_assessment/drought_assessment.html)

• USDA National Water and Climate Center. This site, maintained by USDA's Natural Resources Conservation Service, includes information on agriculture's vulnerability to climate variability like drought, as well as mitigation measures. (http://www.wcc.nrcs.usda.gov/)

• Weekly Weather and Crop Bulletin. This USDA weekly, available online, is a good source on effects of drought on crops. Includes state summaries and useful maps. (http://www.usda.gov/agency/oce/waob/jawf/wwcb.html)

•Western Regional Climate Center. One of the six regional climate centers, WRCC maintains a site with an especially rich array of climate and weather information. (http://wrcc.sage.dri.edu/)

• National Drought Policy Commission. The Web site includes full text of the May 2000 report of this 15-member commission created by Congress in 1998. (http://www.fsa.usda.gov/drought/)

READING RACK (from p. 5)

sponse to industry—I should say to misperceived industry interests" Forget about the Natural Resources Defense Council representative pointing to this memo as one more smoking-gun-wannabe in proving that the Bush energy policy is in cahoots with big industry polluters. Most interesting is the response by the Department of Energy's flack. DOE spokesperson Jeanne Lopatta cited percentages to illustrate how much of the arguments of several key industry group were trashed in the end. By her tally: 80 percent of the Nuclear Energy Institute recommendations got axed; 90 percent of the National Mining Association's; and 70 percent of the American Gas Association's. What's that one about statistics, damned statistics...and lies?

"Resolutions on Global Warming are Rising," The Wall Street Journal, April 3, 2002: Nobody ever said it would be a cinch to get stockholder resolutions passed. Just ask William Hewlett. But that doesn't mean they're not part of the tea leaves. "More investor activities are targeting global warming as an issue requiring shareholder attention this year," reports Lynn Cowan. She finds about a doubling in 2002 compared with the previous year, which means 18 such resolutions this year. That qualifies the groundswell movement (tongue in cheek?) as "the fastest-growing category tracked by the Investor Responsibility Research Center and the Social Investment Forum," she writes. She attributes the uptick to increased efforts by the New York-based Interfaith Center on Corporate Responsibility and the Boston-based Coalition for Environmentally Responsible Economics (CERES). About half of the resolutions were either withdrawn when companies agreed to provide requested information or were excluded from proxy by the Securities and Exchange Commission for various technical reasons, she reports. Among companies reported to still be facing their stockholders on the proxy issue: Allegheny Energy, Inc.; American Standard Co.; Eastman Chemical Co.; Exxon Mobil Corp.; General Electric Co.; Occidental Petroleum Corp.; and Sprint Corp. The list of companies whose stockholders approve such initiatives is unquestionably much shorter. As in none, most likely.

Hedes & Tales: "Buyer's Market: Prolonged Advertising Slump Puts Media in Mood to Pander," *The Wall Street Journal*, May 9, 2002.

Upcoming Issues:

- Covering the Johannesburg Global Conference
- Population and Climate Change—The Links
- Upcoming at SEJ Baltimore Conference

—and much more

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